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Climate Factsheet
Lao People's Democratic Republic (PDR)

People and Geography

» The Lao PDR is a landlocked, least developed country in mainland southeast Asia with a total area of 236,800 square km situated between 13°54' and 22°30'N and between 100°05' and 106°38'E.[1,2]

» The country is bordered by China to the north, Vietnam to the east, Cambodia to the south, Thailand to the west and Myanmar to the northwest. The country's land boundaries extend around 5,274 km.[1,3]

» The Mekong river forms a large part of its western boundary with Thailand.[3]

80% is hilly and mountainous

About 80%of the country's area is hilly and mountainous, with some plains and plateaus, while the remaining 20% comprises mostly flat floodplains along the Mekong river.[1,3]

» Phu Bia at 2,820 m above sea level is the highest point of the country.[2]

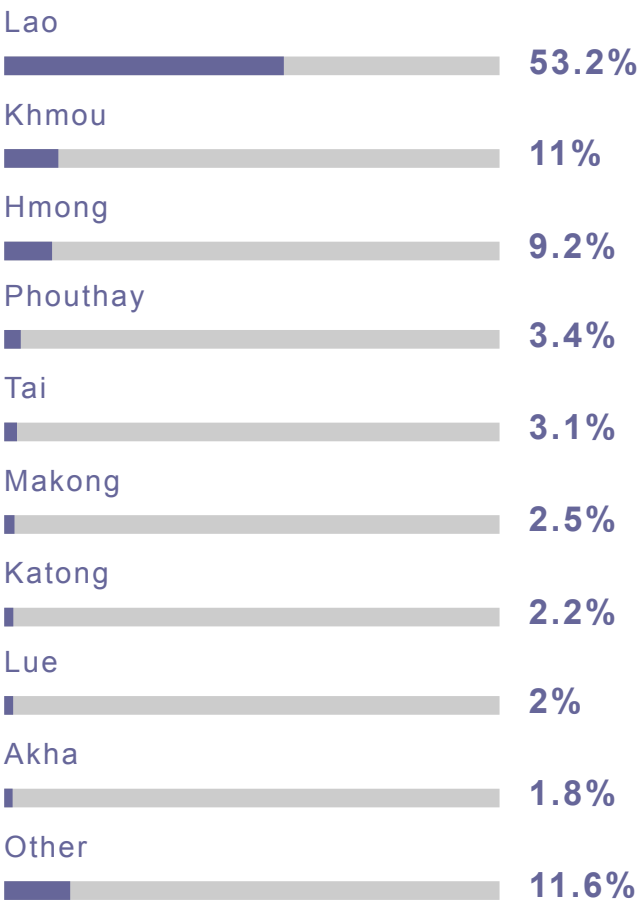
» As of 2011, 67.9% and 10.6% of its land were estimated to be forested, and under agricultural use respectively.[3]

The country is divided into 16 provinces (khoueng) which are

Attapu	Bokeo
Bolikhamxai	Champasak
Houaphan	Khammouan
Louangnamtha	Louangphrabang
Oudomxai	Phongsali
Salavan	Savannakhet
Vientiane (Viangchan)	Xaignabouli
Xekong	Xiangkhoang

and one capital city (Nakhon luang) which is **Vientiane (Viangchan)**.[1]

The ethnic distribution of the population[3] (in 2015)



the Laos Government officially recognizes 49 ethnic groups, but the total number of ethnic groups is estimated to be well over 200.[3]

» Lao is the country's official language, with French, English, various ethnic languages also being spoken.[3]

» In 2015, the major religions included Buddhism (64.7%), Christianity (1.7%), none (31.4%), other/not stated (2.1%).[3]

Population of the Lao PDR was 7.1 million

The population was 7,169,455 in 2019, growing at an annual rate of 1.5% as of 2018.[4]

» In 2016, the population density was 30 people per km^2, among the lowest in southeast Asia.[5]

» In 2015, 38.6% of its population lived in urban areas, with the urban population growing at an annual rate of 4.9% between 2010 and 2015.[5]

» The capital city of Vientiane harbours the most densely populated areas. Other large communities are mainly found along the Mekong river along the southwestern border.[3]

» The birth and death rates in 2020 are estimated to be 22.4 births and 7.2 deaths per 1000 people, respectively.[3]

» The fertility rate was 3.2 children per woman in 2015.[6]

» The sex ratio is estimated to 1.04 males/females at birth, and 0.99 males/females overall in 2020.[3]

» The literacy rate in 2015 was 84.7%, with a large gender gap as the female literacy rate was 79%, whereas male literacy rate was 90%.[3,6]

» Education expenditure was 2.9% of Gross Domestic Product (GDP) in 2014.[3]

» As of 2015, 75.7% of the population has access to improved drinking water, while 70.9% has access to improved sanitation facilities.[3]

» The population suffers from high incidences of bacterial and protozoal diarrhoea, hepatitis A, typhoid fever, dengue fever, and malaria.[3]

» Lao PDR is one of the fastest growing economies in southeast Asia. Between 2011 to 2015, the economy grew at an annual rate of 7.9%.[7]

» Despite this impressive growth, around one-fifth of the population still live below the poverty line ($1.90 per day at 2011 Purchasing Power Parity (PPP)). Income disparity has also increased over time (with the Gini index rising from 34.3 in 1992 to 36.4 in 2012).[7]

» In 2019, Lao PDR had a GDP of 18.174 billion (current US$), and a per capita GDP of 2534.89 (current US$).[4]

» Lao PDR is mostly rural and has about 5.9 million hectares of cultivable land, of which 800,000 hectares are arable for rice or secondary crops under shifting cultivation systems. Shifting cultivation is common in most of the hilly and mountainous areas in northern and central eastern parts of the country.[2]

72% of the population was employed in the agriculture sector as of 2015.[6]

» It is estimated that forest resources contributed to about US$130 million of GDP in 2007. Resources such as timber and non-timber forest products, herbal medicine and firewood are some of the main sources of livelihood for the poor and rural communities.[8]

The forest cover in Lao PDR

70% → 41.5%

From 1940 to 2002, forest cover decreased from 70% to 41.5% of the country's total land area.[8]

» With many of its people dependent on rain-fed agriculture and marine resources, Lao PDR is highly vulnerable to climate change impacts such as floods, droughts, and cyclones.[9]

» Despite being one of the countries with the lowest level of exposure to natural hazards overall in the ASEAN region, Lao PDR is highly vulnerable to disasters because of its poor ability to cope with them. The country received 'high' scores on the World Resource Institute (WRI) vulnerability index, lack of coping capacity index, susceptibility index, and lack of adaptive capacity index.[7]

» The annual per capita CO2 emissions in 2014 was 0.294 metric tonnes.[4]

» In 2000, Lao PDR emitted a total of 43,811 Gg CO2eq and removed about 2,047 Gg CO2eq – hence emitting net 41,764 Gg CO2eq. The levels of emissions

have increased substantially compared to Lao PDR having been a net sink of 104,570 Gg CO2eq in the year 1990.[10]

» In 2016 Lao PDR ranked 109th globally and 17th in terms of CO2 emissions (metric tons per capita) in the East Asia and Pacific region.[24]

Climate

» Lao PDR has a seasonal tropical climate with prominent wet and dry seasons.[2]

Rainfall

Annual rainfall ranges from about **1300 mm** in the northwest and **4000 mm** in southern Annamite range.[2]

» Temperature varies regionally, northern regions being cooler than the central and southern regions.[2]

The maximum temperature is **35.5 - 39.5 °C** in March and April

The minimum temperature recorded is **13.5 - 17.5 °C**, from December to January.[2]

» The annual average temperature is 26.5 to 27.5 °C.[2]

» Lao PDR is divided into three different climatic zones, as follows:[2]

› The northern mountainous areas above 1,000m have a montane temperate and hilly sub-tropical climate. These areas are relatively dry, with an average rainfall between 1,500 to 2,000mm. Temperature ranges are lower than the rest of the country.

› The central mountainous areas in the Annamite chain range in altitude from 500-1,000 m, with some mountain peaks being greater than 2,000 m. These areas experience tropical monsoonal climate with higher temperatures and higher average rainfall compared to the northern mountainous areas.

› The tropical lowland plain and floodplains along the Mekong river and its main tributaries include the plains of Vientiane, Borikhamxay, Khammouan, Savannakhet, Champasack, Saravane, and Attapeu Provinces. More than 50%of the population of Lao PDR are situated in these areas. These areas experience an average rainfall of 1,500 to 2,000 mm.

» Floods normally occur during the rainy season when monsoon rains accumulate in the upper Mekong river basin. Droughts occur during the dry season between monsoon seasons.[11]

» Prolonged flooding occurs in the central and southern provinces when rivers and tributaries are filled with normal or exceptional precipitation in their respective catchment basins. These bodies of water are prone to overflowing as the waters from the flooded Mekong advance downstream.[7]

» The El Nino Southern Oscillation (ENSO) (dry condition for Lao), in addition to the tropical monsoon, plays a major role in driving the climatic processes in Lao PDR.[12]

» The monsoon contributes to a seasonal cycle of rainfall where more than 70%occurs during the wet season. In addition, the climate is driven by interannual rainfall variability that can be linked with extreme climate events such as frequent flooding the southern regions and droughts in the northern.[10]

» The Department of Meteorology and Hydrology (DMH) operated 17 main synoptic stations and 32 secondary synoptic stations.Out of the 49 synoptic stations, 10 were utilized for providing aviation services in airports.[13]

» The DMH has128 manual rainfall gauges, 109 staff gauges, 49 discharge stations and 3 seismic stations located in Luang Prabang, Lak Sao and Vientiane.[13]

Global Climate Change

» The global mean temperature was 1.1 ± 0.1°C above pre-industrial levels in 2019.[14]

» As of 2019, the same year was the second warmest year on record.[13]

» The last five years, 2015-2019, have been the warmest years, and the period from 2010-2019 has been the warmest decade on record.[14]

» Human-induced warming reached approximately 1 °C (likely between 0.8 °C and 1.2 °C) above pre-industrial levels in 2017, increasing at 0.2 °C (likely between 0.1 °C and 0.3 °C) per decade (high confidence).[14]

» From the 1980s, each successive decade has been warmer than preceding decades since 1850.[14]

Global atmospheric mole fraction of greenhouse gases reached a record level in 2018 with

Carbon dioxide	**407.8± 0.1 ppm**
Methane	**1,869± 2 ppb**
Nitrous oxide	**331.1± 0.1 ppb**

which represented 147%, 259% and 123% of pre-industrial level, respectively.[14]

» In 2019, the sea level continued to rise with the global mean sea level reaching its highest value since the beginning of the high-precision altimetry record, in January 1993. The average rate of rise is estimated at 3.24 ± 0.3 mm per year over the 27-year period, but the rate has increased over that time.[14]

» Observations from open-ocean sources over the last 20 to 30 years show a clear decrease in average pH at a rate of 0.017–0.027 pH units per decade since the late 1980s.[14]

Decease of 1%- 2%

Since the mid-20th century, there has been an estimated decrease of 1%–2% (that is, 2.4 – 4.8 Pmol or 77 billion–145 billion tons) in the global ocean oxygen inventory.[14]

» According to the World Glacier Monitoring Service, during the hydrological year 2017/2018 of, observed glaciers experienced an ice loss of 0.89 metre water equivalent (m w.e.).[14]

» Preliminary results for 2019 based on a subset of glaciers, indicate that the hydrological year 2018/2019 was the thirty-second consecutive year of negative mass balance, with an ice loss of more than 1 m w.e.[14]

» Eight out of the ten most negative mass-balance years have been recorded since 2010. The cumulative loss of ice since 1970 amounts to over 23 m w.e.[14]

» The year 2019 marks the 43rd consecutive year (since 1977) with global land and ocean temperatures, above the 20th century average.[25]

Regional Climate Change

Temperature

» As of 2019, Asia had its third warmest year on record, with a temperature of 1.68°C above the 1910–2000 average.[26]

» Across southeast Asia, temperature has been increasing at a rate of 0.14°C to 0.20°C per decade since the 1960s, coupled with a rising number of hot days and warm nights, and a decline in cooler weather.[14]

» Ensemble-mean changes in mean annual temperature exceed greater than 3°C above the late-20th-century baseline over southeast Asia in the mid-21st century under RCP8.5.[15]

» Temperatures in Lao PDR have increased on average between 0.1 to 0.3°C per decade between 1951 and 2000.[12]

Precipitation

» In southeast Asia, the total wet-day rainfall has increased by 22 mm per decade, while rainfall from extreme rain days has increased by 10 mm per decade. Climate variability and trends, however, differ vastly across the region and between seasons.[15]

» Between 1955 and 2005 the ratio of rainfall in the wet to the dry seasons increased.[15]

» Precipitation will likely be more extreme near the centres of tropical cyclones making landfall in southeast Asia.[15]

» Future increases in precipitation extremes related to the monsoon are very likely in Southeast Asia.[15]

» In Lao PDR, rainfall has decreased between 1961 and 1998.[12]

» 1998 due to the El Nino Southern Oscillation, Lao PDR experienced the driest year on record with average rainfall of 800 mm.[16]

Extreme Weather Events

» While an increasing frequency of extreme events has been reported in the northern parts of southeast Asia, decreasing trends in such events are reported in Myanmar.[15]

» In Lao PDR, the number of droughts and floods over the last three decades has increased.[12]

Future Climate Projections

» Average annual temperatures have increased compared to historical trends and the total precipitation per year is increasing throughout the country. As a result, a wide range of potential future changes are projected to occur over the next 20-50 years:[15]

› Model projections indicate a quick and drastic change in the spatial distribution of bioclimatic conditions across the northern and mountainous region of the country. Significant warming and modification of rainfall patterns predicted for 2030.

› Temperatures are projected to increase across the country as well as in the lower Mekong basin and, across seasons. The only uncertainty is how quickly temperature will increase and the magnitude of increase. By 2060, the average annual basin-wide increase could be as low as 0.4 ℃ or as high as 3.3 ℃ depending on the trajectory of global emissions and pattern of changes that follow.

› Rainfall could increase or decrease with significant variation in the magnitude of change and the location of impacts. Average change in rainfall by 2060 under the dry and high emission scenario is projected to be -16%, under the wet, and high emission scenario up to +17% in the most part of the country.

Temperature

» Future temperature change in the lower Mekong basin region will vary from baseline condition within the range of 1 °C – 2 °C. The region will have longer summer periods and shorter winters.[8]

» Some studies indicate that similar warming is likely to occur across all regions, while others suggest that the country's southern climatic zone will experience warming lower than the northern and north central zones.[12]

» The number of days considered 'hot' under present climate is projected to increase by 2-3 weeks and the cool days to decrease by 2-3 weeks.[12]

Precipitation

» The trend of increasing precipitation between 10% and 30% is projected throughout the region, with the highest increase to occur in the eastern and southern part of the Lao PDR. Climate variability tends to be more extreme with wider differences in precipitation between dry and wet years, especially in the Lao PDR.[8]

» Mean annual rainfall is projected to increase by 25% with CO2 concentrations reaching 720 ppm. Wet seasons will experience significant increase in rainfall.[16]

» An overall increase in the number of wet days across the southern area of the Mekong river is projected.[12]

» By mid-century rainfall patterns could change considerably, particularly in some areas of the northern and central regions; rainfall in the northern region is likely to decrease, while that of the central region also suggests a similar trend with a smaller magnitude.[10]

Impacts of Climate Change

» The sectors most vulnerable to climate change (especially flooding and drought) are agriculture, housing, transportation networks and public health services.[11]

» Agriculture is the sector most vulnerable to climate change as it is compounded by vulnerabilities from other sectors such as water, transport, and public health.[11]

Extreme Weather Events

» The frequency of the extreme weather events in Lao PDR has increased from about once every two years before 1992 to every year or even twice a year after 1992.[17]

» Approximately three-fourths of the disasters in Lao PDR have been climate related.[11]

» During 1966 to 2009, flooding was the most frequent climate change hazard, followed by disease epidemics (such as dengue, cholera, and diarrhoea), storms and drought.[11]

» Five storms have reached and affected the country over the last two decades. These storms along with the impacts from southwest monsoons have affected over one and a half million people and caused damages of over US$400,000.[12]

Flood

» Flooding in the country causes damages of about US$50 million every year.[10]

» Most storms are followed by severe flooding, threatening livelihoods every year, and with more frequent and intensified flooding in recent years.[16]

» Flooding has an adverse impact on housing, health and education, industrial activities, and infrastructure (transportation, water, and sanitation).[11]

» The areas of Lao PDR most vulnerable to flooding are the plain areas along the Mekong river in the central and southern parts. Fifteen floods have occurred in Lao PDR from 1970 to 2010.[12]

» The areas of rain-fed rice fields destroyed by flooding were 65,937 ha in 1995, 67,500 ha in 1996, 42,900 ha in 2000, 42,223 ha in 2001, and 57,300 ha in 2005.[17]

» Floods affected 450,910 people from 2,510 villages in 8 provinces in 2005, damaging 102 schools and 117 irrigation system projects.[19]

» In 2006, the impacts of flash floods and prolonged floods caused damages worth 17 billion kip (1.7m USD) to the agricultural sector, 18 billion kip (1.8m USD) to irrigation infrastructure, and approximately 6.5 billion kip (0.65m USD) to the powerhouse of Namtha 3 and Namlung hydropower projects.[19]

» In 2007, flooding affected six provinces in the north, central and southern regions, causing approximately 19.8 billion kip (1.98m USD) of damage to irrigation infrastructure, crop damages amounting to 70 billion kip (7.1m USD) livestock losses worth 103.5 billion kip (10.5m USD) and flooded 34,751 ha of rice fields.[19]

» Between 1966 and 2002, 3,244,150 people were affected by the 16 major floods in the period.[16]

» Flooding due to typhoon Ketsana in 2009 and typhoon Haima in 2011 resulted in reported damages estimated at over US$121 million, affecting over 100,000 people.[7]

» Three flooding incidents in the summer of 2018 affected 17 provinces, 90 districts and 268,000 people.[11]

Droughts

» Lao PDR is also experiencing increasingly frequent episodes of drought, with shortages or delays in rainfall being the main driver of drought. Severe drought occurred in 1996, 1998 and 2003.[1]

» Damages due to severe drought can reach up to US$20 million annually.[10]

» Droughts adversely affect water resources, hydroelectricity generation and agricultural production causing widespread economic loss.[11]

» The droughts in 1998 and 2003 destroyed 29,202 ha and 23,770 ha of rice fields, respectively.[19]

» Around 97,665 tons of rice grain output were lost, and 274,000 persons were impacted by the droughts in 2003.[19]

» Between 1966 and 2002, 5 major droughts affected a total of 4,250,000 people.[16]

» It is estimated that 6 out of 17 provinces are already at high risk of droughts.[11]

» It is estimated that around 188,000 households in Lao PDR are at risk of food insecurity caused by drought.[12]

» Increasing temperatures along with a decrease of rainfall during the dry season might lead to longer and severe droughts. Climate change and the increase in frequency and magnitude of these events are expected to exacerbate issues of food security that area already prevalent in rural areas.[12]

Food and Water Security

» Rising temperatures will increase the incidence and range of pests and, when combined with decreased rainfall and increased demand, new challenges related to water storage or transfer mechanisms will arise.[12]

» Climate change might lead to a loss in agricultural production, impacting the economy and food security of the country.[12]

» Climate change may have both a positive and negative effect on potential future trends of rice productivity in southeast Asia.[16]

» Extreme climatic events may cause a loss of rice productivity. For example, moderate flooding can lead to a decrease ranging 30%-50%.[16]

» Climate change impacts will increase migration and displacement due to a higher rate of natural disasters & poverty; this will include increased impacts due to epidemics and health problems.[12]

» The increase in droughts and high temperatures is expected to lead to water scarcity in dry seasons with implications for the rural areas.[12]

Public Health

» Eight epidemic events have taken place in the past four decades. Disease outbreaks such as smallpox, malaria, diarrhoea, dysentery, dengue fever and cholera have been registered. These epidemics have been associated with recurrent floods and droughts affecting the country over the past years.[12]

» In Lao PDR, the population at risk of malaria is projected to decline towards 2070, however, it is estimated that a low emissions scenario will lead to a greater decline in population at risk.[18]

» The mean relative vectorial capacity for dengue fever transmission is projected to increase under a high emissions scenario from the baseline of 0.55 to about 0.62 towards 2070.[20]

» Under a high emissions scenario, heat-related deaths in the elderly (65+ years) are projected to increase to about 72 deaths per 100,000 by 2080 compared to the estimated baseline of about 3 deaths per 100,000 annually between 1961 and 1990. A rapid reduction in global emissions could limit heat-related deaths in the elderly to about 15 deaths per 100,000 in 2080.[20]

Mitigation and Adaptation to Climate Change

» The Government of Lao PDR ratified the UNFCCC in 1995 and the Kyoto Protocol in 2003.[8]

» As a party to the convention, Lao PDR submitted its First National Communication in 2000, National Adaptation Programme (NAPA) in 2009, National Strategy on Climate Change in 2010 with action plan for 2013-2020 and submitted Second National Communication in 2013.[11]

» In 2015, Lao PDR passed a national law on its Nationally Determined Contribution (NDC), making it the first country in the Association of Southeast Asian Nations (ASEAN) and 26th country in the world to ratify the Paris Agreement under the UNFCCC.

» The intended mitigation activities to be implemented between 2015-2030 include:[18]

Name of activity	Objectives of activity	Estimated CO2eq reductions
Implementation of "Forestry Strategy to the year 2020" of the Lao PDR	To increase forest cover to 70% of land area (i.e. to 16.58 million hectares) by 2020, with emission reductions to carry on beyond that.	60,000 to 69,000 ktCO2e (once the target has been met, by 2020 onwards)
Implementation of Renewable Energy Development Strategy	To increase the share of renewable energy to 30% of energy consumption by 2025. To increase the share of biofuels to meet 10% of the demand for transport fuels by 2025.	1,468,000 ktCO2e (by 2025)
Implementation of Rural Electrification Programme	To make electricity available to 90% of households in rural areas by the year 2020.	163 ktCO2 /pa (once the target has been met in 2020)

Implementation of transport focused NAMAs	To develop road networks and reduce the number of kilometres travelled by all vehicles. To increase the use of public transport compared to the Business As Usual (BAU).	Road network development is 33 ktCO2/pa, and 158 ktCO2/pa for public transport development
Expansion of the use of large-scale hydroelectricity	To build large- scale (>15 MW) hydropower plants to provide clean electricity to neighbouring countries; increase total installed capacity of hydropower to 5,500 MW by 2020, with further addition of 20,000 MW after 2020.	16,284 ktCO2 per annum (2020-30)
Implementation of climate change action plans	To build capacity to monitor and evaluate policy implementation success, with a view to producing new policy, guidance, and data, develop and implement effective, efficient, and economically viable climate change mitigation and adaptation measures.	To be estimated as part of the implementation plan.

» The overall priorities for the Green Climate Fund country programme can be summarised as (not in order of priority):[11]

» The intended mitigation activities to be implemented between 2015-2030 include:[18]

Short term priorities (2019-2021):

- Increase and maintain national forest cover
- Increase the resilience of urban areas to water impact, in particular to floods
- Increase the resilience of rural areas to climate induced droughts and floods
- Enhance resilience of smallholder farming communities in vulnerable areas
- Development of climate friendly agribusiness value chain

Medium to long term priorities (2022-2030):

- Promote energy efficiency measures
- Increase renewable energy supply
- Implement low carbon transport measures
- Increase the resilience of the health system (infrastructure and population)
- Enhance the resilience of urban infrastructure

» The National Adaptation Programme of Action (NAPA) released in May 2009 identifies 45 projects totalling US$85 million to increase resilience in the priority sectors of agriculture, forestry, water, and public health, setting out the objective, activities, outputs, implementing agencies and budget for each project.[19]

» The National Climate Change Strategy (2010) sets out mitigation and adaptation measures in seven sectors: agriculture and food security, forestry and land use change, water resources, energy and transport, industry, urban development, and public health.[8]

» To support the implementation of the National Climate Change Strategy, the draft Action Plan on Climate Change (2013-2020) sets out climate change actions for the seven priority sectors in the National Climate Change Strategy.[11]

Priority climate change adaptation actions include:

- Climate resilient agriculture, land use change and forestry
- Water resource management
- Ecosystem based adaptation solutions
- Climate resilient transport and urban development
- Adaptation in the health sector

Priority climate change mitigation actions include:

- Increasing and maintaining national forest cover
- Increasing use of renewable energy sources and energy efficiency in rural electrification
- Emission reduction by developing public transport services

Lao PDR's Vision 2030 prioritises[20]
Innovative
Green
Sustainable economic growth

» Lao PDR's ten-year Socio-economic Development Strategy (2016–2025) consists of seven strategies, one of which focuses on "green economic growth" and another focuses on "sustainable and green environment with effective and efficient use of natural resources".[21]

» Lao PDR's 8th National Socio-economic Development Plan (2016- 2020) has three outcome areas including the third outcome area: "Natural resources and the environment are effectively protected and utilised according to green-growth and sustainable principles; there is readiness to cope with natural disasters and the effects of climate change and for reconstruction following natural disasters".[22]

» The focus of the Lao PDR government's adaptation efforts is on agriculture, forestry, water resources, and public health.[11]

» The ten-year Natural Resources and Environment Strategy 2016-2025 (NRES 2016-2025) includes 2030 targets for climate change mitigation and access to climate change data and information. An objective is outlined to ensure Lao PDR is informed and prepared for adapting to climate change, responding to climate change impacts, and contributing to global Green House Gases (GHGs) emission reductions.[11]

» Agriculture Development Strategy to the Year 2025 and Vision to 2030 prioritises research into rice and crop seeds that are resilient and capable of adapting to changing climate conditions. The strategy also aims to develop and implement appropriate agricultural methods along with developing and implementing appropriate agricultural methods.[11]

» The vision of the Climate Change and Health Adaptation Strategy is for people to be healthy and strong. The strategy's overall target is to promote public health and to ensure community sectors are able to protect peoples from unstable and changing climate conditions.[11]

» The Forestry Law was revised in 2008 and informs national policy on reforestation and deforestation, sustainable use of forests and forest resources, and the use of forests and ecosystems for ecotourism. The law requires the increase of forest cover as a sink source for greenhouse gas emissions.[11]

» The Plan of Action for Disaster Risk Reduction and Management in Agriculture 2014-2016 (2014) provides a roadmap for operationalising a proactive approach to managing natural hazards and risks by emphasising mitigation, prevention and preparedness in short term and long-term planning.[23]

» Renewable Energy Development Strategy seeks to increase the share of renewable energy within total energy consumption to 30% by 2025, through the promotion and development of biofuels and other alternative energy sources for the transport sector, as well as small-scale hydropower, solar, biogas, energy, biogas, and wind energy.[11]

» Two sectoral climate investment plans have been prepared: Climate Investment Plan Agriculture and Forestry (2018), and Climate Investment Plan Sustainable Cities (2018). The objective of the climate investment plans is to identify projects which can synergistically support a paradigm shift towards a low carbon, climate resilient development pathway for the sector.[11]

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