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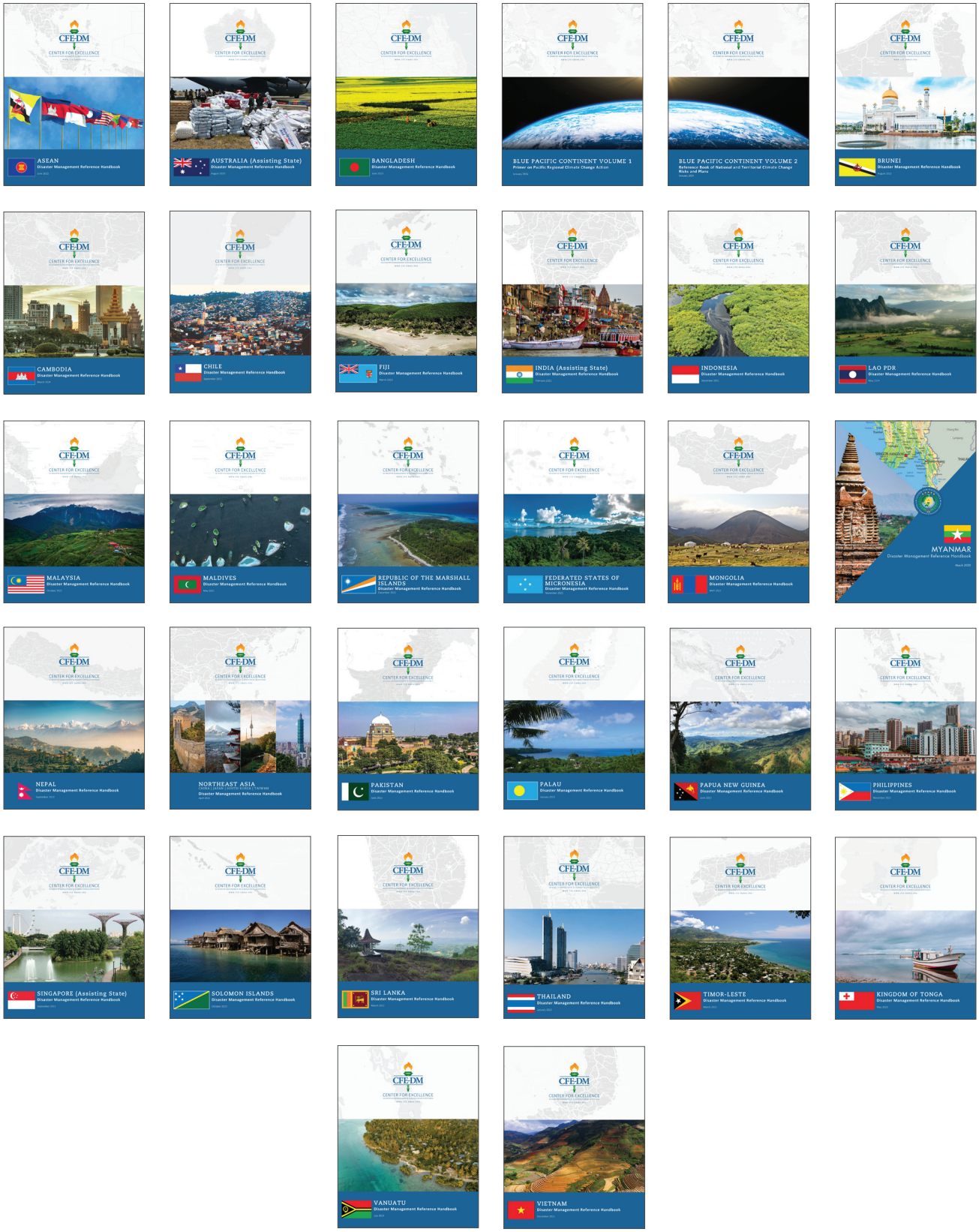
LAO PDR

Disaster Management Reference Handbook

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Front Cover

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Letter from the Director

Since 2018, the disaster management legal and institutional structure of Lao People's Democratic Republic (PDR) has evolved significantly. During that period, the Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) has also been building a partnership with the country's disaster management professionals to ensure that Lao's people can constructively confront the rising threat of natural and human-made hazards.

In February 2022, CFE-DM conducted its inaugural Laos Humanitarian Assistance and Disaster Relief (HADR) Civil-Military Coordination Workshop, which supported the Lao PDR government's work to enhance national disaster management processes in cooperation with Southeast Asian regional stakeholders and international responders from the Red Cross the Red Crescent Movement and the United Nations. More recently, in October-November 2023, the Lao National Disaster Management Committee and Ministry of National Defense joined Singapore's Changi Regional HADR Coordination Centre and CFE-DM to execute Exercise Coordinated Response (Ex COORES) to strengthen Southeast Asian regional cooperation for HADR operations, establish civil-military linkages, and enhance mutual understanding and interoperability.

Not only is Lao PDR significantly exposed to hazards, including floods, landslides, tropical storms, droughts, and earthquakes, but the country is vulnerable to climate change influences on these hazards. Key long-term threats are steadily rising temperatures and a swiftly rising risk of devastating flooding. Lao PDR's national disaster risk reduction (DRR) strategy and disaster management law emphasize the importance of local action to bolster national action, and policies integrate international organizations. The U.S. – and the CFE-DM, in particular – is dedicated to supporting Lao's people and government as they continue to foster DRR and climate change resilience.

This Handbook provides the reader with a baseline understanding of national entities involved in disaster management. This resource offers an overview of the country's people, geography, and economy and details past disaster responses in addition to the country's disaster risk reduction policies. It is hoped that this Handbook will support planners or other personnel involved in disaster response in Lao PDR or working with Laos' disaster management personnel in a response or preparedness project.

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

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

Mission

CFE-DM builds crisis response capacity in US 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 in a changing climate environment.

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EXECUTIVE SUMMARY

The Lao People's Democratic Republic (PDR) is one of the most ethnically diverse countries in Southeast Asia, with the majority of the population comprised of ethnic Lao people alongside many other minority groups who reside predominantly in the foothills and mountains. While Lao PDR still faces relatively high poverty rates, it has made incredible strides in poverty reduction since the socialist state instituted economic liberalization policies in the mid-1980s. The percentage of the population living in poverty declined from 46% in 1993 to 18% in 2019.[1] The Coronavirus disease 2019 (COVID-19) pandemic caused a severe economic setback, but the gross national income is almost back to pre-pandemic levels as of early 2024.

Lao PDR faces several natural hazards, including floods, landslides, tropical storms, droughts, and earthquakes. Flooding is the most commonly occurring disaster and affects the most people. While flooding is part of the Mekong River's annual cycle, flooding has become more frequent and intense due to a combination of climate change and damming rivers for hydropower. Flooding is worse in the rainy season, but it may also be triggered by tropical storms affecting the region. Occasionally, flash flooding has been caused by dam failure, as happened in 2018 with the collapse of one of Xe Pian-Xe Namnoy's saddle dams. This dam disaster damaged or destroyed 19 villages and displaced thousands of people. While droughts are not as frequently occurring, recent years have seen more intense drought, particularly during El Niño years. In addition to natural hazards, rural areas remain burdened with unexploded ordnance (UXO), which poses a particular risk to farmers and children.

After the fatal flooding caused by the 2018 dam collapse, Lao PDR developed its first national disaster risk reduction (DRR) strategy and in 2019 adopted a new disaster management law. Both emphasized the importance of early warning systems and enhanced the disaster management structure. While the National Disaster Management Committee is responsible for overseeing coordination and developing policy, much of the disaster management organization is localized down to provincial, district, and village levels to increase community representation. Many international relief and development organizations support government efforts, and local organizations provide assistance, foster economic empowerment, and advocate for vulnerable populations.

Lao PDR is vulnerable to the impacts of climate change, with various models projecting increased extreme heat and increased flooding risks. The country is already facing rising temperatures, which are projected to continue rising broadly in line with the global average. Increased temperatures will worsen human health and ecosystems, and crops and agricultural livelihoods will be negatively impacted. The trend of rising temperatures coincides with increased urbanization, as more people migrate from rural to urban areas in search of opportunities, leading to increased unplanned urban settlements that will be more vulnerable to extreme heat. Whether in urban or rural areas, people living in poverty are especially vulnerable to climate-related hazards, many of which may be exacerbated by climate change.

Lao PDR is balancing managing disaster and climate risks with promoting economic growth. One key economic approach is to transform from "landlocked" to "land-linked" through multi-billion-dollar railway and electrical lines. Another key part of the national strategy is based on becoming the "battery of Southeast Asia" by generating electricity via hydropower and exporting the electricity to neighbors. While damming raises concerns about ecological impacts and displaced villagers, hydropower is a key part of the country's approach to economic development.

COUNTRY OVERVIEW

Lao PDR is a diverse, multi-ethnic country that has experienced incredible economic growth in the last several decades. The majority of the population belongs to the Lao-Tai ethnic group, while some 37% of people are of various ethnic minorities. Common disaster hazards include flooding, drought, and storms, all of which are anticipated to be exacerbated by climate change. Flooding is the most frequent disaster; it often coincides with monsoonal heavy rains or follows tropical storms, and, among all hazards, it affects the most people.

History

Modern humans have populated Southeast Asia for at least 50,000 years, though present-day Lao PDR has its roots in the Lao kingdom of Lan Xang, which spanned the 14th through 18th centuries. Laos came under the domination of Siam (Thailand) from the late 18th century until the late 19th century, at which point it became part of French Indochina. In 1975, the communist Pathet Lao took control of the government. A gradual, limited return to private enterprise and the liberalization of foreign investment laws began in 1988.

The first extended Lao kingdom, Lan Xang, or the "Kingdom of a Million Elephants," emerged in the 14th century.[2] The kingdom had periods of independence but also paid tribute to more powerful neighbors including the Siamese and Vietnamese. Lan Xang was founded and first led by Fa Ngum, a warrior who conquered territories including and exceeding present-day Lao. Fa Ngum was succeeded in 1373 by his son, whose death in 1416 was followed by a long period of relative calm, save for a Vietnamese invasion in 1479. King Visoun, whose rule started in 1501, was instrumental in helping Lao recover from the invasion, and he built the grand temple known as Wat Wisunarat (Wat Visoun) that still stands in Luangprabang. Photisarath, who ruled 1520–1548, involved Lan Xang in conflicts against Myanmar (Burma) and the Siamese (Thai) kingdom of Ayutthaya (Ayudhya) that would last two centuries. Photisarath was succeeded by his son, whose death in 1571 was followed in 1574 by Myanmar invading Vien Chan (Vientiane) and ravaging the country. This invasion led to a period of anarchy until Souligna Vongsa ascended the throne in 1637, restored order with treaties, and turned Vien Chan into a thriving intellectual center. Upon his death in 1694, Souligna Vongsa was succeeded by a nephew who seized power with the help of a Vietnamese army and placed Lan Xang under Vietnamese rule. The kingdom was thus divided, as the north declared Luangprabang a separate kingdom from Vien Chan, and the south declared the separate kingdom of Champasack. The emergence of three rival kingdoms marked the end of Lan Xang.

Throughout the late 18th century, a series of invasions led to all three Lao kingdoms coming under Siamese (Thai) control, with the Lao kings paying tribute to Bangkok. Siamese expansion continued into the 19th century, until French warships sailed into Bangkok in 1893. The Siamese withdrew from the eastern banks of the Mekong, and the French made Vientiane the administrative center of French Indochina, or Indochine. During World War II, Japan invaded Southeast Asia and took administrative control of French Indochina. Anti-French and anti-Japanese movements sprung up in Lao, but the 1949 signing of a Franco-Laotian convention established Lao with limited self-government within the French Union. The Pathet Lao movement, proclaimed in 1950, opposed French rule and joined forces with the Viet Minh of Vietnam in opposing French colonialism. The 1954 Geneva Accords ended French rule in Southeast Asia and gave Lao rule to the royal government, though the communist Pathet Lao had de facto control of the north. A short-lived coalition government of these different factions split apart in 1964. Over the following decade, the U.S. became more heavily involved in the

war in Vietnam against the northern Vietnamese communist forces. While officially neutral, Lao was pulled into the conflict as the target of a covert U.S. bombing campaign aimed at cutting off supply lines leading into and reinforcing northern Vietnam. From 1964 through 1973, the U.S. dropped on Lao two million tons of ordnance, more than all the bombs dropped during World War II. One-third did not detonate on impact and left the Lao countryside saturated with UXOs, which have killed or injured approximately 50,000 people since 1964.[3]

In 1975, the Pathet Lao came to power.[4] They abolished the monarchy and established the independent Lao People's Democratic Republic on 2 December 1975. The Lao People's Revolutionary Party, the communist party of Lao, is the only party to rule the country over nearly 50 years. In the government's early years, under the goal of socialist transformation with socialist construction, party leaders followed the Vietnamese communist model and attempted to create agricultural collectives in the countryside and to nationalize the limited industry and commerce in towns. Dire economic conditions and repressive political measures led to an estimated 10% of the population fleeing to Thailand before the ruling party started implementing some policies of economic and social liberalization. These reforms culminated in the 1986 inauguration of the New Economic Mechanism, which introduced market incentives and began decentralizing government economic enterprise. Lao PDR rapidly opened its economy and was experiencing significant economic growth by the mid-1990s, and Soviet aid was replaced with assistance from Japan, Western Europe, Australia, and other bilateral donors. Lao joined the Association of Southeast Asian Nations (ASEAN) in 1997. Lao slowly recovered from the Asian economic crisis of the late 1990s, with the economy accelerating in the following decade as foreign direct investment from many countries increased and as the country opened to tourism.[5] Among foreign investments in Lao, China's Belt and Road Initiative (BRI) has invested heavily in hydropower dams and transport infrastructure, including a US$5.9 billion high-speed rail line.[6] Hydropower dams, while accompanied by concerns for displaced villagers and environmental impacts, have nonetheless played a key role in the country's economic strategy to become the "battery of Southeast Asia" by exporting electricity to its neighbors.

Culture and Demographics

Lao culture and attitudes are influenced by Theravada Buddhism, which emphasizes the cooling of human passions. Showing strong emotions, particularly anger, in public is frowned upon. *Kamma*, intentional action or karma, is believed to determine one's situation in life. Having activities contain an element of *muan*, or fun, is an approach to avoid undue psychological stress.[7] While Western fashions have influenced dress in urban areas, traditional clothing, often made from silk, is worn during special occasions or in rural areas. For ethnic Lao women, this clothing includes a long skirt and matching shawl, often accompanied by a French-inspired blouse. Ethnic Lao men wear the traditional *sampot*, or billowed trouser, with an Indochinese shirt or a Mandarin collar jacket, as well as a traditional shawl. Minority ethnic groups in Lao have their own distinctive traditional clothing styles. Important arts and crafts include weaving, which is often passed from mothers to daughters, with silk weaving especially valued. Laotian craftspeople are known for their woodworking skills as well as for metalwork in silver in gold. Buddhist and Hindu influences are seen in traditional literature. Phra Lak Phra Lam is the official national epic and retells the Lao version of the Hindu epic, Ramayana.[8] Literature influenced by Buddhist philosophy includes Sang Sinxay, regarded as a seminal work of Lao epic poetry. One of the greatest texts of Lao literature is Thao Hung Thao Cheuang, which recounts the life and battles of a part-historical, part-mythical character and contains information on early historical and religious structures and origin

myths of the Tai people.[9] Sang Sinxay and Thao Hung Thao Cheuang emerged during the Lan Xang kingdom in the 16th and 17th centuries. The country also has a rich folklore tradition.[10]

Ethnic Makeup

Although the total population is relatively small at 6,492,228, per the 2015 census, Lao PDR is among the most ethnically diverse countries in Southeast Asia. Many ethnic groups can be aggregated into four larger ethno-linguistic families, which the government of Lao describes as Lao-Tai (62.4%), Mon-Khmer (23.7%), Hmong-Mien (9.7%), Chinese-Tibetan (2.9%).

The most populous ethnic groups listed in the 2015 population and housing census were:

- Lao (53.2%)
- Khmou (11.0%)
- Hmong (9.2%)
- Phouthay (3.4%)
- Tai (3.1%)
- Makong (2.5%)
- Katang (2.2%)
- Lue (2.0%)
- Akha (1.8%)

Ethnic groups comprising less than 1% of the population include: Yrou (0.9%), Ta-oy (0.7%), Xuay (0.7%), Pounoy (0.6%), Tri (0.6%), Trieng (0.6%), Ewmien (0.5%), Phong (0.5%), Brao (0.4%), Harak (0.4%), Katu (0.4%), Nhoaun (0.4%), Oy (0.4%), Pacoh (0.4%), Pray (0.4%), Kriang (0.3%), Lahou (0.3%), Lamed (0.3%), Hor (0.2%), Thaineau (0.2%), Xingmoun (0.2%), Yae (0.2%), Cheng (0.1%), Khmer (0.1%), Nhaheun (0.1%), Samtao (0.1%), Toum (0.1%), Xaek (0.1%), and Yang (0.1%). Additional ethnic groups – each comprising less than 0.1% of the population – include Bid, Hayi, Kree, Lavy, Lolo, Moy, Ngouan, Oedou, Sadang, Syla, and Thaen.[11]

Citizens of Laos are referred to as Laotians, regardless of ethnicity. However, ethnically Lao people are the largest group in the country and are part of the Tai ethnic group indigenous to Southeast Asia. The Khmou (or Khmu) people, the largest minority, predominantly live in the northern parts of the country, where they are the native inhabitants. Outside of Lao PDR, some Khmou also live in Vietnam or China. The Hmong people are a sub-group of the Miao people that reside in Laos, Vietnam, and southern China. The Hmong originated from the Yellow River area of China.[12]

Key Population Centers

The country is administratively divided into 18 provinces, which includes the capital city, with 148 districts and 8,507 villages. The largest urban centers include Vientiane, Savannakhet, Pakxe, and Thakhek. Vientiane is the country's capital; it was founded in 1563 and is located on the banks of the Mekong River. The capital has been central to economic growth, and its cultural heritage is increasingly attracting tourism. Savannakhet, the capital of the province of the same name, has a growing economy partially due to the economic influence of nearby Thailand. It is an important cultural, historical, and religious town with monuments, Buddhist temples, Christian churches, and Chinese temples. Pakxe is the capital of southern Champasack Province and had previously served as the administrative center in the Kingdom of Champasack. Pakxe's location at the confluence of the Mekong and Xe Don Rivers made it an important commercial and cultural center. Thakhek is the capital of Khammuane Province and was established by the French on the Mekong River. The city's architecture, limestone cliffs, and Phu Hin Bun national park draw tourism. Other cities – Muang Xai, Luangprabang, Phansavan, Vang Vieng, and Muang Pakxan – have historical and cultural heritage or natural areas that have boosted the tourism sector.[13]

Figure 1 shows a 2015 density map from the 4th Population and Housing Census, with key population centers appearing in darkest red.[14]

Lao PDR is experiencing the fastest rate of urbanization in Southeast Asia. The 2015 census indicated that 33% of the population lived in the main cities, with the bulk of them concentrated in Vientiane. It is estimated that the urbanization level in Lao PDR will reach 47.7% by 2025. Population growth in urban areas has been

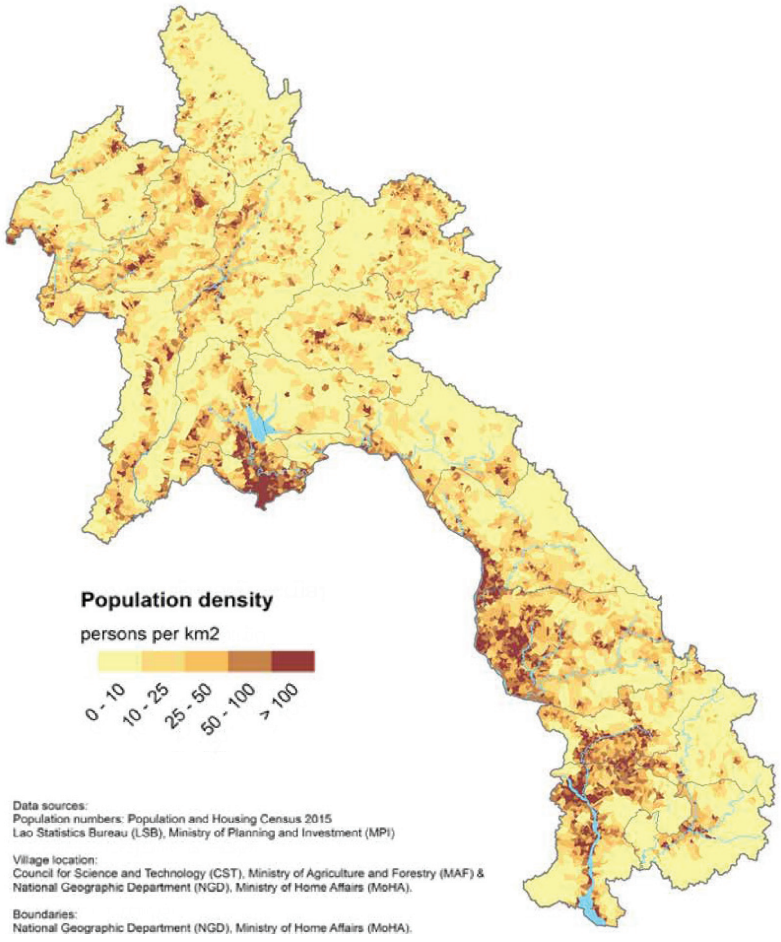


Figure 1: Lao Population Density Map, 2015

fueled by internal migration linked to economic policies promoting the market-based economy.[15] The capital, Vientiane, is the most common destination, with 40% of the city's residents reported to be internal migrants. Approximately 59% of internal migrants are women. Motivations for rural-urban migration include employment or business, family reasons, educational access, and marriage.

Population growth by province from 2005 to 2015 is depicted in Figure 2.[16]

Language

The official language of Lao PDR is the Lao language, which is natively spoken by the ethnic Lao people, who comprise 53% of the population. The Lao alphabet was derived from the Khmer script.

Minority languages are spoken among their respective ethnic groups, particularly in the highland and midland regions, with the

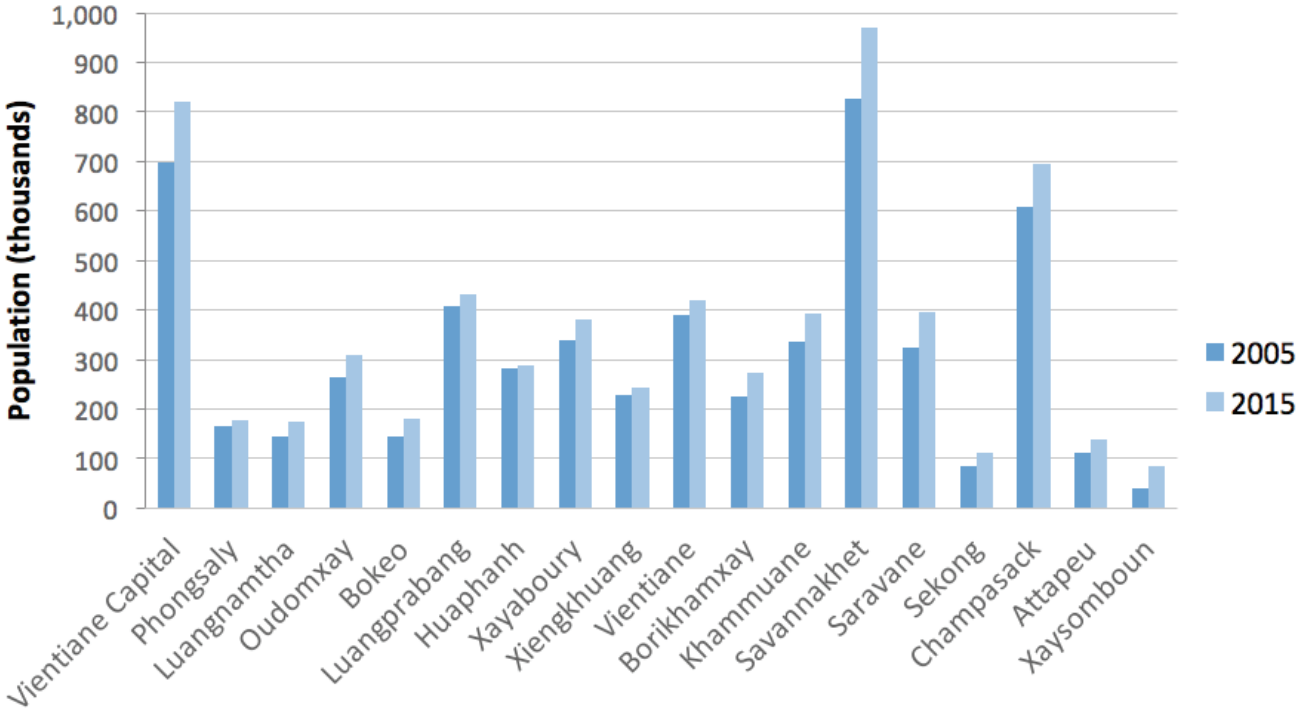


Figure 2: Population by Province, 2005 and 2015

largest minority languages including Hmong and Khmou. French is used in commerce and government and is compulsory for all students. Official signs in the country are bilingual, written in both Lao and French.[17]

Religion

The country's predominant religion is Theravada Buddhism.[18] According to the 2015 census, religious adherence among the population is 64.7% Buddhism, 1.7% Christianity, and 33.6% other beliefs, including animism, folk religions, or no religious beliefs.[19]

Most Buddhists are ethnic Lao. Buddhist monks introduced Buddhism to the area in the 8th century, and it had become widely practiced by the 14th century. Laotian folk religions encompass various ethnic beliefs and customs of several minority communities, both indigenous and foreign. Folk religions are generally polytheistic, with shamans playing an integral role. Indigenous folk religions are adhered to by ethnic groups predominantly from the midland and highland areas. Folk religions and Buddhism are not mutually exclusive. The small number of Christians in Lao PDR are mostly Protestant, numbering an estimated 100,000. There are also approximately 45,000 members of the Roman Catholic Church, most of whom are ethnic Vietnamese.[20]

Vulnerable Groups

Some groups are more vulnerable to the shocks of a disaster, often due to social constraints, roles, and resources. Vulnerability may vary from one society to the next and can be compounded by multiple factors. The categories below are not meant to be viewed alone but are intended to provide additional context to considering crisis impacts.

Women

The main obstacle to gender equality is a lack of equal access for women and girls to opportunities and resources, particularly for rural and marginalized women. Development shortcomings include illiteracy, poor reproductive and basic health, food insecurity, and economic disenfranchisement of Lao women. Literacy rates reflect a significant gender gap. Approximately 91.4% of males, 81.4% of females, and 87.1% of the total adult population are literate, with literacy defined as the ability to read and write among people aged 15 years or older.[21] Compared to men, women have poor employment opportunities and working conditions, as well as limited access to land and financial capital. These key gaps in socioeconomic development are likely to be exacerbated further with the rise in climate and disaster-related risks.

A World Bank index, "Women, Business and the Law 2024," scores 190 economies across eight indicators meant to represent the life cycle of a working woman. For Lao PDR, with data referring to the laws and regulations applicable to the main business city of Vientiane, the country scored 85.6 out of 100.0, higher than the regional average for East Asia and the Pacific. Strengths are seen with gender parity regarding constraints on freedom of movement, marriage, women starting and running a business, and in property and inheritance laws. Areas in need of improvement include legal equality pertaining to laws that affect women's decisions to work, women's pay, women's work after having children, and the size of a woman's pension.[22]

Lao PDR ratified the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) in 1981; it was the second country in the region to do so after the Philippines, but it did not submit its first state report to the CEDAW Committee for review until 2005. Knowledge of CEDAW is confined mainly to senior government officials or senior members of the Lao Women's Union (LWU).[23] The LWU is a mass social organization that advocates for women's rights in Lao. Established originally in 1955, it took its present name in 1984 and works to promote government policies on women, protect women's rights within the government, and promote women's overall status and welfare in society. It has a national network of more than one million

members extending from Vientiane to villages.[24] The LWU is included in the Technical Working Group on Climate Change, which promotes the participation of women in environmental policy making. The LWU is also included in Village Disaster Management Committees under the Law on Disaster Management; however, it is not explicitly included in district, provincial, or central disaster management committees. The capacity of LWU to influence women's resilience through these mechanisms is also limited by the lack of any specific gender criteria or targets in the relevant law and policy frameworks. According to a gender analysis of the country's national legal and policy frameworks, an area of strength is the 2019 Law on Gender Equality (LGE), which is gender responsive, incorporating important equality principles and providing for overcoming cultural beliefs that inhibit women's advancement. Significantly, it mandates gender mainstreaming in laws and policies across all areas of work. The LGE is accompanied by the National Action Plan on Gender Equality 2021–2025 (NAPGE), which includes a broad spectrum of gender positive targets, such as introducing quotas for women and girls over a broad range of activities including leadership roles in areas such as climate change and disaster risk reduction. Areas in need of improvement include the lack of commitments to equality and nondiscrimination in key laws and policies related to disaster risk management, the environment, and climate change. While laws and policies in these areas are based on formal equality between men and women, generally they do not address gender inequality or gendered differences in risks or needs and do not provide for the collection of sex-disaggregated data, gender analysis, or gender mainstreaming.[25]

Regarding intimate partner violence in Lao, approximately one-third of women ever in a relationship have experienced violence (physical, sexual, and/or emotional) by a current or former partner. This rate is slightly lower than the regional average, as available data for Southeast Asia reflects a prevalence rate of 37% for intimate partner violence. To address violence against women, the LWU, in collaboration with United Nations Population Fund (UNFPA), held a National Consultation in Vientiane in February 2023; it brought together key representatives of government, international organizations, and civil society organizations to provide input to the Draft ASEAN Guidelines for Developing National Standard Operating Procedures (SOP) for a Coordinated Response to Violence against Women. The SOP is prioritized in the ASEAN Regional Plan of Action on the Elimination of Violence against Women to comply with minimum international standards for gender-responsive handling of such cases. The government of Laos, with UNFPA support, has developed and endorsed three SOPs for the health and social sectors and for coordination and referral pathway for survivors.[26]

Children

Approximately 59% of Lao's population are children and young people below 25 years of age.[27] Lao PDR has made incredible progress in reducing infant and under-five mortality in the last few decades, yet Lao's infant mortality rate remains the highest in the Asia-Pacific region. The infant mortality rate – the number of children who die before reaching their first birthday each year, expressed per 1,000 live births – was 76.5 in 2000 and fell by more than half to 35.3 in 2020, on par with Papua New Guinea and Myanmar.[28] The under-five mortality rate also declined dramatically – from 154.1 per 1,000 live births in 1990 to 107.3 in 2000 and 42.5 in 2021.[29] There are still significant inequities within Lao, with children in the poorest quintile of households being 2.8 times more likely to die before their fifth birthday than those in the richest quintile.[30]

Lao has one of the highest adolescent birth rates in the region at 83 births per 1,000 girls aged 15-19 years. Those rates are significantly higher in rural areas at 136 births per 1,000 adolescent girls, compared to 42 births per 1,000 adolescent girls in urban areas. As in many other countries, adolescent girls in Lao's rural areas face heightened challenges in access to water,

sanitation, and hygiene. Girls in rural areas often have insufficient access to safe and private facilities for menstrual hygiene management, and they confront difficulties managing their menstruation safely, comfortably, and with dignity. In 79% of households without water on the premises, women or girls usually collect the water. There is a notable gender gap in literacy rates of young people aged 15-24 years; 69% for females and 77% for males. Girls from some ethnic communities and lower wealth quintiles are at an educational disadvantage. The country has the highest rate of child marriage in East Asia and the Pacific, with 37% of women aged 20-49 years having been married before the age of 18. Most of the victims of trafficking, violence, and sexual exploitation are girls and adolescents.[31]

Children, particularly children living in poverty or in remote rural areas, are disproportionately susceptible to negative outcomes during or after a disaster. During emergencies, with less healthy food and without access to clean water and sanitation facilities, children increasingly fall sick and find it difficult to recover. Floods and other disasters in Lao can disrupt children's education and have long-term impacts on their mental well-being. Following Lao's worst dam collapse and the resulting flash flooding in 2018, many schools in affected villages were damaged or destroyed, while other school buildings were used for emergency shelter for months. The flash floods affected around 3,400 school-aged children and adolescents from 3 to 14 years of age.[32] Families waited months or years for permanent homes and often dealt with inferior education facilities for their children. One survivor of the 2018 dam collapse stated, "One school for 500 children? It's too crowded. Many of these kids who graduate from primary school don't continue on to secondary school because [that school] is too far, about 10 kilometers [6.2 miles] from the villages, so they just drop out and help their parents by working in the farms."[33]

People Living in Poverty

People living in poverty are more vulnerable to the health, economic, and livelihood impacts of climate hazards, disasters, and climate change. Disasters can also push people into poverty or into deeper poverty. Lao PDR has made significant progress in reducing poverty, as the percentage of the population living in poverty fell by more than half over 26 years, from 46% in 1993 to 18% in 2019.[34] However, Lao still has one of the highest poverty rates in Southeast Asia.[35] Its 18.3% poverty rate means that nearly one-fifth of the Lao population lives on less than 9,364 Lao Kip (LAK or ₭; US$1.10) a day. Of concern is that while overall poverty rates have decreased, inequality has risen. The average consumption per capita among the poorest quintile grew by 2% per year, compared to the national average of 3.3%, and to 4% for the richest quintile. The Gini index, a measure of inequality wherein 0 represents complete equality of income and consumption while 100 represents total inequality, scored Lao PDR at 36 in 2013 but 38.8 in 2019. During that period, the poverty rate declined faster in rural areas than in urban areas, due to an improvement in farm incomes and remittances among rural households. However, most poverty still resides in rural areas. In 2019, the poverty rate was 23.8% in rural areas, compared to 7% in urban areas.

Poverty rates are higher among minority ethnic groups. The Hmong-Iumien ethnic group has the highest poverty rate at 38.4%, partially due to lagging farm productivity, and they are followed by the Mon-Khmer at 32.7%, and the Chine-Tibet at 18.1%. The poverty rate is lowest among the majority Lao-Tai ethnic grouping at 10.6%. Poverty rates are also higher among poorly educated households. Per 2019 data, people living in households headed by someone with no formal education had a 34.6% poverty rate, more than 10 times higher than among households headed by those with at least a completed secondary education.[36]

Lao is the most rapidly urbanizing country in Southeast Asia, and a significant portion of its people living in poverty are in urban areas, particularly in unplanned settlements. Rapid and unplanned urbanization, population growth,

and intensified climatic events all contributed to an expansion of unregulated and vulnerable settlements. The estimated requirement for housing units in urban areas was 219,000 between 2003 and 2020, including 133,000 new and upgraded housing units to accommodate the urban poor, and this demand is expected to increase alongside the current pace of urbanization.[37]

People Living with Disabilities

People living with disabilities generally have poorer socio-economic conditions and more limited opportunities compared to those without disabilities, as evidenced by a disability monograph, based on the 2015 census and disseminated in 2020 by the Lao Statistics Bureau and Ministry of Planning and Investments. Data collection is key to informing policymakers and planners about people living with disabilities. The 2015 census was Lao's first population and housing census that collected information using the Washington Group's Short Set of Questions, an internationally used survey tool that focuses on functional limitations in vision, hearing, walking, memory, self-care, and communicating.[38] In Lao PDR, more than 160,000 people, 2.77% of the population over 5 years of age, live with a disability, and this community is split fairly evenly between male and female demographics. Disability prevalence is higher in rural and remote geographical areas, likely a result of differential access to health care, with a prevalence of 2.48% in urban areas, 2.86% in rural areas with roads, and 3.33% in rural areas without roads. The prevalence of disabilities also increased with age, reaching 18.4% among those aged 60 years and older. The most common types of difficulties across all age groups are related to seeing (1.3%) and walking or climbing stairs (1.3%), followed by hearing (1.2%) and remembering or concentrating (1.2%), self-care (1.1%), and communicating (0.9%). The leading cause of disability was identified as illness, followed by other causes, congenital causes, accidents including road traffic, war, and UXO injuries. The prevalence of disabilities by province varied from 1.9% in Savannakhet to 4.2% in Luangprabang. Other provinces with relatively high prevalences of disabilities include Xaysomboun (4.0%), Attapeu (3.7%), Oudomxay (3.6%), and Saravane (3.0%).[39]

People over 10 years of age and living with disabilities had significantly lower labor participation and higher unemployment rates compared to people not living with disabilities in both rural and urban areas. Youth and women living with disabilities were particularly excluded from education, vocational training, and the workforce.

Several civil society organizations work to advocate for the rights of people living with disabilities and their full participation in society. They include the Lao Disabled People's Association (LDPA), established in 2001.[40] Lao PDR ratified the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) in 2009 and subsequently adopted several strategies, policies, and action plans targeting people living with disabilities in recent years.[41]

Economics

As of 2024, Lao PDR is a rapidly growing economy that met the criteria to graduate from the ranks of least developed countries in 2018;[42] it expects to graduate in 2026.[43] Its highest gross national income per capita, US$2,520, was recorded in 2019 prior to the COVID-19 pandemic, and that measure stood at US$2,310 in 2022 data.[44] Laos' economic growth throughout the 2010s averaged just below 8%, a rate that placed it among the fastest growing economies in the world. Poverty has been slowly declining but remains relatively high. Over the last three decades, Laos has steadily implemented reforms and built the institutions for a market economy. The country acceded to the World Trade Organization (WTO) in February 2013. In 2015, the ASEAN Economic Community (AEC) was created, and Lao subsequently reformed economic policies and regulations aimed at improving the

business and investment environment. The Lao government is increasingly orienting toward the economic integration of ASEAN and export-led development while seeking to move toward green growth and sustainable development. The country's rapid economic growth has been largely driven by the development of hydropower and mining, with foreign investors playing a significant role. However, these industries have limited employment and growth opportunities and significant environmental costs. While the country is rich in natural resources, economic diversification is needed to expand private sector investment, generate employment in services and industry, and promote regional cooperation and integration. The government has begun prioritizing and expanding the development of high-value agriculture, light manufacturing, and tourism, while simultaneously continuing to develop energy resources and related electrical transmission capacity for export to neighboring countries. Under the 9th National Socio-Economic Development Plan (NSEDP), for the period 2021–2025, the government of Lao PDR aims to promote quality, sustainable, inclusive, and green growth in the context of recovery from the COVID-19 pandemic and to continue economic development.[45]

The COVID-19 pandemic affected economies globally and struck the Lao economy particularly hard, especially after the Lao PDR government instituted lockdowns starting in late March 2020 to prevent disease transmission. The country's economic growth declined from 4.7% in 2019 to –0.6% in 2020.[46] The informal sector and small businesses fared the worst in the pandemic's early years.[47] The economy has been slowly recovering but still strives toward pre-pandemic levels of growth. While economic growth has slowly increased, macroeconomic challenges have persisted in the last three to four years. Long-standing structural vulnerabilities have been exacerbated by the impacts of the COVID-19 pandemic, soaring public debt, and challenging global macroeconomic conditions. As a result, the national currency has weakened, and inflation is soaring. Between July 2021 and July 2023, the Lao kip lost more than half of its value against the U.S. dollar, and this weakness led to temporary shortages of fuel and limited access to foreign exchange at the official exchange rate. Public debt service obligations are increasing and revenues decreasing, with spending reduced on crucial social services such as education, health care, and social protection. This situation affects poorer people most seriously.[48]

As gross domestic product (GDP) slowly grows again, tourism, transport, logistics services, and foreign investment have contributed to economic recovery.[49] Lao aims to transform from "land-locked" to "land-linked" by further integrating its economy with the larger economies of its neighbors. The government hopes to increase exports of agricultural products, manufactured goods, and electricity to its more industrialized neighbors. It sees significant growth opportunities resulting from the US$6 billion high-speed China-Laos Railway.[50] A significant part of China's BRI, the rail link between Kunming, China, and Vientiane opened in December 2021. China, holding a 70% stake in the joint venture project signed in 2015, hopes to expand the 1,000-kilometer (km; 621.37-mile) line eventually through Thailand and Malaysia to Singapore.[51]

Government

The Lao People's Democratic Republic has been effectively ruled by the communist Lao People's Revolutionary Party (LPRP) since they came to power in 1975 and abolished the monarchy. The LPRP is the only legal political party in the country. The president, who is head of state, and the prime minister, who is the head of government, are selected from among high-ranking party members who constitute a Central Committee, headed by a Politburo.

The 1991 constitution provides for a National Assembly, the members of which are elected to five-year terms. The National Assembly elects the president and vice president and approves presidential appointments of the prime minister and members of the cabinet (Council of Ministers). The president and ministers serve

five-year terms.

The National Assembly also elects, on recommendation of its own Standing Committee, the president of the People's Supreme Court, which is the head of the judicial system. The Standing Committee of the National Assembly also appoints judges for provincial, municipal, district, and military courts. Lao PDR's legal system is a civil law system influenced by the French.

The president appoints provincial governors and the Vientiane mayor. The prime minister appoints deputy provincial governors, deputy mayors, district chiefs, and other local administrators. There are party committees and administrative committees at each level of local government.[52]

Administratively, Lao PDR is divided into 18 provinces, each of which is comprised of several districts. The provinces are:

- Attapeu (5 districts)
- Bokeo (5 districts)
- Borikhamxay (7 districts)
- Champasack (10 districts)
- Huaphanh (10 districts)
- Khammuane (10 districts)
- Luangnamtha (5 districts)
- Luangprabang (12 districts)
- Oudomxay (7 districts)
- Phongsaly (7 districts)
- Saravane (8 districts)
- Savannakhet (15 districts)
- Sekong (4 districts)
- Vientiane Capital (9 districts)
- Vientiane Province (11 districts)
- Xayaboury (11 districts)
- Xaysomboun (5 districts)
- Xiengkhuang (7 districts)[53]

Environment

Land-locked Lao stretches from low-lying plains in the south to a mountainous north and is home to major rivers. Most of the land is mountainous, although most of the population reside in the low-lying plains and around the rivers. Many of the people residing in mountainous areas are ethnic minorities. The tropical monsoon climate naturally brings abundant rainfall in the wet season, and annual flooding is part of the Mekong River's cycle. However, climate change and development are exacerbating the effects of flooding disasters.

Geography

Lao PDR is a landlocked country that is located in the lower Mekong River Basin of Southeast Asia between latitudes 14° and 23° North and longitudes 100° and 108° East. Figure 3 shows a map of Lao PDR.[54]

The country stretches 1,700 km (1,056 miles) from north to south and 100-400 km (62-249 miles) from east to west. Lao has a total surface area of 236,800 km^2 (91,429 square miles), of which its total land area is 230,800 km^2 (89,112 square miles). Elevation ranges from a low of 104 meters (m; 341 feet) above sea level in Attapeu to a high of 2,820 m (9,252 feet) at Phoubia Mountain in Xiengkhuang Province.

Approximately 80% of the country's land area is mountainous, primarily in the northern region. Many villages and infrastructure in the northern mountainous region are vulnerable to high mountain hazards such as flash floods and avalanches. The remaining 20% of the land area consists of low-lying plains along the Mekong River and its tributaries.[55] More than two-thirds of the population lives in the southern and central parts of the country. Frequent and intense riverine flooding events usually strike the flood plains along the Mekong and Sekong Rivers that produce one-quarter of the national's food supply. The stretch of the Mekong River that flows from north to south through Lao is 1,898 km (1,179 miles) long. Water from the Mekong and its many tributaries are a critical natural resource for agriculture, the country's most important economic sector, as well as for hydroelectricity. Hydro-generated electricity plays a central role in the national strategy to transform Lao PDR into the "Battery of Asia," the primary producer of electricity exported to neighbors and other Southeast Asian countries.[56]



Figure 3: Map of Lao PDR

Borders

Lao PDR shares borders with five other countries – 2,161 km (1,343 miles) with Vietnam; 1,845 km (1,146 miles) with Thailand; 555 km (345 miles) with Cambodia; 475 km (295 miles) with China; and 238 km (148 miles) with Myanmar (Burma).

The landlocked country has no coastline and no maritime claims.

Climate

Lao primarily has a tropical monsoon climate, influenced by the southeast monsoon, which brings 70% of annual rainfall and high humidity.[57] Generally, the hottest season is April through June. The most rain and humidity occurs from July to October – although the rainy season is also described as May to October.[58] Cooler temperatures accompany the dry season from November through March or April. The coolest months of December through February see minimum temperatures averaging 16-21°C (60-70°F), while temperatures in March and April can reach highs over 32°C (90°F).[59]

While most of the country is tropical in the lowland and hilly areas, the northern and mountainous areas above 1,000 m (3,281 feet) have a temperate and sub-tropical climate with lower temperatures than the rest of the country. The central mountainous areas in the Annamite Chain, varying in altitude between 500 and 1,000 m (1,640 and 3,281 feet), are characterized by a tropical monsoonal climate with higher temperatures and average rainfall totals. Temperature and precipitation rates have been shown to be sensitive to El Niño Southern Oscillation (ENSO), but to a generally lesser extent when compared to other Southeast Asian nations.[60] Rainfall is normally between 1,200 and 2,200 millimeters (mm; 47 and 87 inches) per year in the plains but can exceed 3,000 mm (118 inches) in some mountainous areas.[61]

DISASTER OVERVIEW

The country regularly experiences storms that bring flooding and can trigger landslides. Flooding is the most frequently occurring disaster and affects the most people. Flooding is often exacerbated by tropical cyclones that bring increased precipitation to the area. Heavy rainfall is also often a trigger for landslides, particularly in mountainous areas. Droughts happen on occasion, and high temperatures are a key challenge. More recent droughts have been more intense and damaged agriculture and livelihoods. As climate change impacts the region, Lao PDR can expect more frequent stretches of high temperatures as well as more intense storms that expose more people, infrastructure, and agricultural lands to flooding.

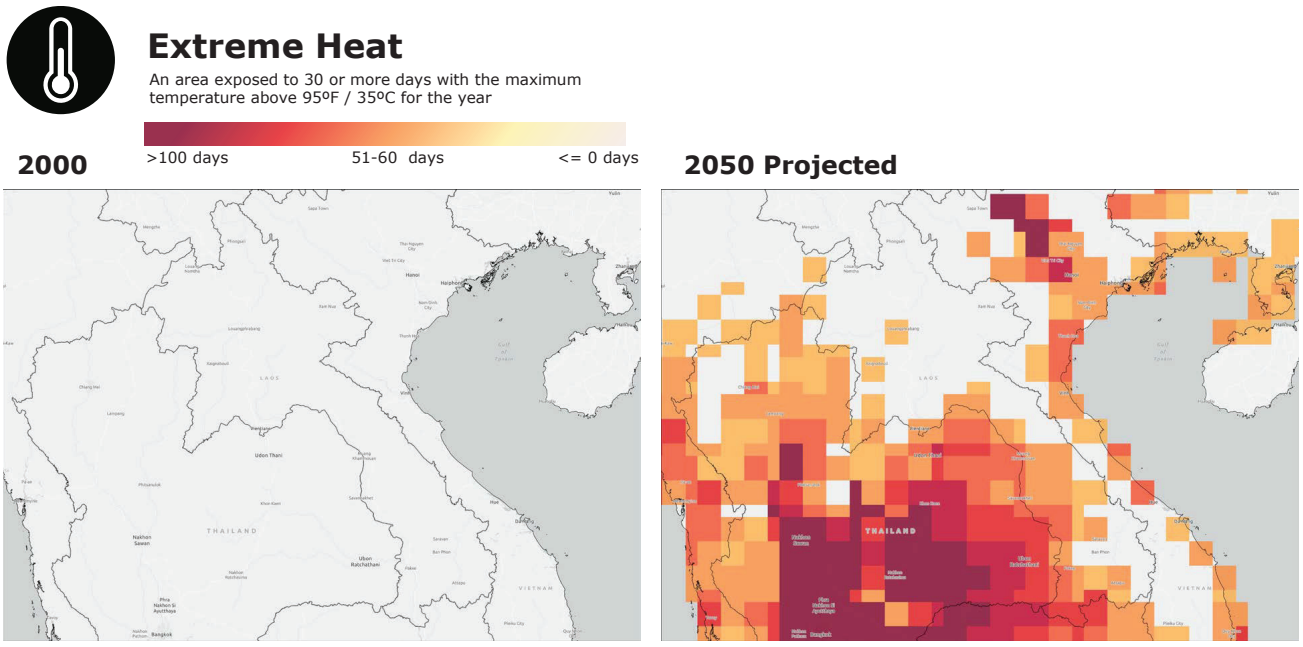
Climate Change

Lao PDR is vulnerable to the impacts of projected climate change trends. Communities face significant climate-related hazards, particularly floods, landslides, and droughts, the effects of which are exacerbated by poverty, malnourishment, and high exposure among poor and marginalized communities. An estimated 46% of settlements, representing around 3 million people, have been exposed to at least one climate change-related hazard, according to a study by the Ministry of Natural Resources and Environment (MONRE) and UN-Habitat.[62]

One significant climate change impact that Lao PDR faces is rising temperatures. The country faces a projected average warming of up to 3.6°C (up to 6.48°F) before the end of the 21st century, under the highest emissions pathway scenario of RCP8.5. The range of average temperature increase is based on the lowest-emission and highest-emission Representative Concentration Pathway (RCP) scenarios. RCPs describe possible trajectories for carbon dioxide emissions and the resulting atmospheric concentration. There are four commonly used RCPs (2.6, 4.5, 6.0, and 8.5), which were developed based on their end-of-century "radiative forcing" — a measure of the combined effect of greenhouse gases, aerosols, and other factors that can influence climate to trap additional heat.[63] RCP2.6 is the most optimistic scenario and indicates a 2.6 watts per meter squared (W/m^2) forcing increase relative to pre-industrial conditions. RCP8.5 is the most pessimistic of the four scenarios and indicates an 8.5 W/m^2 forcing increase.[64] RCP2.6 projects a global rise of 1.0°C (1.8°F) above the 1986–2005 baseline by 2100, while RCP8.5 projects a rise of 3.6°C (6.5°F).

Data suggests warming has already accelerated rapidly in Lao PDR since 2000. Temperatures are expected to keep rising, broadly in line with the global average, and this rise will have significant negative effects in Lao PDR.[65] Annual maximum and minimum temperatures are expected to rise more rapidly than average temperature, likely exacerbating stresses on human health, livelihoods, and ecosystems. More frequent extreme heat events pose a significant threat to human health, especially for outdoor laborers, and potentially also for urban populations given rapid and unplanned urbanization driven by increasing rural-to-urban migration.[66] Crops and agricultural livelihoods are also expected to be negatively impacted by rising temperatures. A significant adaptation effort is needed to address reductions in crop yields that are expected to accompany projected increases in the incidence of extreme heat during the growing season of staple crops such as rice. Poorer communities operating on subsistence and rain-fed agriculture will be especially challenged. Figure 4 shows that by 2050, an additional 4 million people in Lao are projected to be exposed to extreme heat, defined as being exposed to 30+ days per year with the maximum temperature above 35°C (95°F).[67]

Some climate models assess that Lao also faces increased flooding risk due to climate change. Without action, the population annually exposed to river flooding is projected to double to over 80,000 people by the 2030s. Yet flooding impacts could be even greater, since the potential for



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

It is projected that the exposed population to extreme heat will increase to **4 million people** by 2050.

Figure 4: 4 Million More Laotians are Projected to Be Exposed to Extreme Heat by 2050

increased loss and damage from flash flooding and landslides is poorly understood. Flooding was estimated to affect 48,000 people annually and cause US$159 million in annual damages as of 2010. These figures are expected to rise due to climate change as well as increasing urbanization and economic development. By the 2030s, flooding is expected to affect an additional 40,000 people and cause an additional US$295 million in damage, according to models assessing impacts under the RCP8.5 emissions pathway scenario. Even under lower emissions pathways, almost all Asian countries face an increase in the frequency of extreme river flows. What would historically have been a 1 in 100-year flow could become a 1 in 50-year or 1 in 25-year event in most of South, Southeast, and East Asia.[68]

While the influence of climate change on tropical storms continues to be a subject of intense study, there is some consensus that storms in the Western Pacific will become less frequent but more intense. As of the year 2000, as a baseline, some three-quarters of Lao PDR's population, concentrated in the central and southern parts of the country, were exposed to cyclone hazards.[69] A 2022 examination of various climate change models found that exposure to category 1 storms (the weakest cyclone category) would rise by more than 1,000%. There is little indication that Laos will face stronger storms as it is insulated somewhat by its land-locked position.[70] Nonetheless, exposure to storm winds and rainfall over areas of the country heretofore spared will increase the risk of human and economic losses. Figure 5 shows that, by 2050, 7.2 million people will be exposed to tropical cyclones, an increase from 4.9 million people in 2000.[71]

The impacts of climate change are likely to fall disproportionately on poorer and more marginalized communities. Inequality is widening in Lao PDR and evidence suggests that this gap will probably amplify the impacts of climate-related disasters on marginalized communities. Moreover, research has shown that the effects of climate change are not gender neutral. Women, as well as children, are among the highest risk groups. The differences between women's and men's vulnerability to climate change risks are attributable to factors including gender-based differences in time use, access to assets and credit, treatment by formal institutions that can constrain women's opportunities, limited access to policy discussions and decision making,

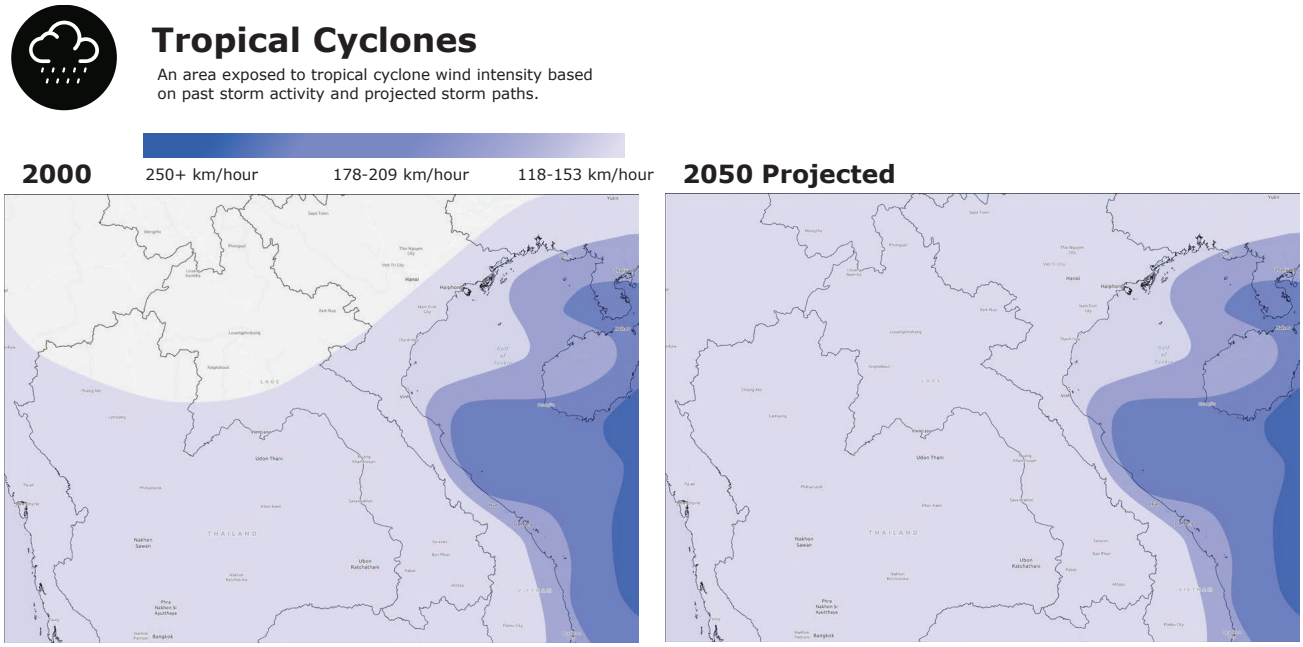


Figure 5: Population Exposed to Tropical Cyclones (2000 and 2050, projected)

and a lack of sex-disaggregated data for policy analysis and change.

Hazards

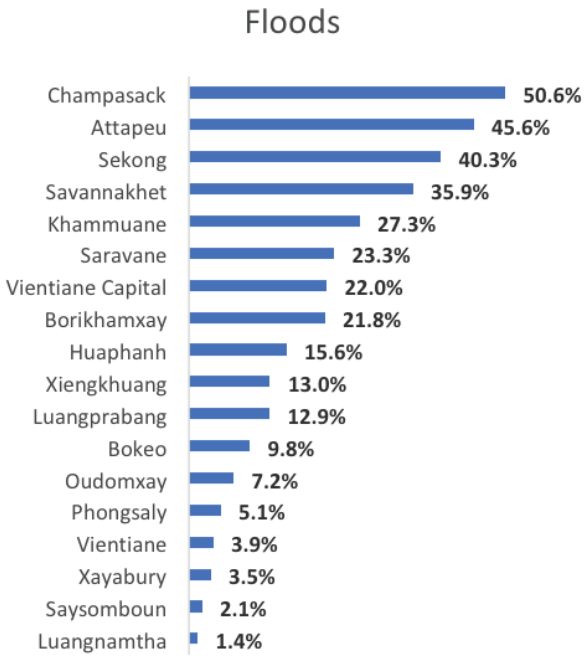
The most common hazards that Lao PDR experiences are flooding, landslides, storms, drought, and earthquakes.

Flooding

Lao PDR has a high exposure to flooding, including riverine and flash flooding. Flooding usually occurs after extended periods of continuous heavy precipitation, often during the rainy season or following a tropical storm in the region. Extreme flooding in 2013 affected over 350,000 people, killed thousands of head of livestock, and damaged 15,000 hectares of rice crops as well as infrastructure, including bridges and schools. Floods have generally affected southern provinces the most; in just one year, 2019, nearly half of the villages of Champasack, Attapeu, and Sekong Provinces registered flood impacts. Figure 6 shows areas of the country affected by flooding.[72]

Drought

Lao has some exposure to drought, but it is relatively low compared to exposure to other hazards. Nonetheless, it must be monitored as hydropower development on the Mekong River significantly alters the hydrology of the region. Two primary types of drought may affect Lao PDR - i.e., meteorological (usually associated with a precipitation deficit) and hydrological (usually associated with a deficit in surface and subsurface water flow, potentially originating in the region's wider river basins). Lao PDR faces an annual median probability of severe meteorological drought of around 4%.[73] In 2015, severe drought, partly driven by a strong El Niño event, damaged tens of thousands of hectares of upland, rice, and fruit crops. Droughts have been observed to mainly affect the north, with higher degrees of concentration in the provinces of Bokeo – where 62% of villages experienced at least one episode in 2019 – Oudomxay, Luangnamtha, and Luangprabang. In contrast, less than 7% of settlements in the southern and central provinces of Saravane, Champasack, and Khammuane, or the capital, Vientiane, have experienced drought. Figure 7 shows areas of the country affected by droughts.[74]



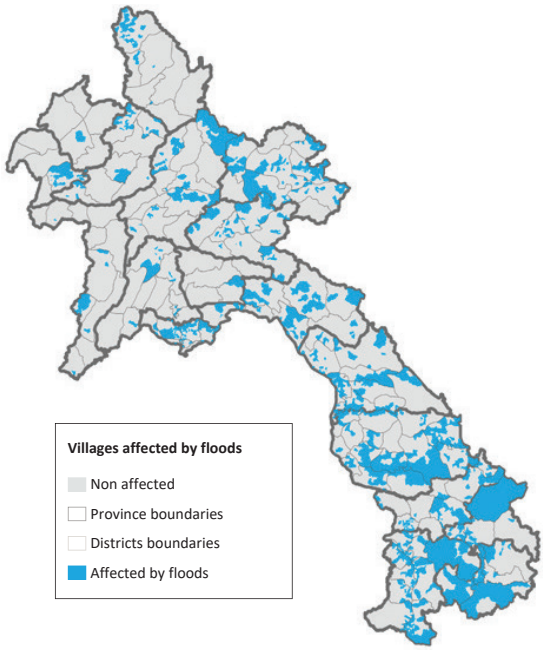
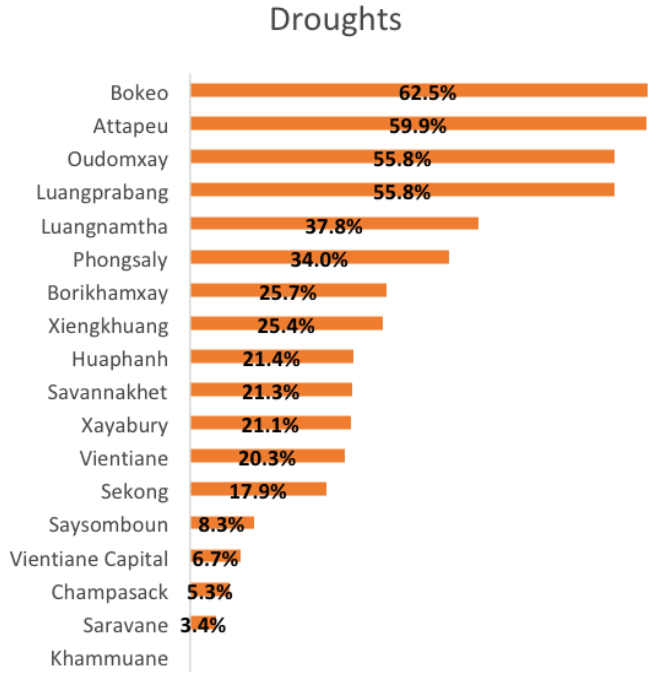


Figure 6: Areas Affected by Floods



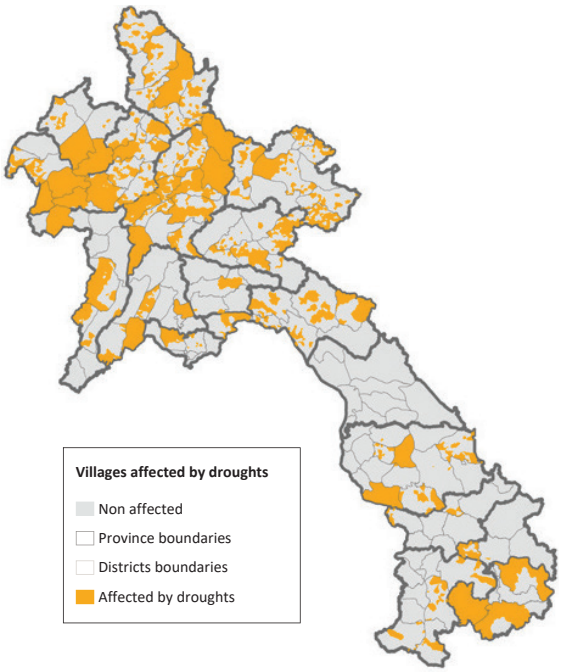


Figure 7: Areas Affected by Droughts

Landslide

Lao has a significant susceptibility to landslides,[75] which usually coincide with heavy monsoon rains. Much of the country's road network is in hilly or mountainous terrain, where landslides pose a particular hazard to road operations, although most of the landscape is forested. The cost of landslide repairs can account for 50-80% of annual emergency maintenance costs of the road sector.[76] In August 2022, heavy rains following Tropical Storm Mulan affected much of the country. The rainfall led to widespread flooding and landslides that blocked roads and cut water and electricity services.[77] In August 2023, heavy rains led to severe flooding and landslides affecting

eight provinces, with landslides leading to two deaths in Borikhamxay Province.[78] Landslides, typically accompanying storms, are reportedly more frequent in the north, likely due to the mountainous terrain. However, in terms of the number of villages affected, the most landslide-affected provinces were Attapeu and Sekong, both in the south, according to a 2019 survey. Figure 8 shows areas of the country affected by landslides.[79]

Tropical Storms

Lao has some exposure to tropical cyclones and their associated hazards. In 2011, consecutive tropical storms caused flooding and landslides, which affected hundreds of thousands of people, particularly with issues of hygiene, sanitation, and infrastructure damage. As with landslides, the provinces most affected by storms according to number of villages affected are Attapeu and Sekong. Figure 9 shows areas of the country affected by storms.[80]

Earthquake

The country is exposed to medium seismic hazards, which can pose a significant risk due to vulnerable buildings and infrastructure.[81] An earthquake in November 2019 caused significant damage in northwestern Laos' Xayaboury Province. The same province experienced another earthquake in December 2021, though no damages were reported that time.[82] In December 2019, the Lao National Earthquake Data Center opened to provide information quickly to the public on any seismic activity with a magnitude of 3 or greater. It is designed to improve the country's ability to withstand earthquake disasters, promote the development of earthquake science and technology, protect lives and property, and provide a strong guarantee for economic and social development. "Enhanced capacity building for the related expert team and the rapid distribution of seismic information will ensure the safety of people living in at-risk earthquake areas and around large-scale development projects," said Director-General of the Department of Meteorology and Hydrology, Khanmany Khounphon. The two-story building housing the Center was equipped with modern facilities in 12 workrooms to monitor seismic data. Construction had begun in November 2018 with funding assistance from

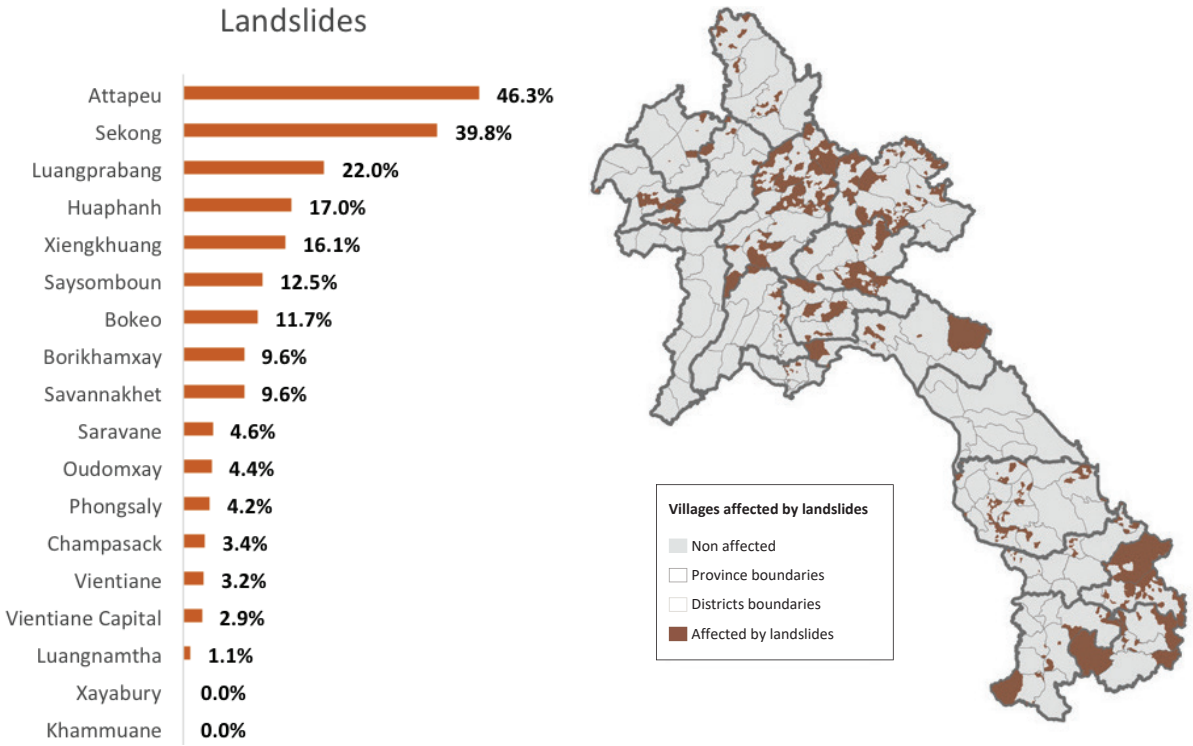


Figure 8: Areas Affected by Landslides

China, and the earthquake monitoring center opened one month after the 2019 earthquake.[83] According to a 2019 survey, earthquakes affected only 2% of villages across six provinces, with nearly half of the earthquake-affected villages in the northwestern provinces of Luangnamtha, Luangprabang, and Xayaboury. Figure 10 shows areas of the country affected by earthquakes.[84]

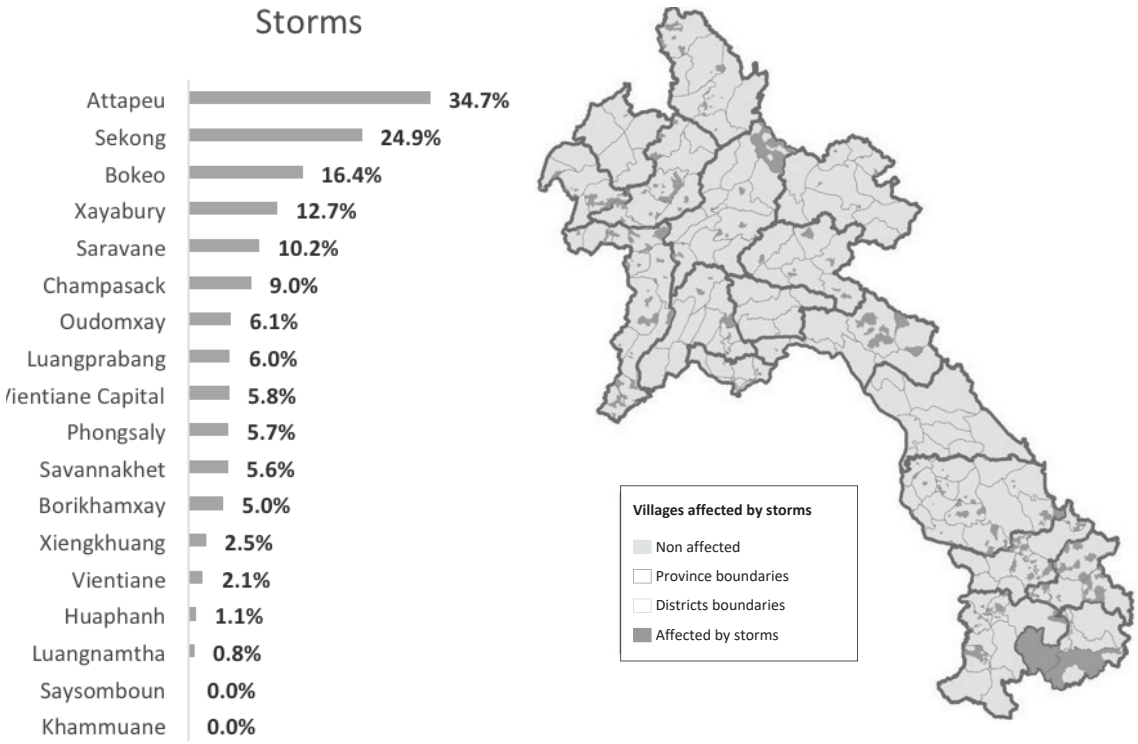


Figure 9: Areas Affected by Storms

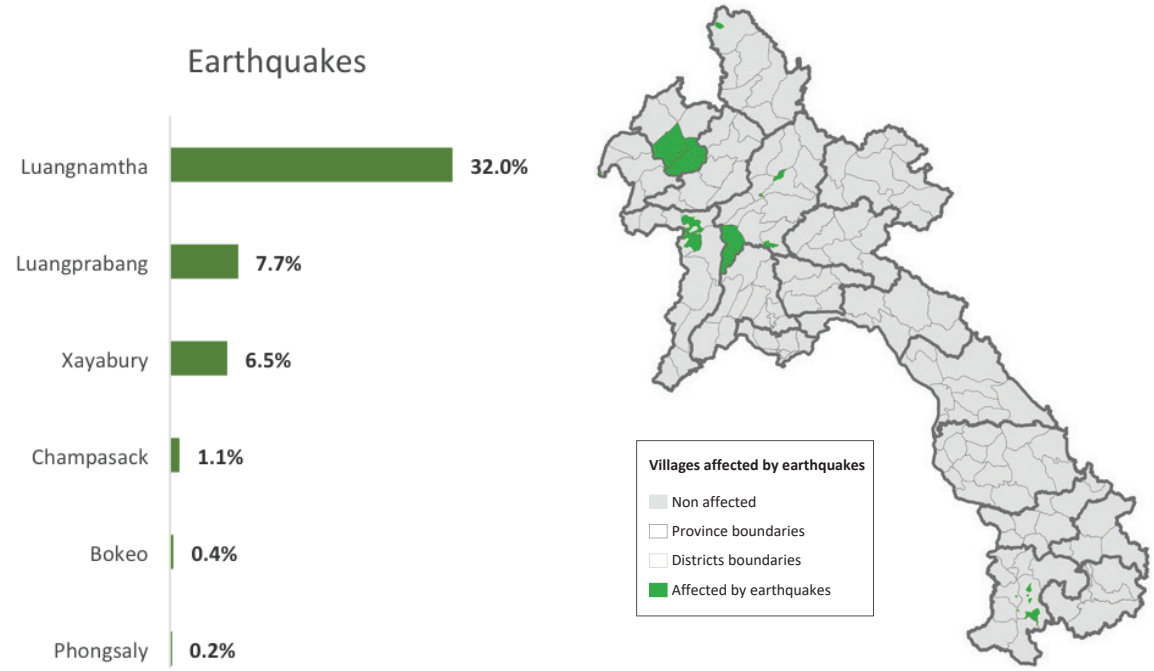


Figure 10: Areas Affected by Earthquakes

History of Natural Disasters

The following is a list of natural disasters in Lao PDR in the last ten years.

2023 August — Floods

In August 2023, persistent heavy rain led to extensive flooding across central and southern regions, where numerous farms and houses were damaged. Six people lost their lives, one person was reported missing, and 110,120 people were estimated to be affected. Affected areas included 550 villages across 50 districts within the 12 provinces of Vientiane Capital and Province, Bokeo, Huaphanh, Luangprabang, Xayaboury, Xiengkhuang, Borikhamxay, Khammuane, Savannakhet, Champasack, and Xaysomboun. Flooding massively damaged crops and fishponds just before the harvesting season and significantly undermined food security and livelihoods. Schools, hospitals, irrigation systems, telecommunication systems, electric poles, and roads were also widely impacted. For the agriculture sector, the floods and landslides damaged 190,467 hectares of agriculture and 106 rice storage barns and led to the loss of 18,776 head of livestock. For infrastructure, the floods led to the damage or non-functioning of 154 roads, 79 irrigation systems, 10 schools, three district hospitals, 225 toilets, 12 electric poles, and 310 vehicles. The total cost of flood damage was estimated at ₭151.9 billion (US$7,613,018). Accessibility at the village level was hindered due to high water levels. Damage to the water supply led to increased risk of drinking water shortages and negative impacts on sanitation. Vulnerable individuals, particularly children under five years old, faced heightened risk of malnutrition due to loss of food sources.

The Ministry of Labor and Social Welfare (MLSW), along with the Ministry of National Defense (MND), provided ₭573,927,000 (US$28,762) in aid items such as rice, household items, and clothing to affected people in Borikhamxay, Khammuane, and Savannakhet Provinces. The MLSW extended its aid by distributing fuel vouchers to affected people in ten provinces at a cost of ₭360,000,000 (US$18,041). The MND played an important role in relief efforts by mobilizing military forces and vehicles to offer support. They also distributed food and non-food items and provided temporary shelter equipment in Borikhamxay, Khammuane, Savannakhet, and Huaphanh Provinces. The Ministry of Health deployed a team equipped with a Mobile Water Purification Truck unit to produce clean water and distribute various water containers and essential medicines in Khammuane Province; this relief was valued at ₭418,573,868 (US$20,977). Provincial and District Disaster Management Committees were also actively involved in the response, including conducting needs assessments. The Lao Red Cross Society (LRCS) actively collaborated with the National Disaster Management Committee (NDMC) and provided support in designated areas as assigned by the government. Save the Children conducted rapid needs assessments in six villages in Atsaphone district, Savannakhet Province.[85]

2022 August — Floods

During 6-18 August 2022, widespread flooding and landslides linked to Tropical Storm Mulan struck in nine provinces, 29 districts, and 223 villages.[86] The flooding affected an estimated 8,600 households (40,500 people), killed at least one person, and injured two people.[87] It also caused damage to 540 houses, 14 bridges, 90 road points, 11 schools, 22 public facilities, and 830 fishponds, and killed 18,700 head of livestock.[88] On 26 August 2022, heavy rains recurred, causing flash floods in Bokeo, Huaphanh, Oudomxay, and Phongsaly Provinces. In Oudomxay Province, one person was confirmed dead, one person missing, and five people injured, while damages included around 2,283 households affected, with 100 houses destroyed and 445 houses partially damaged. In Huaphanh Province, two people were injured, 287 households were affected, and four houses were partially damaged. In Phongsaly and Bokeo Provinces, the floods similarly affected residential houses, roads, and other community infrastructure.[89]

2020 October–December — Heavy Rains and Floods

From 6 October through early December 2020, the lower Mekong region of Lao, Cambodia, Thailand, and Vietnam experienced prolonged heavy rain due to a succession of weather systems, including two tropical storms and a tropical depression. The extensive rainfall resulted in widespread flooding and landslides in southern Lao. Based on an initial assessment conducted by the National Disaster Management Office (NDMO) with participation of LRCS, at least nine districts in the three provinces of Saravane, Savannakhet, and Sekong were hit by flooding, with an estimated 15,305 households (97,514 people) in 163 villages affected by the floods. Savannakhet Province fared the worst, as more than 10,000 households from 137 villages were reportedly affected and two people lost their lives. In Sekong Province, an estimated 3,000 people were affected, and two people died. Saravane Province reported more than 600 people affected and five deaths.[90]

2020 April — Heavy Rains and Floods

Starting 24 April 2020, heavy rains triggered floods across northern Laos, particularly Luangprabang Province. A media report from 29 April stated that the flood had led to the deaths of at least three people, and four people were missing in the area of Kiawtaloun Village.[91]

2019 November — Earthquake

On 21 November 2019 at 0650 local time (UTC+7), a 6.1 magnitude earthquake at a depth of 3 km (1.86 miles) occurred 20 km (12.4 miles) southeast of Ban Nam Chang village in northwest Laos. The Lao NDMO reported that 11 districts were affected in Xayaboury Province. The epicenter was approximately 45 km (28 miles) northwest of the provincial capital, Xayaboury town,[92] with the most damage occurring in 34 villages of Hongsa and Xaysathan districts. Damage also occurred across the border in the Thai provinces of Phrae, Nan, and Loei. In Lao PDR, it was estimated that 1,132 people were affected, 12 people injured, 92 people displaced, and 90 houses and 50 public buildings damaged.[93] Within the first 24 hours, the UN Satellite Centre (UNOSAT) Rapid Mapping Service provided the Lao government with a population exposure analysis.[94] UNOSAT estimated that of 6,361,660 people exposed to the seismic shaking, approximately 2,530 people lived within the strong shaking intensity zone, 42,050 people lived within the moderate shaking intensity zone, 285,140 people lived within the light shaking intensity zone, and 2,364,606 people lived within the weak shaking intensity zone.[95] All populations in the strong or moderate shaking intensity zone were in Xayaboury Province. Damages from the earthquake were estimated to amount to US$278,874.

2019 August — Storms and Floods

Tropical Storm Podul and Tropical Depression Kajiki struck Lao PDR on 29 August and 2 September 2019. They brought high winds and heavy rainfall that led to flooding in Saravane, Champasack, Savannakhet, Khammuane, Sekong, and Attapeu Provinces. According to the National Disaster Prevention and Control Committee (now the NDMC), a total of 155,799 households (766,936 people) from 1,525 villages across 44 districts were affected. There were 19 deaths and one missing person reported.[96] As many as 97 bridges, 747 schools, 43 health centers and hospitals, 462 road areas, 124,000 hectares of farmland, and 36 reservoirs were affected by the floods for a total of US$164 million in damages.

The National and Provincial Disaster Prevention and Control Committees started response actions on 2 September. As requested by local authorities, World Vision contributed to the response in Saravane district (Saravane Province), Soukhouma district (Champasack), Thapantgong and Xonnabuly districts (Savannakhet), and Nhommalath district (Khammuane).[97] The LRCS deployed a rescue team (12 volunteers and two staff) to Pakxe area in Champasack Province and then to Savannakhet Province; they assisted with the evacuation of 2,464 people and provided first

aid to 558 people in the two provinces. A total of seven rescue boats were in operation. The LRCS also established water purification units in Khammuane and Savannakhet Provinces. LRCS chapters supported their respective provincial governments through a joint response with the NDMO at the provincial level. In addition to rescue and evacuation operations, LRCS personnel provided first aid, assistance at evacuation centers, and delivery of relief items.[98]

2018 August — Tropical Storm Bebinca

On 16-17 August 2019, Tropical Storm Bebinca hit the country. All provinces were affected with damage concentrated in 2,382 villages, among 126,736 households that included 616,145 people. A reported 1,779 houses were destroyed, 514 houses were damaged, 90,000 hectares of paddy fields and 11,000 hectares of other plantations were destroyed, and 630 km (391 miles) of roads and 47 bridges were damaged.[99] This storm followed just weeks behind Tropical Storm Son Tinh and compounded some of the suffering.

2018 July — Xe Pian-Xe Namnoy Dam Collapse and Flood

The country's worst dam-linked disaster occurred on 23 July 2018, when an auxiliary dam of the Xe Pian-Xe Namnoy Hydropower Project in southern Laos collapsed as a result of effects from Tropical Storm Son Tinh, which had made landfall days earlier. The wall of water that escaped Xe Pian-Xe Namnoy's saddle dam "D" in Champasack Province killed 71 people, primarily in the downstream Attapeu Province. It wiped out all or part of 19 villages and displaced 14,440 people.[100] More than 7,000 people in 19 villages in Attapeu experienced losses and damage to houses, property, and farmlands. An estimated 15,000 people were affected as the dam's floodwaters extended far downstream across the Cambodian border.[101] Lao PDR lost up to 2.1% of its GDP in the disaster.[102]

The recovery phase continued for years. The survivors were promised compensation and were relocated to temporary shelters in designated areas in what many thought would be a wait of several months, but that lasted for years. By 2020, displaced families remained in four temporary camps, where they awaited construction of new villages and homes. That year, the government began allocating 1-3 hectares of land based on family size to those who lost their land, though some villagers said the plots were too small and lacked proper irrigation to subsist on. Residents of 12 of the 19 villages had been fully compensated two years after the disaster, with some of the remaining villagers accepting the government offer but some wanting a renegotiation.[103] The Japanese government funded hundreds of post-emergency shelters through UN-Habitat; they were gifted in November 2020 to flood survivors.[104] International non-governmental organizations (NGO) provided food, healthcare, and education assistance. Five years after the disaster, in July 2023, some survivors stated that they still had not been fully compensated.[105]

2017 September – Flooding

On 11 September 2017, the reservoir of the Nam Ao Dam in Phaxay district in northeastern Laos' Xiengkhuang Province breached the dam and sent 500,000 cubic meters (132 million gallons) of water downstream in severe flash floods that inundated eight villages in central Laos' Xaysomboun Province, where infrastructure, farmlands, and water supplies were damaged. No injuries or deaths were reported. The dam reservoir burst following heavy rain, although faulty construction was also blamed.[106]

2017 August – Flooding

Heavy rainfall between 25 July and 5 August 2017 resulted in flooding in several provinces. At least four people were reported dead and more than 100,000 people were affected, along with damage to housing, agriculture, and infrastructure. The most affected provinces were Oudomxay, Borikhamxay, Sekong, Attapeu, Saravane, Champasack, Xayaboury, Vientiane, and Khammuane.[107]

2017 July – Flooding

Following Tropical Storm Sonca, intense rainfall triggered flooding in the provinces of Saravane, Champasack, Sekong, Xayaboury, Borikhamxay, Savannakhet, and Attapeu. In Xayaboury Province, two people died, one person was injured, and about 89 houses were affected by flooding. In Borikhamxay, one person died, about 900 families were affected across 43 villages, and at least 559 hectares of crops and rice fields were submerged. In Champasack, 628 families in 14 villages were affected, along with 13.5 hectares of rice fields. In Savannakhet, 245 families in eight villages were affected, along with 451 hectares of rice fields. In Sekong, more than 10 families were affected. In Saravane, 30 villages and 1,511 hectares of rice fields were affected. Attapeu also reported agricultural areas flooded.[108]

2016 August – Flooding

Heavy rains during 11–20 August 2016 caused flooding in the provinces of Luangprabang, Oudomxay, Saravane, Xayaboury, and Xiengkhuang. Xiengkhuang was hit about a week later than the first four provinces when Tropical Storm Dianmu fueled further rains. The LRCS reported five casualties, with at least 26,328 people affected across all five provinces – 3,375 in Luangprabang, 19,242 in Oudomxay, 2,760 in Saravane, 891 in Xayaboury, and 60 in Xiengkhuang. A joint assessment was convened by the MLSW and other ministries in Oudomxay, the most affected province. Following the assessment, the MLSW recommended the release of emergency funds for the province.[109] The International Federation of Red Cross and Red Crescent Societies (IFRC) also released emergency funds (US$131,555) to LRCS to assist 5,000 of the most affected people in Oudomxay.[110]

2015 August – Flooding

During August 2015, widespread localized flooding affected many rural areas and towns in Bokeo, Borikhamxay, Khammuane, Luangnamtha, and Xaysomboun Provinces, according to the Humanitarian Aid department of the European Commission.[111] The ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre) reported flooding in at least 118 villages in 12 districts in Huaphanh, Borikhamxay, Khammuane, and Luangnamtha Provinces. The Social Welfare Department of the MLSW reported 7,989 families or 47,815 people were affected. No deaths were reported, but the flooding damaged houses and public services. The government of Lao PDR and local authorities led emergency response efforts with damage and loss assessments, cleared roads of mud and debris, and distributed relief items.[112]

2015 — Drought

In the summer of 2015, severe drought, partly driven by a strong El Niño event, damaged tens of thousands of hectares of upland, rice, and fruit crops.[113] The drought started in May 2015 and delayed rice production during what is usually the rainy season. Farmers in the northwestern province of Xayaboury were particularly hard hit by the drought. Per Agriculture and Forestry Department officials in the province, more than 1,000 hectares of upland crop area were affected, with 420 hectares reported as seriously damaged. More than 104,000 hectares of freshly planted rice seedlings were also affected, with some 48,000 hectares in the districts of Ngeun, Xienghon, Phieng, and Kaenthao sustaining significant damage. Crops such as sweet corn, sesame, and job's tear fruit were also affected on more than 8,000 hectares with some 3,800 hectares reported as damaged.[114]

Country Risk

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

Disaster Risk = (Hazard × Vulnerability) / Capacity[115]

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

- Capacity - The combination of strengths, attributes, and resources available within an organization, community, or society to manage and reduce disaster risks and strengthen resilience.
- Disaster risk - The potential loss of life, injury, or destroyed or damaged assets, which could occur to a system, society, or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability, and capacity.
- Hazard - A process, phenomenon, or human activity that may cause loss of life, injury, or other health impacts, property damage, social and economic disruption, or environmental degradation.
- Vulnerability - The conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of an individual, a community, assets, or systems to the impacts of hazards.[116]

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

INFORM Risk Profile

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

- INFORM Risk is an open-source risk assessment for humanitarian crises and disasters. It can support decisions about prevention, preparedness, and response.
- INFORM Severity is a way to measure and compare the severity of humanitarian crises and disasters globally. It can help develop a shared understanding of crisis severity and ensure all those affected get the help they need.
- INFORM Climate Change is an upgraded INFORM Risk Index that includes climate and socio-economic projections with results intended to inform policy choices across climate mitigation, climate adaptation, disaster risk reduction, sustainable development, and humanitarian assistance.[117]

The **INFORM Risk** Index measures the risk of humanitarian crises and disasters in 191 countries. The INFORM model is based on the standard dimensions of risk: Hazards and Exposure, Vulnerability, and Lack of Coping Capacity. The first dimension measures the natural and human hazards that pose the risk. The second and third dimensions cover population factors that can mitigate against or exacerbate the risk. The Vulnerability dimension considers the strength of individuals and households relative to a crisis while the Lack of Coping Capacity dimension considers factors of institutional strength.[118]

The INFORM model is split into different levels to provide a quick overview of the underlying factors leading to humanitarian risk. INFORM gives each country a risk score of 1-10 (1 being the lowest and 10 the highest) for each of the dimensions, categories, and components of risk, as well as an overall risk score.[119] The higher the score the more at risk a country is. In the **2024 INFORM Risk Index**, Lao PDR had an overall risk score of 3.5/10,

which INFORM categorizes as the "Medium" risk class and lands Lao PDR as the 91st (of 191) most at-risk country in the Index. The Hazards and Exposure dimension score takes into account a combination of both natural and human hazards, and Lao PDR rated 2.2/10, a score that netted the country a rank of 101st of 191; the country has a significantly higher exposure to "Natural" hazards at 3.7/10 than to "Human" Hazards at 0.4/10. The Vulnerability dimension score was 3.4/10 to net Lao PDR a rank of 113th of 191, and the country's Socio-Economic Vulnerabilities (5.1/10) accounted for significantly more in the overall score than did Vulnerable Groups (1.2/10). The Lack of Coping Capacity dimension score was 5.7/10 for a rank of 49th of 191, and both Institutional (6.4/10) and Infrastructural (4.9/10) capacity shortfalls were noted. Physical exposure to river flooding, at 8.2/10, was the highest score in the Hazards and Exposure dimension. Among categories in the Vulnerability Dimension, Development and Deprivation scored the highest at 6.8/10. Finally, Governance rated a 6.6/10 for the highest score in the Lack of Coping Capacity dimension. Figure 11 shows the INFORM Risk Index dashboard for Lao PDR for 2024.[120]

Based on 2022 baseline assessments and projections of climate change influences on major hazards, the **INFORM Climate Change** tool suggests that Lao PDR will see some increased exposure to natural and human-made hazards even as its governance challenges and lack of coping capacity worsen. When the climate change index applies additional indicators to the various Hazards and Exposures categories, exposure to overall flooding decreases slightly.[121] (Note that other models find varying outcomes, with the World Bank's Climate Risk Country Profile stating that Lao PDR's exposure to riverine flooding will increase with climate change.)[122] Exposure to drought, cyclone, and epidemics increases significantly - e.g., tropical cyclone exposure increases from 1.4/10 in 2024 to 5.3/10 in 2080 under the worst-case (RCP8.5) emissions scenarios used for modelling.[123] The INFORM Climate Change Index dashboard can be configured to examine the country's potential experience under two RCPs – 4.5 (mid-range) and 8.5 (worst-case) – and it projects out to the years 2050 and 2080. The RCPs are used to describe the amount of greenhouse gases in the atmosphere at a specific point and allow modelers to consider emissions scenarios and their impacts out to the year 2100. The most commonly used RCPs for international modelling are RCPs 2.6, 4.5, 6.0, and 8.5. RCP 4.5 is an intermediate pathway where emissions are limited but not stringently and result in a surface temperate rise of 1.1-2.6°C (1.98-4.68°F) by 2100. RCP 8.0 is one of the pathways that considers almost no limitations of greenhouse gas emissions, and most projections expect it to lead to a surface temperature rise of 2.6-4.8°C (4.68-8.64°F) by 2100.[124]

There is no **INFORM Severity** measure for Lao PDR as there are no ongoing humanitarian crises.

World Risk Report

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

The World Risk Report calculates the level of risk a country faces based on a formula of exposure to hazards and vulnerability. It provides an assessment of the risk that countries will confront disasters but does not indicate probabilities for the emergence of disasters, nor does it forecast the timing of future disasters.

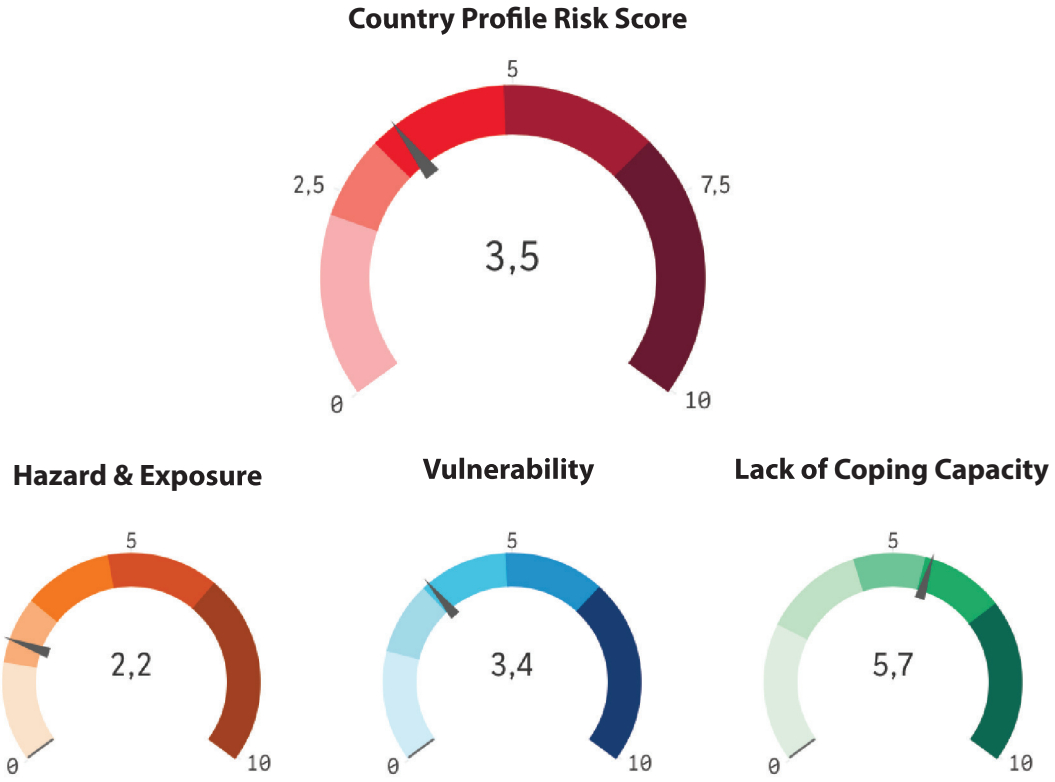


Figure 11: INFORM Risk Index, Lao PDR (2024)

This index uses 100 indicators that include risk, hazard exposure, vulnerability, and coping capacity (as defined above), and adds two others:

- Susceptibility - The disposition to suffer damage in the event of extreme natural events. Susceptibility relates to structural characteristics and frameworks of societies.
- Adaptation - A long-term process that also includes structural changes and comprises measures and strategies that address and try to deal with future negative impacts of natural hazards and climate change. Analogous to "lack of coping capacity," the lack of adaptive capacities is included in the Index.

In the 2023 World Risk Report, Lao PDR ranked 127th of 192 countries wherein the country ranked first is at greater risk, and the countries ranked nearer 192 are at less risk. Lao's total Index score was 2.79 (on a scale of 0-100 wherein the lower the number the less risk a country faces), putting it in the "Low" risk class. Figure 12 details the World Risk Report's score-to-classification matrix.[125]

Lao's component scores were:

- Exposure: 0.38 (Low)
- Vulnerability: 20.42 (Medium)
- Susceptibility: 10.35 (Low)
- Lack of Coping Capacity: 13.61 (High)
- Lack of Adaptive Capacity: 60.47 (Very High)

For comparison, Lao's total score of 2.79 puts it below the regional (Asia) median of 4.97 and below the sub-regional (Southeast Asia) median of 14.04. To a great extent, this reflects both lower levels of exposure to hazards and efforts to reduce vulnerabilities across social groups. In terms of Exposure, Lao PDR is below the medians for Asia (1.6) and Southeast Asia (8.64) in a reflection of Lao's lessened exposure to cyclones, earthquakes, and tsunami, compared to its neighbors in the region. In the Vulnerability dimension, the country is below the medians for Asia (21.88) and Southeast Asia (22.83) in a reflection of its efforts to reduce socio-economic deprivation and bolster disaster management processes. Under Susceptibility, Lao PDR is below the medians for both Asia (14.75) and Southeast Asia (16.01) due, in part,

Classification	WorldRiskIndex	Exposure	Vulnerability	Susceptibility	Lack of Coping Capacities	Lack of Adaptive Capacities
very low	0.00 – 1.84	0.00 – 0.17	0.00 – 9.90	0.00 – 7.17	0.00 – 3.47	0.00 – 25.28
low	1.85 – 3.20	0.18 – 0.56	9.91 – 15.87	7.18 – 11.85	3.48 – 10.01	25.29 – 37.47
medium	3.21 – 5.87	0.57 – 1.76	15.88 – 24.43	11.86 – 19.31	10.02 – 12.64	37.48 – 48.04
high	5.88 – 12.88	1.77 – 7.78	24.44 – 33.01	19.32 – 34.16	12.65 – 39.05	48.05 – 59.00
very high	12.89 – 100.00	7.79 – 100.00	33.02 – 100.00	34.17 – 100.00	39.06 – 100.00	59.01 – 100.00

Figure 12: World Risk Report Classification Table

to efforts to reduce societal disparities and address needs of vulnerable populations. In the Lack of Coping Capacity dimension, Lao PDR is above the median for Asia (13.61) but below that for Southeast Asia (13.65) as it has avoided recent shocks – beyond the COVID-19 pandemic – but still struggles with governance. Finally, on the Lack of Adaptive Capacity score, Lao PDR sits above the medians for both Asia (44.39) and Southeast Asia (46.38) in a reflection of shortcomings in investing in DRR capacity as well as the long-term impacts of health and investment shortfalls.[126]

Global Climate Risk

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

The major events examined by the CRI are tropical cyclones (typhoons). The key takeaway is that countries with high exposure to such storms – either frequent small ones or rare massive ones – will be preparing for less predictable, potentially less frequent, but probably more powerful typhoons under climate change scenarios. The CRI cites various DRR and CCA efforts in countries exposed to hydrometeorological hazards, and it emphasizes that the CRI findings are a clear reason to improve global climate change financing programs to ensure that the most affected countries – many of which are also least developed states – do not experience worsening development outcomes because of disaster losses. The CRI cites outcomes from the COVID-19 pandemic as examples of how simultaneous or consecutive disasters can erode resiliency in the absence of international solidarity funding.

In the 2021 CRI, based on single-year (2019) data, Lao PDR ranks 45th of 180 countries where the country that ranks first in the index is at the highest risk and the country that ranks 180 is least at-risk. Lao PDR experienced human and economic losses from storms in 2019. In the 20-year data (2000-2019), Lao PDR netted a slightly less "at-risk" rank of 52nd of 180 countries although it did experience both human and material losses. Over the period, the country ranked 82nd and 73rd in the average fatalities per year and average losses (in terms of GDP) per year, respectively. Its average fatalities per 100,000 inhabitants and average losses per unit GDP over the period earned it ranks of 66th and 38th, respectively. The assessment is that the country does experience extreme weather on a somewhat consistent basis although some years may see more destructive storms than others.[127]

ORGANIZATIONAL STRUCTURE FOR DISASTER MANAGEMENT

The Department of Social Welfare (DSW) under the Ministry of Labor and Social Welfare (MLSW) is the central hub for disaster management activities. The DSW oversees everything from delivery of emergency relief to affected people and community-led reconstruction through conflict mediation. There are Disaster Management Committees (DMC) at all levels of government administration, from national to village.

Lead Government Agencies in Disaster Response

There are two ways that the central government can undertake disaster management.

The first, as laid out in law, is led by the Deputy Prime Minister as the Chair of the National [Central] Disaster Management Committee (NDMC or CDMC), an inter-ministerial and cross-sectoral body responsible for formulating policy and overseeing coordination. The NDMC involves focal points (FP) from line ministries, provincial and local governments, and local communities. The NDMC maintains close cooperation and ties with international development partners and all public and private actors involved in humanitarian assistance, safety, and risk prevention. The National Disaster Management Office (NDMO; sometimes Disaster Management Department or DMD) under the DSW is mandated to establish and enhance multilateral disaster preparedness, mitigation, and response. The NDMO, as led by the DSW, functions as the secretariat for the NDMC, and it maintains cooperation with international partners, especially via the UN Resident Coordinator's Office (RCO).[128] The Emergency Operations Center (EOC) is housed in the DSW and is the responsibility of the NDMC Secretariat.[129]

The second way is via a Special Taskforce, led by the Prime Minister and chaired by the Deputy Prime Minister. The Special Taskforce may serve as the coordinating body among all relevant parties at all levels of a disaster response. The Special Taskforce may investigate the causes of a disaster, find solutions to mitigate impacts, and take necessary precautions to prevent similar incidents in the future. The Special Taskforce may supervise military and police search-and-rescue (SAR) operations, transportation, and logistics tasks.

Both the standard and Special Taskforce paths for disaster management are shown in Figure 13.[130]

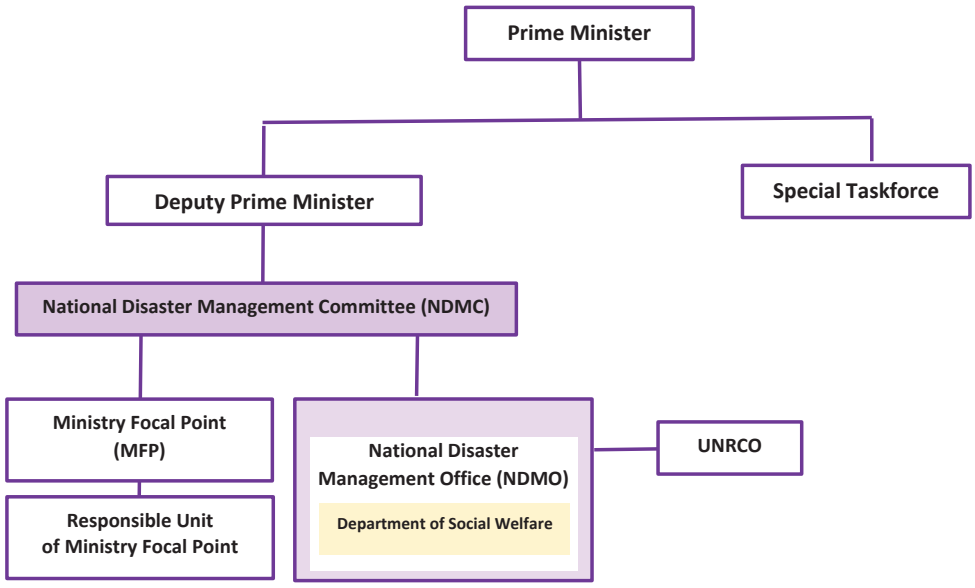


Figure 13: Prime Minister's Options for Disaster Management

The NDMC is a statutory body established under Part VII of the Disaster Management Law (2019). It is composed of the Deputy Prime Minister as the Chair, the Minister of Labor and Social Welfare as the Deputy Chair, Deputy Ministers of National Defense and Finance as Deputy Chairs, and the Director of the Office of the Prime Minister and Deputy Ministers of other relevant ministries as committee members. The NDMC has general oversight of all phases of disaster and risk management in coordination with various international, national, public, and private bodies. The NDMC is responsible for implementation, monitoring, and evaluation of the National Strategy on DRR. The DSW, as Secretariat, formulates policies and plans for NDMC approval.[131] NDMC meets semi-annually or on an ad hoc basis when disasters are declared.[132]

Provincial, district, and village disaster management committees (PDMC, DDMC, and VDMC, respectively) are generally chaired by the lead or deputy administrator at their respective levels. An additional requirement for VDMCs is to integrate community representatives, including those who lead or participate in organizations for the elderly, youth, and women. Figure 14 illustrates the flow of authority from national to village DMCs.[133]

Climate change issues are managed separately, by the Ministry of Natural Resources and Environment (MONRE). Under MONRE, the Department of Planning and Finance (DPF) is the nationally designated authority for work with the Green Climate Fund, and the MONRE Department of Climate Change (DCC) provides technical advice to DPF.[134] The National Environment Committee (NEC), a cross-sector committee chaired by the Deputy Prime Minister, is the top body for providing policy guidance on environmental management, including climate change. Under the NEC, MONRE is responsible for environmental policy and planning, and MONRE's DCC is the governing body for coordinating and implementing climate change-related laws and policies. The director general

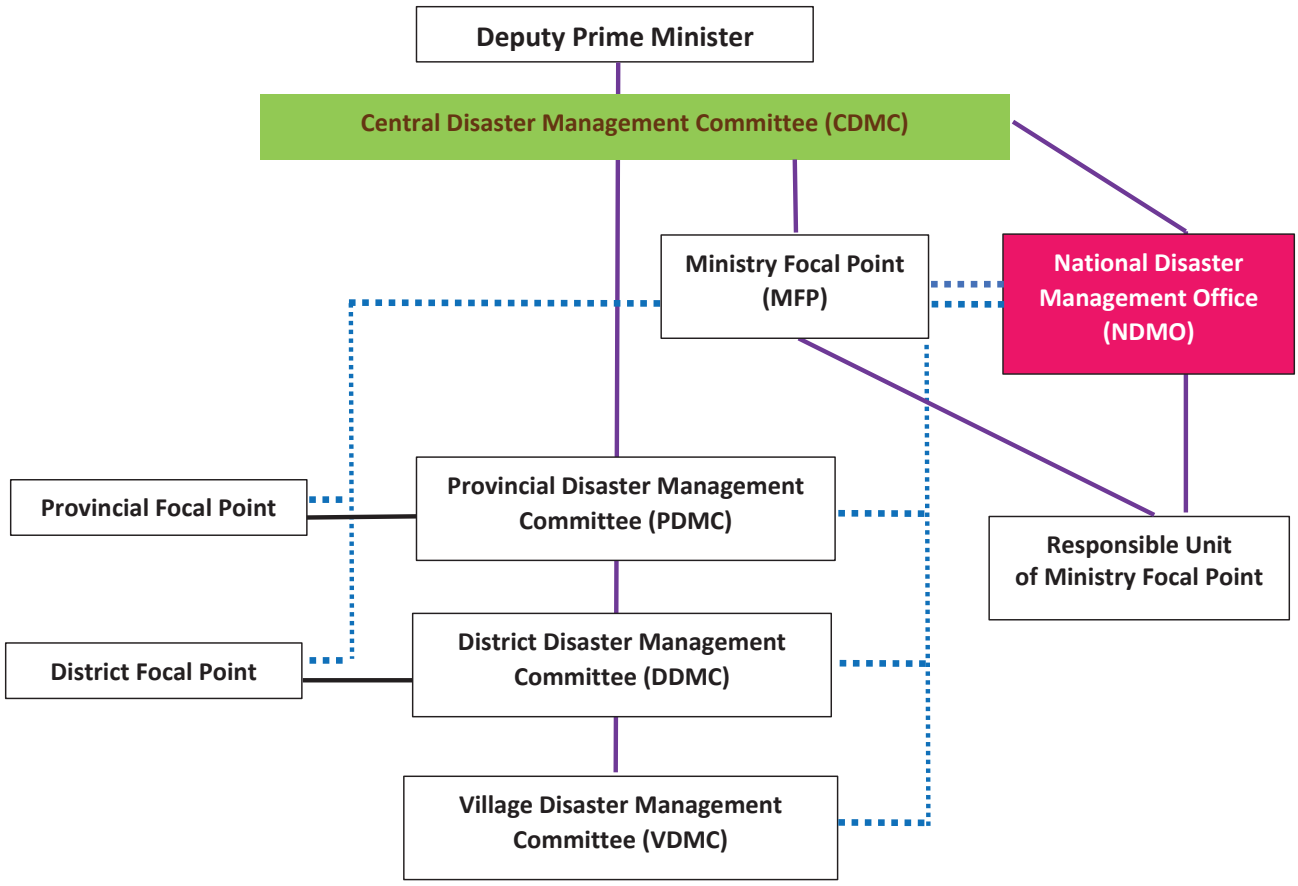


Figure 14: Disaster Management Committees of Lao PDR

of DCC chairs the Technical Working Group on Climate Change, which coordinates climate change action across ministries. The Technical Working Group is comprised of representatives from a range of ministries and includes a representative from the Lao Women's Union.[135]

Disaster Relief and Emergency Response

When a disaster strikes, the DSW will utilize internal and external means to mobilize and coordinate assistance.

The Lao PDR government has overall responsibility for leading the emergency response. UN agencies, non-governmental organizations (NGO), components of the International Red Cross and Red Crescent Movement, and development partners support the government response in conjunction with relevant line ministries and departments at the national and sub-national levels. The UN agencies, the Laos Red Cross Society (LRCS), and development partners have standing agreements with the government to enable humanitarian activities in the event of a disaster. Many international NGOs sign Memoranda of Understanding (MOU) with the MLSW for development activities, but separate agreements are required at the national and provincial level to conduct emergency response activities.

The government coordinates activities through the NDMC and the DSW-led NDMO. The DSW-hosted EOC not only monitors and reports on the status of disasters but also is the conduit for communication among the parties concerned, including affected administrative areas of the state, international development partners, and the AHA Centre. The DSW, as NDMC Secretariat, will invite ministry FPs to the EOC to report on emergency conditions and to consult on the specifications of the emergency response. Table 1 describes the phases and operations of the EOC.[136]

PDMCs, DDMCs, and VDMCs assist the central government in early warning and preparedness interventions, undertake assessments, and launch immediate response

Phase	Operations
Notification and warning	• EOC Director receives and considers notification / warning from the Department of Meteorology and Hydrology (DMH) • EOC Director notifies EOC in the form of a warning • EOC Director notifies main sectors and parties concerned • EOC Director reports to the NDMC Chair to inform and request guidance
Preparations	• EOC Director receives notification / warning of an emergency scenario • EOC Director orders operations by notifying standing employees / officials at the EOC • EOC Director notifies main sectors and parties concerned to prepare to respond
Operations	• EOC Director receives data and notifications of incidents of the disaster • EOC Director notifies coordinators of the main parties to take up positions as standing members at the EOC for coordination with relevant ministries • EOC Director orders urgent assessment and reports • EOC Director prepares daily (more or less frequently according to actual circumstances) press releases to provide updates on the situation • EOC Director requests that the parties concerned respond to the disaster • EOC Director coordinates the disaster response and progress made with the ministries conducting operations and reports to the NDMC Chair • EOC Director coordinates with international organizations (as necessary) • EOC Director performs assessments and monitors the response operations near real time • EOC Director reports to the NDMC Chair for guidance and to cooperate at the level of the Committee
Completion / First phase of recovery	• EOC Director has received a scenario assessment report that the situation has returned to normal • EOC Director gives notice of cessation of the initial emergency response and orders entry into the initial recovery phase • EOC Director prepares a press release on the cessation of the initial emergency response • EOC Director requests that the government approves the performance of a post-disaster recovery needs assessment • Each disaster response team reports on and ceases operations • A summary meeting is held to extract lessons learned from operations • EOC Director monitors progress of the initial post-disaster recovery phase • A report is completed for the government

Table 1: Phases of Lao PDR EOC Operations

operations.[137] The administration with jurisdiction over the location where the disaster occurs takes immediate responsibility for providing assistance. The DMCs at each level coordinate with the relevant ministries, organizations, and local government bodies to deliver temporary shelter, food, drinking water, water for other uses, emergency medical services, clothing, and other items to those affected. In the event of a severe disaster, the NDMC coordinates with the relevant local government bodies to establish Emergency Command Centers at the central level and in the locations where the disaster occurred; these Centers allocate temporary shelter, provide water and sanitation facilities, create temporary storage facilities, provide medical assistance, and organize the delivery and distribution of relief. Figure 15 illustrates the response coordination structure across administrative levels.[138]

The Centers for Assistance Operations from Central Level integrate personnel from the national EOC. These Centers must be located near the Provincial Emergency Command Center in each province. They include a Head Coordinator, generally a deputy minister, and military and civilian units that undertake data and information collection, assessment, and analysis, oversee personnel and logistics, and manage coordinators, one of whom is stationed in each affected province.[139]

In the event of a severe incident or losses sustained in multiple areas, the NDMC establishes an Emergency Assessment Team to coordinate with local government bodies on two items: 1) an Initial Damage and Urgent Needs Assessment, and 2) Emergency Assistance and Short-Term Recovery Assistance Plans; both are reported to the government. If necessary, the NDMC gains government approval to apply mechanisms of the national Inter-Agency Standing Committee (IASC) for needs assessment, emergency assistance, and post-disaster recovery, including the mobilization of international assistance capacities.[140] The IASC is the mechanism for overall coordination of humanitarian actions; it is co-chaired by the Director General of DSW and the UN Resident Coordinator (UNRC). IASC membership is extended to agencies of the UN Country Team (UNCT), relevant government line ministries, and international NGOs.

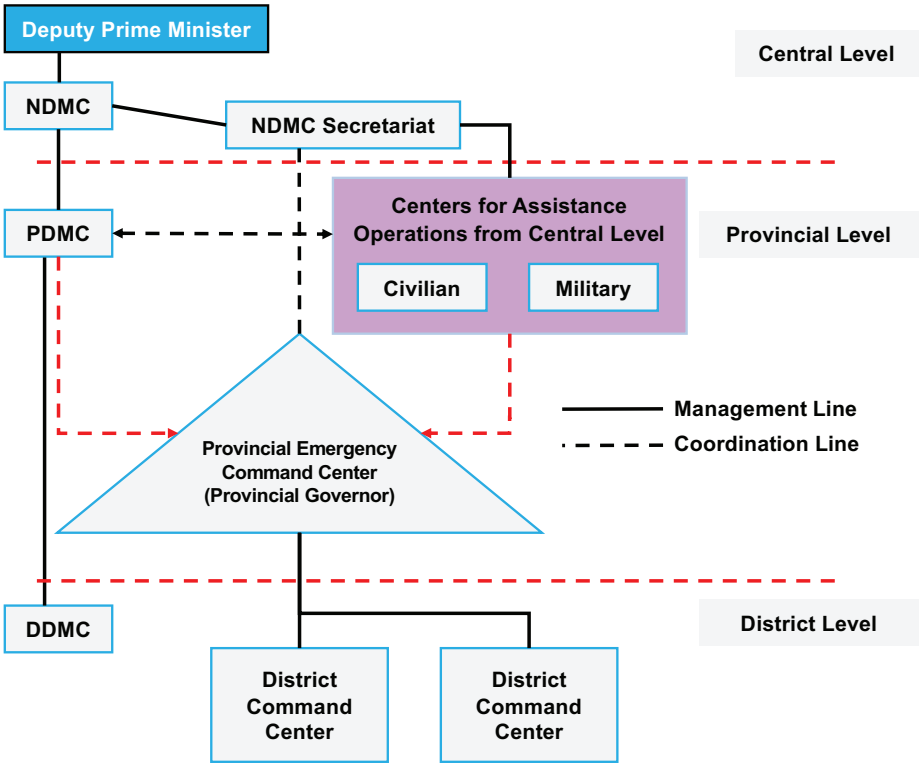


Figure 15: Emergency Response Coordination Structure

The Emergency Task Force (ETF) is a technical coordination body for disaster preparedness and response; it brings together the UN, international NGOs, and the MLSW and is co-chaired by the UNRCO Head of Office and a representative from the MLSW. The ETF cluster leads include representatives from the United Nations Children's Fund (UNICEF) for water, sanitation, and hygiene (WASH), World Health Organization (WHO) for health and nutrition, World Food Programme (WFP) and Food and

Agriculture Organization (FAO) for food security and agriculture, and International Organization for Migration (IOM) and UN-Habitat for shelter and non-food items (NFI). Members of the ETF include government agency FPs from the Ministries of Health, Foreign Affairs, National Defense, and Public Security, alongside representatives of international and national NGOs and LRCS.

The ETF has two main responsibilities: 1) monitor and communicate early warning information prior to a disaster, and 2) ensure a clearly articulated operational response based on individual cluster needs and response plans. The ETF takes on coordination of actors that have operational and technical roles. It is also tasked with developing the key response outcomes, including strategic response plans, situation reports, and funding documents, as well as providing operational recommendations and concerns to the IASC. Humanitarian operations in Lao PDR are also coordinated via nine clusters. In the event of a large-scale disaster, all nine clusters will be activated, as will the Information Management Network (IMN) and the Emergency Communications Group (ECG). The ETF will include all nine cluster FPs, representatives from the IMN and ECG, and the UN Office for the Coordination of Humanitarian Affairs (OCHA). Figure 16 illustrates the coordination structure, per the 2023 Inter-Agency Contingency Plan.[141]

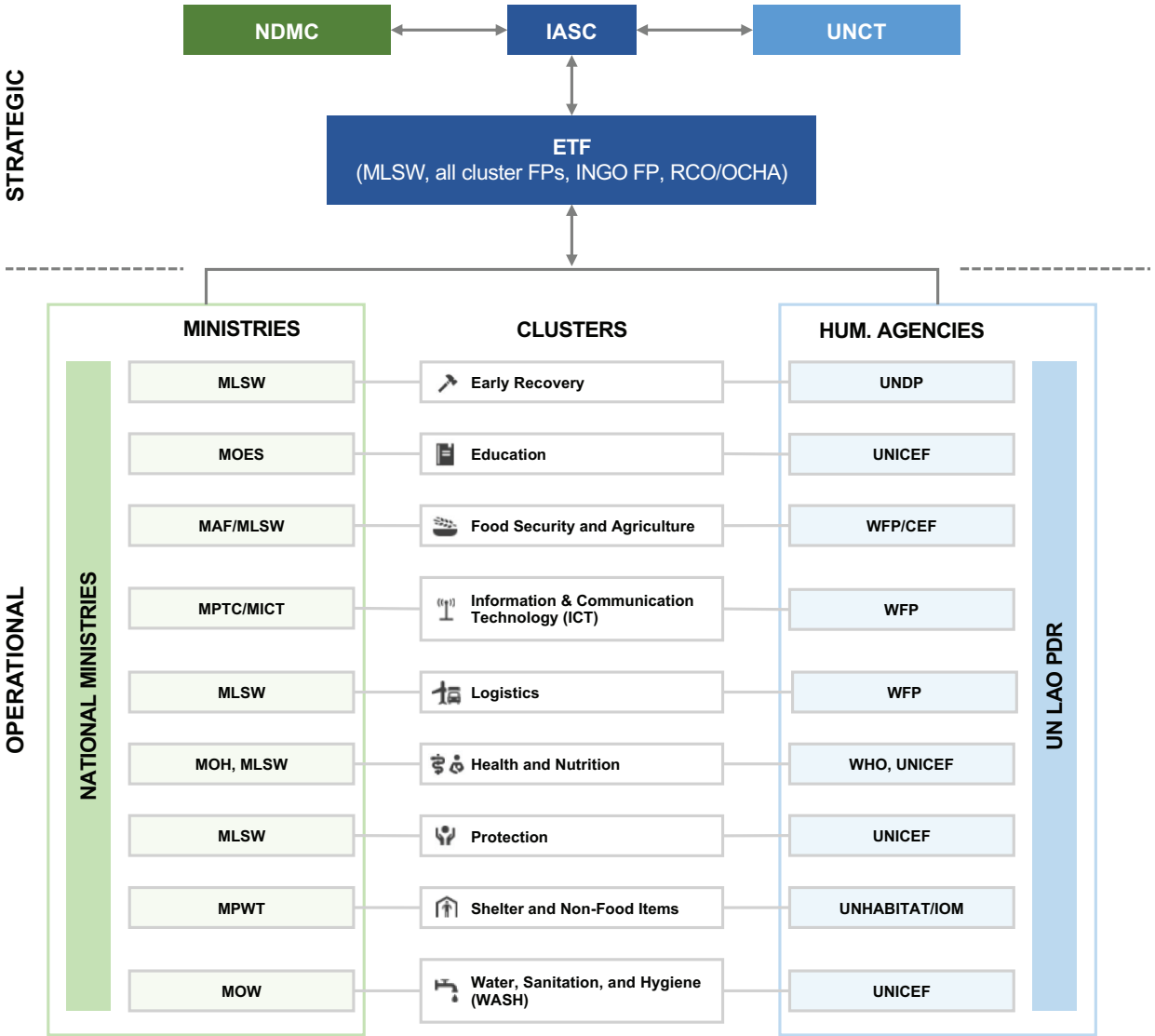


Figure 16: Humanitarian Coordination Structure, Lao PDR

For external assistance, the first platforms to which the DSW will turn is the AHA Centre and the ASEAN Committee on Disaster Management (ACDM),[142] for which the NDMO, under the DSW, is the national FP.[143] The country may then turn to the broader international community.

The AHA Centre is ASEAN's hub for information and knowledge for disaster management, and it supports coordination to ensure multinational and collective response to disasters within the region. The AHA Centre follows the ASEAN Standard Operating Procedure for Regional Standby Arrangements and Coordination of Joint Disaster Relief and Emergency Response Operations (SASOP), and it hosts and manages the Web Emergency Operation Center (WebEOC), which is activated in times of emergency to allow ASEAN member-states to submit requests for and offers of assistance. The ACDM comprises the NDMOs from each ASEAN member-state, and it meets at least once a year. The ACDM facilitates regional cooperation in addressing problems associated with disaster management.[144]

The MLSW, in cooperation with WFP, maintains a warehouse in Vientiane. It is equipped with materials ranging from roofing nails and zinc sheets to solar light bulbs, kitchen utensil packs, sanitary supplies, mosquito nets, tents, water tanks and trucks, generators, and rice.[145] The warehouse management staff at central and provincial levels are trained on logistics and management of supplies, and they have eight mobile warehouses (one per province) for emergency response in Oudomxay, Xayaboury, Bokeo, Luangnamtha, Khammuane, Savannakhet, Sekong, and Attapeu.[146]

Armed Forces Role in Disaster Relief

The Lao People's Armed Forces (LPAF) includes the Lao People's Army (LPA) and its Riverine Force, the Air Force, and the Self-Defence Militia Forces, the last overseen by the LPA and consisting of local forces operating on a part-time basis at the village level. The ruling LPRP Central Committee's Defence and Public Security Commission (DPSC) maintains direct control of the LPAF, the mission of which is border and internal security.[147] The LPA does not list responding to disasters or delivering humanitarian assistance among its functions, although its responsibility for "ensuring stability and social order to protect the national interests" indicates that the forces can be called upon for public security missions.[148] However, in the annual disaster preparedness plan, SAR is expressly listed as a function of LPAF and police. The armed forces and police coordinate with local authorities and affected parties regarding implementation of SAR and evacuation of affected persons to Emergency Command Center-designated places. LPAF may act autonomously using existing forces, vehicles, and equipment.[149]

The Ministry of National Defense (MND) has compiled a list of personnel and assets ready for use, especially in SAR. They include:

- Engineering, Chemical Warfare, Military Medical, Air, and Transportation forces stationed in the capital region
- Four divisions, five regiments, four military hospitals, and three military factories located throughout the country
- Various trucks, boats, ambulances, aircraft, generators, and field hospital equipment.[150]

LPAF performs critical roles in preparation for operations; it trains to play either the lead or supporting role in pre-disaster, response, and early recovery phases.[151] The MND supervises the LPAF and local civil defense within communities; these forces often act as first responders at the community level. The MND's Disaster Response Unit conducts training and exercises to develop capacity within the LPAF. Separately, the Ministry of Public Security (MPS) is tasked with maintaining public order; under MPS, the police support first responders during disasters, and MPS staff help identify disaster victims.[152]

LPAF troops regularly join counterparts from Cambodia and Vietnam to exercise skills useful in disaster response. Given their shared

exposure to flooding, they frequently undertake scenario-based training that requires them to rescue people from flood waters, dig people out from collapsed buildings, and address chemical spills.[153] In the past, Japan's Ministry of Defense has conducted training programs for LPA officers to build skills for planning, executing, and evaluating training programs for the rest of LPA to learn SAR techniques, emergency medical skills, and other team capacities useful in disaster response scenarios.[154]

Disaster Management Partners

In the event that the DMC at the administrative level where the disaster occurred deems it necessary to seek additional assistance from any domestic sector, that DMC may make a request directly to the agency with the required capability. If assistance from foreign countries becomes necessary, the NDMC will request that the central government consider it. In addition to ASEAN assistance mechanisms, assistance from allied countries, international organizations, and NGOs will use mechanisms to deliver assistance in accordance with the regulations of the Lao PDR. The NDMC coordinates with the relevant ministries, organizations, and local government bodies to facilitate the entry of personnel and the import of vehicles, equipment, medicines, consumables, and other items, as specified by law and overseen the Ministry of Foreign Affairs.[155]

The DSW's relationship with UN system agencies is described in the UN Sustainable Development Cooperation Framework (UNSDCF 2022–2026), which laid out UN agencies' plans and implementation activities within the country for the covered period. The framework explains how UN entities will work in partnership with the Lao PDR government and other stakeholders toward achieving the priorities of the 2030 Agenda, including the Sustainable Development Goals (SDG) and Sendai Framework.[156] The UNRC is responsible for leading and coordinating international emergency response through the UNCT, comprised of heads of resident UN agencies.[157]

The UNCT in Lao PDR includes 25 UN system agencies, funds, and programs. Under the current UNSDCF, UN partners are working with national, provincial, district, and village DMCs to develop local DRR plans and to support development of vulnerability maps for flood and drought.[158]

The International Red Cross and Red Crescent Movement

International Committee of the Red Cross

The International Committee of the Red Cross (ICRC) is a private, independent humanitarian organization, headquartered in Geneva, Switzerland. The ICRC bases its activities on the provisions of International Humanitarian Law, and it is neutral in politics, religion, and ideology. The ICRC assists with the protection of civilian victims of armed conflict and internal strife and their direct results. Within these roles, it may take any humanitarian initiative as a neutral and independent intermediary.[159] Lao PDR is covered by the ICRC regional delegation in Thailand. In recent years, the ICRC has continued to work with Lao and its neighbors on clearance, risk awareness, and assistance to victims of UXO.[160]

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 191 National Societies. The IFRC carries out relief operations to assist victims of disasters and combines this with development work to strengthen the capacities of its member National Societies.[161] Lao PDR is covered by the Bangkok-based IFRC Country Cluster Delegation for Cambodia, Laos, Thailand, and Vietnam. In its 2023-2025 multi-country plan for the Mekong Region, IFRC indicates that it will continue to support the LRCS and its key Movement partner, the Swiss Red Cross, to implement its workplan for Preparedness for Effective Response and other

capacity-strengthening projects. In addition, LRCS plans to emphasize First Aid training nationwide, and IFRC, with financial support from the Japanese Red Cross Society, supported the creation of a pool of First Aid trainers. LRCS has also worked with the Thai Red Cross Society to build a central disaster relief warehouse, and it works with the Red Cross Society of China on DRR, Korean Red Cross on health, and Singapore and Vietnam Red Cross Societies on emergency response. One IFRC officer is embedded with LRCS in the Vientiane headquarters.[162]

Lao Red Cross Society

The LRCS was established in 1955 as an auxiliary to the Lao PDR government for delivering humanitarian services. In 2017, the National Assembly passed the Red Cross Law, which mandated LRCS to:

- Provide primary relief assistance and first aid
- Encourage blood donations and supply blood to survivors
- Promote basic healthcare
- Carry out emergency rescue operations
- Mobilize resources
- Train volunteers to provide humanitarian assistance

A representative of the LRCS sits on the NDMC and communicates directly with the MLSW and MONRE, and representatives of LRCS' 18 branches throughout the country sit on PDMCs and DDMCs in their respective areas. There are upwards of 500 staff and 800 volunteers across all branches.[163]

In its national strategy for 2021-2030, LRCS elaborated on three strategies:

1. Enhance capacity on disaster preparedness and response and on basic relief assistance
2. Promote access to health services for a decent quality of life
3. Develop LRCS into a strong and sustainable humanitarian organization, able to operate with effectiveness and efficiency.

The objectives and outcomes under these strategic goals range from building the LRCS' ability to conduct needs assessments among disaster-affected communities to boosting blood donation and more sustainable funding.[164]

U.S. Government Agencies in Lao PDR

Under the auspices of the U.S.-Lao Comprehensive Partnership, the U.S. has committed to supporting Lao PDR's moves toward prosperity with a focus on developing the Lao business sector and seeking areas for effective investment in the country.[165] Especially during the COVID-19 pandemic, U.S. support to Lao's health sector was funneled through the U.S. Embassy and U.S. Agency for International Development (USAID). Assistance ranged from donations of personal protective equipment to cold chain and information technology equipment to support the vaccine roll-out.[166] Indeed, the U.S. was among the first international partners to provide financial and material COVID-19 assistance to Lao PDR in addition to continuing other types of assistance.[167]

Key USAID programming has focused on assisting Lao's vulnerable populations. In cooperation with partners from the Lao government and civil society, USAID funded the six-year USAID Okard program, implemented by NGOs World Education Lao PDR and Humanity & Inclusion, to promote social and economic inclusion of people living with disabilities. At the national level, USAID Okard spurred development of disability-inclusive policies and practices even as it built capacity among local administrators to deliver disability-inclusive services – e.g., rehabilitation, assistive products, inclusive education – across health, education, and social inclusion sectors. As of latter 2023, the USAID Okard program had addressed needs of 29,000 people, including training 5,400 service providers and strengthening the capacities of more than 800 organizations that work with people living with disabilities.[168]

In 2023, USAID launched the 5-year Project for Capacity Strengthening for Maternal Child Health and Nutrition, implemented by JSI Research and Training Institute, Inc. in

cooperation with the Ministry of Health (MOH) with target communities in 24 districts of the provinces of Phongsaly, Oudomxay, Savannakhet, Saravane, and Sekong. In support of the MOH's Reproductive, Maternal, Newborn, Child Health Strategy and Action Plan (2016-2025), the Project is intent on engaging communities to work with the health system to increase access to and use of maternal child health and nutrition services, which are also a target for improvement under the Project. The objective is to ensure provincial and district health offices have sufficient leadership, management, and governance skills and resources to meet maternal and child health needs. This USAID-MOH partnership will help establish provincial Centers of Excellence, which will provide clinical training for health workers and expand the quantity and quality of informational resources for adolescents, pregnant women, and parents.[169]

USAID's Bureau for Humanitarian Assistance (USAID/BHA) is the U.S. Government lead federal coordinator for international disaster response and humanitarian assistance. USAID/BHA requests U.S DoD support to disaster response operations on an as-needed basis, and only in situations where the U.S. military can provide a unique capability that other first responders, including those of the host nation and international humanitarian partners, have insufficient capacity to provide. USAID/BHA responds to humanitarian crises in approximately 80 countries every year—including natural disasters, conflicts, and severe food insecurity—and fulfills its mandate of saving lives, alleviating human suffering, and reducing the physical, social, and economic impact of disasters worldwide. USAID/BHA provides funding, supplies, and expertise for the rapid and effective provision of humanitarian aid throughout the world.

USAID/BHA's staff presence globally and at its Washington, D.C., headquarters includes experts in the food security, nutrition, WASH, health, shelter/settlements, logistics, agriculture, economic recovery/livelihoods, livestock, DRR, climate adaptation, and humanitarian protection sectors. USAID/BHA has humanitarian advisors at all of the DoD combatant commands, Special Operations Command, and key DoD field-forward positions, as well as at the U.S. Mission to the UN in New York, the U.S. Mission to the UN and other International Organizations in Geneva, the U.S Mission to the UN Agencies in Rome, the U.S. Mission to the European Union in Brussels, and the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia, U.S. To support disaster response globally, USAID/BHA maintains regional offices in six countries – Costa Rica, Hungary, Kenya, Senegal, South Africa, and Thailand – as well as 14 liaison offices, where regional advisors coordinate with relevant actors across their respective regions and countries. In addition to these offices, full-time USAID/BHA staff are present in 32 other countries. USAID/BHA's vast network of implementing partners includes affected communities, local and national governments, other U.S. Government entities, and international partners, including NGOs, international organizations, the international donor community, and the private sector. Relief supplies are pre-positioned primarily in implementing partners' warehouses, and in five USAID/BHA-managed warehouses around the world to enable a rapid response to any location globally.

As the lead federal coordinator for Foreign Disaster Response (FDR), USAID/BHA's annual budget reflects the U.S. Government's interest in providing needs-based assistance, and it has been as high as US$11.9 billion annually in recent years for humanitarian assistance activities. All of USAID/BHA's programs and activities are humanitarian assistance, targeting populations most vulnerable to the impacts of shocks from slow or sudden-onset emergencies. USAID/BHA's humanitarian assistance consists of two major conceptual areas, which may frequently be interlinked programmatically and strategically. The first area is humanitarian response pursuant to a Declaration of Humanitarian Need (DHN) issued by the U.S. Ambassador or Chief of Mission in the affected country based on four criteria:

1. There is evidence of significant unmet humanitarian need;
2. U.S. Government humanitarian assistance will save lives, reduce human suffering, and mitigate the impact of humanitarian emergencies on the most vulnerable;
3. The host country requests or will accept international assistance; and
4. Responding aligns with U.S. Government interests and humanitarian objectives.

This DHN permits USAID/BHA to begin emergency response activities. Humanitarian response is characterized by urgent action, including rapid assessment of needs and provision of funding to partners to meet those needs, logistical support to local and national actors, and frequently the deployment of USAID/BHA disaster response experts or teams.

The second conceptual area of USAID/BHA assistance is known as early recovery, risk reduction, and resilience (ER4) activities, which aim to improve the well-being of vulnerable people by strengthening their capacities to manage risk, to anticipate, withstand, recover from, and adapt to shocks and stresses, and to support positive, transformative change. These ER4 activities may be integrated with humanitarian response programming or may be stand-alone activities. ER4 programs and activities are cost-effective, reducing the need for future humanitarian assistance when shocks occur.

Core USAID/BHA responsibilities during an emergency response

- Conducting assessments of humanitarian needs
- Developing U.S. Government response strategy
- Coordinating the operational on-ground response in support of the U.S. Ambassador
- Providing fast and effective funding to established partners (NGOs, international organizations, etc.)
- Leading official reporting on humanitarian issues and U.S. Government response activities
- Requesting support from other U.S. Government agencies as required

When civilian and host nation military response capacity is overwhelmed and the U.S. military has a unique capability, USAID/BHA may request supplemental FDR support from DoD for a limited period. These requests occur in less than 5% of all official U.S. Government responses. Interagency requests for DoD support to FDR are transmitted to the Secretary of Defense (SecDef) in an official memorandum (Executive Secretariat Memo), which is required in order to leverage such DoD support. With SecDef approval, DoD components may provide non-reimbursable foreign disaster relief support to USAID using available Overseas Humanitarian, Disaster, and Civic Aid (OHDACA) funds. Coordination between USAID and DoD personnel is facilitated at the tactical, operational, and strategic levels by Humanitarian Assistance Advisors to the Military (HAA/M), who are USAID/BHA personnel trained to liaise with DoD counterparts and bridge gaps between the U.S. military and international humanitarian community. The DoD capabilities most commonly requested by USAID/BHA during a disaster response are logistics and airlift support rather than direct assistance to beneficiaries. USAID uses the Mission Tasking Matrix form as the formal means of tasking for DoD resources at the tactical level. OHDACA steady-state projects are distinct from FDR activities, and their implementation requires coordination with the local or regional USAID mission as well as approval by the relevant U.S. Ambassador and DoD combatant command.

The U.S. Government prioritizes civilian leadership in humanitarian operations in accordance with internationally-recognized humanitarian principles, including both the leadership of our responses and engagement with partner nations. The unique socio-political context of each partner nation is a key consideration for decision makers at all levels before, during, and after the use of DoD capabilities in a disaster response scenario.

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Laws, Policies, and Plans on Disaster Management

As part of its efforts to implement the Sendai Framework for Disaster Risk Reduction (2015-2030), Lao PDR has reframed its disaster management processes and procedures away from simply responding to emergencies toward what it calls a "social welfare" approach of addressing vulnerabilities and building capacities, especially at the local level. Under the MLSW, the government is also adapting policies to ensure that its agencies partner with international organizations, ASEAN neighbors, and the private sector to develop community-based DRR strengths and capacities.

National Socio-Economic Development Plan (NSEDP)

Lao PDR's government constructs 5-year operational plans that guide policy and strategy for socio-economic development. The 9th NSEDP (2021-2025) explicitly integrates focus areas from the National Strategy for DRR (2021-2030) to reduce damage and loss from disasters as a means to ensure poverty reduction and national economic growth.[170] The current NSEDP demands systematic integration of climate change adaptation and mitigation with mitigation of natural hazards within relevant sector and local development plans. It also lays out the goals of developing SOPs on early warning for hydrometeorological hazards and building forecasting capacity on floods, droughts, and earthquakes in high-risk areas. Across the DRR landscape, the NSEDP calls for enhanced prevention and control of and recovery from natural and human-made disasters by strengthening DMC capacity at both central and local levels and strengthening coordination between central government agencies and local authorities.[171]

Disaster Management Law

The Disaster Management Law (No. 71/NA) came into effect in 2019. It set out disaster management principles and defined priorities, institutional mandates, and other aspects of the disaster management system. The Law included policy and planning related to recovery, restoration, and contributions to green and sustainable socio-economic development and national security.[172] The Law identified three main task areas:

- Disaster prevention tasks to prevent and mitigate disaster risks – data collection and inventory of risk areas, risk zoning, risk mapping, risk information system development, access and use of information, risk mitigation, disaster preparedness and response, early warning, and announcement of evacuation
- Disaster management tasks to limit hazard events that are occurring so that they will not cause serious harm or significant damage to health, life, property of the state, community, or people – ensuring safety, emergency assistance, SAR, initial impact and needs assessments, repairing essential infrastructure, declaration of a disaster area, and cancellation of the area's disaster declaration

- Post-disaster rehabilitation tasks aimed at rehabilitating affected peoples' livelihoods and restoring and rebuilding infrastructure that was affected to the same standard or better than before – post-disaster needs assessments (PDNA), post-disaster recovery planning, implementing post-disaster recovery, and monitoring and evaluating the recovery[173]

Part V of the Disaster Management Law creates the Disaster Management Fund (DMF), which is designated to mobilize and accumulate funding to ensure a sustainable budget for all areas of disaster management. There are DMFs at the central, provincial, and district levels.[174]

Disaster Management Fund Decree

The DMF is administered by a dedicated Board and the NDMC. According to the Decree on the Disaster Management Fund (2021), the Fund can be used for:

- Emergency assistance such as temporary shelter, food, drinking water, sanitation, emergency medical service, epidemiological control centers, medicines, medical equipment, clothing, subsidies, establishment of emergency centers at central and local disaster areas, temporary accommodation, warehousing, distribution of supplies, and contingency planning
- Repair of critical infrastructure such as roads, bridges, electricity, telecommunications, clean water, sanitation, and hospitals to facilitate emergency responses
- Primary assessment of damage and emergency needs, procurement of necessary equipment to serve emergency work, and support work in the event of an emergency.[175]

National Strategy for Disaster Risk Reduction (2021–2030)

The National Strategy for DRR (NSDRR 2021–2030) was formulated with the intent of formalizing government response structures and finding new solutions to how the country responds to complex emergencies, builds resilience, and fosters preparedness. It builds upon efforts to implement the 2019 Disaster Management Law as well as to move the country toward achieving aspects of the 2030 Agenda, including the Paris Agreement, Sendai Framework, and SDGs. Figure 17 shows the seven strategies of the NSDRR.[176]

Strategy 1	Develop and strengthen the disaster prevention system, disaster risk reduction, system, disaster preparedness and response
Strategy 2	Strengthen disaster response and emergency assistance
Strategy 3	Develop and strengthen post-disaster recovery
Strategy 4	Strengthen sectoral coordination on disaster risk reduction, emergency response and recovery
Strategy 5	Enhance national and local DRR education and training
Strategy 6	Promote participation and stakeholder engagement and inclusion
Strategy 7	Budget and disaster risk financing

Figure 17: Seven Strategies of the Lao PDR NSDRR

The NSDRR also supports country-level implementation of the ASEAN Agreement on Disaster Management and Emergency Response (AADMER), the regional agreement that sets the foundation for regional cooperation, coordination, technical assistance, and resource mobilization in all aspects of disaster management. The NSDRR supports implementation of the priorities of the AADMER Work Programme 2021-2025 to build regional resilience and a culture of mutual assistance.[177]

Progress toward the NSDRR objectives is monitored and evaluated by the NDMC, which utilizes an information management system hosted by the MLSW. The information system is open to feedback from all stakeholders, including international development partners, NGOs, and the private sector.[178]

Climate Change Decree

The Climate Change Decree was endorsed in September 2019 to define principles, regulations, and measures on managing and monitoring climate-related matters. In principle, the decree provides an overarching legal framework for climate change mitigation and adaptation, including legal mandates and reporting lines

among different administrative bodies in relation to climate change.[179] It also identifies measures on CCA for people, ecosystems, infrastructure, and urban planning to ensure they are resilient to climate change and to minimize the impacts of climate change by implementing suitable measures to reduce vulnerability, risk, and potential damage.[180]

National Strategy on Climate Change

In 2010, Lao PDR released its first Strategy on Climate Change, which was followed by the Climate Change Action Plan 2013–2020 and the country's first Nationally Determined Contribution (NDC) under the UN Framework Convention on Climate Change (UNFCCC) in 2016. Following the passage of the 2019 Decree on Climate Change, the country updated its Strategy on Climate Change to define the national vision out to 2050 and to outline the national programs of action to 2030. However, the strategy also points out key challenges to the country achieving its climate change mitigation goals; these challenges include limited public knowledge on climate change vulnerabilities and impacts, ineffective cross-sector coordination, a lack of sustainable financing for climate change mitigation and adaptation, and limited institutional and staff capacity.[181]

Disaster Management Communications

During a disaster, the DSW utilizes key platforms to share information with external stakeholders. The primary method for sharing data and information is the AHA Centre, but the DSW may also reach out to partners that work under the IASC.

The two AHA Centre tools via which NDMC can share information about any evolving hazard or incident are the Disaster Monitoring and Response System (DMRS) and the ASEAN Disaster Information Network (ADInet). The DMRS was designed in partnership with the U.S.-based Pacific Disaster Center (PDC), and it receives constant information feeds from within the PDC data collection and assessment system. The DMRS shows real-time information on hazards alongside hydrometeorological data, basic population numbers, and location of major infrastructure. This information can help affected-state disaster managers and their peers across ASEAN understand the potential impacts of an event. Meanwhile, ADInet is a repository of past hazard events. It is publicly accessible and moderated by the ADInet team, which assesses submissions for validity and accuracy. This repository can help disaster managers, DRR practitioners, researchers, and community organizers understand how past disaster events were managed and inform their future programming.[182]

An additional resource is LaoDi, a disaster database to guide and support decisions. It is based on DesInventar, the system developed by the UN Development Programme (UNDP) and UNDRR. DesInventar allows users to generate inventories and databases of damage, loss, and other effects of disasters of all scales. LaoDi serves as a repository for disaster information at the MLSW, supported by the UNDP. The centralized platform allows government agencies and the public to visualize and download data relating to hazards, including social, ecological, physical, and economic vulnerability and loss from natural and technological hazards. It also increases access to disaster resilience and preparedness services to youth, elderly people, and people with disabilities. LaoDi allows decision-makers to prioritize interventions including allocating international, national, and local budgets.[183]

The DMH of the MONRE is responsible for the hydrometeorological observation network and forecasts. Specifically, DMH has the following functions and responsibilities:

- Hydrometeorological data collection, archiving, storage, and dissemination
- Data processing and analysis, including quality control
- Weather monitoring and forecasting, as well as meteorological services primarily for air navigation and agriculture

- Flood forecasting
- Hydrometeorological observation network installation, maintenance, and operation
- Earthquake monitoring
- Provision of climate services and early warnings of meteorological and hydrological hazards[184]

The DMH organizational structure is shown in Figure 18.[185]

DMH provides meteorological information to users based on available tools and existing data from surface, satellite, and weather radar stations. Tropical cyclone forecasts are based on the analysis of weather maps and tropical cyclone warnings derived from products issued by global and regional forecast centers, such as the European Centre for Medium Range Weather Forecasting, the Regional Specialized Meteorological Center - Tokyo, the Korean Meteorological Agency, the Hong Kong Observatory, the Vietnam National Hydro Meteorological Service, and the Regional Integrated Multi-Hazard Early Warning System (RIMES).

The Mekong River Commission (MRC) has adopted procedures for maintaining water quality, data and information exchange and sharing, water use monitoring, notification/ early warning systems (EWS), and maintenance of flows. Private companies operating 53 hydroelectric dams are charged with regulating flows in a manner that minimizes risks with relation to transboundary flood management.[186] The MRC Regional Flood Forecasting Unit issues a daily flood forecast during the flood season (1 June to 31 October). MRC also distributes a 5-day forecast to responsible agencies within member-states – DMH and NDMC within Lao PDR. The offices receiving the information are then responsible for informing the public and agencies according to their procedures.[187]

Early Warning Systems

Weather forecasts and warnings for floods and severe weather events are disseminated to agencies for different sectors by telephone. The residents of Vientiane and provincial centers then receive warnings through radio, TV, and newspapers. However, approximately 4% of the population does not have access to telecommunications or electricity networks and, thus, they may be excluded from the formal, national EWS network. The most common forms of early warning are messages delivered through national and local radio or warnings delivered by village chiefs, who typically receive them by telephone and communicate them to their villages and village clusters via a network of loudspeakers, occasionally mounted on motorcycles and driven around to deliver the messages.[188]

As part of an Asian Development Bank-funded upgrade to Lao's DRR capacity, the National Early Warning Centre (NEWC) was established in 2013, and staff were trained and able to deliver forecasts and early warnings to the NDMO by late 2017.[189] The Early Warning SOP of 2017 was developed to provide a concise list of major tasks to be executed by agencies responsible for early warning, and it combines elements of technology-based hazard monitoring along with weather forecasts by the DMH (through the NEWC), early warning dissemination through multi-tier mechanisms facilitated by each respective DMC, and response actions of the government and community. A continued effort to enhance technical capacity

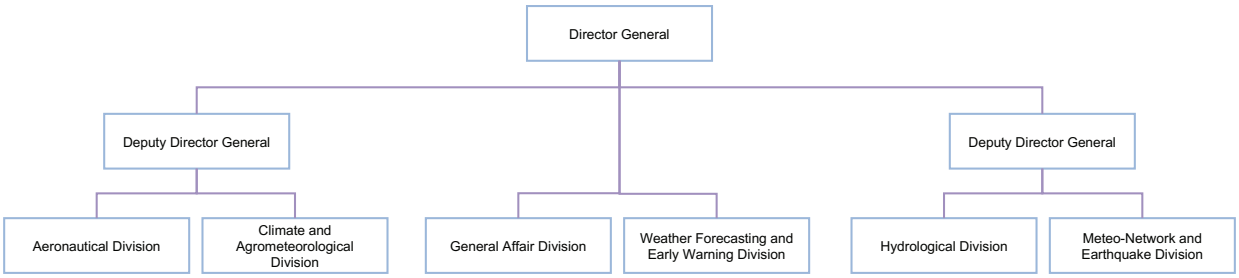


Figure 18: Department of Meteorology and Hydrology Organizational Structure

and people-centered early warning is underway to develop a fully functioning and systematic EWS for all major hazards.[190] Figure 19 illustrates the flow of information and the tools that the NDMO uses for the EWS.[191]

A community-based alert system has been developed based on mobile telephone alert messaging tools through the country's mobile telephone networks; however, messages may also be broadcast by using sound systems and loudspeakers (village loudspeakers).[192]

Since 2020, the FAO-funded Laos Climate Service for Agriculture (LACSA) has provided a database for storing and managing the data collected by 101 weather stations across the country. These data are then used to generate weather and seasonal forecasts, and, when combined with other data, they allow farmers and agricultural sector stakeholders to plan for not only rainfall and temperature, but also soil condition and pest management. The LACSA output includes weekly and monthly bulletins, free to all subscribers via internet, the AKAD Lao app of DMH's Weather Forecast Division, and Provincial Departments of Natural Resources and Environment. There is an expectation that the database will help prepare the agricultural sector ahead of future droughts.[193]

The country also opened its National Earthquake Data Center in 2019. It is managed by DMH.[194] By 2023, the Center had 15 new and two upgraded monitoring stations across the country.[195]

Information Sharing

Understanding how to overcome the information challenges that civilian and military agencies experience during a typical disaster response mission is important. Sharing information is critical since no single responding entity, NGO, international governmental organization, assisting country government, or the host government can be the source of all the required information.[196] Collaboration, information sharing, and networking have been the backbone of successful disaster response and preparation. Disseminating information not only to those in-country and threatened by disaster, but also to those responding to assist in the emergency has been crucial to timely, efficient, and effective disaster response. There are many resources, stakeholders, and components to consider before, during, and after a natural disaster. This section incorporates country-specific, humanitarian, regional, government, and U.S. DoD information sources.

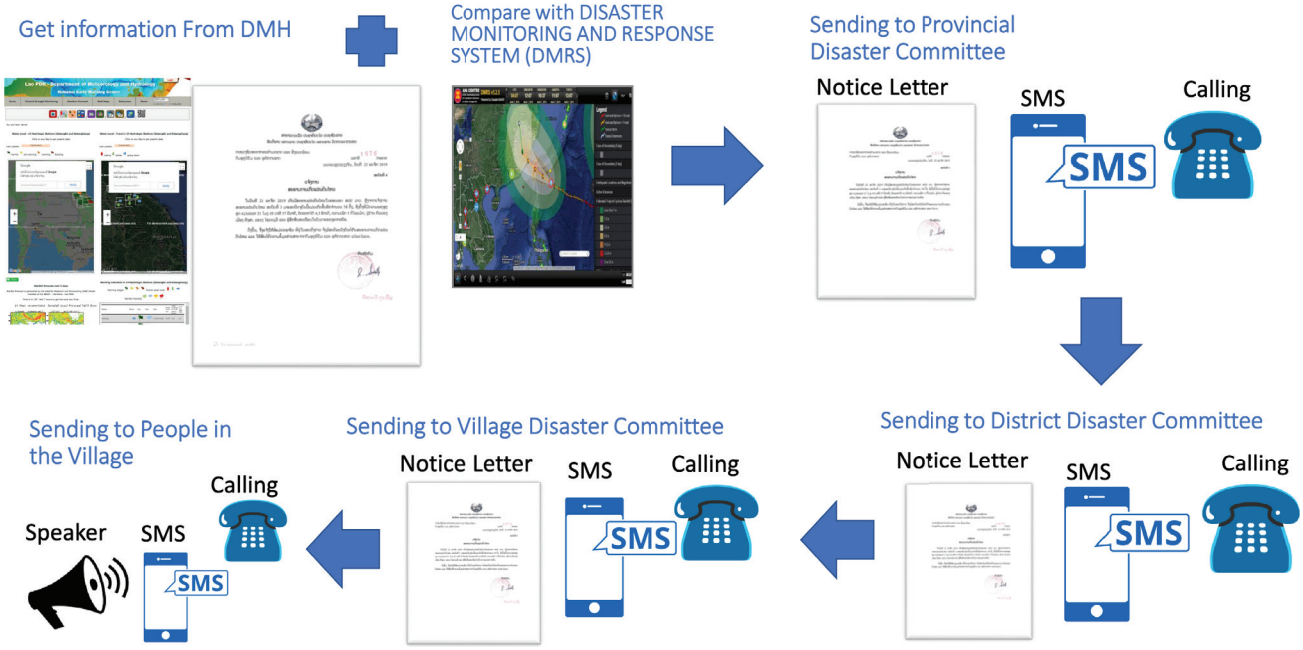


Figure 19: Flow of Alerts and Warnings

Laos Information Sources

National Disaster Management Office / DSW

The MLSW website maintains general information about its offices; content is primarily in the Lao language.

Dongmakkhai Village, Xaythany District, Vientiane
Tel: +856 21 213000 / +856 21 222777 / +856 21 219450
Website: *http://www.molsw.gov.la/*

Department of Meteorology and Hydrology

DMH shows forecasts and alerts on its website. It also hosts the access point for LACSA.

Souphanouvong Avenue, Akad Village, Sikhottabong District, Vientiane
Tel: +856 021 5010
Website: *https://dmhlao.la/joomla/index.php/en/*

Lao Red Cross Society

LRCS is the National Society and is an auxiliary to the government for humanitarian assistance and disaster response as well as for boosting public participation in First Aid training and blood donation.

Impasse Xieng Nhune, Avenue Sethathirad, Vientiane
Tel: +856 21 216 610 / +856 21 214504
Website: *http://www.laoredcross.org.la*
Facebook: LaoRedCrossSociety
Instagram: @laoredcross
X/Twitter: @LaoRedCross
Email: *info@laoredcross.org.la*

Humanitarian Information Sources

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

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

Website: *https://www.unocha.org/roap*
For OCHA situation reports, click on "Subscribe" at the bottom of the page.
X/Twitter: OCHAAsiaPac

ReliefWeb

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

A subsection of ReliefWeb is ReliefWeb Response (RW Response). It aggregates operational content from other humanitarian action platforms to provide an authoritative source of information. The goal is to ensure that humanitarians can share, find, and re-use critical information quickly and efficiently.

Website: *https://reliefweb.int/*
RW Response: *https://response.reliefweb.int/*

PreventionWeb

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

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

International Federation of Red Cross and Red Crescent Societies

IFRC is the world's largest humanitarian organization, comprised of 191 National Societies, including LRCS, a secretariat in Geneva, Switzerland, and over 60 delegations around the world. The IFRC carries out relief operations to assist victims of disasters and combines this with development work to strengthen the capacities of the National Societies. IFRC's work focuses on four core areas: promoting humanitarian values, disaster response, disaster preparedness, and health and community care.[197]

Website: *https://media.ifrc.org/ifrc* and *https://go.ifrc.org/*

International Committee of the Red Cross

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.[198] The ICRC delegation in Thailand oversees work in Lao PDR.

Website: *https://www.icrc.org/en*
Facebook, X/Twitter, Instagram, TikTok: @ICRC

Global Disaster Alert and Coordination System (GDACS)

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

Website: *https://www.gdacs.org/alerts/*

Virtual OSOCC

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

Website: *https://vosocc.unocha.org/*
The latest alerts can be found here: *https://www.gdacs.org/Alerts/default.aspx*
To subscribe: *https://www.gdacs.org/About/contactus.aspx*

ThinkHazard!

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

Website: *https://thinkhazard.org*

Humanitarian Country Teams (HCT)

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

Most HCT SitReps can be found through ReliefWeb: *https://reliefweb.int/*

Humanitarian Data Exchange (HDX)

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

Website: *https://data.humdata.org/*

Regional Information Sources

Changi Regional HADR Coordination Centre (RHCC)

Changi Regional Humanitarian Assistance and Disaster Relief (HADR) Coordination Centre was launched in September 2014 to support the military of a disaster-affected state in coordinating assistance with assisting foreign militaries. It aims to provide open, inclusive, and flexible platforms that allow both regional and extra-regional militaries to work together effectively in a multinational disaster response. Changi RHCC manages the OPERA CIS web portal to broadcast the updated situation status of multinational military disaster responses to minimize duplication and gaps in the provision of foreign military assistance. As a member-state of ASEAN, Lao PDR has direct liaison with Changi RHCC. Through Changi RHCC, Singapore and Lao PDR can organize exercises, training, information sharing, and even relief during emergencies.

Website: *https://www.changirhcc.org/*
To subscribe to RHCC Weekly and Spot Reports, email: *Changi_RHCC@defence.gov.sg*

AHA Centre

ADInet is the public-facing disaster information repository of the AHA Centre. It contains data and narratives of past disasters as submitted by both the public and professionals in the sphere; data is vetted by AHA Centre moderators. Figure 20 shows the ADInet detail for flooding and landslides in Lao PDR in August 2023.[199]

U.S. Government Sources

U.S. Agency for International Development

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

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

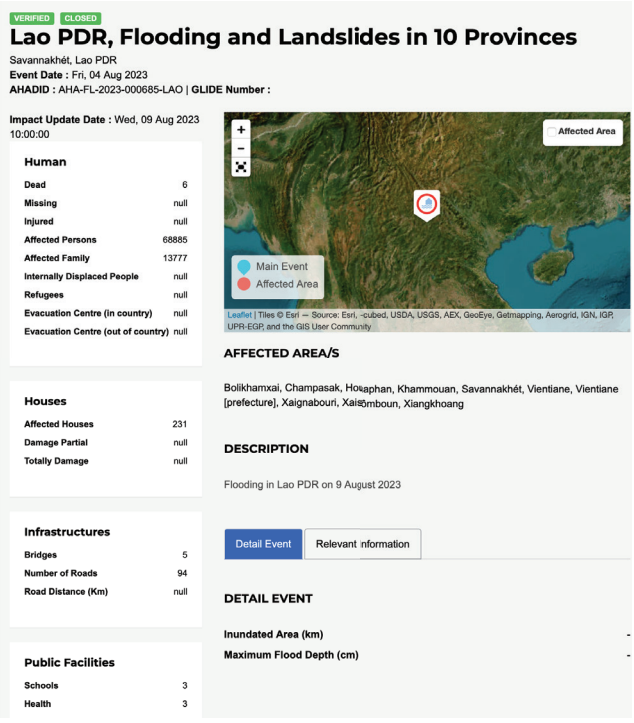


Figure 20: Screenshot of ADInet for Lao PDR Flooding, August 2023

USAID produces a monthly "USAID Newsletter," available digitally: *https://www.usaid.gov/news-information/newsletter*. More information and updates from USAID are available across their social media platforms.

Facebook: @USAID
Instagram: @uasid
X/Twitter: @usaid
YouTube: USaidVideo
Website: *https://www.usaid.gov/*

USAID's Bureau for Humanitarian Assistance

USAID/BHA provides timely and extensive reporting on foreign disaster events and response efforts in which they are involved. Regular products for an internal U.S. Government audience, including the DoD, include alerts and situation reports, which are available via email mailing lists. Information products for public use, such as Fact Sheets and Program Maps, are available on USAID.gov (*https://www.usaid.gov/humanitarian-assistance*) and posted on social media: Facebook and X/Twitter (@USAIDSavesLives). To learn more about USAID's work in different countries, visit *https://www.usaid.gov/humanitarian-assistance/where-we-work*.

Pacific Disaster Center

Pacific Disaster Center (branded 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 DRR and best practices throughout all phases of disaster management from early warning to multi-hazard monitoring. It has a collection of scientifically-verified geospatial data and modeling tools to assess hazard risks and impacts. A restricted version of DisasterAWARE is the EMOPS (Emergency Operations) system, which is specifically for the disaster management community, including government agencies and humanitarian assistance organizations serving at local, state, federal, and regional levels.[200]

PDC also provides a public version, Disaster

Alert, which offers open access to a world map documenting 18 hazard types.[201] Disaster Alert also has a free, early-warning app to receive customizable, maps-based, visual alerts regarding active hazards. The app offers a global notification system covering natural and man-made hazards. It is available on both iPhone and Android.[202]

Website: *https://www.pdc.org/ and https://www.pdc.org/disasteraware/*
Emergency Operations (EMOPS) system (request account): *https://disasteraware.pdc.org*

All Partners Access Network (APAN)

APAN is the Unclassified Information Sharing Service for the U.S. DoD. APAN provides the DoD and mission partners with community space and collaboration tools to leverage information to effectively plan, train, and respond to meet their business requirements and mission objectives. APAN's technology team has been supporting HADR operations for over 15 years.[203] 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.[204]

Website: *https://www.apan.org/*

Joint Typhoon Warning Center (JTWC)

JTWC provides advanced warning of tropical cyclones for U.S. Government agencies and organizations.

Website: *https://www.metoc.navy.mil/jtwc/jtwc.html*

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

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

Website: *https://dkiapcss.edu/*

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

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

Website: *https://www.cfe-dmha.org/*
Disaster Management Reference Handbooks are available for download at: *https://www.cfe-dmha.org/Publications/Disaster-Management-Reference-Handbooks*
Civil-Military Coordination in Foreign Disaster Relief Missions: Best Practices for Information Sharing is available here: *https://www.cfe-dmha.org/Publications/Best-Practices-Pamphlets*

INFRASTRUCTURE

Landlocked Lao PDR is closely linked to its neighbors by transport infrastructure and the import-export of electricity. Vientiane has significant influence over infrastructure policy and regulation, but provinces are generally responsible for overseeing construction and maintenance. Flooding poses the greatest threat to all types of infrastructure and can disrupt transport, communications, education, and clean water access, among other services.

Transport

Road transport is the predominant mode of transport and serves an estimated 90% of total domestic passenger and cargo traffic.

The Ministry of Public Works and Transport (MPWT) is responsible for managing national transport sector activities. MPWT operational sections are the Department of Civil Aviation, Department of Inland Waterways, Department of Public Works and Transport (DPWT), Department of Roads, Department of Transport, and the Railway Authority.[205] Responsibility for implementation of road planning, contract management for road construction, and maintenance of provincial, district, and rural roads rests with the 18 provincial DPWT offices,[206] which report to provincial authorities.[207] The Department of Inland Waterways under the MPWT is responsible for management of policy, planning, and development of infrastructure and facilities for ports, navigation channels, flood control, riverbank protection, and waterway transport. MPWT's line offices at the provincial and district levels are responsible for waterway-related works within their respective provinces and districts.[208]

In case of flooding, roads are especially vulnerable to inundation and damage, and such damage means communities risk being cut off. Movement of staple foods and passengers into villages and of local produce out of villages can become more time consuming or even impossible, and this disruption threatens food security, health, and livelihoods for the period when transport is cut. Meanwhile, increased volume of imports of equipment, fuel, and construction materials to replace destroyed infrastructure can further impact the stability of roads and take the place of normal traffic.

Airports

A Vice-Minister under MPWT oversees the Department of Civil Aviation, the Airports Authority, and Air Traffic Management.[209] The Department of Civil Aviation is responsible for policy and planning for civil aviation and for regulatory oversight of technical and safety matters pertaining to the Lao Airports Authority, which is responsible for the operation and maintenance of Vientiane's Wattay Airport's international and domestic terminals, the Luangprabang and Pakxe regional airports, and the Luangnamtha and Savannakhet provincial airports. All other provincial airports are the responsibility of the provincial governments with technical consultation of the Department of Civil Aviation.

Laos has 112 airports or fields and 39 smaller airstrips; not all of these facilities are operational. Vientiane's Wattay International Airport is the main international gateway; Luangprabang and Pakxe accept regional traffic and provide customs, immigration, and quarantine services. There are helipads at Wattay International, Luangprabang, Savannakhet, and Pakxe.[210]

Wattay International has some cargo storage area. The combined storage capacity is 4,306 m^2 (46,350 square feet) across three cargo terminals operated by Lao Airlines, Lao Skyway, and Lao's courier company, Hung Huang Logistics Co., Ltd. The International Cargo Terminal Building has 1,650 m^2 (17,760 square feet) of storage in Terminal 1 and 1,600 m^2 (17,222 square feet) of storage floor space in Terminal 2. The x-ray room is located in the center of Terminal 1, and the weighing scale for export goods can

accommodate up to one ton. Terminal 2 has cool rooms and dangerous goods storage. The Lao Airlines building's floor area is approximately 840 m^2 (9,042 square feet), and the Lao Skyway building is 216 m^2 (2,325 square feet); each has one x-ray inspection machine.[211]

Table 2 shows some details of the country's main airports and fields.[212]

Seaports

Lao PDR's seaborne imports and exports travel via either Thailand or Vietnam. Thailand's Laem Chabang and Bangkok handle most goods for Lao PDR, but Vietnam's Ho Chi Minh port is also important.[213]

Roads

The road network has four classifications based on functionality. National roads (NR) connect Vientiane to provincial centers or major cities to international border checkpoints; provincial roads connect provincial centers to district centers; district roads connect district centers to clusters of villages; and rural roads connect clusters of villages to villages and farms.[214] The total length of the network is 59,600 km (37,034 miles), of which 14% are NRs and fully 44% are rural. Of the total, only about 23% are paved, and the remainder are gravel or dirt.[215] As such, the road network is vulnerable to hydrometeorological hazards and climate change-associated risks. The impact of extreme heat, flooding, and landslides has increased the need for emergency repair, and a large portion of the road network is in poor condition. Seasonal closures are frequent due to poor surface conditions, deficient drainage systems, floods, and landslides.

NR13 has long been the backbone of transport as it links the country's northwestern border with China to Vientiane and to the southern border with Cambodia; NR13 North covers 671 km (417 miles) from Vientiane to China, and NR13 South covers 829 km (515 miles) between Vientiane

Airport	ICAO / IATA Code	Elevation	Runway Dimensions	Runway Surface
Wattay International Airport	VLVT / VTE	172 m (564 feet)	3,000 × 45 m (9,843 × 148 feet)	Asphalt on concrete
Attapeu	VLAP / AOU	105 m (345 feet)	1,850 × 30 m (6,070 × 98 feet)	Asphalt
Boun Neua	VLFL / PCQ	900 m (2,953 feet)	Length: 887 m (2,910 feet)	Concrete
Houeisay (Bokeo)	VLHS / HOE	421 m (1,380 feet)	1,500 × 23 m (4,921 × 75 feet)	Asphalt
Khong Island (Don Khong)	VLKG / KOG	133 m (436 feet)	Length: 1,060 m (3,478 feet)	Asphalt
Luangnamtha	VLLN / LXG	600 m (1,968 feet)	1,600 × 30 m (5,249 × 98 feet)	Asphalt-Paved
Luangprabang	VLLB / LPQ	293 m (963 feet)	2,900 × 45 m (9,514 × 148 feet)	Asphalt
Oudomxay	VLOS / ODY	550 m (1,804 feet)	1,600 × 30 m (5,249 × 98 feet)	Concrete
Pakxe	VLPS / PKZ	107 m (351 feet)	2,400 × 45 m (7,874 × 148 feet)	Asphalt
Sam Neua (Samnue)/ Nong Khang	VLSN / NEU	1,087 m (3,569 feet)	2,400 × 30 m (7,874 × 98 feet)	Paved
Saravane	VLSV / VNA	175 m (574 feet)	Length: 1,533 m (5,030 feet)	n/a
Savannakhet	VLSK / ZVK	155 m (509 feet)	1,633 × 38 m (5,358 × 125 feet)	Concrete
Xayaboury	VLSB / ZBY	380 m (1,246 feet)	1,000 × 18 m (3,281 × 59 feet)	Asphalt
Xiengkhuang	VLXK / XKH	1,093 m (3,586 feet)	2,600 × 38 m (8,530 × 125 feet)	Asphalt

Table 2: Codes and Runway Lengths for Lao PDR's Main Airports

and Cambodia. Various main NRs link to NR13 to provide east-west connectivity to Thailand and Vietnam.[216]

The busiest overland border checkpoints between Lao PDR and Vietnam are Namphao (Lao PDR) – Cau Treo (Vietnam) and Dansavan (Lao PDR) – Lao Bao (Vietnam). Namphao-Cau Treo is served by Lao's NR8, and the gate handles approximately 300 vehicles daily under normal circumstances.[217] Dansavan-Lao Bao is on Lao's NR9, of which 242 km (150 miles) from the Lao-Thai Friendship Bridge No. 2 in Savannakhet province to the Lao-Vietnam border at Dansavan-Lao Bao is designated Asia Highway 16 (AH16), part of the 1,450-km (900-mile) East-West Economic Corridor linking Myanmar's Mawlamyine seaport in the west to Vietnam's Da Nang seaport in the east.[218] The Lao-Thai Friendship Bridge No. 2 sits at the Kaysone Phomvihane (Savannakhet, Lao) – Mukdahan (Thailand) border checkpoint.[219]

The Lao-Thai Friendship Bridge No. 1 on the border between Hadsayfong (Vientiane, Lao) and Nong Khai (Thailand) marks the border crossing on the shortest route from Thailand's Bangkok port at 640 km (398 miles) and Thailand's Laem Chabang port at 696 km (432 miles). The crossing can be very busy and congested, with more than 300 cargo vehicles transiting daily, and clearance can take more than 8 hours.[220]

The Paksan Ferry Border Crossing on the Mekong between Lao's Borikhamxay Province and Thailand's Bungkan Province uses 300-ton ferries that can carry up to five 50-ton trailer trucks at one time. The ferry crossing will be complimented by the fifth Lao-Thai Friendship Bridge.[221] As of late 2023, the 1,350-m (4,429-foot) bridge and associated infrastructure were 80% complete, and opening was slated for late 2024.[222]

Railways

The Lao rail network is linked directly to two neighbors. A 9-km (5.6-mile) section between Nongkai, Thailand, and Thanaleng, Vientiane Province, enables a Lao rail connection to Thailand's seaports. A 422-km (262-mile) high-speed Laos-China rail link from Vientiane to Boten, on the Chinese border, opened in 2021 and had carried more than 1.7 million passengers and 1.1 million tons of cargo by latter 2023. The Laos-China railway meets the Laos-Thailand railway at the Thanaleng dry port.[223] Figure 21 shows the route of the Laos-China line.[224]

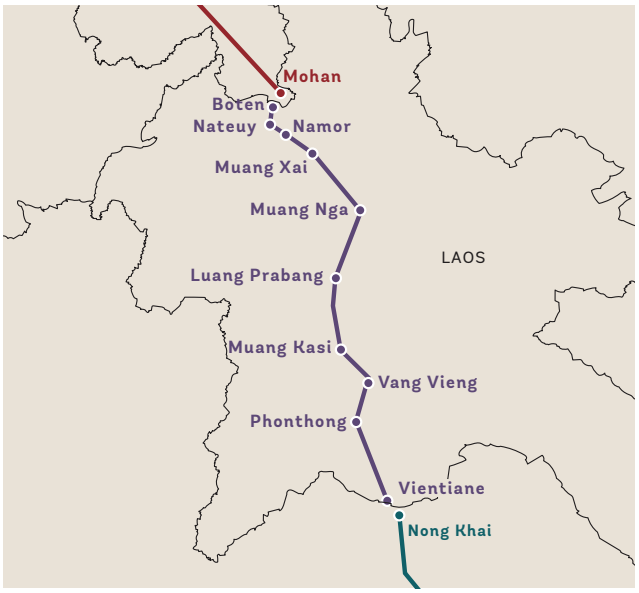


Figure 21: Laos-China Rail Route, August 2023

The Laos-China line is standard gauge (1.435m), but the Laos-Thailand line has, heretofore, been on meter-gauge track. Changes to the Laos-Thailand link will see passenger trains run on a new, standard-gauge, high-speed network while moving cargo traffic to the meter-gauge network; this difference in track may create challenges for transloading goods and passengers.[225]

The diesel-fueled Laos-Thailand Railway is operated by the State Railway of Thailand; there are three stations – Khamsavath, Thanaleng, and Nong Khai – and all are connected by road; except at Thanaleng, there is little storage infrastructure. The electric Laos-China Railway is a component of China's BRI; management of the Laos-China line is overseen by Laos-China Railway Company Ltd.[226] There are 10 stations planned for the line, and all will handle both cargo and passengers; they include four main passenger stations – Vientiane, Vang Vieng, Luangprabang, and Muang Xai – and one main

freight transport and logistics compound in Vientiane.[227]

The Thanaleng dry port is 1 km (0.6 miles) from the Lao-Thai Friendship Bridge No. 1. It is a multi-model rail-and-road node that links to both the Laos-China and Laos-Thailand rail lines and by road to Thailand's ports. It has 20 hectares of container yard and 30,000 m^2 (322,900 square feet) of bonded facilities across six warehouses. It provides rubber-tired gantry cranes, reach stackers, empty container handlers, forklifts, mobile cranes, and yard tractors. During 2022, it handled more than 49,000 containers.[228] The national logistics development plan includes an additional eight inland dry ports – Huoayxai in Bokeo, Nateuy in Luangnamtha, Xay in Oudomxay, Luangprabang, Lak Xao in Borikhamxay, Thakhek in Khammuane, Xeno in Savannakhet, and Vangtao in Champasack.[229] All of these additional dry ports remain in the planning stage.

Waterways

Waterways are used for transport throughout the country. The Mekong River is the longest and widest navigable river in the country; it flows from north to south for 1,865 km (1,159 miles), and approximately 90% of Lao PDR's territory is located in the Mekong Basin.[230] In addition to the Mekong, the Nam Ou and Se Kong rivers and the Nam Ngum reservoir are important for passenger and cargo traffic. Dry season flow reduction and natural barriers limit the use of higher-capacity vessels. Much of the Mekong itself sees vessel capacity limited to 30 tons during the dry season because of water depth. On the upper section, some 220 km (137 miles) of navigation channels between the China-Myanmar border and Lao's Houysai, Bokeo Province, accommodate vessels of 150 deadweight tonnage (DWT) year-round and vessels of 200-300 DWT in the wet season. Another 300-km (186-mile) section from Houysai to Luangprabang is navigable for vessels of 60 DWT in the dry season. Between Luangprabang and Vientiane (430 km; 267 miles), the river is navigable only for vessels of 30 DWT year-round but has difficult sections, even at high water levels. The most easily navigable section is Vientiane – Thakhek – Savannakhet (460 km; 286 miles). The Khemarat rapids between Savannakhet and Champasack completely close the Mekong to dry season transport between these two provinces. In the Pakxe – Don Deth section, navigation is possible only as far as the Cambodia border where the Khone Falls are impassable.[231]

As of 2018, there were 21 small-scale river port facilities; there are 155 km (96 miles) of river embankments and slope protection infrastructure, and 52.4 km (32.5 miles) of dikes.[232] Five provincial ports can be used for international transportation based on the Agreement on Commercial Navigation on Lancang-Mekong River among China, Lao PDR, Myanmar, and Thailand. Lak Si Port in Vientiane is the largest of these ports; it can accommodate 20,000-30,000 tons of freight annually. Ports at Houysai, Pak Beng, and Luangprabang each have annual freight movement of about 10,000 tons. Most of the river ports consist of reinforced concrete ramps parallel to the riverbank. There is generally no equipment for loading and unloading cargo. Private companies provide all cargo and passenger transport on the rivers.[233]

In 2015, MPWT, with assistance from the Government of Korea, developed a Master Plan for Integrated Flood Management across the whole Mekong mainstream and eight major tributaries – Nam Khan in Luangprabang Province, Nam Houng and Nam Heaung in Xayaboury Province, Nam Ngum in Vientiane, Nam Xan in Borikhamxay Province, Xebangfai in Khammuane Province, Xedon in Saravane Province, and Sekong in Attapeu Province. The Master Plan had three objectives:

1. Promote integrated waterway management along the Mekong River to protect local human lives, property, and land resources from flood inundation and bank erosion
2. Prepare investment projects by conducting pre-feasibility and feasibility studies at prioritized sites
3. Provide a basis for planning and implementing effective and systematic measures for river management by the Lao PDR Government.

Despite the importance of the Mekong and other rivers, waterway infrastructure systems are limited. Flood control measures are insufficient, and early warning and public alert systems are rudimentary. The projected effects of climate change, especially the potential for more frequent and intensified floods, require attention across sector development planning.[234]

Schools

The Ministry of Education and Sport (MOES) oversees the formal education system, which provides early childhood education, primary education (five years), lower and upper secondary education (four years and three years, respectively), technical and vocational education and training (TVET), and various levels of post-secondary, university education. The first nine years (primary and lower secondary) are compulsory, and there are TVET certificate options starting with lower secondary.[235]

For the school year 2017-2018, the Education Management Information Systems counted 3,212 early childhood centers with 229,892 students, 8,858 primary education centers with 786,246 students, and 962 lower secondary education centers with 180,020 students.[236] In 2019-2020, more than 82% of children who were 5 years of age that school year had enrolled in school; however, the country's completion rate for primary school in the same year stood at 79.9%. Girls had higher primary school completion rates than boys with nearly 83% of girls completing primary school in 2020. Enrollment rates for lower secondary school sat at 83.3% for the 2019-2020 school year, and girls' enrollment rate was 81.9% versus boys' rate of 84.5%.[237]

In 2020, total secondary (lower and upper) school enrollment stood at 71.3% with girls' enrollment four percentage points behind boys' enrollment. Total enrollment in upper secondary school reached 54.8% in the 2019-2020 school year, and only 3.8% of students who completed lower secondary went on to TVET.[238] In 2017, 41.8% of girls aged 15–17 years were not in school. Especially among ethnic minorities and poorer families, girls leave school at higher rates than boys at every school level, and girls from the lowest wealth quintile are significantly underrepresented in upper secondary school. Stark gender inequities also exist for literacy at all levels, although this disparity is more pronounced among older age groups.[239] As of 2021, nationally, 87% of all adults can read, but only 81% of women versus 91% of men can read.[240]

There are four public universities - National University of Laos (NUOL), Champasack University (CU), Souphanouvong University (SU), and Savannakhet University (SKU) – that, together, enrolled 36,000 students in the 2019-2020 school year. Approximately one-quarter of students were studying sciences, technology, engineering, and mathematics.[241] The MOH also operates the University of Health Sciences, and additional private colleges are available.

MOES continues to seek ways to bolster the quality of educational outcomes, especially for students with disabilities, and to ameliorate gaps in enrollment, repetition, dropout, and completion between males and females, between and within ethnic groups, between non-poor and poor districts, and between urban and rural areas. All of these gaps are commonly exacerbated by disasters – e.g., in 2013, 196 schools were damaged by disaster, and the floods of 2018 submerged schools in affected provinces for up to two months.[242] As of 2020, only 73% of primary schools in the country had basic water and sanitation facilities to help children, schoolteachers, and faculty address hygiene needs.[243]

The Education and Sports Sector Development Plan 2021-2025 (ESSDP) has four objectives:

- Refocus the sector on primary education to improve content knowledge and pedagogical skills of primary teachers
- Expand lower secondary and make it more affordable, effective, and realistic
- Realign the skills and competencies of MOES staff to more effectively meet the current and foreseen needs of the system
- Provide institutional strengthening to enhance efficiency, effectiveness, and

accountability through realigning mandates, roles, and responsibilities, clarifying job descriptions and specifications, and establishing systems to allocate human and financial resources according to needs.[244]

Among backers working to bolster Lao PDR's progress toward the ESSDP goals, the World Bank is supporting initiatives focused on reading readiness, students with disabilities, and teacher training.[245]

Disaster Risk Reduction in the Education Sector

In the 2023 Disaster Response Plan, the MOES is listed as maintaining 24 emergency coordinators within education departments in 17 provinces as well as an Education and Sport Sector Emergency Response Unit. MOES personnel and materials are focused on ensuring swift repairs to damaged schools in cooperation with private companies and the community to ensure that school staff and teachers can focus on learning continuity.[246] In addition, MOES created an in-house DMC, chaired by a Vice Minister and comprised of FPs from Ministry departments. This DMC coordinates with the NDMC. The MOES DMC's roles and responsibilities are:

- Appoint a disaster management contact person and coordinate establishment of FPs at provincial and district levels and at educational institutions
- Integrate disaster management concepts into education programs in schools, organize disaster management training on living safely with hazards and management of natural resources and the environment for teachers and students
- Organize evacuation of students and communities when disaster strikes and use educational buildings as temporary shelter for victims

For planning for education in emergencies, the MOES is assigned to coordinate with UNICEF and Save the Children, and it partners with NGOs to ensure a strategic response that is coordinated across all sectors. With oversight from the disaster management FP at the national level, responsibility for school-based disaster management is decentralized. Committees are formed at the village level with school principals having overall responsibility for school safety in the classroom and the school environs. These school committees are supported by district and province disaster management FPs in the respective district and province Departments of Education, which then report to the national disaster management FP.[247]

In 2014, MOES finalized a national DRR curriculum (textbook and teacher guides) for primary school grades 3-5 and lower secondary grade 6. They integrate lessons on major hazards within regular subjects; key topics are UXO, epidemics, and road accidents.[248]

Although MOES has approved the guidelines for school building construction,[249] poor construction practices have made schools vulnerable to various hazards and have, in the past, resulted in severe damage to foundations and facilities. During the 2018 floods, school foundations, walls, ceilings, and roofs were damaged along with the teachers' manuals, textbooks, furniture, and supplies held within. In some areas, access to schools and temporary learning facilities was also disrupted by waterlogging, destroyed roads, and debris. Children – who expressed intense desire to return to school – also reported loss of uniforms, learning materials, musical instruments, sports equipment, and other items needed for their education. As part of the PDNA from the 2018 flooding, the medium-term recovery strategy recognized that comprehensive disaster risk management (DRM) needed to be integrated into the school system. The MOES and other stakeholders planned to provide training and capacity building for education officials, principals, teachers, and village education development committee members on comprehensive Safe Schools programs and how to conduct rapid and post-disaster needs assessments. Moreover, the PDNA recognized a need to safeguard school communities from structural collapse and damage by revising

school construction guidelines and training for engineers on revised construction guidelines. Finally, the medium-term strategy would ensure that school-based and community-based DRM are integrated into the school curriculum and into emergency response plans for each school.[250]

When the COVID-19 pandemic broke out in early 2020, Lao PDR shut down schools for two months, and 1.4 million students were affected. Approximately 78% of urban children and 87.5% of rural children could not access schooling because they had neither the necessary technology nor teaching and learning materials for remote education. In response to the absence of learning, MOES and UNICEF, along with the European Union and the Global Partnership for Education, partnered to build and launch the country's first digital education platform, Khang Panya Lao. The platform is modeled after UNICEF's Learning Passport education tool, and users access content through an Android app or on the web. Khang Panya Lao provides digital textbooks for students and training resources for teachers for adapting to hybrid in-person and online teaching. Together with other donors, USAID contributed learning materials to the platform,[251] and the Japan International Cooperation Agency (JICA) delivered teacher training and skills promotion to enhance teachers' use of the platform.[252]

Communications

The Ministry of Technology and Communications (MTC; formerly the Ministry of Post and Telecommunications) and Ministry of Information and Culture and Tourism (MICT) are the regulatory bodies for the telecommunications sector. MICT regulates programming, licensing, and network development, while MTC manages spectrum and frequency licensing.[253] MTC houses the Departments of Radio Frequency, Cyber Security, and Digital Governance, as well as the Lao National Internet Center (LANIC), which oversees the country's top-level domain (.la).[254] The Ministry of Public Security is in charge of enforcing internet regulations and control; in 2021, the Ministry announced the creation of a taskforce to monitor social media use and to focus especially on mis- and disinformation, or "fake news." Meanwhile, MICT, which approves content and data exchanged on the internet, has ordered all provincial-level departments to register all owners of popular websites, Facebook pages, and other social media news outlets.[255]

Although adoption of digital communications tools continues to grow in Lao PDR, it has been slower than in other Southeast Asian countries due, in part, to affordability and reach of infrastructure. In terms of household ownership, a 2022 survey found that less than 50% of rural Laotian households have a television, 15% have a radio, 2% have a computer, and 0.3% have fixed-line broadband.[256] Consequently, the two-thirds of Laotians who live in rural areas[257] are significantly less likely to be able to participate in socio-economic activity that relies on digitized networks and may not have access to critical hazard and risk information in times of emergency. Moreover, they will rely on community centers that house televisions or radios or will look to community leaders – authorities or elites – to pass on information learned from television and radio broadcasts.

Telephones

A 2021 estimate found that there were 1.3 million telephone landlines in Lao PDR, and this number translated to roughly 18 landlines per 100 people.[258] The number of landlines is vastly outstripped by mobile telephone subscriptions. In 2023, Lao PDR had around 6.45 million mobile telephone connections or approximately 85 lines per 100 people. The sector is dominated by Lao Telecom (LTC), Star Telecom (UNITEL), Enterprise Telecommunications Lao (ETL), and T-Plus Laos (an LTC subsidiary).[259] The government retains a financial stake in all major mobile service providers.[260]

Although UNITEL has the largest market share at 51%,[261] LTC has the broadest network coverage, with near-nationwide 4G and the country's first commercial 5G network.[262] UNITEL's 4G signal is available in all major

cities and provinces, as well as in most rural districts. ETL's network covers almost all major cities, but the network coverage in rural areas does not match that of LTC and UNITEL. T-Plus Laos' network coverage is stronger in major urban areas.[263] All major providers are extending 4G LTE coverage,[264] and Vientiane residents are expected to see city-wide 5G access in the mid-2020s.[265] Android devices account for more than 81% of all mobile handsets in Lao PDR, with Apple devices making up most of the remainder.[266]

Since October 2023, telecommunications and internet companies may only sell SIM cards through designated company service points. The Lao Telecommunication Regulatory Authority under MTC has instructed mobile telephone users to register their SIM cards by taking photos of their identification cards, driver's license, family registration book, and resident certificate and sending them, online, to the Authority.[267]

Internet Access

An estimated 62% of the population has access to the internet, and 44% of residents (3.35 million people) use social media.[268] One source finds that nearly 80% of web traffic from the country is via mobile telephone, while 19% is via lap- or desktop computer, and the remainder is via a tablet device.[269] Nearly 100% of social media use is through mobile devices.[270] In January 2024, broadband speeds averaged 32.15 megabits per second (Mbps) for mobile downloads and 32.87 Mbps for fixed-line downloads.[271]

LTC is the market leader in fixed broadband. It delivers fiber-to-the-home broadband to more than 100,000 subscribers.[272] As of 2021, there were 25 companies with licenses to operate as internet service providers (ISP) and to provide internet connections through satellite and fiber-optic networks. As with mobile telephone services, the major ISPs are LTC, UNITEL, ETL, and T-Plus Laos. A broadband connection costs LAK100,000 - 300,000 (US$10-30) per month.[273]

The Lao National Internet Committee is chaired by a Deputy Prime Minister who is also the Minister of Public Security.[274] Under the MTC, the LANIC is the National Internet Committee's secretariat and houses the National Internet Exchange to which all ISPs connect in order to access the LANIC-managed government data center. LANIC also works to implement the Lao Digital Economy Development Vision, Strategy, and Plan (2021-2040), which, among other things, involves legislation, infrastructure, human resources, cyber-security, and international cooperation.[275]

Mass Media

Radio remains the main source of information for an estimated 70% of the population. However, those Lao residents with internet access increasingly turn to online media, especially social networks, for news and information. In addition, younger Laotians frequently access Thai media for both entertainment and information.

The mass media is strictly controlled, and there are only a very few non-government-owned, entertainment-oriented outlets, generally magazines. The government owns and operates the national television and radio networks. Reporters without Borders (RSF) reports that there are 24 newspapers, 32 television networks, and 44 radio stations. Offices of the LPRP and MICT publish and broadcast all of these outlets.[276] All media outlets are expected to use news issued by the central, state-run news agency, Khaosan Pathet Lao (KPL).[277]

Authorities use restrictive laws to ensure information control, and as a result, self-censorship is the norm. Those few outlets that are not government-owned must submit content to government officials for review prior to publication or broadcast, and there appears to be broad knowledge among publishers, owners, and journalists about what will or will not pass review. Thus, content that will not pass is generally not produced.[278] In 2019, in a demand intended to "halt the spread of fake news," the government required news outlets that disseminate material through social media to register and threatened fines and prison sentences for non-compliance.[279] This threat

followed a 2014 extension of media limits that prohibit dissemination of information that "harms the national interest" or "traditional culture" to internet users. Since then, ISPs have been required to report web users' names, professions, and data search histories to authorities.[280]

Post

Regulated by MTC, the Lao Postal Service (Entreprise des Postes Lao) is the state-owned and -run postal service. Its presence is said to be strong in Vientiane and Luangprabang, while outlying and rural areas do not have as frequent or reliable service. Parcels being sent or received must be inspected before posting or at receipt.[281]

DHL is the main courier service for international parcel and document delivery; FedEx and EMS do also serve the country.

Utilities

The Ministry of Energy and Mines (MEM) is the principal authority for energy policy. Under MEM, state-owned Electricité du Laos (EDL) is responsible for electricity transmission and distribution networks, and EDL acts as a single buyer of electricity for the domestic market.[282] Both the MPWT and MOH have some responsibility for water and sanitation; broadly, the MPWT has oversight for urban systems and the MOH for rural ones. Urban and peri-urban water systems are managed by the Provincial Nam Papa State Enterprises (PNPSE), state-owned companies with a responsibility to move toward market-oriented operations.[283] The PNPSEs have district-level branches called "district Nam Papas." Although they are financially autonomous and operate on a semi-commercial basis, PNPSEs administratively report to provincial DPWTs. Similarly, although they administratively report to the PNPSEs, the district Nam Papa branches also report to the District Public Works and Transport Offices.[284]

Power

In the absence of an independent power sector regulator, MEM is the regulator and determines electricity tariffs. EDL, the sole purchaser in the country, buys electricity from producers – the EDL Generation Public Company and Independent Power Producers (IPP).[285] As of 2017, IPPs generated an estimated 6.4 gigawatts (GW) of electricity, or 88% of the total installed capacity. EDL is responsible for transmission, distribution, and delivery to end users. Outside of MEM/EDL, provincial authorities support rural electrification through the operation of 85 mini-grids supplied by diesel generators, small hydropower, or other renewables, and they assist with the preparation of regional power development plans. Whereas MEM has the authority to approve generation projects of over 15 megawatts (MW), provincial authorities are required to approve projects between 1 and 15 MW.[286]

By 2017, an estimated 94% of households were electrified, up from only 15% in 1995.[287] Under the National Electrification Program, the government has a target of 95% of households connected to the grid by 2025.[288] There remain challenges to both reaching the last pockets that are not connected – mostly in the northern provinces – and to ensuring the market stability of the power sector, as EDL sells power at well below market rate. Moreover, inefficient transmission and distribution networks and seasonality of domestic hydropower leave the domestic market prone to low reliability and, therefore, pressure to import electricity. An estimated two-thirds of generated electricity is exported even as the country imports one-third of required electrical energy (1,655 Gigawatt-hours [GWh]), of which 80% comes from Thailand, 18% from China, and 2% from Vietnam.[289] Only about one-quarter of all electricity generated in the country is used by the domestic market. An estimated 75% of IPPs focus on generation for export, especially to Thailand.[290]

For 20 years, development strategies have focused on hydropower, a national electrification program, and the export of electricity. Accordingly, the power sector has expanded as the country has exploited hydro potential

alongside thermal and other sources of energy.[291] National hydropower potential is estimated at 26,000 MW, and there were 78 power plants with an installed capacity of 9,972 MW in 2019, when hydropower plants accounted for approximately 80% of overall generation capacity. Apart from hydro, Lao PDR has significant potential to generate energy from other renewables – e.g., solar, biomass, biogas, and wind – with a total potential renewables (minus hydro) generation capacity of some 4,000 MW, dominated by wind (2,068 MW).[292] These other renewables will become more important as climate change impacts reliability of precipitation and, therefore, the reliability of hydro. Figure 22 illustrates rainfall trends in Lao PDR between 1991 and 2015; years when actual precipitation fell below average are years where hydropower production had the potential to fall well short of demand.[293]

Through its Renewable Energy Development Strategy 2011–2025, the country is seeking to promote renewable resources other than large hydropower dams to make up a 30% share of the country's total energy demand by 2025.[294] An estimated 4.9 GW of wind generation capacity is being constructed as of early 2024. In November 2023, progress on the country's first wind generation facility, the planned 600-MW "Monsoon," moved forward with installation of its first turbine. Located on 640 km^2 (250 square miles) of land in the districts of Dak Cheung (Sekong Province) and Sanxay (Attapeu Province), the Monsoon is a joint project of Impact Energy Asia Development (IEAD, a venture of Japan's Mitsubishi Corporation alongside Impact Electrons Siam and Thailand's BPCG). PowerChina is overseeing construction, and BPCG has a 25-year concession to operate the facility, which is set to come online in 2025. Power generated at the Monsoon is already slated to be sold to Electricité du Vietnam via a 25-year power purchase agreement.[295]

Despite its focus on renewable resources, since 2015, Lao PDR has generated 10-20% of all electricity consumed domestically from lignite coal. The total consumption of coal stands at an estimated 300,000 tons annually, and the energy generated by this coal is primarily used by cement factories and a few small industrial users. Indeed, a 1,878-MW lignite-fired thermal plant in Hongsa, commissioned in 2015, alone accounted for 34.9% of the country's overall generation mix in 2017 although the majority of electricity generated from this plant is exported to Thailand.[296] Some estimates see electricity generation from coal topping 22% of total energy by 2040, and this use would push carbon dioxide emissions to four times the 2015 level under a business-as-usual scenario.[297]

The EDL transmission network comprises four grid regions – North, Central 1, Central 2, and South. Each grid is made up of a dedicated 115-kilovolt (kV) system. Generation capacity outstrips peak demand in the North and Central 1 grids, but until recently the capacity for shifting excess power to other grids was minimal. More recently, a few connections have been built. The national high-voltage transmission network consists of 11,301 km (7,022 miles) of predominantly 115-kV and 230-kV lines, although 462 km (287 miles) are rated at 500 kV and are primarily used for export to Thailand. Exports to Vietnam are via 230 kV lines while 115 kV lines facilitate power exchange with

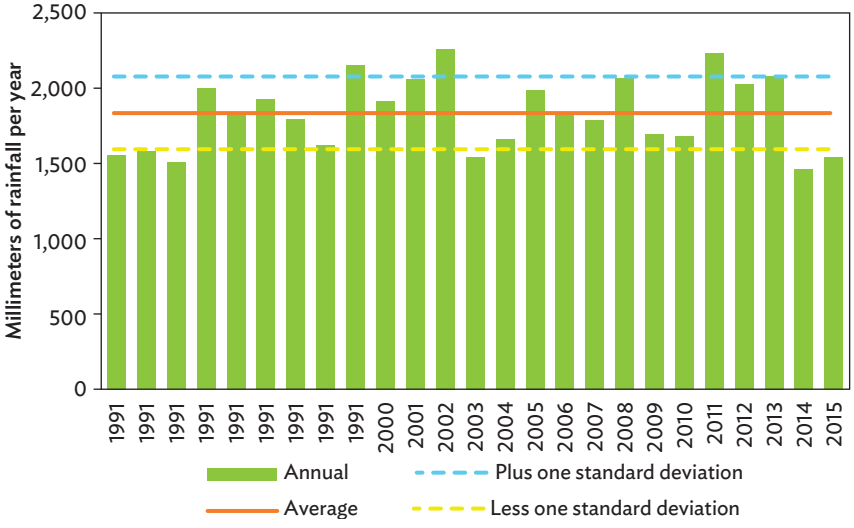


Figure 22: Rainfall Trends in Lao PDR (World Bank via the Asian Development Bank)

Cambodia, China, and Thailand. Lower voltage (22 kV and 35 kV) lines are dedicated for import from all neighbors.[298]

Water and Sanitation

The Water Supply Law of 2010 vested responsibility for operating urban piped public water supply with PNPSEs although the MPWT's Department of Water Supply retained oversight of strategy and policy. The Water Supply Regulatory Committee and its secretariat, the Water Supply Regulatory Office, have regulatory powers over urban water systems. The 2010 law left the National Centre for Environmental Health and Water Supply (Nam Saat), under the MOH's Department of Hygiene and Health Promotion, with responsibility for water supply, sanitation, and hygiene promotion in rural areas.[299] The service delivery model for water and sanitation services in rural areas is based on community-managed water supplies. Communities also contribute to the construction of water supplies by providing labor and local construction materials. Increases in coverage mainly result from private (household) investment.[300]

Based on the 2017 Lao Social Indicator Survey II, 80% of the entire population had access to improved water sources.[301] However, there are significant regional disparities, with almost a 20% gap in access to clean water supply between urban and rural populations - 97% of urban residents used improved sources of drinking water, compared to 78% in rural areas.[302] In 2017, of 148 urban areas, 93 had metered water supply. In the mountainous northern regions, the most common means of providing an improved water supply is a gravity-fed system. In lower elevations, especially in the south, shallow groundwater sources are available through boreholes with hand pumps and protected wells. These sources constitute the majority of improved water supplies available in rural areas.[303] Pollution and contamination of these sources remains a key concern. Tests for bacterial indicators of fecal contamination in drinking water throughout Lao PDR consistently find that as many as 86% of households drink contaminated water. Moreover, arsenic in drinking water from tubewells is a problem in central and southern Laos; this arsenic is derived naturally in the soil, and as many as 400,000 people may be exposed to arsenic in drinking water exceeding WHO guidelines. Exposure to arsenic in drinking water is associated with various health effects – e.g., skin lesions and various forms of cancer, kidney and liver failure, and ulcers.[304]

The 2017 Social Indicator Survey also revealed that 71% of households had access to improved sanitation.[305] Here, too, inequalities are great as only 66% of rural residents used improved sanitation compared to 95% of urban residents.[306] In 2015, among disadvantaged groups, more than half still practiced open defecation. However, the rate of open defecation decreased to 23.9% in 2018. The practice still poses a significant health risk.[307]

Nearly all households in major urban areas use on-site facilities that consist of a flush toilet connected to a septic tank or leach pit. A high volume of wastewater is discharged directly from these systems to the environment – i.e., onto roadsides or into paddy fields and ponds – from which it enters rivers and streams. This pollution occurs when households have their septic tanks or leach pits emptied or replaced. Since 2013, the MPWT and the Bremen Overseas Research and Development Association have launched several demonstration projects using Decentralized Wastewater Treatment Solutions (DEWATS). They have installed operational DEWATS systems in communal institutions, communities, markets, and private establishments across Luangprabang, Bokeo, Sekong, Attapeu, Huaphan, Khammuane, and Champasack provinces, and in Vientiane.[308]

HEALTH

Lao PDR is vulnerable to various public health threats even as it enjoys some health benefits from increased economic development. Life expectancy for females and males increased from 54.3 and 49.6 years, respectively, in 1990 to 70.3 and 65 years, respectively, in 2017.[309] Lao PDR has also made progress addressing under-5 mortality, which significantly improved from 165.5 deaths per 1,000 live births in 1990 to 40.9 deaths per 1,000 live births in 2019.[310] Moreover, the mortality rate of infants (under 1 year of age) improved from 125.5 deaths per 1,000 live births in 1990 to 36.2 deaths per 1,000 live births in 2019.[311] According to the 2023 Global Hunger Index (GHI) Report, Lao PDR is ranked 74th of 125 countries assessed.[312] The country's score of 16.3 indicates moderate hunger, the second lowest level from among low, moderate, serious, alarming, and extremely alarming hunger levels.[313] Furthermore, the Lao Social Indicator Survey revealed that although there has been an increase in the number of children receiving high-impact health and nutrition interventions, less than half of all children are being reached.[314] Evidence suggests that between 2007 and 2017, immunization coverage for the first dose of measles-containing vaccine increased from 40% to 82% and the three-dose DPT (diphtheria, tetanus, and pertussis) vaccine increased from 50% to 85%; however, immunization coverage challenges remain.[315]

Despite the challenges of COVID-19 and other disease outbreaks, the country has made significant improvements in health. Nonetheless, in remote and rural areas, many people lack access to quality health care because of the unequal distribution of well-trained health care workers. Preventable deaths due to poor-quality health care for children, newborns, infants, and mothers remain a concern, as do communicable diseases such as sexually transmitted infections and tuberculosis (TB). The increasing burden of non-communicable diseases (NCD) and the health impacts of climate change further heighten the need for strengthened and resilient health systems, which are at risk due to an underfunded health sector and weakened post-pandemic economy. Since 2019, the top three causes of death in Lao PDR have been stroke, ischemic heart disease, and lower respiratory infections, as depicted in Figure 23.[316] Furthermore, risk factors that drive most death and disability combined are malnutrition, air pollution, tobacco, and high blood pressure, as depicted in Figure 24.[317]

Lao PDR aims to achieve universal health coverage (UHC) by 2025 and is scheduled to graduate from least developed country status by 2026. However, to reach these goals, the country needs to reduce its dependence on out-of-pocket payments from revolving drug funds, increase its domestic health financing while making changes in its composition and distribution, strengthen pre-payment mechanisms, and strategically transition donor funding to invest in health programming. Lao PDR's health care

What causes the most deaths?

Communicable, maternal, neonatal, and nutritional diseases
Non-communicable diseases

Cause	2009 rank	2019 rank	Change in deaths per 100k, 2009–2019
Stroke	1	1	↑ +3.8
Ischemic heart disease	4	2	↑ +7.9
Lower respiratory infect	2	3	↓ −34.7
Neonatal disorders	3	4	↓ −29.2
Tuberculosis	5	5	↓ −20.6
COPD	7	6	↑ +0.6
Chronic kidney disease	9	7	↑ +1.2
Diabetes	11	8	↑ +2.7
Cirrhosis liver	12	9	↑ +1.2
Diarrheal diseases	6	10	↓ −15.9

Figure 23: Top 10 Causes of Deaths in Laos, 2009 and 2019, and Percent Change

system faces challenges in financing, health records, infrastructure, and management of health services. Medical care remains inadequate and is unevenly distributed.[318] The government spent an average of US$22.35 per person on health care in 2019.[319] This amount is expected to increase to US$37.74 by 2050.[320] Consequently, out-of-pocket spending is projected to rise from US$27.83 per person in 2019 to US$45.68 in 2050.[321]

Lao PDR is committed to achieving the SDGs by 2030 as part of its Vision 2030. The country ranked 115th of 166 countries in the 2023 Sustainable Development Report, with a score of 63, just below the East and South Asia regional average of 67.2.[322] Scores may be interpreted as a percentage of achievement; thus, a 100 indicates the SDGs have been achieved. In addition to the seventeen SDGs, Lao PDR adopted SDG 18 "Live in safety from unexploded ordnance (UXO)" to address one of the country's major obstacles to development. Figure 25 depicts Lao PDR's achievements and remaining challenges related to SDG health targets, where green represents success exceeding the set target; the columns from left to right are "value," "year," "rating," and "trend," where "value" represents the metric per indicator.[323] Remaining health challenges:

- Malnutrition affecting children's physical and cognitive development
- Neonatal and under-5 mortality
- Ensuring children are receiving WHO-recommended childhood immunizations
- Maternal and child health to include family planning
- Incidence of TB and HIV detection
- Increased incidence of NCDs (i.e., cardiovascular disease, cancer, diabetes, and chronic respiratory diseases)

What risk factors drive the most death and disability combined?

Metabolic risks
Environmental/occupational risks
Behavioral risks

Risk	2009 rank	2019 rank	Change in DALYs per 100k, 2009–2019
Malnutrition	1	1	↓ −5,891.5
Air pollution	2	2	↓ −2,319.4
Tobacco	3	3	↓ −337.2
High blood pressure	4	4	↑ +102.0
High fasting plasma glucose	7	5	↑ +374.6
Dietary risks	6	6	↑ +52.1
High body-mass index	10	7	↑ +577.1
Alcohol use	8	8	↑ +56.7
Kidney dysfunction	9	9	↑ +65.7
Occupational risks	11	10	↑ +7.6

Figure 24: Top 10 Risk Factors Contributing to Disability-Adjusted Life Years, 2009 and 2019

SDG3 – Good Health and Well-Being

Maternal mortality rate (per 100,000 live births)	126.1	2020	●	↑
Neonatal mortality rate (per 1,000 live births)	21.0	2021	●	↗
Mortality rate, under-5 (per 1,000 live births)	42.5	2021	●	↗
Incidence of tuberculosis (per 100,000 population)	143.0	2021	●	↗
New HIV infections (per 1,000 uninfected population)	0.1	2021	●	↑
Age-standardized death rate due to cardiovascular disease, cancer, diabetes, or chronic respiratory disease in adults aged 30–70 years (%)	26.8	2019	●	→
Age-standardized death rate attributable to household air pollution and ambient air pollution (per 100,000 population)	195.3	2019	●	
Traffic deaths (per 100,000 population)	17.9	2019	●	↓
Life expectancy at birth (years)	68.5	2019	●	→
Adolescent fertility rate (births per 1,000 females aged 15 to 19)	83.4	2016	●	
Births attended by skilled health personnel (%)	64.4	2017	●	
Surviving infants who received 2 WHO-recommended vaccines (%)	73	2021	●	↓
Universal health coverage (UHC) index of service coverage (worst 0–100 best)	50	2019	●	↗
Subjective well-being (average ladder score, worst 0–10 best)	5.0	2022	●	

Figure 25: Lao PDR's Sustainable Development Goals Health Targets Status (2023)

- Limited health care infrastructure and health service delivery to remote areas and vulnerable populations
- Access to affordable and improved quality health care
- Training and retaining health care workforce
- Global health security
- Limited access to safe water and sanitation
- Household and ambient air pollution
- Traffic deaths

Health Care System Structure

Since the 1990s, the Ministry of Health (MOH) has made efforts to provide services to more people by decentralizing its health care system into three administrative levels: a central MOH, provincial health offices (PHO), and district health offices (DHO).[324] Due to its unique geography and significant rural population, Laos has adopted a distinctive model of development, characterized by the clustering of small villages into various districts across all 18 provinces (including Vientiane city).[325] There are four levels of service providers: 1) central-level providers (hospitals) managed directly by the MOH; 2) provincial-level providers, managed by PHOs; 3) district-level providers, managed by the DHOs; and 4) community-level providers (health centers), also managed by the DHOs.[326] Figure 26 depicts the health system structure of Lao PDR.[327]

At the village level, health care workers include village health volunteers, members of community health committees, and traditional birth attendants.[328] The responsibility of providing health care services in rural areas falls upon district clinics and hospitals, where mid- and low-level health care providers have limited training and access to educational resources. As a result of the lack of qualified local staff, inadequate infrastructure, and the need for affordable medical devices and drug supplies, at the district level, health care systems often depend on international aid in the form of vaccines, training for medical professionals and staff, and strengthening of maternal and child health programs.[329] The MOH has recognized the need for capacity-building of the workforce and has identified training of health care workers at the district level as a top priority.[330]

As the health service delivery system is

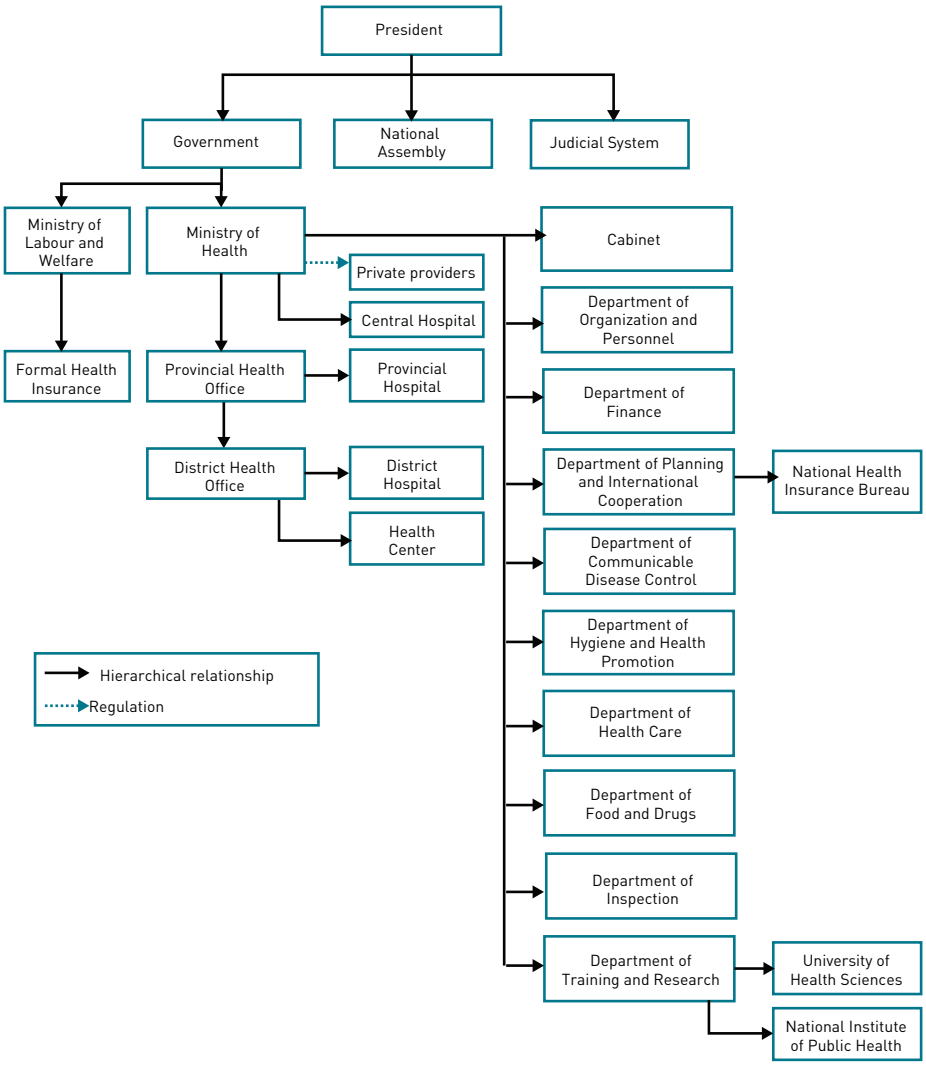


Figure 26: Lao PDR's Health System Structure, 2013

government-owned, the MOH works with governmental organizations across various sectors. The Ministry of Finance (MOF) is responsible for the overall fiscal policy and sectoral allocations of the annual recurrent budget, while the Ministry of Planning and Investment is responsible for capital budget allocation.[331] The MLSW is responsible for social security schemes for the formal employment sector, and the Ministry of Home Affairs (MHA) allocates the quota of health workers and the annual number of posts for recruitment of civil servants.[332] Additionally, the Ministries of National Defense and Public Security manage and fund the organization and administration of military and police hospitals, respectively.[333] Furthermore, the Food and Drug Department (FDD) of MOH regulates pharmaceuticals and medical devices.[334] Provincial governors' roles in public financial management is crucial as the budget resource flows are horizontal, meaning district and provincial offices collect and keep all revenues within their assigned areas.[335] These offices then use the revenues to fund their budget expenditures, including for health. Provinces can negotiate the tax revenue they will send to the central government and how much they will keep for local use if they collect tax revenues.

The government has various health care programs that cater to different income groups. These programs include the State Authority for Social Security (SASS), designed for civil servants; the Social Security Office (SSO), for employees of both state and private enterprises; the Community-based Health Insurance (CBHI), for informal sector workers; the Health Equity Funds (HEF), for people with low incomes; and free maternal and child health services in select provinces.[336] In 2016, the government took steps to increase the number of people covered under the social health protection schemes by introducing National Health Insurance (NHI), a combination of the four health care programs and targeting the informal sector, which constitutes around 74% of the population.[337] By the end of 2017, the NHI scheme had expanded to 17 provinces (all areas except for Vientiane city). By 2019, the government had also integrated existing schemes, like the National Social Security Fund for the formal sector, into the NHI scheme.[338] As of the end of 2022, social health protection schemes covered 94.5% of the total population. Future sustainability of the NHI will depend on MOF increasing the budget to cover benefit expenditures. Due to the country's economic challenges, implementation of the Health Financing Strategy 2021-2025 and the NHI Strategy 2021-2025 will require adjustments.[339]

As a result of the country's response to COVID-19, the MOH has strengthened the national health care system to prepare for public health emergencies.[340] The Lao National WASH Survey 2021, conducted by the MOH and WHO, found that 16% of the country's health centers and hospitals had basic hygiene services and 19% had waste management services.[341] While 98% of health care facilities had some sanitation services, only 2% had fully appropriate WASH services, and some provinces were underserved.[342] Health facilities are increasingly at risk of climate change impacts linked to extreme weather; many have experienced disasters in the past 20 years, but only 1% of facilities had any measures in place to reduce vulnerability.[343]

Lao PDR offers secondary- and tertiary-level health services through four central general hospitals and three specialized hospitals in Vientiane. Additionally, four regional and 12 provincial hospitals, 130 district hospitals, 860 health centers, and roughly 5,239 village drug kits provide primary health care.[344] However, the country's hospital bed rate is low at 0.8 beds per 1,000 population.[345] The private health sector is growing in urban areas; this sector includes private pharmacies, traditional medicine practitioners, and private clinics. Similar to other Asian countries, dual practice is common among doctors and nurses who work at provincial and district hospitals and then moonlight in private practice. The MOH regulates the private health sector, and providers must receive a license from the MOH's medical committee.[346] Patients are usually charged a consultation fee at private

practices and must pay for any medicines dispensed by these clinics. Nonetheless, private practice can undermine the quality of services offered at public health facilities as doctors may refer their public practice patients to their private clinics after regular office hours. Additionally, informal payments from patients to doctors and nurses are common.

International NGOs are required to register with the Ministry of Foreign Affairs (MOFA), and civil society organizations (CSO) are required to register with the MHA to engage in health sector activities.[347]

Health Strategies and Surveillance

The national vision for health is "Health for all by all."[348] To achieve this vision, Lao PDR is committed to achieving UHC, graduating from least developed country status, and attaining the SDGs by 2030. The MOH implements health sector development plans and health system reform through the 9th Five-Year National Health Sector Development Plan (NHSDP) 2021-2025[349] and the Health Sector Reform Strategy.[350] Health sector reform focuses on improving the health system's resilience by implementing the "3-building system," or Sam Sang, where responsibility is increasingly devolved to local administrative levels to respond to disease outbreaks and other public health emergencies.[351] Other key priorities include improving the overall quality and safety of health care services and strengthening strategic planning and human resources capacity for health. Priority areas for health sector reform are service delivery, human resources for health, health financing, governance and management, and monitoring and evaluation.[352] The National Commission for Health Sector Reform consists of the Deputy Prime Minister, the Ministers of Health, Finance, Planning and Investments, Foreign Affairs, and Labor and Social Welfare, representatives of the LWU, and others.[353]

Since the H5N1 Avian influenza outbreak in 2007, Lao PDR's public health surveillance system has been developing and has made improvements in communicable disease surveillance and outbreak response through the establishment or application of three frameworks: the 2005 International Health Regulations (IHR), the Asia Pacific Strategy for Emerging Diseases, and the National Work Plan for Emerging Infectious Diseases (2007-2010).[354] Furthermore, significant strengthening of the surveillance and response systems for emerging and re-emerging diseases at the provincial and district levels is crucial in areas such as human resources, capacity to use information technologies and laboratory techniques, and adequate laboratory equipment.[355] According to the 2021 Global Health Security Index, Lao PDR scored 34.8 out of 100, in which 100 represents the most favorable health security conditions and 0 represents the least favorable conditions.[356] This score earned Lao PDR a rank of 99th of 195 countries assessed. Laos' scores for 'Detect' and 'Respond' are 37.9 and 38.3, respectively, higher than the global average of 32.2 and 37.6, respectively.[357] Furthermore, a Joint External Evaluation (JEE) of the IHR core capabilities of Lao PDR was conducted by WHO in February 2017.[358] The JEE noted significant accomplishments in communication, coordination, and advocacy for IHR surveillance, national laboratory capacity, and the ability to respond to outbreaks across multiple sectors.[359] However, the evaluation also identified some overarching challenges, including sustainable financing for health security, capacity building of human resources, intersectoral collaboration, coordination, and the formalization, documentation, and implementation of procedures.[360] The national health information system (HIS) has improved, though challenges remain, including transitioning from a paper-based to a computerized system and the roll-out of the vital and civil registration systems. Additionally, the national HIS does not cover the private sector, and the use of health information and technology assessments on cost-effective health investments is limited.[361] Figure 27 depicts the National Surveillance Reporting Systems of

Lao PDR.[362]

The WHO plays a crucial role in enhancing Lao PDR's health system reform by providing technical assistance through various technical working groups, Sector-Wide Coordination Mechanisms, and informal meetings with health development partners.[363] The WHO works with the MOH through the Country Cooperation Strategy (CCS) 2024-2028.[364] The CCS identifies three strategic priorities and nine deliverables; the three strategic priorities are:

- Strategic priority 1: Promoting sustainable and resilient health systems toward UHC.
- Strategic priority 2: Providing protection for communities from health emergencies and diseases.
- Strategic priority 3: Protecting health from climate change and environmental threats.[365]

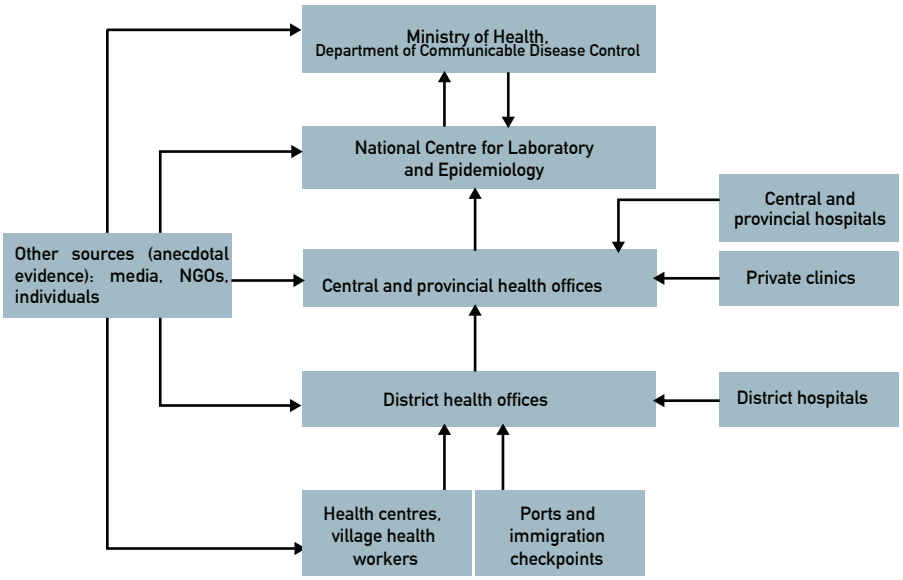


Figure 27: National Surveillance Reporting System of Lao PDR

Communicable Diseases

Lao PDR is burdened with the following communicable diseases:

Coronavirus Disease 2019 (COVID-19)

The MOH confirmed that the country's initial two cases of COVID-19 were detected in Vientiane Capital. Both cases were admitted to the hospital on 23 March 2020.[366] In the very early days of the COVID-19 pandemic, in February 2020, the government had initiated a series of national interventions. These interventions included mandatory use of face masks, promotion of hand hygiene practices, closure of schools, and implementation of mass gathering restrictions. Furthermore, the government imposed strict limitations on international travel, internal movement, and workplace operations. Citizens were also encouraged to stay at home to limit the spread of the virus.[367] A COVID-19 vaccine was first introduced in Lao PDR on 25 November 2020.[368] As of November 2023, approximately 13.88 million vaccine doses had been administered. About 78% of the population had completed the primary series of the vaccine, while 34% had received at least one booster dose.[369] USAID bolstered the MOH response efforts by handing over cold chain and information technology equipment to include 150 refrigerators and 50 freezers to store vaccines and 400 tablets and 70 laptops to capture vaccine data.[370] Additionally, USAID partnered with UNICEF from 2021 to 2023 to provide technical assistance for Risk Communication and Community Engagement to intensify vaccine service delivery in low performing districts.[371] As of 12 March 2024, Lao PDR reported eight active COVID-19 cases and national total deaths were 758.[372]

Dengue

Dengue is a vector-borne, viral infection transmitted by the Aedes mosquito, mainly the Aedes aegypti. Dengue has spread across tropical and subtropical regions of the world and threatens over half of the world's population.[373] Although dengue can be contracted year-round, cases typically increase during the rainy season (May to November in Lao PDR) as mosquito breeding sites multiply. Lao PDR reported nearly

a 60% drop in dengue cases between 2022 and 2023.[374] The MOH has partnered with Save the Children and the World Mosquito Program on a new initiative to reduce dengue cases.[375] The initiative entailed releasing mosquitoes carrying the Wolbachia bacteria, which makes it harder for mosquitoes to transmit viruses, in two districts of Vientiane between April and August 2023. The bacteria are harmless to ecosystems and humans. The initiative aims for mosquitoes with Wolbachia bacteria to breed with the local mosquito population over several generations and to reduce dengue cases significantly. As of 1 February 2024, MOH's National Center for Laboratory and Epidemiology reported 223 dengue cases with zero deaths for the calendar year to date. The cases reported represent a 137% increase compared to 174 cases reported during the same period in 2023.[376]

Malaria

Lao PDR and other countries within the Greater Mekong Subregion have made tremendous progress in reducing malaria morbidity and mortality. However, challenges remain regarding drug-resistant malaria and high treatment failure rates.[377] The malaria-causing parasite, P. falciparum, poses a public health concern as it is partially resistant to artemisinin, the core compound of artemisinin-based combination therapy (ACT).[378] The primary advantage of ACT is that the artemisinin quickly and effectively reduces the majority of malaria parasites, while the partner drug clears the small number of remaining parasites. Reduced efficacy of the artemisinin component places greater demands on the partner drug to clear a larger parasite mass, jeopardizing its future efficacy.[379] Between 2001 and 2021, annual reported malaria cases in Laos declined from 279,903 to 3,926.[380] Lao PDR aims to eliminate all species of malaria that infect humans by 2030. In 2020, the Center of Malariology, Parasitology and Entomology published the 2021-2025 National Strategic Plan for Malaria Control and Elimination.[381] The plan aims to reduce annual overall parasite incidence per 1,000 population (API) to below 0.16 by 2025, with an intermediate target of 0.55 by 2021.[382] Lao PDR achieved the intermediate target through strengthening surveillance systems, distributing long-lasting insecticidal nets to high-risk populations, expanding testing, and improving case management. In 2021, of 18 provinces, only two had an API above 1.0: Sekong (5.9) and Attapeu (9.3).[383] Launched in 2005, the U.S. President's Malaria Initiative (PMI), led by USAID in partnership with the U.S. CDC, focused on malaria prevention and treatment measures such as insecticide-treated mosquito nets, indoor residual spraying, accurate diagnosis and prompt treatment with ACTs, intermittent preventive treatment for pregnant women, and monitoring and surveillance.[384] The PMI allocated approximately US$3 million for the Regional Development Mission for Asia in Fiscal Year 2024 for malaria interventions in Lao PDR and Thailand.[385]

HIV/AIDS

New HIV/AIDS infections are decreasing in Lao PDR. The country's most recent count of new HIV/AIDS infection cases stood at 1,000, which meets global 2030 targets.[386] Additionally, Laos is making progress towards the 2030 Ending AIDS target of 100 or fewer new HIV infections every year.[387] As of 2022, Laos was home to an estimated 17,000 people living with HIV (PLHIV), 13,203 of whom are aware of their diagnosis, and 10,130 of whom are receiving antiretroviral therapy (ART).[388] Of concern, there is an increase in the treatment gap of 6,870 PLHIV who are not receiving ART. Stigma and discrimination contribute to low HIV testing coverage among key populations such as female sex workers, men who have sex with men, and people who inject drugs.[389] In 2022, approximately US$4.06 million was spent on HIV/AIDS interventions, with Lao PDR contributing US$1.85 million and international funding making up the remaining US$2.21 million.[390] Through the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), the U.S. CDC supports various initiatives that aim to support key populations with activities

focused on early diagnosis of HIV, provision of high-quality HIV testing and diagnosis, and strengthening rapid treatment initiation and sustained viral suppression.[391]

Tuberculosis

Lao PDR has a high burden of TB. In 2022, WHO reported a total incidence of 10,000 TB cases with 470 HIV-positive TB co-infections and 78 multidrug resistant TB cases.[392] TB is the number three cause of death among communicable, maternal, neonatal, and nutritional diseases in Laos.[393] Risk factors attributable to TB are smoking, alcohol use, undernourishment, HIV, and diabetes.[394] In 2022, Lao PDR's UHC and social protection programs provide TB treatment coverage to 82% of patients who were notified of their status, while in 2019, 63% of TB patients faced catastrophic costs.[395] The most recent data reported in 2018 estimated that 160 people had drug resistant TB (DR-TB), 45 of them were on treatment, and 38 were successfully treated.[396] DR-TB is difficult to diagnose, treat, and cure. The National Tuberculosis Program in Lao PDR, with funding and technical support from WHO, conducted the first national TB patient cost survey from 2018 to 2019.[397] The survey identified the primary factor contributing to catastrophic costs associated with TB as the cost of additional foods or nutritional supplements. As a result, the survey recommended enhancing nutritional support for TB patients.[398] In 2022, WHO, in collaboration with the National Nutritional Centre, implemented a research project called "Effect of nutritional intervention on TB treatment outcome and financial burden of TB: Before and after trial in Lao PDR."[399] The project results will be published the second quarter of 2024. Additionally, The Global Fund allocated US$15.5 million for TB and HIV interventions in Lao PDR from 2021 to 2023.[400] The investment was designed to improve access to quality health and nutrition services in targeted areas of Laos and to increase notification and TB treatment coverage.

Respiratory Infections

In Lao PDR, acute respiratory infection is the leading cause of morbidity and mortality in the general population, while pneumonia is a leading cause of death in children under 5 years of age.[401, 402] The etiology of respiratory infections is complex as it varies with genetic diversity and seasonal patterns. Most frequently detected pathogens are Influenza A and B viruses combined, followed by human adenovirus and respiratory syncytial virus (RSV).[403] While Influenza A and B and RSV cases are detected during rainy seasons, human adenovirus is primarily detected in dry seasons.[404] The diagnosis and management of respiratory tract infections in Lao PDR reveal knowledge gaps that need addressing. Approximately 30% of surveyed medical doctors considered unnecessary antibiotic treatment as harmless. This finding emphasizes the need for enhanced awareness and education among health care professionals in the appropriate use of antibiotics to minimize antimicrobial resistance. Additionally, having accurate data on the respiratory infection disease burden, transmission, and viral evolution is critical for developing vaccines and therapies. Since 2023, the Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit established a pilot surveillance system for RSV in children presenting to hospitals in Lao PDR.[405] The surveillance system, funded by the Programme for Research Epidemic Preparedness and Response in Singapore, will collect samples from two central and four provincial hospitals.[406]

Non-Communicable Diseases

NCDs, such as stroke, ischemic heart disease, and chronic obstructive pulmonary disorder, are the leading causes of morbidity and mortality in Lao PDR.[407] Risk factors contributing to the increase of NCDs are tobacco use, raised blood pressure, physical inactivity, and harmful use of alcohol.[408] Lao PDR has committed to improving the health of the population and became a party to the WHO Framework Convention on

Tobacco Control (WHO FCTC) on 5 December 2006.[409] As a result of the various tobacco interventions implemented by the government, tobacco smoking trends within the population are decreasing.[410] Despite the progress made on tobacco control through the restriction of tobacco advertising and e-cigarette availability and maintaining smoke-free spaces, challenges remain regarding the country's low tobacco tax rate and prices.[411] Investing in and enforcing the WHO FCTC measures and the 2021 Tobacco Control Law is expected to decrease NCD cases in Lao PDR.[412, 413] Beyond tobacco, the World Bank reported that Laotian males 15 years of age and older each consumed an estimated 18.1 liters (4.78 gallons) of pure alcohol in 2019, a high total compared to neighbors Cambodia (13.8 liters; 3.64 gallons) and Vietnam (15.3 liters; 4.04 gallons).[414] Lao PDR raised alcohol taxes, including on alcohol and tobacco products brought into the country, to reduce the outflow of foreign currency and improve public health.[415]

Training for Health Professionals

Lao PDR is experiencing a shortage of health care professionals due to inadequate infrastructure support, lack of access to medicines and equipment, and low compensation. Education for health professionals is managed by the MOH and is fully funded through taxes.[416] At the national level, the University of Health Sciences, the School of Public Health, and the Institut de la Francophonie pour la Médecine Tropicale are the primary training institutions in Vientiane.[417] At the provincial level, there are three colleges of health sciences (Luangprabang, Savannakhet, and Champasack) and four public health schools (Oudomxay, Xiengkhuang, Vientiane, and Khammuane).[418] The University of Health Sciences offers bachelor's level and postgraduate training, such as a master's program and specialization qualifications, while the colleges of health sciences offer mid- to high-level diploma courses required to qualify as a technical nurse, community midwife, medical assistant, or medical associate primary health care worker.[419] In addition, the four central hospitals (Mahosoth, Setthathirath, Mittaphab, and the Mother and Child Hospital) are all actively engaged in clinical training.[420]

Challenges remain due to limited post allocations by the MHA and low retention of qualified health workers in rural areas. To address the challenge of health worker retention in rural areas, the MOH implemented a law supporting mandatory employment of all new graduates to work for three years in rural areas while providing adequate financial and non-financial incentives.[421] Additionally, health workers are not required to maintain their license through engaging in regular professional development as there is no such mandatory requirement and the licensing system is not yet in place.[422] There is evidence of an increasing brain drain of qualified health professionals from the public to the private health sector. After obtaining their license from the MOH, health professionals in the public sector commonly engage in dual practice outside of their regular work hours.[423] To bolster Lao PDR's global health security, the U.S. CDC has supported strengthening workforce development through the Field Epidemiology Training Program (FETP) since 2009 with support from the WHO and Lao MOH.[424] The FETP has a network of over 100 graduates across Laos; they are equipped to address public health challenges.

WOMEN, PEACE, AND SECURITY

Lao PDR has made significant progress in increasing rates of girls' participation in education and has made progress in women's representation in managerial and senior roles.[425] In the 2023 Global Gender Gap Report, Lao PDR received a score of 0.733 out of 1.000, where 0 denotes complete imparity and 1.000 denotes parity, and this score earned Laos a ranking of 54th of 146 countries assessed globally or 5th of 19 countries assessed within the East Asia and the Pacific region.[426] Within the report, Laos scored high on the subindices Economic Participation and Opportunity (0.851), Educational Attainment (0.964), and Health and Survival (0.975), but it scored low on Political Empowerment (0.140).[427] Representation of women in the national parliament has decreased from the 2015 baseline, and currently, women hold less than 25% of seats.[428] On the other hand, the proportion of women in senior and middle management positions has increased from 23.4% to 25.7% in the past decade.[429] Gender-based violence (GBV) is prevalent, although victims and survivors often do not have access to justice due to underreporting and fear of being stigmatized.[430] The National Plan of Action on Protection and Elimination of Violence Against Women and Children (NAPEVAWC) 2021–2025 is a positive step towards collecting data on victims and survivors of GBV.[431] This data can be used to design gender-responsive measures. Through the NAPEVAWC, the LWU and the National Commission for the Advancement of Women (NCAW) have jointly launched an initial SOP, an essential tool to guide Lao PDR's criminal justice response to violence against women and girls and to ensure that victims receive necessary support, protection, and access to justice.[432] The Ministry of Justice, Ministry of Public Security, Office of the Supreme People's Prosecutor, and People's Supreme Court are responsible for implementing the SOP.

Although Lao PDR has made progress in gender equality, there are many challenges that persist regarding women's employment, access to justice for intimate partner violence and GBV, community safety for women, reproductive and primary health, food insecurity, and economic marginalization.[433] Additionally, climate change disproportionally impacts employment and educational opportunities for women and girls and, consequently, impacts family relations and work-related gender roles.[434] Specifically, women and girls from rural communities face significant marginalization.[435] Moreover, there remains room for improvement in addressing issues of gender inequality and the unique risks and needs that women face. It is important that policies and mechanisms are put in place to collect sex-disaggregated data, carry out gendered analysis, and effectively mainstream gender in institutions and processes.

The Women, Peace, and Security (WPS) agenda covers a wide range of efforts to increase women's meaningful participation in the promotion of sustainable peace and security through conflict prevention and resolution, peace negotiation, peacebuilding, peacekeeping, humanitarian response, relief aid, and economic recovery and development. The WPS agenda gained global visibility with United Nations Security Council Resolution (UNSCR) 1325, which was adopted in October 2000 and affirmed the important role women play in many aspects of promoting and maintaining peace and security. The WPS agenda has since expanded with the adoption of additional related UNSCRs: 1820 (2009); 1888 (2009); 1889 (2010); 1960 (2011); 2106 (2013); 2122 (2013); 2242 (2015), 2467 (2019), and 2493 (2019). These resolutions together address various issues of gender and security, including the need to stop GBV and to promote women's roles in conflict resolution, recovery, and peacebuilding. The WPS agenda

has also broadened to include applying a gendered perspective to humanitarian assistance, disaster management, DRR, and climate security for more equitable participation to address humanitarian needs and benefit the entirety of a society over the longer term.

As of 2024, Lao PDR does not have a national action plan for WPS;[436] however, the Law on Gender Equality 2019 (LGE) is gender responsive with the incorporation of equality principles and a focus on overcoming cultural beliefs that inhibit women's advancement.[437] The LGE mandates gender mainstreaming in laws and policies across all areas of work. Additionally, the LGE is accompanied by the National Action Plan on Gender Equality (2021-2025), an ambitious policy for implementation with a focus on a broad spectrum of gender positive targets to include leadership roles in climate change and DRR.[438] Lao PDR is a party to the ASEAN Declaration on the Elimination of Violence Against Women and Children.[439] Additionally, the country is a member of the Working Group on Prevention and Mitigation under the ASEAN Committee on Disaster Management within the 2022 ASEAN Regional Plan of Action on WPS.[440] In 1981, Lao PDR became the second country in the region to ratify CEDAW.[441] However, the understanding of CEDAW is limited to only high-ranking government officials or senior members of the LWU.[442] To promote greater awareness of CEDAW and women's human rights in general, there is a pressing need for increased public advocacy and training of district officials.

The government has implemented the National Plan of Action on Anti-Trafficking in Persons Phase III (2021-2025).[443] It is actively involved in bilateral and multilateral efforts to combat human trafficking, including the ASEAN framework of the Coordinated Mekong Ministerial Initiative against Trafficking and the Bali Process.[444] Several MOUs were signed with various countries, such as Thailand, Vietnam, and China, to improve cooperation against trafficking in persons. On 13 July 2005, Lao PDR signed the Cooperation to Combat Trafficking in Persons MOU with Thailand.[445] On 3 November 2010, Lao PDR signed the Cooperation in Preventing and Combating Trafficking in Persons and Protection of Victims of Trafficking MOU with Vietnam. Finally, on 1 September 2014, an MOU was signed between Lao PDR and the Republic of China on the issue of human trafficking.

Several coordination mechanisms for WPS have been established in Lao PDR; they include the Gender Network, which is comprised of CSOs and UN agencies.[446] There is also a CEDAW Task Force and a CSO GBV Task Force, supported by international NGOs such as CARE International. The CSO GBV Task Force comprises local CSOs, but it has no government representation.[447] These task forces meet quarterly, and the chair and co-chair roles rotate among members. Additionally, there is an Anti-Human Trafficking Working Group, which the MOFA and UNFPA lead.[448] This group meets quarterly and includes government and international development partners.

Some of the international and national organizations and CSOs whose work underpins the WPS agenda in Lao PDR are:

International Organizations

UN Women has been working towards achieving women's empowerment and gender equality in Lao PDR since 1993.[449] UN Women's primary area of focus is strengthening the capacity of the LWU and providing support for the establishment of the national women's machinery through the UN Development Fund for Women, building the government of Lao PDR's capacity to implement CEDAW through the CEDAW Southeast Asia Programme, and empowering women migrant workers on safe migration with information kits through the Regional Programme on Empowering Women Migrant Workers.[450]

USAID is funding a ten-year (2016-2026), US$21.5 million Counter Trafficking in Persons (USAID Asia CTIP) program implemented by Winrock International.[451] The objective of the program is to enhance collaboration among

government social services, law enforcement agencies, health care providers, and anti-trafficking advocacy organizations, with a goal of improving the well-being of trafficking survivors in Asia. Initially, the program will concentrate on human trafficking in the Lower Mekong countries, which include Bangladesh, Cambodia, Laos, Myanmar (Burma), Thailand, and Vietnam.[452]

CARE International is the lead international NGO on GBV in Lao PDR. CARE's flagship program, Stand Up and Speak Out (SUSO), was implemented with AUS$800,000 (US$524,480) in funding from Australia's Department of Foreign Affairs and Trade (DFAT) between 2017 and 2019.[453] SUSO aimed to change gender norms in rural, remote, ethnic minority, and urban communities by working with influential male and female change agents, Village Mediation Unit members, and Village Authority members. Furthermore, CARE has implemented the regional Enhancing Women's Voice to Stop Sexual Harassment program (2017-2021) in four Mekong countries where it aimed to tackle sexual harassment in the garment industry and implemented the European Union/DFAT funded (US$1 million) project called Strengthening Civil Society to Address GBV (2016-2019) through the Lao Positive Health Association (LaoPHA).

The Asia Foundation (TAF) works with the Ministry of Justice, the National Assembly, the Lao Bar Association, and other government agencies to improve access to justice and rule of law for Lao citizens.[454] They have supported the establishment of legal aid clinics in several provinces and will expand to other provinces.[455] TAF is also working to develop legal aid packages for cases of GBV and fund scholarships for women to attend the National Institute of Justice. Additionally, TAF is involved in counter-trafficking efforts and works with women's shelters to raise awareness and provide education and vocational training.[456]

National Organizations

The **National Commission for the Advancement of Women (NCAW)** was established in 2003; it serves as the government focal point for gender mainstreaming and assists with national policy guidance and strategic action plans to promote gender equality and women's advancement.[457] In November 2016, the National Commission for Mothers and Children merged with NCAW to form the National Commission for the Advancement of Women, Mothers and Children.[458] 'Sub-CAW' units were established at the provincial, district, and village levels, and across line ministries to enhance policymaking and monitor CEDAW implementation.[459] Furthermore, NCAW is responsible for monitoring progress in implementing CEDAW and the Beijing Platform for Action.[460] NCAW works alongside the LWU, local authorities, and international organizations to coordinate workshops and mobilize funding to promote gender rights and raise awareness of harmful practices towards women.

The **Lao Women's Union (LWU)** is a mass organization established in Laos on 20 July 1955. LWU has a mandate to enhance women's capacity for self-development, to enhance women's role in society, and to implement related policies and plans.[461] LWU engages in preventive activities on violence against women and children. These activities include protecting and supporting victims by offering counseling, health care, free legal support, and victim witness protection during prosecution. It is also responsible for providing victims with safe temporary shelters, vocational training, and reintegration opportunities through the Women and Child Counseling and Protection Network. These services are available at the central, provincial, district, and village levels.[462] The LWU cooperates with the NCAW to operate the Good Family program, which provides services such as a dedicated hotline, counseling centers, and shelter in Vientiane. Counseling centers are available in almost all provinces; however, challenges to accessing services remain.[463]

Local NGOs/ CSOs

The **Lao Positive Health Association (LaoPHA)** was established in 1999 and works

to improve key affected populations' health, social welfare, and well-being.[464] They focus on women living with and affected by HIV, orphans, transgender people, homosexual people, female sex workers, drug users, and young male populations. LaoPHA provides health care services, social support, and community advocacy initiatives that remove barriers to health services and reduce discrimination and stigmatization.[465]

The **Gender and Development Association (GDA)** was established in 1991 and is the lead local NGO on gender and GBV.[466] GDA facilitates advocacy, community awareness, and women's empowerment, and it has a wide network of national and international partners. Furthermore, GDA co-organized a Regional Conference on Strengthening Understanding of the Impact of Gender Norms and Stereotypes on Violence Against Women in the Greater Mekong Sub-Region from 9 to 10 January 2019 in Vientiane with funding support from the Advancing Learning and Innovation on Gender Norms (ALIGN Platform).[467] Photo 1 depicts participants at the Regional Conference in Vientiane, Lao PDR.[468]

The **Association Development Women Legal Education (ADWLE)** was established in 2012 and works to empower women by disseminating laws related to women, mainstreaming gender in legal education, and facilitating access to justice mechanisms for women.[469] Additionally, ADWLE provides legal education and training to institutions and communities, runs mobile legal aid clinics, and trains paralegals to support GBV victims. In July 2015, ADWLE established its first legal aid clinic for female victims of GBV in Lao PDR and is active in advocacy and policy advice on CEDAW and GBV laws.[470]



Photo 1: Participants at Regional Conference on Violence Against Women, January 2019

CONCLUSION

Lao PDR is exposed to a range of hazards, especially floods and droughts. Concurrently, more than 80% of the population lives in rural areas where two-thirds of them rely on agriculture, and these factors put both lives and livelihoods at risk of disruption from hydrometeorological events. The country is also exposed to medium-to-moderate seismic hazards,[471] which threaten vulnerable communities where either a landslide may occur or where buildings and infrastructure may collapse.

Lao PDR is among the most vulnerable countries to the effects of climate change. The country confronts storms, floods, and droughts that cause landslides, fires, disease outbreaks, loss of life, and damage to infrastructure and livelihoods. What is more, the country already faces shortfalls in resources to build capacity, and what coping capacity it does have is spent responding to successive emergencies. As people migrate to urban areas, alterations in ecosystems exacerbate the impacts of climate change-related risks. While historically, droughts and floods have mainly impacted the poorest people – ethnic minority groups living in remote areas – swift urbanization is seeing more people building on and agglomerating in marginal areas that are, themselves, highly exposed to hazards, especially flooding.

In recognition of the links between climate change and disasters, Lao PDR has begun to link its climate change mitigation and adaption plans to its multi-hazard DRR programming. For example, in the 9th NSEDP, it specified targets for environmental protection and risk reduction alongside promoting resilient infrastructure to link all communities. Nonetheless, a disconnect remains in that the MONRE's climate change offices are set apart from the MLSW's disaster management offices, including those tasked with DRR. To ensure best use of the country's limited resources, there is a slow but notable shift toward reducing the barriers between CCA and DRR officials and work.[472]

Based on the 2019 Disaster Management Law, the NDMC, an inter-ministerial and cross-sectoral body, remains responsible for formulating policy and overseeing coordination of disaster management activities. The MLSW's DSW, the secretariat for the NDMC, maintains cooperation with international partners and houses the disaster EOC. However, significant work occurs at the provincial, district, and village level where PDMCs, DDMCs, and VDMCs coordinate responses and integrate the community into DRR and response work. All levels of DMCs work with UN agencies, NGOs, the LRCS, and other partners based on standing agreements that enable humanitarian activities in the event of a disaster. As a member-state of ASEAN, Lao PDR also has access to and works with the AHA Centre and fellow disaster management offices across ASEAN.

As lives and livelihoods exposed to potential damage linked to hydrometeorological hazards increase due to rising temperatures, more variable rainfall, and unplanned urban development, Lao PDR's DMCs and humanitarian partners will confront more frequent emergencies with the potential to bring greater loss of life alongside more damage to society and the economy. As part of the country's efforts to combat these impacts of climate change, it has enshrined its "social welfare" model of managing risk and increasing development into plans and programs to bolster climate change mitigation and adaptation, but its targets for reducing greenhouse gas emissions and building more resilient infrastructure require significant financial and technical support from international partners. In addition to fellow ASEAN member-states, Lao PDR relies heavily on China for investment although Vientiane and the U.S. continue to cooperate on key development priorities – e.g., health, education, and water and sanitation.

APPENDICES

DoD DMHA Engagements in the Past Five Years (FY 2019-2024)

The list below describes the DMHA engagements that the U.S. has had with Lao PDR in the last five years.

Sister Rivers Exchange – January 2024

The annual Sister Rivers Exchange took place 22-26 January 2024 in Thailand and Vietnam. The annual meeting brings together experts, policymakers, and stakeholders from the Mekong region and the United States to collaborate on solutions to water security and river management challenges that are increasing within the context of climate change. Sponsored by the U.S. State Department and the U.S. Army Corps of Engineers (USACE), representatives from the Mekong River Commission (MRC-Mekong), Mississippi River Commission (MRC-USA), USAID, and USACE Pacific Ocean Division (POD) bring diverse perspectives to the table. The goal is to share solutions and best practices to address challenges facing both regions. The 2024 multilateral exchange was spearheaded by the Chief Executive Officer (CEO) of the MRC-Mekong Secretariat, Dr. Anoulak Kittikhoun, as well as the Heads of Delegation and Joint Committee members from Cambodia, Lao PDR, Thailand, and Vietnam. "The Sister Rivers Partnership Exchange embodies the spirit of global cooperation. As we convene in Thailand and Vietnam, we recognize the urgency of collaborative action to ensure the sustainable future of our water resources," said Kittikhoun. Brigadier General Kirk E. Gibbs, USACE POD Commanding General, echoed this sentiment, saying, "The Pacific Ocean Division is proud to be part of this impactful event. By fostering collaboration across diverse regions, we are actively contributing to the resilience of our water systems, and in turn, the many communities that rely on them." Activities during the week included a reciprocal technical exchange and visits to the Hydro-Informatics Institute in Bangkok, Southern Regional Hydrometeorological Center in Ho Chi Minh City, Bong Bot Sluice Gate in Tra Vinh province, Vietnam, and Tra Su Mangrove Forest and Nam Viet Corporation in An Giang province, Vietnam. Brigadier General Kimberly Peeples, the MRC-USA President and USACE Mississippi Valley Division Commanding General, emphasized the importance of the partnership and international collaboration to address shared challenges. "The Mississippi River Commission is eager to continue fortifying a relationship built on a collective effort to sustain water resources."[473]

Lao Ministry, CFE-DM Co-Organize Exercise COORES – November 2023

Exercise Coordinated Response (Ex COORES) is a biennial multinational HADR Table-Top Exercise (TTX). The 2023 event was co-organized by the NDMC and MND of Lao PDR alongside the Singapore Armed Forces' Changi RHCC and USINDOPACOM's CFE-DM. The exercise involved 180 personnel from 26 militaries and 25 civilian organizations and was held at the Changi Command and Control Centre, Changi Naval Base, from 30 October to 2 November 2023. The objective of the exercise was to strengthen cooperation for HADR operations, establish civil-military linkages, and enhance mutual understanding and interoperability. The exercise scenario was based on a tropical storm bringing torrential rains, flooding, and landslides to a fictitious state, which, due to the impact of the disaster, declared a State of Emergency and requested international assistance. The TTX replicated the response plans of a Multi-National Coordination Centre to conduct both military-military and civil-military coordination with UN agencies. The 2023 exercise saw participation from UN OCHA, the Australian Civil-Military Centre, AHA Centre, and the LRCS, all of whom

offered valuable perspectives for civil-military coordination.[474] Photo 2 shows Ex COORES participants from LRCS, Singapore and Lao armed forces, and CFE-DM in a focus group discussion.[475]



Photo 2: Ex COORES Participants in Discussion Group

DPAA Delivers Medical Assistance – October 2023

Medical providers with the U.S. Defense POW/MIA Accounting Agency (DPAA) hosted a medical outreach initiative as they conducted recovery mission operations in Lao PDR in September and October 2023. The medical outreach provided assistance to approximately 200 Laotians. During this time, the medics delivered routine and symptomatic care through interviews and physical examinations. U.S. Army Major Philip Castañeda, DPAA medical outreach doctor, described the mission, saying, "Providing health care for the Lao citizens throughout the mission was significant because it enabled us to build a positive relationship... They're helping us find a missing person, and we're trying to give back to the community by providing this service to them." During the recovery mission, the U.S. personnel worked side-by-side with Laotians in search of a person missing from the Vietnam War. Typical daily tasks included soil excavation, transfer, and screening for evidence of an aircraft crash. As the DPAA personnel worked alongside their Laotian counterparts, the medics examined the locals periodically to ensure they received the best medical treatment possible. The experience that the medical personnel gained from delivering the health care offered improved proficiencies in tropical medicine.[476]

Lao Professionals among Students at Disaster Health Course – June 2023

Public health and disaster response professionals and students from around the globe gathered at the 26th annual Health Emergencies in Large Populations (HELP) Course, held in Honolulu, Hawai'i, in June 2023. Participants had the opportunity to discuss major public health issues and decision-making skills to effectively respond to the needs of populations in crisis. The two-week course was facilitated by the CFE-DM in partnership with the ICRC and the University of Hawai'i at Mānoa Office of Public Health Studies. The class included 31 individuals from 14 nations including Bangladesh, Bhutan, India, Indonesia, Lao PDR, Malaysia, Maldives, Mongolia, Nepal, Philippines, Sri Lanka, Thailand, the U.S., and Vietnam, and they represented various Ministries of Defense and Health, National Disaster Management Organizations, Red Cross and Red Crescent societies, and NGOs. Participants engaged in presentations by subject-matter experts and scenario-driven sessions. The course is unique in that its composition includes participants from both civilian and military organizations, and it delivers a networking opportunity among the people that may meet again in the field during a future humanitarian emergency. Since 1996, the collaborative course has graduated nearly 800 alumni and produced global networks that they can rely on in times of crisis.[477]

Mekong, Mississippi River Commissions Extend Memorandum of Understanding – July 2022

In July 2022, Sister Rivers Partners signed a new MOU and conducted a site visit in Cambodia and Lao PDR. The agencies representing the Mekong and Mississippi rivers

agreed to deepen the partnership via which they share lessons learned and best practices in economic development, environmental protection, technological expertise, and other areas. On 13 July, as part of the Sister Rivers Partnership Exchange program, leaders of the MRC-Mekong – representing Southeast Asia's largest waterway – and their counterparts from MRC-USA – which represents the world's third-largest watershed – renewed their five-year MOU to promote "safer, more economical, efficient, and environmentally sound water resources development and management." MRC-USA President, Major General Diana M. Holland, described the value of the relationship, which formally began in 2010 with their first MOU. "We will build upon previous reciprocal meetings and discuss a wide range of water resource challenges common to both river basins. Both Commissions represent significant expertise and will benefit from the continued exchange of lessons learned and best practices." The MOU, which was extended during this latest Field Visit to the Mekong by a Mississippi delegation, identified 11 specific areas of collegial exchange: CCA; integrated water resource management; drought management; flood forecasting; hydropower development and impact assessment; water demand and utilization; agriculture and food security; navigational improvement; fish passage; water quality; and wetlands. Each area is relevant and urgent for the Mekong, as recent years have seen the combination of hydropower water use and climate change-related floods and droughts dramatically impact the river's water levels, sediment flow, fish migration, and salinity. All of these issues affect the livelihoods and even food security for millions of fishing and farming families in the basin. Among the sites visited during this meeting were Lao PDR's Xayaboury Hydroelectric Power Plant, which launched operations in 2019, and Cambodia's Tonlé Sap, which is the largest freshwater lake in Southeast Asia and recently recorded the lowest water levels ever. Additional visits were paid to Mekong government ministers and officials. MRC-USA, which was established by the U.S. Congress in 1879, is supported in all its technical and technological needs by the USACE, and the Commission President is generally the commanding general of the USACE's Mississippi Valley Division.[478]

Field Epidemiology Training Cohort Graduates – July 2022

The U.S. Embassy Chargé d'Affaires, Joy Sakurai, joined the Lao MOH's Dr. Snong Thongsna at a commencement ceremony for eight graduates of the Field Epidemiology Training Program (FETP) on 6 July 2022. The FETP is supported by the U.S. DoD's Defense Threat Reduction Agency (DTRA), the U.S. CDC, and the WHO. Since 2009, it has been under management of the Lao MOH, Department of Communicable Disease Control (DCDC) and National Center for Laboratory and Epidemiology. The FETP aims to strengthen infectious disease surveillance and response capacity. As of the 2022 graduation of Cohort 13, 102 field epidemiologists had successfully completed the one-year training course, with 34 alumni from the national level, 51 from provincial level, and 17 from district level. The program enables Lao health officials to detect and respond to disease outbreak, especially emerging diseases. The FETP trainees undertake studies on current health situations and provide recommendations to policy makers to address and improve disease prevention and control measures. They are also frontline workers or members of rapid response teams who take part in surveillance, investigating cases, tracing close contacts, and collecting samples. "I am grateful to say that the [FETP] has played an important role in developing surveillance and response capacity in Lao PDR. The applied nature of the training has equipped graduates with practical skills to respond to surveillance and disease outbreak investigation," said Dr. Snong. Dr. Ying-Ru Lo, WHO Representative to Lao PDR, and Dr. Rattanaxay Phetsouvanh, Director of Lao FETP/ Director General of DCDC, were also present at the ceremony.[479]

CFE-DM Conducts Humanitarian Assistance Workshop in Laos – February 2022

CFE-DM conducted the inaugural Laos HADR Civil-Military Coordination Workshop from 15 to 18 February 2022 in Xayaboury, Laos. The workshop provided Lao PDR Government line ministries knowledge to enhance national HADR processes for coordination at the national, regional, and international levels. The workshop also helped identify roles and responsibilities of Lao agencies involved in disaster response both as an affected and assisting state, and it increased understanding of fundamental concepts, guidelines, and principles, for humanitarian civil-military coordination at regional and international levels. Key participants included representatives from Lao's MLSW, MND, and the U.S. Embassy Defense Attaché Office. Academic briefs were provided by MLSW, MND, CFE-DM, the IFRC, AHA Centre, USAID/BHA, and WFP. The workshop included a TTX that simulated response to a flooding scenario in Xayaboury province.[480]

Mekong, Mississippi River Commissions Extend Cooperation – December 2021

The MRC-Mekong and MRC-USA deepened cooperation in data collecting and sharing. MRC-Mekong announced on 10 December 2021 that the United States had awarded it a grant of US$773,570 to improve collecting and sharing data for water management and continued exchanges with MRC-USA. "Although small, this grant will provide strategic support to the important work of the MRC in the Mekong and wider region," said the Director of the Office of Conservation and Water at the U.S. Department of State, Christine Dawson. The President of MRC-USA, Major General Diana Holland, said the two commissions are "equal partner[s]" in their relationship. The CEO of the MRC-Mekong Secretariat, Dr. An Pich Hatda, said the two agencies had a "common mission and shared commitment" to sustainable development. Dr. Hatda added that the Mekong "is confronted with increasing risks from climate change, extreme floods, droughts, and development activities." The grant, running through 2024, was slated to improve data sharing for impact monitoring, forecasting, infrastructure operations, basin planning, and reporting on the state of the Lower Mekong Basin by supporting disaggregated data collection and mapping on gender and vulnerability. The MRC-Mekong and MRC-USA — supported by USACE — had already conducted several exchange visits contributing to better knowledge and practices in the fields of planning, disaster management, and stakeholder engagement. Under the new grant, remote sensing and other technologies were expected to help the MRC-Mekong implement Procedures for Water Use and Monitoring along with sharing Lower Mekong conditions with Cambodian, Lao, Thai, and Vietnamese publics.[481]

Lao-American Nutrition Initiative Buildings Handed over to Lao PDR – September 2021

On 16 September 2021, U.S. Ambassador, Dr. Peter M. Haymond, handed over new facilities and training spaces to Minister of Health Dr. Bounfeng Phoummalaysith at the MOH's Center of Nutrition as part of the United States' Lao-American Nutrition Initiative (LANI). The ceremony incorporated the official opening of several training spaces located inside the Center; these were equipped using funding from USAID through the Applied Nutrition Research Capacity Building project implemented by Catholic Relief Services. The USACE, through USINDOPACOM, constructed LANI's facilities in three phases. The first two phases of construction included a Clinical Translational Research Center Building, Teaching Administration and Cafeteria building, and infrastructure development to provide power and water on site. The 2021 ceremony saw the official handover of the third and final phase, which consisted of a dormitory, a traditional "Lao-style" demonstration kitchen, and a combined garden and greenhouse. The total construction value of the project was US$4.6 million. These buildings and training spaces will be a platform for nutrition, health care, and research professionals

to collaborate on finding solutions to improve nutrition in Lao PDR. Indiana University, Purdue University, National Nutrition Strategy and Plan of Action, University of Health Sciences, and the Lao Tropical and Public Health Institute co-developed training focused on improving capacity to conduct and utilize nutrition research. The Center of Nutrition will also focus on anthropometrics, improving nutrition understanding and research quality, and improving coordination on nutrition research among government ministries, academics, NGOs, and private sector actors.[482]

U.S. Delivers Ambulances to Ministry of National Defense – October 2020

In a ceremony highlighting growing Lao-U.S. security assistance cooperation, U.S. Ambassador to Lao PDR Dr. Peter M. Haymond handed over nine Ford Everest field ambulances to Deputy Minister of National Defense Major General Aesamay Leuangvanxay on 1 October 2020 at the MND. The United States provided the ambulances through its Foreign Military Financing program, and this delivery was the first-ever grant of its kind from the U.S. DoD to Lao's MND. The field ambulances, spare parts, and associated training were valued at over US$600,000 dollars and were expected to assist LPA soldiers responding to medical emergencies and transporting injured personnel. They can be expected to improve Lao troops' ability to respond to disaster scenarios in remote areas of the country. "Our two militaries worked together to identify additional equipment needed for the Lao People's Army medical and humanitarian aid and disaster response operations. The result of that collaboration is what brings us here today. We are proud that these vehicles will help the Lao People's Army respond to future disasters, whatever they may be, to help the Lao people," Ambassador Haymond said. This grant assistance followed discussions in the U.S.-Lao Bilateral Defense Dialogue (BDD), the most recent of which focused on public health and increasing military medical partnerships, as well as civil-military operations and disaster relief.[483]

14th Annual Lao-U.S. Bilateral Defense Dialogue – December 2019

On 5 December 2019, senior MND officials met with U.S. Ambassador Rena Bitter and senior officials from USINDOPACOM for the 14th Lao-United States BDD. Brigadier General Kenchanh Nanthalangsy, Director General of the Foreign Relations Department for the MND, hosted the dialogue in Vientiane. Major General Suzanne Vares-Lum, USINDOPACOM Mobilization Assistant, was the senior U.S. military officer at the talks. Representatives from the MOFA and the U.S. Public Health and Military Engagement teams also attended the meetings, where Ambassador Bitter opened the talks. "Military cooperation between the United States and the Lao PDR is an important component of our two countries' Comprehensive Partnership," said Ambassador Bitter. The goal of a BDD is to develop and improve defense cooperation programs to enhance the relationship between defense forces and promote regional military cooperation. The 2019 BDD focused on advancing public health and military medical partnerships, as well as civil-military operations such as removal of UXO and disaster relief. Discussions on joint training and education opportunities continued, with the goal of expanding professional military education and English-language training, which assists Lao military integration with other ASEAN partners and facilitates Lao MND participation in regional conferences and senior-level meetings.[484]

International/Foreign Relations

The present Lao foreign policy is extremely open and integrates efforts to be on good terms with every nation. This openness marks a significant shift from historic policy, determined as it has been by Lao PDR's location, size, and history. After the formation of its current government system in 1975, the country attempted to maintain a Marxist-Leninist outlook that linked it with other communist and socialist states. Key among these ties was

the "special relationship" with Vietnam and, by extension, the Soviet Union, despite the potential for this preference to foment tensions between Laos and China. Since 1991, the country has expanded its slate of engagements. Although, by necessity, Lao maintains close ties with Cambodia, China, Thailand, and Vietnam, it has also built increasingly strong relationships with other regional and extra-regional players, especially Australia, France, Japan, Pakistan, Saudi Arabia, Sweden, and Türkiye. Moreover, it has expanded its multilateral engagements since the latter 1990s by joining ASEAN (1997), the East Asia Summit (2005), and the World Trade Organization (2013). Officially, the government has dedicated itself to a foreign policy of peace, independence, friendship, and non-alignment, with the ruling LPRP designated the sole instrument for achieving those conditions.[485]

As of 2024, Lao PDR maintains diplomatic missions in Australia, Austria, Belgium, Brunei, Cambodia, China, Cuba, France, Germany, Hungary, India, Indonesia, Japan, Kuwait, Malaysia, Mongolia, Myanmar, North Korea, Philippines, Russia, Singapore, South Korea, Sweden, Switzerland, Thailand, the United Kingdom, the U.S., and Vietnam. It has permanent missions at ASEAN in Jakarta and at the UN in New York and Geneva.[486]

ASEAN

Although Lao PDR initially viewed ASEAN, as founded in 1967, as an enemy to Laos' communist system and an instrument of U.S. imperialism, by 1986, when Vientiane launched the New Economic Mechanism to shift from a planned economy to a market-oriented system, the importance of integrating with its neighbors influenced Laos to shift its stance somewhat. Consequently, ideological differences began to be less important than economic imperatives, and, in 1992, Lao PDR signed the "Bali Treaty," or the Treaty of Amity and Cooperation in Southeast Asia, and acquired observer status in ASEAN. It became a full member in 1997 and has deepened its integration within ASEAN's structures in the hopes of transforming its small, land-locked economy into a key land link among the other economies of Southeast Asia. Indeed, in its 7th NSEDP (2011-2015), Lao PDR explicitly set goals for regional economic integration to include developing a legal system to support the establishment of a common market. The 8th NSEDP (2016-2020) sustained these targets for regional integration. In addition to the economic benefits Lao PDR has recouped from its membership in ASEAN, it has also gained political and diplomatic support, especially in terms of human resources development of its own cadres, and it has completed domestic reforms that have brought rule-of-law and governance achievements. Lao PDR held the ASEAN chair in 2004-2005 and 2016,[487] and Vientiane assumed the chair again in 2024. For this most recent stint, Lao PDR set the theme of "ASEAN: Enhancing Connectivity and Resilience." During its year-long tenure, Lao PDR hopes to intensify ASEAN cooperation under the "three community pillars" by promoting infrastructure connectivity, narrowing development gaps, promoting greater economic integration and people-to-people exchanges, and further strengthening ASEAN's relations with external partners in order to solidify recovery from recent shocks and build resilience in the face of climate change, natural disasters, and security threats.[488]

China

After tensions prevailed during Laos' period of preferring Vietnamese and Soviet ties, the past two decades have seen Vientiane and Beijing build strong trade, infrastructural, and people-to-people contacts. Trade between China and Laos has grown immensely, and China accounts for more than one-quarter of Laos' total trade. Moreover, since the late 1990s, China has provided Laos with grants, low-interest loans, technical assistance, foreign investment, and high-profile development projects. This investment came as both China and Lao PDR embraced notions of "state capitalism" and single-party rule.[489] The two-way trade volume between the two countries was estimated at

US$4.15 billion in 2021 and had been increasing by approximately 20% yearly for several years before the COVID-19 pandemic. China takes more than 80% of Laos' agricultural exports and is also the main source of infrastructure financing - over US$16 billion since 1989. Lao PDR hosts at least 815 projects funded by China (mostly under the BRI).[490] Among the key BRI projects is the US$6 billion Laos-China rail project to connect Vientiane with Kunming, in southwestern China. Nonetheless, China does not rank as one of Laos' top sources of official development assistance (ODA) because Beijing's funding is largely made up of loans with projects focused on commercial elements. Chinese companies reportedly have invested US$7 billion toward dams, mines, rubber plantations, and special economic zones in the Lao PDR.[491]

Thailand

Historic tensions between Laos and Thailand date to the 18th century, with Thai invasions of what is today Laos, the departure of resources, people, and knowledge from Laos to Thailand, and a propensity of some Thai to characterize Laotians as low-class. The current relationship is less exploitative and antagonistic, and cultural bridges have been built that link the people of the two countries even when their governments are in disagreement. Indeed, in the past three decades, Thailand has been a major source of foreign investment in Lao PDR with trade in goods and services across the Mekong River coming to symbolize political realignment for Laos. Nonetheless, the bridges across the river that promoted trade also have been known to cause tensions as poorer or ethnic minority Laotians have sought opportunity in Thailand. Resolving these issues remains a key goal of the two neighbors.[492] As of a 2023 state visit by the Thai Prime Minister to Vientiane, Thailand stood as the largest trading partner of Lao PDR as well as the third largest source of foreign investment; in 2022, Thai investment was valued at US$43.7 billion. Thailand also imports electricity from Lao PDR.[493]

Key irritants in the relationship relate to irregular migration and border demarcation. The two countries set up a joint border committee in 1996, and by 2015, they had demarcated nearly all 702 km (436 miles) of the shared land border, with only spots where historic military clashes had erupted left to be demarcated. The 1,108-km (688-mile) river boundary was proving significantly more difficult to resolve.[494] In fact, in latter 2021, Laos' Foreign Minister reported that, of the total 1,835 km (1,140 miles) of border, only 37% was fully demarcated.[495] In addition, hundreds of thousands of Laotians generally work in Thailand legally and illegally. The countries have signed MOUs on how to address this issue,[496] but the COVID-19 pandemic threw cross-border labor migration into disarray. As of 2019, of the 900,000 Laotian laborers working outside the country, the greatest number were in Thailand, where they were employed in domestic work, construction, manufacturing, agriculture, or entertainment work. However, as the pandemic hit, more than 200,000 Laotian laborers returned from Thailand. This mass return flooded quarantine centers, marked a halt to remittances that had been lifelines for many families, and increased Lao PDR's poverty rate suddenly.[497] By 2024, after the pandemic had nominally ended, Thailand's Ministry of Labor published fresh estimates of the number of Laotian laborers in the economy; they put that number at 230,000 but said the country could need an addition 400,000 in the coming years as Thai society ages and working-age people become a smaller share of the population. The system of visas and checks to ensure migrant laborers are not abused will come under strain as demand for Laotian labor increases in Thailand.[498]

United States

The United States established full diplomatic relations with Laos in 1955, and the U.S. supported the country's royalist government during the Laotian civil war. For nearly a decade beginning in 1964, Laos was subjected to heavy U.S. bombing as part of the wider war in Indochina. From the rise of the communist

government in 1975, U.S.-Laos relations deteriorated and only recovered after the Soviet Union's collapse, which drove Lao PDR's shift in diplomatic and trade relations. Full U.S.-Laos diplomatic relations were restored in 1992 although it would be 20 years before a U.S. Secretary of State would visit; Secretary of State Clinton's 2012 visit was followed by two visits in 2016 by Secretary of State Kerry and a visit by President Obama, the first U.S. President to visit, in September 2016. The President's 2016 visit saw he and Laos' President Bounnhang Vorachit announce a Comprehensive Partnership.

The U.S. and Lao PDR cooperate on health, child nutrition, education, environmental protection, trade liberalization, legal reform, counter-narcotics, law enforcement, humanitarian assistance, and English-language training. The 2009 launch of the Lower Mekong Initiative eventually grew into the Mekong-U.S. Partnership, initiated in 2020. Along with the other countries of the lower Mekong River Basin, Lao PDR works with the U.S. on human, economic, and environmental security in relation to the river, its waters, and its ecosystem. The U.S. and Lao PDR also continue to resolve legacy issues from the 20th century wars in Indochina; these issues include clearance of UXO and accounting for missing U.S. personnel. A large part of U.S. bilateral assistance to Lao PDR is devoted to improving health and education, accelerating economic and trade reforms, strengthening governance and rule of law, and building resilience to climate change. U.S. exports to Lao PDR include metals, vehicles, and agricultural products. U.S. imports from Laos include apparel, inorganic chemicals, agricultural products, and precious metals. The two countries signed a Trade and Investment Framework Agreement in February 2016.[499]

Vietnam

For much of history, Laos relied on Vietnam for a route to the sea, while Vietnam used Laos' mountainous region as a strategic asset for challenging Thai hegemony in the Mekong River Valley. While the importance of these geographic factors has lessened in the 21st century, the "special relationship" between the Vietnamese and Laotian ruling parties has remained a key to ensuring that Vientiane is bound more closely to Hanoi than to any other stakeholder, albeit sometimes in unpublicized ways.

Indochinese solidarity in socialism was formalized in July 1977, when Vientiane and Hanoi signed the 25-year Treaty of Friendship and Cooperation. Among the major influences on Lao PDR during this period were the hundreds of Vietnamese advisers who mentored their Laotian counterparts throughout Laos' government ministries and the hundreds of Laotian party staff and technicians who studied in Vietnam's Marxist-Leninist institutes or technical schools. During this period, in 1986, the two countries finished demarcating their border, and in early 1989, Vietnamese troops that had been stationed in Laos continuously since 1961 were withdrawn. After Lao PDR formally relinquished Marxist-Leninist ideology and the 25-year treaty expired, Laos' New Economic Mechanism opened the door to rapprochement with other regional states, and Vietnam become one of many partners even as it has remained a mentor and emergency ally.[500]

Among the major aspects that continue to ensure strong bilateral ties between Vientiane and Hanoi are "twinning" arrangements between Laotian and Vietnamese provinces and districts. They ensure that "sister" local governments in the two countries work directly together rather than going through the conduit of national parties, and they intertwine the countries' lower-level administrative zones via infrastructure, culture, and trade.[501] During a November 2023 meeting of the Laos-Vietnam Cooperation Committee, a Vietnamese official noted that Vietnam continues to deliver development and economic aid to Lao PDR via more than 400 investment projects in infrastructure, social welfare, education, and culture.[502] In 2022, two-way trade between the countries was valued at more than US$1.7 billion, an increase of 24% year-on-year after four years of roughly US$1.1 billion trade value.[503]

Participation in International Organizations

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

Asian Development Bank (ADB), ASEAN Regional Forum (ARF), Association of Southeast Asian Nations (ASEAN), Colombo Plan (CP), East Asia Summit (EAS), Food and Agriculture Organization of the United Nations (FAO), Group of 77 (G-77), Institute of Catastrophe Risk Management (ICRM), Inter-Parliamentary Union (IPU), International Atomic Energy Agency (IAEA), International Bank for Reconstruction and Development (IBRD), International Civil Aviation Organization (ICAO), International Criminal Police Organisation (INTERPOL), International Development Association (IDA), International Finance Corporation (IFC), International Federation of Red Cross and Red Crescent Societies (IFRC), International Fund for Agricultural Development (IFAD), International Labour Organization (ILO), International Monetary Fund (IMF), International Olympic Committee (IOC), International Organization for Standardization (ISO - subscriber), International Organization of La Francophonie (OIF), International Telecommunications Union (ITU), Multilateral Investment Guarantee Agency (MIGA), Non-Aligned Movement (NAM), Organisation for the Prohibition of Chemical Weapons (OPCW), Permanent Court of Arbitration (PCA), United Nations (UN), United Nations Conference on Trade and Development (UNCTAD), United Nations Educational, Scientific, and Cultural Organization (UNESCO), United Nations Industrial Development Organization (UNIDO), Universal Postal Union (UPU), World Customs Organization (WCO), World Federation of Trade Unions (WFTU, NGOs), World Health Organization (WHO), World Intellectual Property Organization (WIPO), World Meteorological Organization (WMO), World Trade Organization (WTO), World Tourism Organization (UNWTO).

Lao PDR was not contributing to any UN peacekeeping missions as of 30 September 2023.[504]

Force Protection/Pre-Deployment Information

The following information is provided for pre-deployment planning and preparations; unless otherwise noted, the information in this section can be found on the U.S. State Department's Laos International Travel Information page.[505] 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 Lao PDR (www.fcg.pentagon.mil). All official travel and personal travel for active duty personnel must be submitted through an APACS request. Contact information for the Defense Attaché Office can be found in the FCG if you have additional questions.

Passport/Visa

U.S. travelers arriving in Laos must have a passport with at least six months validity remaining from the date of entry and at least two blank visa pages.

Tourist visas are required. Tourist visas on arrival are available at certain ports of entry and generally permit a stay of 30 days. Tourist visas may be extended up to an additional 60 days through the Department of Immigration in Vientiane. At certain ports of entry, an eVisa may be used. To obtain a visa in advance, and for other information about Lao entry requirements, please contact the Embassy of the Lao People's Democratic Republic, 2222 S St. NW, Washington DC 20008, tel: 202-332-6416, fax: 202-332-4923.

Business visas can only be arranged in advance. After arrival, a business visa usually may be extended for one month. Please contact the Embassy of the Lao People's Democratic Republic for specific information.

All travelers must have a valid entry stamp and be within authorized period of stay, or have an exit visa, to depart Laos. Those not abiding by these conditions will be fined and may be arrested.

For lost / stolen U.S. passports, travelers must obtain both a replacement passport and an exit visa. The U.S. Embassy can issue a limited validity replacement passport expeditiously; however, the Lao PDR Government requires 3 to 5 working days to issue an exit visa. Contact the Foreigner Control Office at the Department of Immigration in Nong Buek for an exit visa. The office is located on NongBuek-Dongnaxok Rd. Tel: +856 21 212 520. If a lost passport causes a traveler to exceed the authorized period of stay in Laos, such travelers may be subject to overstay fines unless prior arrangements with Immigration are made.

Laos does not allow its citizens to have dual nationality. Under Lao law, Lao citizens who have been outside of Laos for extended periods or who have taken a second nationality are no longer considered to be Lao citizens. Lao immigration officials may deny entry to or exit from Laos for individuals using multiple passports.

Safety and Security

The most recent U.S. State Department Travel Advisory for Lao PDR is dated 24 July 2023.

Lao PDR (country-wide) - Level 2: Exercise Increased Caution

- Exercise increased caution due to civil unrest. Some areas have increased risk.
- Do not touch unknown metal objects and avoid traveling off well-used roads, tracks, and paths due to risk of UXO.

Xaisomboun Province - Level 3: Reconsider Travel

- There is a continued threat of violence in Xaisomboun Province. The U.S. Government has limited ability to provide emergency services to U.S. citizens in Xaisomboun Province as U.S. Government employees must obtain special authorization to travel there.

Areas on the Border with Myanmar (Burma) - Level 2: Exercise Increased Caution

- Bandits, drug traffickers, and other people pursuing illegal activities operate in these areas, as do armed groups opposed to the Burmese [Myanmar] government.

Areas of Savannakhet, Xiengkhuang, Saravane, Khammuane, Sekong, Champasack, Huaphanh, Attapeu, Luangprabang, and Vientiane provinces, as well as along Route 7 - Level 2: Exercise Increased Caution

- There are large numbers of unexploded bombs in these areas left over from the Indochina War.

General Advice

The Embassy recommends U.S. citizens reconsider travel to all of Xaisomboun Province. U.S. Embassy personnel are restricted from traveling to Xaisomboun Province due to past incidents of violence.

There are large amounts of UXO in Laos left over from the Indochina War. UXO may be found in some parts of Savannakhet, Xiengkhuang, Saravane, Khammuane, Sekong, Champasack, Huaphanh, Attapeu, Luangprabang, and Vientiane provinces. In particular, UXO may be found along Route 7 (from Route 13 to the Vietnam border), Route 9 (Savannakhet to the Vietnam border), and Route 20 (Pakxe to Saravane). Never pick up unknown metal objects and avoid traveling off well-used roads, tracks, and paths.

Exercise caution in remote areas along the border with Myanmar (Burma). Bandits, drug traffickers, and other people pursuing illegal activities operate in these border areas.

Petty thieves target foreigners for pickpocketing (especially in tourist hubs) and theft of unattended property, including in vehicles. Thieves on passing motorcycles snatch purses. Petty theft increases during major holidays. Residential break-ins also occur.

In tourist areas, shop owners may rent

motorbikes to tourists, have someone "steal" the motorbike, and charge the tourist for the cost of the "stolen" motorbike. Be cautious of rental arrangements and never provide a passport as collateral.

Laos' tourism industry infrastructure is very limited, especially outside major cities. Tourists participate in activities at their own risk. Emergency response and subsequent appropriate medical treatment is not available in-country. U.S. citizens are encouraged to purchase medical evacuation insurance.

Victims of Crime

U.S. citizen victims of sexual assault are encouraged to contact the U.S. Embassy for assistance. Report crimes to police in the place where the incident took place. Victims of crime may also contact the Tourist Police at 021-251-128. Tourist Police generally speak English. Contact the U.S. Embassy at 856-21-48-7000; after hours call 856-21-48-7600. Remember that local authorities are responsible for investigating and prosecuting the crime.

The U.S. Embassy can:

- Help find appropriate medical care;
- Assist in reporting a crime to the police;
- Contact relatives or friends with written consent;
- Explain the local criminal justice process in general terms;
- Provide a list of local attorneys;
- Provide our information on victim's compensation programs in the U.S.;
- Provide an emergency loan for repatriation to the United States and/or limited medical support in cases of destitution;
- Help find accommodation and arrange flights home;
- Replace a stolen or lost passport.

Domestic Violence: U.S. citizen victims of domestic violence are encouraged to contact the Embassy for assistance.

Emergency Contact Information

U.S. Embassy Vientiane

Thadeua Road, Km 9, Ban Somvang Thai
Hatsayphong District, Vientiane, Lao PDR
Tel: +856 21 48 7000
Emergency: +856 21 48 7600
Fax: +856 21 48 7040
Email: *CONSLAO@state.gov*
Website: *https://la.usembassy.gov/*

Currency Information

Laotian kip, LAK or ₭

LAK 1.00 – US$0.000048 or LAK 20,842.5 = US$1.00 (as of 9 February 2024)

Travel Health Information

The CDC provides guidance that all travelers to Lao PDR should be up to date on routine vaccinations. The following are additional recommendations for travel to Lao PDR. The information in Tables 3 and 4 is taken directly from the CDC website under the Travelers Health Section (*https://wwwnc.cdc.gov/travel/destinations/list/*).[506]

Health Alerts for Lao PDR: At the time of writing this handbook (February 2024), there are no health risk alerts.

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

Eat and Drink Safely

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

Eat

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

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

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

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

Take Medicine

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

Prevent Bug Bites

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

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

For protection against ticks and mosquitoes:

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

For protection against mosquitoes only:

Products with one of the following active ingredients can also help prevent mosquito bites. Higher percentages of active ingredient provide longer protection.
- DEET
- Picaridin (also known as KBR 3023, Bayrepel, and Icaridin)
- Oil of lemon eucalyptus (OLE) or para-Menthane-3,8-diol (PMD)
- IR3535
- 2-undecanone

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

Safety and Security

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

Routine Vaccines	All travelers should be up to date on all routine vaccines before every trip. Some of these vaccines include: • Chickenpox (Varicella) • Diphtheria-Tetanus-Pertussis • Flu (influenza) • Measles-Mumps-Rubella (MMR) • Polio • Shingles
COVID-19	All eligible travelers should be up to date with COVID-19 vaccines.
Hepatitis A	Recommended for unvaccinated travelers one year old or older going to Lao PDR. Infants 6 to 11 months old should also be vaccinated against Hepatitis A. The dose does not count toward the routine 2-dose series. Travelers allergic to a vaccine component or who are younger than 6 months should receive a single dose of immune globulin, which provides effective protection for up to 2 months depending on dosage given. Unvaccinated travelers who are over 40 years old, immunocompromised, or have chronic medical conditions planning to depart to a risk area in less than 2 weeks should get the initial dose of vaccine and at the same appointment receive immune globulin.
Hepatitis B	Recommended for unvaccinated travelers younger than 60 years old traveling to Lao PDR. Unvaccinated travelers 60 years and older may get vaccinated before traveling.
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 Lao PDR take prescription medicine to prevent malaria. Depending on the medicine you take, you will need to start taking this medicine multiple days before your trip, as well as during and after your trip. Talk to your doctor about which malaria medication you should take.
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.
Rabies	Rabid dogs are commonly found in Lao PDR. If you are bitten or scratched by a dog or other mammal while in Lao PDR, 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.
Typhoid	Recommended for most travelers, especially those staying with friends or relatives or visiting smaller cities or rural areas.

Table 3: CDC Travel Health Information for Vaccine- and Prophylaxis-Preventable Diseases in Lao PDR

Avian Influenza	Avian influenza spreads to people who are around, touching, or working with infected poultry, including farms or live-animal markets. To avoid infection, avoid domestic and wild poultry.
Chikungunya	Transmitted by the bite of infected mosquitos. Avoid bug bites.
Dengue	Transmitted by the bite of infected mosquitos. Avoid bug bites.
Hantavirus	Contracted by breathing in air or accidentally eating food contaminated with the urine, droppings, or saliva of infected rodents, by the bite of an infected rodent, or, less commonly, by being around someone sick with hantavirus. Avoid rodents and areas where they live. Avoid sick people.
Leptospirosis	Contracted by touching urine or other body fluids from an animal infected with leptospirosis, by 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. Avoid contaminated water and soil.
Schistosomiasis	Contracted during wading, swimming, bathing, or washing in contaminated freshwater streams, rivers, ponds, lakes, or untreated polls. To avoid infection, avoid contaminated water.
Tuberculosis	TB is transmitted by inhaling TB bacteria that is in the air from an infected and contagious person coughing, speaking, or singing. Avoid sick people.
Zika	Transmitted by the bite of an infected mosquito or by an infected pregnant woman to her unborn baby. Avoid bug bites.
Typhoid	Recommended for most travelers, especially those staying with friends or relatives or visiting smaller cities or rural areas.

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

Sendai Framework

The Sendai Framework for Disaster Risk Reduction 2015-2030 is the global blueprint and 15-year plan to build the world's resilience to natural disasters.[507] The Sendai Framework is the successor instrument to the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters.[508] Adopted at the Third United Nations World Conference on Disaster Risk Reduction in Sendai, Japan, in 2015, the Framework aims to achieve the substantial reduction of disaster risk and losses in lives, livelihoods, and health and in the economic, physical, social, cultural, and environmental assets of persons, businesses, communities, and countries by 2030.[509]

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

The Seven Global Targets include:

- Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality rates in the decade 2020-2030 compared to the period 2005-2015.
- Substantially reduce the number of affected people globally by 2030, aiming to lower average global figure per 100,000 in the decade 2020 -2030 compared to the period 2005-2015.
- Reduce direct disaster economic loss in relation to global GDP by 2030.
- Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.
- Substantially increase the number of countries with national and local DRR strategies by 2020.
- Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this Framework by 2030.
- Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030.[510]

The Four Priorities of Action include:

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

Figure 28 shows the Sendai DRR Framework.[511]

In Lao PDR's 2023 Voluntary National Report for the Midterm Review of Implementation of the Sendai Framework, the MLSW described the sustained challenge the country confronts in meeting Sendai targets because of the scale and frequency of flooding and storms amidst the COIVD-19 pandemic. The Ministry cited budgetary shortfalls as among the roots of a failure to shift focus toward preparedness and away from immediate relief. Unless otherwise noted, the following descriptions come from the Midterm Voluntary Review.[512]

Priority 1 - Understanding disaster risk

Two-thirds of Laos' people, mostly those in remote areas, are still not covered by an EWS. There also remain obstacles – e.g., language barriers or inadequate tools. Limited technical knowledge, facilities, and human resources to generate accurate, timely, and usable climate forecasts, products, and information are obstacles to the operation of the National Meteorological and Hydrological Services, a situation that impedes risk assessment process as well as early warning capacity.

Key success was achieved in upgrading 30 hydrometeorological stations to predict weather and climate events with more efficiency. The capabilities of the warning system of the Weather Bureau have grown to warn people to remain alert for flooding and landslides following several

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

Scope and Purpose
The present framework will apply to the risk of small-scale and large-scale, frequent and infrequent, sudden and slow-onset disasters, caused by natural or manmade hazards as well as related environmental, technological, and biological hazards and risks. It aims to guide the multi-hazard management of disaster risk in development at all levels as well as within and across all sectors
Expected Outcome
The substantial reduction of disaster risk and losses in lives, livelihoods, and health and in the economic, physical, social, cultural, and environmental assets of persons, businesses, communities, and countries
Goal
Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political, and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience

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

Priorities for Action			
There is a need for focused action within and across sectors by States at local, national, regional, and global levels in the following four priority areas.			
Priority 1 Understanding disaster risk	**Priority 2** Strengthening disaster risk governance to manage disaster risk	**Priority 3** Investing in disaster risk reduction for resilience	**Priority 4** Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation, and reconstruction
Disaster risk management needs to be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics, and the environment	Disaster risk governance at the national, regional, and global levels is vital to the management of disaster risk reduction in all sectors and ensuring the coherence of national and local frameworks of laws, regulations, and public policies that, by defining roles and responsibilities, guide, encourage, and incentivize the public and private sectors to take action and address disaster risk	Public and private investment in disaster risk prevention and reduction through structural is non-structural measures are essential to enhance the economic, social, health, and cultural resilience of persons, communities, countries, and their assets, as well as the environment. These can be drivers of innovation, growth, and job creation. Such measures are cost-effective and instrumental to save lives, prevent and reduce losses, and ensure effective recovery and rehabilitation	Experience indicates that disaster preparedness needs to be strengthened for more effective response and to ensure capacities are in place for effective recovery. Disasters have also demonstrated that the recovery, rehabilitation, and reconstruction phase, which needs to be prepared ahead of the disaster, is an opportunity to "Build Back Better" through integrating disaster risk reduction measures. Women and persons with disabilities should publicly lead and promote gender-equitable and universally accessible approaches during the response and reconstruction phases

Figure 28: UN Sendai Framework for Disaster Risk Reduction 2015-2030

days of rainfall. The National Water Resources Information Center was established and upgraded 163 meteorological and hydrological stations. The National Earthquake Information Center was also set up, built 15 new earthquake monitoring stations across the country, and upgraded two stations.

DSW's NDMO plays a large role in facilitating data development, information sharing, and collaborative decision making even as the period 2018–2022 saw a great increase in the volume of survey data, standardized assessments, and mapping conducted by different ministries, supported by affected communities and NGOs. The development of a cross-departmental national data infrastructure is ongoing; projects include upgrading and deploying the LaoDi Database to provide the evidence base to support better policymaking. UNDP has supported upgrades to LaoDi.

The MONRE has helped in the development of village disaster management plans and has focused on extending disaster maps and warning systems beyond flooding to include multiple hazard types and on developing decision support tools with the Lao PDR Rice Millers' Association.

The MLSW helped establish a community-based alert system by launching a pilot project to use mobile alert messaging tools through mobile telephone service providers. Warning messages are also broadcast by using sound systems and loudspeakers (village loudspeakers).

The National Advanced Fire and Resource Institute and WFP launched an initiative to raise disaster risk understanding to increase rain-fed rice productivity, enhance food security, and improve rural livelihoods in 2018. It installed seven weather stations in seven climate-vulnerable villages across the country. The stations utilize the information for real-time weather forecasting activities. In addition, a seasonal Dynamic Crop Calendar was developed as part of community information tools. The calendars are placed on the wall of the Office of Village Administration and were particularly appealing to climate-vulnerable villagers to better manage risks associated with climate variability and change. The Dynamic Crop Calendar mobile phone application also made the crop calendars and climate advisories accessible to decision makers at the province, district, and village levels, as well as the target groups. During the 2017-2019 period, 21 village-specific Dynamic Crop Calendars and 24 weekly agricultural advisory bulletins were produced, and the Dynamic Crop Calendar has been integrated into the curricula of climate and agriculture field schools that reached 1,084 farmers (406 women).

MLSW undertook Vulnerability Analysis and Mapping services amidst 2019 floods to allow stakeholders to participate in disaster relief and recovery efforts. The Ministry of Agriculture and Forestry (MAF) also implemented FAO-supported vulnerability assessment training in six provinces. The Atlas of Agricultural Livelihoods and Climate Risk of Lao PDR for 2019–2020 was developed under the leadership of MAF and FAO. The Atlas presents the first national dataset on livelihoods and farmers' capacity to adapt to climate change. Maps include satisfaction of farmers' basic needs, farmers' access to the resources needed for innovation, and farmers' capacity to translate innovation into action. The Atlas is available online in the Land Resources Information Management System.

MONRE developed Disaster Risk Maps in 18 villages in Southern Vientiane to visualize real-time sensor information, such as changing water levels in flood gauges, monitoring wells, and stations. The Ministry conducted Climate Vulnerability Assessments supported by UN-Habitat. The risk maps present:

- Risk and vulnerability assessment of drought,
- Forecast temperature and rainfall quantity over the periods of three and six months, and
- Agriculture pests and disease outbreak risks to improve pest management results.

According to the Disaster Management Law, the Secretariat of the DMC at each administrative level plays a significant role in developing a Disaster Risk Map with partners across sectors, organizations, and local authorities to ensure local groups are invited to join. The Map

supports cities' and communities' management and mitigation strategies.

MONRE also established safety zone signboards and developed a manual of community-based disaster risk management as well as an SOP for coordinating early warning.

The Asian Disaster Preparedness Center and the World Meteorological Organization are implementing the Climate Risk and Early Warning Systems (CREWS) Initiative in Lao PDR in the form of the "Reinforcing the Capacities of Meteorological and Hydrological Services and Enhancing the Early Warning Systems in Cambodia and Lao PDR" project. The objective of the CREWS Lao PDR is to enhance the capacities of national and regional stakeholders to provide timelier and more precise forecasts and warnings.

Priority 2 – Strengthening disaster risk governance to manage disaster risk

The adoption of the 2019 Disaster Management Law empowered the NDMC to play a vital role in implementing, monitoring, and evaluating the National Strategy throughout the country. A key action was to restructure the disaster management and risk reduction system to develop a more robust prevention, post-disaster, and preparedness and response system. The DSW was given clear legal mandates and authority according to the Decree on Disaster Management Fund No. 631/GOL, the Decree on Organization and Roles of Disaster Management Committee No. 239/PM, and the National Strategy, for cultivating a whole-of-society approach to DRR and providing national leadership and policy direction to make implementation more efficient, effective, and up to date. The Disaster Management Law makes special provision for the participation of international development partners, civil society, and NGOs to support the ministries on capacity building activities and local communities and vulnerable groups. To the government, input from development partners is a key part of community-based DRR because they work with different local communities on risk management by taking account of the needs of vulnerable groups.

The NSDRR was developed by MLSW and the NDMC with technical and financial support from the Asian Development Bank for research conducted during 2019-2020. The NSDRR aims to 1) prevent and reduce disaster risks, 2) prepare and coordinate for emergency response, and 3) restore economic, social, and environmental infrastructure after a disaster. The strategy set the NDMC and line ministries on the path towards a more competent disaster management governance structure for stronger engagement in coherent planning and collaboration towards impactful results. In the first year, the National DRR Action Plan targeted development of local Disaster Preparedness and Response Plans for two provinces and four districts.

Disaster management and climate change were mainstreamed into the 7th, 8th, and 9th NSEDPs and concerned sectoral development plans under the framework of Sustainable Development and Poverty Alleviation. The 9th NSEDP (2021–2025) seeks to advance disaster risk prevention, mitigation, and recovery through seven DRR-related Strategic Priorities and 12 objectives as a means of saving lives and alleviating disaster impacts, while promoting sustainable and inclusive growth, human capital investment, infrastructure development, and progress towards the smooth transition from Least Developed Country status.

In 2016, Lao PDR submitted its NDC under the Paris Climate Agreement and launched its climate change action plan. The 2010 National Strategy on climate change served as the framework for mainstreaming climate change in the 7th NSEDP. The overall goal was to prioritize both economic development and poverty reduction in the national response to the impacts of climate change. In public works and transport and in the agriculture and forestry sectors, the annual drought and flood prevention action plan was prepared as well as a plan to deal with pest outbreaks.

According to the Disaster Management Law, the DMC at each administrative level shall

create a Disaster Management Plan, including urban planning, land use planning, provision of settlements and livelihoods, construction of infrastructure, and development projects, to become more resilient to disasters. The NDMC plays a key role in developing operation plans and rebuilding efforts to deal with inefficiency and inequality of the recovery. The PDMC is the FP for the implementation of disaster management resources. PDMCs include stakeholders from the police and armed forces, the public sector, civil society, and the LRCS. However, PDMCs tend to lack knowledge and skills to handle emergency operations and manage complicated technical cases.

Priority 3 – Investing in disaster reduction for resilience

The government has the following financial tools for DRM

- State Reserve Fund, State Budget Department, Ministry of Finance
- National Contingency Fund, State Budget Department, Ministry of Finance
- Social Welfare and Emergency Fund, DSW, MLSW
- Road Maintenance Fund, MPWT
- Provincial Emergency Funds (Provinces)

In 2016, the total resources allocated to these funds were LAK 800.6 billion (US$38.4 million).

In 2019, the government participated in a pilot project on the first regional catastrophe risk pool under the Southeast Asia Disaster Risk Insurance Facility (SEADRIF). The proposed catastrophe risk pool is designed as a reinsurance-backed disaster liquidity facility, based on an upfront premium and providing quick payouts when eligible disaster events occur. Lao PDR purchased disaster insurance under the project in the value of US$5 million for the three-year term beginning in 2021.

The government allocated many billions of LAK of the state budget for post-disaster rehabilitation focusing on public works and transport, agriculture and forestry, health, education, and sport. Concerned sectors at the central and provincial levels seek support from international partners to implement emergency aid and recovery programs after a disaster, including strengthening disaster and climate change management projects.

To ensure that DRR and CCA are integrated in national and local DRR strategies, the Decree on the DMF set out the principles and regulations on the management and utilization of the Fund. The principles and regulations on the management and utilization of the DMF aim to mobilize and accumulate funds from domestic and foreign sources to finance emergency assistance, repair critical infrastructures, undertake search and rescue, and to bring disaster victims back to normal or better lives.

Given the budget constraints, investing in resilience in Lao PDR has been made possible by financial assistance from major donors such as the Asian Development Bank, the World Bank, Global Facility for Disaster Reduction and Recovery, and multi-donor trust funds as well as international NGOs. In 2017, funding of US$30 million was granted by the World Bank to implement the Lao PDR Southeast Asia DRM Project, a massive investment on DRR in a comprehensive manner focusing on flood risks, including integrated urban flood risk management, resilient urban planning, and financial planning for disaster resilience.

Priority 4 – Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation, and reconstruction

MLSW, in partnership with WFP, organized Warehouse Management and Emergency Distribution training to strengthen the capacity of 98 district level staff (37 of them women) in 72 districts across 16 provinces. MLSW's warehouse (KM 17) was also developed to stock ready-to-ship relief supplies, both high priority items such as food, water, and medical supplies and non-priority items. The warehouse management staff in both central and provincial levels received training on logistics and effective warehouse and inventory management including proper

planning, recording, controlling, and monitoring inventory. There were nine central-level staff and 19 provincial-level staff trained. MLSW also developed in-country mobile logistics hubs across the country, starting with eight provinces - Oudomxay, Xayaboury, Bokeo, Luangnamtha, Khammuane, Savannakhet, Sekong, and Attapeu. The mobile warehouses can be used to establish a relief logistics operation center at a remote location near to disaster-affected areas. These mobile warehouses will increase efficiency and effectiveness of emergency response operations as transportation links for rapidly delivering relief supplies might be obstructed. Transportation resources received for use during the urgent responses include 169 rescue boats, each with two emergency power generators, 1,211 tents, and 121 water filtration machines.

The country has also seen significant improvement in the provision of humanitarian logistics support by the military. In 2022, the military was proactive in pursuing improvement of military-to-military (with the militaries of Vietnam and Cambodia) and military-to-civilian integration. LPAF, under the MND, performs critical roles ensuring that aid reaches people in need, particularly in the early days of a response. It uses tactical vehicles such as boats and helicopters to provide essential air and water transport and logistical support to move hundreds of displaced people and critical supplies and equipment needed. The Disaster Management Law addressed additional roles for the military on humanitarian action, with lead or supporting roles in various aspects of different disaster management cycle, especially in pre-disaster, response, and early recovery phases. SAR skills and equipment provided by the military are key assets for the NDMC. The armed forces may also restore houses and relocate populations, clear and improve roads to sustain operations, fix public health infrastructure and restore essential infrastructure, and offer protection assistance. Twenty-one soldiers participated in Military Humanitarian Aid for Disaster Relief training in Japan and transferred knowledge and skills to other soldiers at the headquarters and those working in four southern provinces. The military worked in collaboration with China's military forces on a Search and Rescue Training for 250 soldiers. LPAF also provides training for the local relief workforce, including water rescue training to save a drowning person and water survival skills for local leaders.

The MOH conducted a health sector reform to reduce the health risks of emergencies. The country also enhanced capacity to coordinate larger-scale response operations for Emergency Medical Teams (EMT) and improved the quality of emergency medical services by working with different countries in Southeast Asia and around the world. In 2020, the government delivered a training series to strengthen health professionals' emergency capacities so that they can better provide direct clinical care to people affected by emergencies and disasters and support local health systems in four provincial hospitals (including Huaphanh, Oudomxay, Sekong, and Attapeu Provinces). These hospitals play a central role in managing risks, including infectious disease risk, and reducing the consequences of emergencies and disasters from all hazards. The project was supported by the WHO.

EMTs were developed along with an SOP for EMTs. To integrate EMTs into the local health system to allow immediate response, emergency drills for EMT providers and partners were organized. Drills enhanced preparedness and promoted the rapid deployment and efficient coordination of EMTs to reduce the loss of life and prevent long-term disability as a result of disasters, outbreaks, and other emergencies. Emergency Medicine Training Manuals were developed under the Cooperation Plan for Emergency Services Development between University of Health Sciences in Lao PDR, University of Tsukuba in Japan, and the Faculty of Medicine, Konkaen University, Thailand. The Plan is expected to improve the quality of emergency medical service in Southeast Asia region to the next level and for disaster preparedness.

MLSW organized five promotional activities

and capacity building to build the competencies of 1,000 DMCs at all administrative levels and disaster relief workers in disaster risks, impacts, and resilience strategies. The organization of training to strengthen DRR capacities, enhance environmental protection, and promote the integration of DRR in local development plans for local DMCs allowed the committees to learn and to determine job roles and responsibilities. These trainings also provided new country-level and local-level platforms to enhance support to local committees in three provinces, nine districts, and 60 villages, totaling 2,802 persons (1,427 of them women).

The National Capacity Development DRR Training of Trainers Workshop was organized by MLSW for 46 trainers (17 of them women) who have specialized expertise and play key roles as project coordinator during the emergency and recovery phase. There were 114 Village Health Volunteers (53 of them women) trained in first aid response. MLSW also revised and developed a training manual for DRR and coordination system in emergency response. There were 970 training manuals distributed.

In 2020, WFP supported the development and finalization of Cash and Voucher Assistance Guidelines and a Minimum Expenditure Basket for the country. The Basket is defined as what a household requires in order to meet their essential needs, on a regular or seasonal basis, and its average cost is useful in helping identify and harmonize cash transfer values to beneficiaries. WFP also delivered intensive training on the fundamentals of cash and voucher programming to 22 participants from the Lao PDR Cash Working Group. WFP supported the establishment of the working group; members include representatives from government departments, UN agencies, NGOs, and the Red Cross Movement.

MLSW, supported by WFP, conducted a 72-Hour Assessment Approach Orientation and Data Preparedness Workshop in May 2022. The workshop aimed to introduce the WFP 72-Hour Assessment Approach as a model to be integrated into the national emergency assessment practices. There were 51 participants from 11 ministries, five provincial governments, and six UN agencies. Supported by the Global Logistics Cluster and in partnership with the MLSW, WFP began implementation of the Logistics Preparedness Project to support national emergency preparedness and response operations. During 2019, WFP supported the preparation of a logistics preparedness roadmap and action plan jointly developed by the government and partners.

The Disaster Risk Reduction and Management in Agriculture Project supported the capacity building of national and local government staff and farmers in planning and integrating disaster reduction and management actions into agricultural sector development plans. The project delivered two national and two provincial consultation workshops and drafted guidelines for integrating DRM in agriculture for technical review. WFP supported over 160 national and sub-national level government staff from MAF, MONRE, and MLSW in developing capacities for managing disaster risk in agriculture. In 2020, WFP supported the government with the development of national food security and nutrition policies, programs, and systems, including publishing the updated Disaster Risk Management in Agriculture Guidelines. Several guidelines for bio-intensive and resilient schools, community gardens, and agroforestry were developed and supported by WFP.

The MOES implemented 10 projects in cooperation with WFP to support national NSDRR implementation. The Ministry revised the School Agriculture Guidelines to strengthen nutrition and gender aspects and developed the Ministerial Directive on promoting school agriculture for all levels from kindergarten to university. WFP assisted 1,434 schools in resource transfers to promote local fresh produce in the meals; support for local farmers by linking women and men smallholder farmers to schools; gardening support; promotion of improved, safe food storage; and promotion of improved health and hygiene. WFP also partnered with the Nam Saat to ensure facilities are adequate for the

needs of each school for cooking, hygiene, school gardening, and hand washing.

The Disaster Risk Management in Agriculture project focuses on the organization of three technical workshop trainings to strengthening capacity of government officials and local farmers and the development of Guidelines for the Disaster Reduction and Management in the Agriculture Sector. Enhanced technical skills enabled the officials to plan and implement disaster adaptation and mitigation plans in the agriculture sector. The national-level workshop comprised 28 technical ministry staff and the two provincial workshops had a total of 78 participants, including district officers.

WFP established 203 Food Nutrition Schools to enhance knowledge of and access to nutrient-rich crops, post-harvest handling, food storage and safety, processing, and preservation. The schools empowered over 7,000 participants, including the 5,376 women participants, by increasing their ownership of and influence over household family nutrition. WFP joined the Food and Nutrition Security and Market Linkages project, managed by the MAF and the International Fund for Agricultural Development, which aims to build community resilience through establishing and training asset management committees in villages and to construct community assets related to local food and nutrition security and market linkages needs.

In Sekong and Attapeu Provinces, WFP delivered training on climate-smart agricultural techniques to 2,674 beneficiaries. Through food-assistance-for-assets activities in Phongsaly Province, WFP supported the creation of 13 community fishponds supporting 18,963 beneficiaries, including 9,481 women. The ongoing Climate-Smart Village Project in five villages in Phongsaly Province introduced native species of pigs and chickens and related training to the communities. This program built on the integrated climate-safe gardens focused on diverse native species that WFP started in 2020 and contributed to the holistic climate-smart approach of the pilot villages. Through cash-assistance-for-assets activities in Phongsaly Province, WFP is supporting the creation of 31 productive community assets, including fishponds, feeder roads, community water systems, agroforestry activities, and community rice banks, assisting 6,244 beneficiaries (3,006 of them women) in 15 villages. Through food-assistance-for-assets activities in Savannakhet Province, WFP, in partnership with World Vision International, is supporting the creation of 93 productive community assets, including fishponds, feeder roads, community water systems, agroforestry activities and community rice banks, assisting 33,553 beneficiaries in 45 villages. To ensure that communities in Kaleum District (Sekong Province) and Sanamxay District (Attapeu Province) have improved awareness and understanding of DRR and preparedness activities, WFP trained 149 representatives (16 of them women) from 34 VDMCs in community-based disaster risk management.

Country Profile

The information in the Country Profile section is sourced directly from the CIA World Factbook for Laos. 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.[513]

Background

Modern-day Laos has its roots in the ancient Lao kingdom of Lan Xang, established in the 14th century under King FA NGUM. For 300 years Lan Xang had influence reaching into present-day Cambodia and Thailand, as well as over all of what is now Laos. After centuries of gradual decline, Laos came under the domination of Siam (Thailand) from the late 18th century until the late 19th century, when it became part of French Indochina. The Franco-Siamese Treaty of 1907 defined the current Lao border with Thailand. In 1975, the communist Pathet Lao took control of the government, ending a six-century-old monarchy and instituting a strict socialist regime closely aligned to Vietnam. A gradual, limited return to private enterprise and the liberalization of foreign investment laws began in 1988. Laos became a member of ASEAN in 1997 and the WTO in 2013.

In the 2010s, the country benefited from direct foreign investment, particularly in the natural resource and industry sectors. Construction of a number of large hydropower dams and expanding mining activities have also boosted the economy. Laos has retained its official commitment to communism and maintains close ties with its two communist neighbors, Vietnam and China, both of which continue to exert substantial political and economic influence on the country. China, for example, provided 70% of the funding for a $5.9 billion, 400-km railway line between the Chinese border and the capital Vientiane, which opened for operations in December 2021. Laos financed the remaining 30% with loans from China. At the same time, Laos has expanded its economic reliance on the West and other Asian countries, such as Japan, Malaysia, Singapore, Taiwan, and Thailand. In 2023, Lao households faced the highest inflation in almost a quarter century, with year-on-year inflation reaching 40% early in the year.

Geography

Location
Southeastern Asia, northeast of Thailand, west of Vietnam

Geographic coordinates
18 00 N, 105 00 E

Area
total: 236,800 sq km
land: 230,800 sq km
water: 6,000 sq km
comparison ranking: total 84

Area - comparative
about twice the size of Pennsylvania; slightly larger than Utah

Land boundaries
total: 5,274 km
border countries (5): Burma 238 km; Cambodia 555 km; China 475 km; Thailand 1,845 km; Vietnam 2,161 km

Coastline
0 km (landlocked)

Maritime claims
none (landlocked)

Climate
tropical monsoon; rainy season (May to November); dry season (December to April)

Terrain
mostly rugged mountains; some plains and plateaus

Elevation
highest point: Phu Bia 2,817 m
lowest point: Mekong River 70 m
mean elevation: 710 m

Natural resources
timber, hydropower, gypsum, tin, gold, gemstones

Land use
agricultural land: 10.6% (2018 est.)
arable land: 6.2% (2018 est.)
permanent crops: 0.7% (2018 est.)
permanent pasture: 3.7% (2018 est.)
forest: 67.9% (2018 est.)
other: 21.5% (2018 est.)

Irrigated land
4,409 sq km (2020)

Major rivers (by length in km)
Mènam Khong (Mekong) (shared with China [s], Burma, Thailand, Cambodia, and Vietnam [m]) - 4,350 km note – [s] after country name indicates river source; [m] after country name indicates river mouth

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

Population distribution
most densely populated area is in and around the capital city of Vientiane; large communities are primarily found along the Mekong River along the southwestern border; overall density is considered one of the lowest in Southeast Asia

Natural hazards
floods, droughts
Geography – note: landlocked; most of the country is mountainous and thickly forested; the Mekong River forms a large part of the western boundary with Thailand

People and Society

Population
7,852,377 (2023 est.)
comparison ranking: 103

Nationality
noun: Lao(s) or Laotian(s)
adjective: Lao or Laotian

Ethnic groups
Lao 53.2%, Khmou 11%, Hmong 9.2%, Phouthay 3.4%, Tai 3.1%, Makong 2.5%, Katong 2.2%, Lue 2%, Akha 1.8%, other 11.6% (2015 est.)
note: the Laos Government officially recognizes 49 ethnic groups, but the total number of ethnic groups is estimated to be well over 200
Languages
Lao (official), French, English, various ethnic languages
major-language sample(s): ແຫລ່ງທີ່ຂາດບໍ່ໄດ້ສໍາລັບ ຂໍ້ມູນຕົ້ນຕໍ”

Religions
Buddhist 64.7%, Christian 1.7%, none 31.4%, other/not stated 2.1% (2015 est.)

Demographic profile
Laos is a predominantly rural country with a youthful population – almost 55% of the population is under the age of 25. Its progress on health and development issues has been uneven geographically, among ethnic groups, and socioeconomically. Laos has made headway in poverty reduction, with the poverty rate almost halving from 46% in 1992/93 to 22% in 2012/13. Nevertheless, pronounced rural-urban disparities persist, and income inequality is rising. Poverty most affects populations in rural and highland areas, particularly ethnic minority groups.

The total fertility rate (TFR) has decreased markedly from around 6 births per woman on average in 1990 to approximately 2.8 in 2016, but it is still one of the highest in Southeast Asia. TFR is higher in rural and remote areas, among ethnic minority groups, the less-educated, and the poor; it is lower in urban areas and

among the more educated and those with higher incomes. Although Laos' mortality rates have improved substantially over the last few decades, the maternal mortality rate and childhood malnutrition remain at high levels. As fertility and mortality rates continue to decline, the proportion of Laos' working-age population will increase, and its share of dependents will shrink. The age structure shift will provide Laos with the potential to realize a demographic dividend during the next few decades if it can improve educational access and quality and gainfully employ its growing working-age population in productive sectors. Currently, Laos primary school enrollment is nearly universal, but the drop-out rate remains problematic. Secondary school enrollment has also increased but remains low, especially for girls.

Laos has historically been a country of emigration and internal displacement due to conflict and a weak economy. The Laos civil war (1953 – 1975) mainly caused internal displacement (numbering in the hundreds of thousands). Following the end of the Vietnam War in 1975, indigenous people in remote, war-struck areas were resettled and more than 300,000 people fled to Thailand to escape the communist regime that took power. The majority of those who sought refuge in Thailand ultimately were resettled in the US (mainly Hmong who fought with US forces), and lesser numbers went to France, Canada, and Australia.

The Laos Government carried out resettlement programs between the mid-1980s and mid-1990s to relocate ethnic minority groups from the rural northern highlands to development areas in the lowlands ostensibly to alleviate poverty, make basic services more accessible, eliminate slash-and-burn agriculture and opium production, integrate ethnic minorities, and control rebel groups (including Hmong insurgents). For many, however, resettlement has exacerbated poverty, led to the loss of livelihoods, and increased food insecurity and mortality rates. As the resettlement programs started to wane in the second half of the 1990s, migration from the northern highlands to urban centers – chiefly the capital Vientiane – to pursue better jobs in the growing manufacturing and service sectors became the main type of relocation. Migration of villagers from the south seeking work in neighboring Thailand also increased. Thailand is the main international migration destination for Laotians because of the greater availability of jobs and higher pay than at home; nearly a million Laotian migrants were estimated to live in Thailand as of 2015.

Age structure
0-14 years: 30.63% (male 1,218,731/female 1,186,156)
15-64 years: 64.73% (male 2,527,643/female 2,555,029)
65 years and over: 4.65% (2023 est.) (male 169,142/female 195,676)

Figure 29 shows the 2023 population pyramid for Lao PDR, based on the U.S. Census Bureau's International Database. A population pyramid illustrates the age and sex structure of a country's population and may provide insights about political and social stability, as well as economic development. The population is distributed along the horizontal axis, with males shown on the left and females on the right. The male and female populations are broken down into 5-year age groups represented as horizontal bars along the vertical axis, with the youngest age groups at the bottom and the oldest at the top.

Dependency ratios
total dependency ratio: 54.7
youth dependency ratio: 48
elderly dependency ratio: 6.7
potential support ratio: 14.8 (2021 est.)

Median age
total: 25 years (2023 est.)
male: 24.6 years
female: 25.3 years
comparison ranking: total 168

Population growth rate
1.3% (2023 est.)
comparison ranking: 74

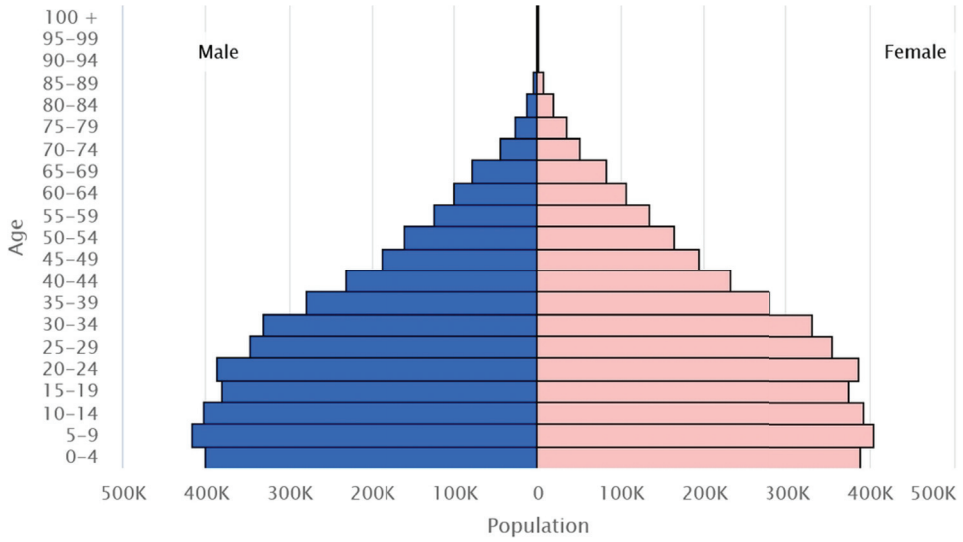


Figure 29: Population Pyramid, Lao PDR (2023)

Birth rate
20.4 births/1,000 population (2023 est.)
comparison ranking: 69

Death rate
6.3 deaths/1,000 population (2023 est.)
comparison ranking: 145

Net migration rate
-1.1 migrant(s)/1,000 population (2023 est.)
comparison ranking: 150

Population distribution
most densely populated area is in and around the capital city of Vientiane; large communities are primarily found along the Mekong River along the southwestern border; overall density is considered one of the lowest in Southeast Asia

Urbanization
urban population: 38.2% of total population (2023)
rate of urbanization: 2.99% annual rate of change (2020-25 est.)
total population growth rate v. urban population growth rate, 2000-2030

Major urban areas - population
721,000 VIENTIANE (capital) (2023)

Sex ratio
at birth: 1.04 male(s)/female
0-14 years: 1.03 male(s)/female
15-64 years: 0.99 male(s)/female
65 years and over: 0.86 male(s)/female
total population: 1 male(s)/female (2023 est.)

Maternal mortality ratio
126 deaths/100,000 live births (2020 est.)
comparison ranking: 60

Infant mortality rate
total: 36.6 deaths/1,000 live births (2023 est.)
male: 40.4 deaths/1,000 live births
female: 32.6 deaths/1,000 live births
comparison ranking: total 36

Life expectancy at birth
total population: 68.6 years (2023 est.)
male: 67 years
female: 70.3 years
comparison ranking: total population 185

Total fertility rate
2.3 children born/woman (2023 est.)
comparison ranking: 79

Gross reproduction rate
1.13 (2023 est.)

Contraceptive prevalence rate
54.1% (2017)

Drinking water source
improved: urban: 97.1% of population
rural: 84.1% of population
total: 88.8% of population
unimproved: urban: 2.9% of population
rural: 15.9% of population
total: 11.2% of population (2020 est.)

Current health expenditure
2.7% of GDP (2020)

Physicians density
0.35 physicians/1,000 population (2020)

Hospital bed density
1.5 beds/1,000 population (2012)

Sanitation facility access
improved: urban: 100% of population
rural: 72% of population
total: 82.2% of population
unimproved: urban: 0% of population
rural: 28% of population
total: 17.8% of population (2020 est.)

Major infectious diseases
degree of risk: very high (2023)
food or waterborne diseases: bacterial and protozoal diarrhea, hepatitis A, and typhoid fever
vectorborne diseases: dengue fever, malaria, and
sexually transmitted diseases: hepatitis B (2024)

Obesity - adult prevalence rate
5.3% (2016)
comparison ranking: 179

Alcohol consumption per capita
total: 8.15 liters of pure alcohol (2019 est.)
beer: 3.62 liters of pure alcohol (2019 est.)
wine: 0.07 liters of pure alcohol (2019 est.)
spirits: 4.46 liters of pure alcohol (2019 est.)
other alcohols: 0 liters of pure alcohol (2019 est.)
comparison ranking: total 42

Tobacco use
total: 31.8% (2020 est.)
male: 53.3% (2020 est.)
female: 10.3% (2020 est.)
comparison ranking: total 21

Children under the age of 5 years underweight
21.1% (2017)
comparison ranking: 13

Currently married women (ages 15-49)
60.1% (2023 est.)

Child marriage
women married by age 15: 7.1%
women married by age 18: 32.7%
men married by age 18: 10.8% (2017 est.)

Education expenditures
2.3% of GDP (2020 est.)
comparison ranking: 179

Literacy
definition: age 15 and over can read and write
total population: 87.1%
male: 91.4%
female: 81.4% (2021)

School life expectancy (primary to tertiary education)
total: 10 years
male: 10 years
female: 10 years (2020)

Environment

Environment - current issues
unexploded ordnance; deforestation; soil erosion; loss of biodiversity; water pollution, most of the population does not have access to potable water

Environment - international agreements
party to: Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Climate Change-Paris Agreement, Comprehensive Nuclear Test Ban, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Nuclear Test Ban, Ozone Layer

Protection, Wetlands, Whaling
signed, but not ratified: none of the selected agreements

Climate
tropical monsoon; rainy season (May to November); dry season (December to April)

Land use
agricultural land: 10.6% (2018 est.)
arable land: 6.2% (2018 est.)
permanent crops: 0.7% (2018 est.)
permanent pasture: 3.7% (2018 est.)
forest: 67.9% (2018 est.)
other: 21.5% (2018 est.)

Urbanization
urban population: 38.2% of total population (2023)
rate of urbanization: 2.99% annual rate of change (2020-25 est.)
total population growth rate v. urban population growth rate, 2000-2030

Revenue from forest resources
1.48% of GDP (2018 est.)
comparison ranking: 44

Air pollutants
particulate matter emissions: 21.15 micrograms per cubic meter (2019 est.)
carbon dioxide emissions: 17.76 megatons (2016 est.)
methane emissions: 9 megatons (2020 est.)

Waste and recycling
municipal solid waste generated annually: 351,900 tons (2015 est.)
municipal solid waste recycled annually: 35,190 tons (2015 est.) percent of municipal solid waste recycled: 10% (2015 est.)

Major rivers (by length in km)
Mènam Khong (Mekong) (shared with China [s], Burma, Thailand, Cambodia, and Vietnam [m]) - 4,350 km note – [s] after country name indicates river source; [m] after country name indicates river mouth

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

Total water withdrawal
municipal: 130 million cubic meters (2020 est.)
industrial: 170 million cubic meters (2020 est.)
agricultural: 7.05 billion cubic meters (2020 est.)

Total renewable water resources
333.5 billion cubic meters (2020 est.)

Government

Country name
conventional long form: Lao People's Democratic Republic
conventional short form: Laos
local long form: Sathalanalat Paxathipatai Paxaxon Lao
local short form: Mueang Lao (unofficial)
abbreviation: Lao PDR
etymology: name means "Land of the Lao [people]"

Government type
communist state

Capital
name: Vientiane (Viangchan)
geographic coordinates: 17 58 N, 102 36 E
time difference: UTC+7 (12 hours ahead of Washington, DC, during Standard Time)
etymology: the meaning in Pali, a Buddhist liturgical language, is "city of sandalwood"

Administrative divisions
17 provinces (khoueng, singular and plural) and 1 prefecture* (kampheng nakhon); Attapeu, Bokeo, Borikhamxay, Champasack, Huaphanh, Khammuane, Luangnamtha, Luangprabang, Oudomxay, Phongsaly, Saravane, Savannakhet, Sekong, Vientiane Capital, Vientiane, Xayaboury, Xaisomboun, Xiengkhuang

Independence
19 July 1949 (from France by the Franco-Lao General Convention); 22 October 1953 (Franco-Lao Treaty recognizes full independence)

National holiday
Republic Day (National Day), 2 December (1975)

Constitution
history: previous 1947 (pre-independence); latest promulgated 13-15 August 1991
amendments: proposed by the National Assembly; passage requires at least two-thirds majority vote of the Assembly membership and promulgation by the president of the republic; amended 2003, 2015

Legal system
civil law system similar in form to the French system

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

Citizenship
citizenship by birth: no
citizenship by descent only: at least one parent must be a citizen of Laos
dual citizenship recognized: no
residency requirement for naturalization: 10 years

Suffrage
18 years of age; universal

Executive branch
chief of state: President THONGLOUN Sisoulith (since 22 March 2021); Vice Presidents PANY Yathotou and BOUNTHONG Chitmany (since 22 March 2021)
head of government: Prime Minister SONEXAY Siphandon (since 30 December 2022)
cabinet: Council of Ministers appointed by the president and approved by the National Assembly
elections/appointments: president and vice president indirectly elected by the National Assembly for a 5-year term (no term limits); election last held on 22 March 2021 (next to be held in March 2026); prime minister nominated by the president, elected by the National Assembly for a 5-year term
election results:
2021: THONGLOUN Sisoulith elected president; National Assembly vote - THONGLOUN Sisoulith (LPRP) 161-1; PANY Yathotou and BOUNTHONG Chitmany (LPRP) elected vice presidents; National Assembly vote - NA; PHANKHAM Viphavanh (LPRP) elected prime minister; National Assembly vote - 158-3
2016: BOUNNHANG Vorachit (LPRP) elected president; PHANKHAM Viphavanh (LPRP) elected vice president; percent of National Assembly vote - NA; THONGLOUN Sisoulith (LPRP) elected prime minister; percent of National Assembly vote - NA

Legislative branch
description: unicameral National Assembly or Sapha Heng Xat (164 seats; members directly elected in multi-seat constituencies by simple majority vote from candidate lists provided by the Lao People's Revolutionary Party; members serve 5-year terms)
elections: last held on 21 February 2021 (next to be held in 2026)
election results: percent of vote by party - NA; seats by party - LPRP 158, independent 6; composition - men 128, women 36, percent of women 21.9%

Judicial branch
highest court(s): People's Supreme Court (consists of the court president and organized into criminal, civil, administrative, commercial, family, and juvenile chambers, each with a vice president and several judges)
judge selection and term of office: president of People's Supreme Court appointed by the National Assembly upon the recommendation of the president of the republic for a 5-year term;

vice presidents of the People's Supreme Court appointed by the president of the republic upon the recommendation of the National Assembly; appointment of chamber judges NA; tenure of court vice presidents and chamber judges NA
subordinate courts: appellate courts; provincial, municipal, district, and military courts

Political parties and leaders
Lao People's Revolutionary Party or LPRP [THONGLOUN Sisoulith]
note: other parties proscribed

International organization participation
ADB, ARF, ASEAN, CP, EAS, FAO, G-77, IAEA, IBRD, ICAO, ICRM, IDA, IFAD, IFC, IFRCS, ILO, IMF, Interpol, IOC, IPU, ISO (subscriber), 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 Sisavath INPHACHANH (since 7 June 2022)
Chancery: 2222 S Street NW, Washington, DC 20008
Tel: [1] (202) 332-6416
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Website: *https://laoembassy.com/*
Consulate(s): New York

Diplomatic representation from the US
Chief of mission: Ambassador (vacant); Chargée d'Affaires Michelle OUTLAW (since August 2023)
Embassy: Ban Somvang Tai, Thadeua Road, Km 9, Hatsayfong District, Vientiane
Mailing address: 4350 Vientiane Place, Washington DC 20521-4350
Tel: [856] 21-48-7000
Fax: [856] 21-48-7040
Email: *CONSLAO@state.gov*
Website: *https://la.usembassy.gov/*

Flag description
three horizontal bands of red (top), blue (double width), and red with a large white disk centered in the blue band; the red bands recall the blood shed for liberation; the blue band represents the Mekong River and prosperity; the white disk symbolizes the full moon against the Mekong River, but also signifies the unity of the people under the Lao People's Revolutionary Party, as well as the country's bright future

National symbol(s)
elephant; national colors: red, white, blue

National anthem
name: "Pheng Xat Lao" (Hymn of the Lao People)
lyrics/music: SISANA Sisane/THONGDY Sounthonevichit
note: music adopted 1945, lyrics adopted 1975; the anthem's lyrics were changed following the 1975 Communist revolution that overthrew the monarchy

National heritage
total World Heritage Sites: 3 (all cultural)
selected World Heritage Site locales: Town of Luangprabang; Vat Phou and Associated Ancient Settlements; Megalithic Jar Sites in Xiengkhuang - Plain of Jars

Economy

Economic overview
lower middle-income, socialist Southeast Asian economy; one of the fastest growing economies; declining but still high poverty; natural resource rich; new anticorruption efforts; already high and growing public debt; service sector hit hard by COVID-19

Real GDP (purchasing power parity)
$58.264 billion (2021 est.)
$56.827 billion (2020 est.)
$56.543 billion (2019 est.)
note: data are in 2017 dollars
comparison ranking: 109

Real GDP growth rate
2.53% (2021 est.)
0.5% (2020 est.)
5.46% (2019 est.)
comparison ranking: 154

Real GDP per capita
$7,800 (2021 est.)
$7,800 (2020 est.)
$7,800 (2019 est.)
note: data are in 2017 dollars
comparison ranking: 156

GDP (official exchange rate)
$16.97 billion (2017 est.)

Inflation rate (consumer prices)
3.76% (2021 est.)
5.1% (2020 est.)
3.32% (2019 est.)
comparison ranking: 127

Credit ratings
Fitch rating: CCC (2020)
Moody's rating: Caa2 (2020)
note: The year refers to the year in which the current credit rating was first obtained.

GDP - composition, by sector of origin
agriculture: 20.9% (2017 est.)
industry: 33.2% (2017 est.)
services: 45.9% (2017 est.)
comparison rankings: services 195; industry 56; agriculture 44

GDP - composition, by end use
household consumption: 63.7% (2017 est.)
government consumption: 14.1% (2017 est.)
investment in fixed capital: 30.9% (2017 est.)
investment in inventories: 3.1% (2017 est.)
exports of goods and services: 34.6% (2017 est.)
imports of goods and services: -43.2% (2017 est.)

Agricultural products
rice, roots/tubers nes, cassava, sugar cane, vegetables, bananas, maize, watermelons, coffee, taro

Industries
mining (copper, tin, gold, gypsum); timber, electric power, agricultural processing, rubber, construction, garments, cement, tourism

Industrial production growth rate
7.61% (2021 est.)
comparison ranking: 56

Labor force
3.915 million (2021 est.)
comparison ranking: 97

Unemployment rate
1.26% (2021 est.)
1.03% (2020 est.)
0.85% (2019 est.)
comparison ranking: 8

Youth unemployment rate (ages 15-24)
total: 3.3% (2021 est.)
male: 3.4%
female: 3.2%
comparison ranking: total 196

Population below poverty line
18.3% (2018 est.)

Gini Index coefficient - distribution of family income
38.8 (2018 est.)
comparison ranking: 64

Average household expenditures
on food: 50% of household expenditures (2018 est.)
on alcohol and tobacco: 10.5% of household expenditures (2018 est.)

Household income or consumption by percentage share
lowest 10%: 3.3%
highest 10%: 30.3% (2008)

Budget
revenues: $2.896 billion (2019 est.)
expenditures: $3.839 billion (2019 est.)

Budget surplus (+) or deficit (-)
-5.5% (of GDP) (2017 est.)
comparison ranking: 173

Public debt
63.6% of GDP (2017 est.)
58.4% of GDP (2016 est.)
comparison ranking: 72

Taxes and other revenues
18.3% (of GDP) (2017 est.)
comparison ranking: 108

Fiscal year
1 October - 30 September

Current account balance
$446.572 million (2021 est.)
-$230.973 million (2020 est.)
-$1.32 billion (2019 est.)
comparison ranking: 59

Exports
$7.82 billion (2021 est.)
$6.461 billion (2020 est.)
$6.985 billion (2019 est.
note: data are in current year dollars
comparison ranking: 117

Exports - partners
Thailand 33%, China 27%, Vietnam 13%, Australia 8%, Switzerland 3% (2021)

Exports - commodities
electricity, gold, paper, copper, rubber, flavored water (2021)

Imports
$6.527 billion (2021 est.)
$5.816 billion (2020 est.)
$7.518 billion (2019 est.)
note: data are in current year dollars
comparison ranking: 130

Imports - partners
Thailand 53%, China 26%, Vietnam 10% (2019)

Imports - commodities
refined petroleum, cars, cattle, iron structures, steel products (2019)

Reserves of foreign exchange and gold
$1.476 billion (31 December 2021 est.)
$1.393 billion (31 December 2020 est.)
$1.111 billion (31 December 2019 est.)
comparison ranking: 139

Debt - external
$14.9 billion (31 December 2017 est.)
$12.9 billion (31 December 2016 est.)
comparison ranking: 103

Exchange rates
kips (LAK) per US dollar -
Exchange rates:
9,697.916 (2021 est.)
9,045.788 (2020 est.)
8,679.409 (2019 est.)
8,401.335 (2018 est.)
8,244.843 (2017 est.)

Energy

Electricity access
electrification - total population: 100% (2021)

Electricity
installed generating capacity: 9.346 million kW (2020 est.)
consumption: 5,108,640,000 kWh (2019 est.)
exports: 24.114 billion kWh (2019 est.)
imports: 1.345 billion kWh (2019 est.)
transmission/distribution losses: 2.262 billion kWh (2019 est.)
comparison rankings: installed generating capacity 68; transmission/distribution losses 133; imports 67; exports 8; consumption 124

Electricity generation sources
fossil fuels: 35.6% of total installed capacity (2020 est.)
nuclear: 0% of total installed capacity (2020 est.)
solar: 0.1% of total installed capacity (2020 est.)
wind: 0% of total installed capacity (2020 est.)
hydroelectricity: 64.1% of total installed capacity (2020 est.)
tide and wave: 0% of total installed capacity (2020 est.)
geothermal: 0% of total installed capacity (2020 est.)
biomass and waste: 0.2% of total installed capacity (2020 est.)

Coal
production: 16.04 million metric tons (2020 est.)
consumption: 15.823 million metric tons (2020 est.)
exports: 235,000 metric tons (2020 est.)
imports: 18,000 metric tons (2020 est.)
proven reserves: 503 million metric tons (2019 est.)

Petroleum
total petroleum production: 0 bbl/day (2021 est.)
refined petroleum consumption: 19,300 bbl/day (2019 est.)
crude oil and lease condensate exports: 0 bbl/day (2018 est.)
crude oil and lease condensate imports: 0 bbl/day (2018 est.)
crude oil estimated reserves: 0 barrels (2021 est.)

Refined petroleum products - production
0 bbl/day (2015 est.)
comparison ranking: 111

Refined petroleum products - exports
0 bbl/day (2015 est.)
comparison ranking: 166

Refined petroleum products - imports
17,460 bbl/day (2015 est.)
comparison ranking: 131

Natural gas
production: 0 cubic meters (2021 est.)
consumption: 0 cubic meters (2021 est.)
exports: 0 cubic meters (2021 est.)
imports: 0 cubic meters (2021 est.)
proven reserves: 0 cubic meters (2021 est.)

Carbon dioxide emissions
40.726 million metric tonnes of CO2 (2019 est.)
from coal and metallurgical coke: 37.871 million metric tonnes of CO2 (2019 est.)
from petroleum and other liquids: 2.855 million metric tonnes of CO2 (2019 est.)
from consumed natural gas: 0 metric tonnes of CO2 (2019 est.)
comparison ranking: total emissions 63

Energy consumption per capita
73.187 million Btu/person (2019 est.)
comparison ranking: 81

Communications

Telephones - fixed lines
total subscriptions: 1,300,195 (2021 est.)
subscriptions per 100 inhabitants: 18 (2021 est.)
comparison ranking: total subscriptions 62

Telephones - mobile cellular
total subscriptions: 4,822,973 (2021 est.)
subscriptions per 100 inhabitants: 65 (2021 est.)
comparison ranking: total subscriptions 124

Telecommunication systems
general assessment: Laos joined the World Trade Organization (WTO) in 2013; one of the conditions of admittance was to establish an independent regulator for its telecom sector within two years; the government had committed to do so by February 2015 as part of the accession agreement; there still has been no sign of any firm plans being made to create an independent regulatory body; the Ministry of Technology and Communications retains the primary role in regulating the country's telecom market; with the government also having a financial stake (in part or in whole) in every one of the major fixed-

line and mobile operators, the MPT's position and decision-making is far from what could be considered independent; sufficient returns on investment cannot be guaranteed with such strict pricing controls as well as the potential for political interference; fixed-line and mobile penetration levels have, as a result, remained much lower than what's seen in neighboring South East Asian markets; there are signs of growth in the mobile broadband segment as LTE network coverage slowly widens and, more recently, the country's first 5G services start to come on stream; residents in the capital will at least be able to enjoy high-speed services in the near future, while the rest of the country waits patiently to catch up with the rest of the world. (2022)
domestic: fixed-line nearly 18 per 100 and 65 per 100 for mobile-cellular subscriptions (2021)
international: country code - 856; satellite earth station - 1 Intersputnik (Indian Ocean region) and a second to be developed by China

Broadcast media
6 TV stations operating out of Vientiane - 3 government-operated and the others commercial; 17 provincial stations operating with nearly all programming relayed via satellite from the government-operated stations in Vientiane; Chinese and Vietnamese programming relayed via satellite from Lao National TV; broadcasts available from stations in Thailand and Vietnam in border areas; multi-channel satellite and cable TV systems provide access to a wide range of foreign stations; state-controlled radio with state-operated Lao National Radio (LNR) broadcasting on 5 frequencies - 1 AM, 1 SW, and 3 FM; LNR's AM and FM programs are relayed via satellite constituting a large part of the programming schedules of the provincial radio stations; Thai radio broadcasts available in border areas and transmissions of multiple international broadcasters are also accessible

Internet country code
.la

Internet users
total: 4.588 million (2021 est.)
percent of population: 62% (2021 est.)
comparison ranking: total 103

Broadband - fixed subscriptions
total: 128,000 (2020 est.)
subscriptions per 100 inhabitants: 2 (2020 est.)
comparison ranking: total 126

Transportation

National air transport system
number of registered air carriers: 1 (2020)
inventory of registered aircraft operated by air carriers: 12
annual passenger traffic on registered air carriers: 1,251,961 (2018)
annual freight traffic on registered air carriers: 1.53 million (2018) mt-km

Civil aircraft registration country code prefix
RDPL

Airports
41 (2021)
comparison ranking: total 104

Airports - with paved runways
8
note: paved runways have a concrete or asphalt surface but not all have facilities for refueling, maintenance, or air traffic control; the length of a runway required for aircraft to safely operate depends on a number of factors including the type of aircraft, the takeoff weight (including passengers, cargo, and fuel), engine types, flap settings, landing speed, elevation of the airport, and average maximum daily air temperature; paved runways can reach a length of 5,000 m (16,000 ft.), but the "typical" length of a commercial airline runway is between 2,500-4,000 m (8,000-13,000 ft.)

Airports - with unpaved runways
33
note: unpaved runways have a surface composition such as grass or packed earth and are most suited to the operation of light aircraft; unpaved runways are usually short, often less than 1,000 m (3,280 ft.) in length; airports with unpaved runways often lack facilities for refueling, maintenance, or air traffic control

Pipelines
540 km refined products (2013)
Railways
total: 422 km (2023)
standard gauge: 422 km (2023) 1.435-m gauge (422 km overhead electrification)
comparison ranking: total 120
Roadways
total: 59,647 km (2024)
paved: 13,718 km (2024)
unpaved: 45,929 km (2024)
comparison ranking: total 80

Waterways
4,600 km (2012) (primarily on the Mekong River and its tributaries; 2,900 additional km are intermittently navigable by craft drawing less than 0.5 m)
comparison ranking: 26

Merchant marine
total: 1 (2022)
by type: general cargo 1
comparison ranking: total 184

Military and Security

Military and security forces
Lao People's Armed Forces (LPAF): Lao People's Army (LPA, includes Riverine Force), Air Force, Self-Defense Militia Forces (2023)
note: the Ministry of Public Security maintains internal security and is responsible for law enforcement; it oversees local, traffic, immigration, and security police, village police auxiliaries, and other armed police units

Military expenditures
0.2% of GDP (2019 est.)
0.2% of GDP (2018 est.)
0.2% of GDP (2017 est.)
0.2% of GDP (2016 est.)
0.2% of GDP (2015 est.)
comparison ranking: 166

Military and security service personnel strengths
limited and varied information; estimated 30,000 active-duty troops (26,000 Army; 4,000 Air Force) (2023)

Military equipment inventories and acquisitions
the LPAF is armed largely with Soviet-era weapons; in recent years, China and Russia have been the leading suppliers of military equipment to Laos (2023)

Military service age and obligation
18 years of age for compulsory or voluntary military service; minimum 18-month service obligation (2023)
Military – note: the LPAF's primary missions are border and internal security, including counterinsurgency and counterterrorism; the Army is organized into a few small divisions and independent regiments deployed around the country in four military regions; the Army is supported by a self-defense militia, which is estimated to be 100,000 strong; the small Air Force does not have any combat aircraft; Vietnam is the military's primary security partner, although in recent years, Laos has expanded defense ties with China and Russia (2023)

Transnational Issues

Disputes - international
Laos-Burma: none identified
Laos-Cambodia: in 2021, the two countries agreed to increase efforts to combat drug trafficking and other transnational crimes and to complete the last 14% of their border demarcation
Laos-Cambodia-Vietnam: Cambodia and Vietnam are concerned about Laos' extensive

plans for upstream dam construction and the potential harm it poses to fisheries and farming downstream
Laos-China: concern among Mekong River Commission members that China's construction of eight dams on the Upper Mekong River and construction of more dams on its tributaries will affect water levels, sediment flows, and fisheries
Laos-Thailand: talks continue as of 2018 on completion of demarcation with Thailand but disputes remain over islands in the Mekong River
Laos-Vietnam: Laos and Vietnam completed border demarcation in 2016

Illicit drugs
Laos remains a key transit route for drug trafficking and the movement of precursor chemicals; opium produced is typically smuggled out of the country and refined elsewhere and not trafficked in significant quantities to the United States

Acronyms and Abbreviations

°	degree(s) – of temperature (C = Celsius; F = Fahrenheit) or of Latitude and Longitude (North, South, East, West)
$	dollar(s) – of the U.S. or Australia
₭	Kip (Lao currency; LAK)
AADMER	ASEAN Agreement on Disaster Management and Emergency Response
ACDM	ASEAN Committee on Disaster Management
ACT	artemisinin-based combination therapy
ADInet	ASEAN Disaster Information Network
ADWLE	Association Development Women Legal Education
AHA Centre	ASEAN Coordinating Centre for Humanitarian Assistance on disaster management
API	annual overall parasite incidence per 1,000 population
ART	antiretroviral therapy
ASEAN	Association of Southeast Asian Nations
BDD	Bilateral Defense Dialogue
BHA	Bureau for Humanitarian Assistance (of USAID)
BRI	Belt and Road Initiative
CCA	climate change adaptation
CCS	Country Cooperation Strategy
CDC	Centers for Disease Control and Prevention (of the U.S.)
CDMC	Central [National] Disaster Management Committee
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
CEO	Chief Executive Officer
CFE-DM	Center for Excellence in Disaster Management and Humanitarian Assistance
COVID-19	Coronavirus Disease 2019
CRI	Climate Risk Index
CSO	civil society organization
DCC	Department of Climate Change
DCDC	Department of Communicable Disease Control (of the Lao MOH)
DDMC	District Disaster Management Committee
DFAT	Department of Foreign Affairs and Trade
DHN	Declaration of Humanitarian Need
DHO	district health office
DMC	Disaster Management Committee
DMD	Disaster Management Department (NDMO)
DMF	Disaster Management Fund
DMH	Department of Meteorology and Hydrology
DMRS	Disaster Monitoring and Response System
DoD	Department of Defense (of the U.S.)

DPAA	Defense POW/MIA Accounting Agency
DPF	Department of Planning and Finance
DPSC	Defence and Public Security Commission
DPWT	Department of Public Works and Transport
DRM	disaster risk management
DRR	disaster risk reduction
DR-TB	drug resistant tuberculosis
DSW	Department of Social Welfare
DTRA	Defense Threat Reduction Agency (of the U.S. DoD)
DWT	deadweight tonnage
ECG	Emergency Communications Group
EDL	Electricité du Laos
EMT	Emergency Medical Team
EOC	Emergency Operations Center
ER4	early recovery, risk reduction, and resilience
ESSDP	Education and Sports Sector Development Plan
ETF	Emergency Task Force
ETL	Enterprise Telecommunications Lao
EWS	early warning system
Ex COORES	Exercise Coordinated Response
FAO	Food and Agriculture Organization (of the UN)
FCTC	Framework Convention on Tobacco Control (of the WHO)
FDR	Foreign Disaster Response
FETP	Field Epidemiology Training Program
FP	focal point
GBV	gender-based violence
GDA	Gender and Development Association
GDP	gross domestic product
GW / GWh	gigawatt(s) / Gigawatt-hours
HADR	Humanitarian Assistance and Disaster Relief
HELP	Health Emergencies in Large Populations
HIS	health information system
IASC	Inter-Agency Standing Committee
ICRC	International Committee of the Red Cross
IFRC	International Federation of Red Cross and Red Crescent Societies
IHR	International Health Regulations
IMN	Information Management Network
INDOPACOM	Indo-Pacific Command (of the U.S. DoD)
IOM	International Organization for Migration (of the UN)
IPP	Independent Power Producer

ISP	internet service provider
JEE	Joint External Evaluation
JICA	Japan International Cooperation Agency
km / km^2	kilometer(s) / square kilometer(s)
KPL	Khaosan Pathet Lao
kV	kilovolt(s)
LACSA	Laos Climate Service for Agriculture
LAK	Lao Kip (₭; currency of Lao PDR)
LANI	Lao-American Nutrition Initiative
LANIC	Lao National Internet Center
LaoPHA	Lao Positive Health Association
LGE	Law on Gender Equality
LPA	Lao People's Army
LPAF	Lao People's Armed Forces
LPRP	Lao People's Revolutionary Party
LRCS	Laos Red Cross Society
LTC	Lao Telecom
LWU	Lao Women's Union
m / m^2	meter(s) / square meter(s)
MAF	Ministry of Agriculture and Forestry
Mbps	megabits per second
MEM	Ministry of Energy and Mines
MHA	Ministry of Home Affairs
MICT	Ministry of Information and Culture and Tourism
MLSW	Ministry of Labor and Social Welfare
MND	Ministry of National Defense
MOES	Ministry of Education and Sport
MOF	Ministry of Finance
MOFA	Ministry of Foreign Affairs
MOH	Ministry of Health
MONRE	Ministry of Natural Resources and Environment
MOU	Memorandum of Understanding
MPS	Ministry of Public Security
MPWT	Ministry of Public Works and Transport
MRC (-Mekong)	Mekong River Commission
MRC-USA	Mississippi River Commission
MTC	Ministry of Technology and Communications
MW	megawatt
NAPEVAWC	National Plan of Action on Protection and Elimination of Violence Against Women and Children
NAPGE	National Action Plan on Gender Equality

NCAW	National Commission for the Advancement of Women
NCD	non-communicable disease
NDC	Nationally Determined Contribution
NDMC	National Disaster Management Committee
NDMO	National Disaster Management Office
NEC	National Environment Committee
NEWC	National Early Warning Centre
NFI	non-food item
NGO	non-governmental organization
NHI	National Health Insurance
NHSDP	National Health Sector Development Plan
NR	National Road
NSEDP	National Socio-Economic Development Plan
OCHA	Office for the Coordination of Humanitarian Affairs (of the UN)
ODA	official development assistance
OHDACA	Overseas Humanitarian, Disaster, and Civic Aid
PDC	Pacific Disaster Center
PDMC	Provincial Disaster Management Committee
PDNA	post-disaster needs assessment
PDR	[Lao] People's Democratic Republic
PHO	provincial health office
PLHIV	people living with HIV
PMI	President's Malaria Initiative (of the U.S.)
PNPSE	Provincial Nam Papa State Enterprise
POD	Pacific Ocean Division (of USACE)
RCO	Resident Coordinator's Office (of the UN)
RCP	Representative Concentration Pathway
RHCC	Changi Regional HADR Coordination Centre
ROAP	Regional Office for Asia and the Pacific (of UN OCHA)
RSV	respiratory syncytial virus
SAR	search and rescue
SASOP	ASEAN Standard Operating Procedure for Regional Standby Arrangements and Coordination of Joint Disaster Relief and Emergency Response Operations
SDG	Sustainable Development Goal
SOP	standard operating procedure
SUSO	Stand Up and Speak Out
TAF	The Asia Foundation
TB	tuberculosis
TTX	Table-Top Exercise
TVET	technical and vocational education and training

U.S.	United States
UHC	universal health coverage
UN	United Nations
UNCT	United Nations Country Team
UNDP	United Nations Development Programme
UNDRR	United Nations Office for Disaster Risk Reduction
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNOSAT	United Nations Satellite Center
UNRC	United Nations Resident Coordinator
UNSCR	United Nations Security Council Resolution
UNSDCF	United Nations Sustainable Development Cooperation Framework
USACE	United States Army Corps of Engineers
USAID	United States Agency for International Development
UXO	unexploded ordnance
VDMC	Village Disaster Management Committee
W/m^2	watts per meter squared
WASH	water, sanitation, and hygiene
WebEOC	Web Emergency Operation Center
WFP	World Food Programme
WHO	World Health Organization
WPS	Women, Peace, and Security

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