



ASIAN DISASTER REDUCTION CENTER

Visiting Researcher Program (FY2023)

Laos Country Report 2023



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Contents

1. General information

.....3

1.1 Geographical Data

.....3

1.2 Climate Change

information.....4

1.3 Demographic

Data.....5

2. Disaster Risk Situation in

Laos.....5

2.1 Role and significance of national Strategy on Risk

Reduction.....7

2.2 Historical Disaster Situation and

impact.....8

3. Related Laws and

Regulation.....12

3.1 National Socio-Economic Development plan

.....13

3.3 Achievements in Disaster management for Lao PDR

.....15

4. Key Changes and Lessons Learned

.....19

4.1 Key problems and challenges

.....19

4.2 Lessons Learned

.....21

5. Develop National Strategy for DRR 2021-2030.....25

6. Counterpart of ADRC.....25

7. References25

1.General information

1.1 Geographical Data

Laos is a Landlocked Country location in Southeast Asia bordered by Burma, com Plateau in China through Myanmar, Lao PDR, Thailand, Cambodia and Viet Nam. Most of the country is Mountainous and thickly forested, and The Mekong River form a large part of the western bondary with Thailand , The Mekong river has a length of approximately 4,900 km, flowing from its source on

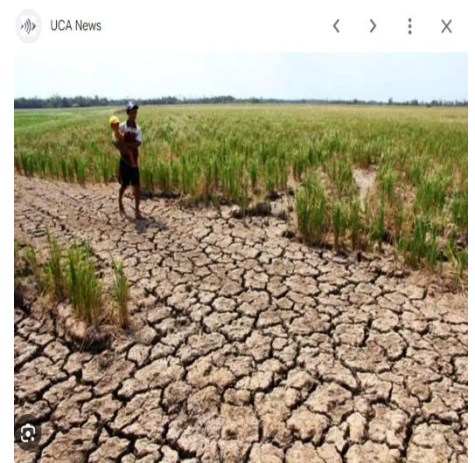


the Tibetan Plateau in China through Myanmar, Lao PDR, Thailand, Cambodia and Viet Nam via a large delta into the sea, Mekong River length in Laos 1683 km, Laos has the Main River 7 River is Nam Tha River a length 325 km, Nam Song River 36 km, Nam Ngum River 354 km, Nam Kean River, Nam Ou River 448 km, Nam Xe Bangfai River and Nam Banghiang River, have 17 provinces 148 District, Divided into three areas is Northern, central and Southern.

1.2 Climate Change General information

Lao PDR is highly vulnerable to climate change impacts, particularly floods, landslides, and droughts. A study conducted by the Ministry of Natural Resources and Environment (MoNRE) and UN-Habitat indicates that 46% of the settlements in Lao PDR, representing around three million people, have been impacted by at least one climate change-related hazard.¹ In 2018, the country suffered its most costly floods in a decade following heavy rains from two tropical cyclones. Overall, more than 600,000 people across all 18 provinces were affected by the impact of the two tropical cyclones. In addition, climate change and changing rainfall patterns can increase the incidence of landslides and droughts. However, there is limited evidence that disaster risk and climate change considerations are routinely incorporated into urban or spatial planning in Lao PDR.

Lao People's Democratic Republic has a tropical climate, which is influenced by the southeast monsoon which causes significant rainfall and high humidity. The climate is divided into two distinct seasons: rainy season or monsoon, from May to mid-October, followed by a dry season from mid-October to April. The average annual rainfall is about 1,300 – 3,000 mm. Average temperatures in the northern and eastern mountainous areas and the plateaus are 20° C , and in the plains 25-27° C.



1.3 Demographic Data

Laos's total population was 7.58 million in January 2023. Data shows that Laos's population increased by 105 thousand (+1.4 percent) between 2022 and 2023. 49.6 percent of Laos's population is female, while 50.4 percent of the population is male. Feb 14, 2023

Population of Laos (2024 and historical)

Year	Population	Yearly % Change	Yearly Change	Migrants (net)	Median Age	Fertility Rate	Density (P/Km ²)	Urban Pop %	Urban Population	Country's Share of World Pop	World Population	Laos Global Rank
2024	7,736,681	1.35 %	102,902	-9,999	24.7	2.37	34	37.9 %	2,933,677	0.10 %	8,118,835,999	103
2023	7,633,779	1.39 %	104,304	-9,999	24.4	2.41	33	37.3 %	2,849,332	0.09 %	8,045,311,447	103
2022	7,529,475	1.41 %	104,418	-9,999	24.1	2.45	33	36.7 %	2,765,699	0.09 %	7,975,105,156	103
2020	7,319,399	1.49 %	107,346	-10,303	23.5	2.54	32	35.5 %	2,600,131	0.09 %	7,840,952,880	105
2015	6,787,419	1.43 %	92,800	-12,995	22.0	2.77	29	32.5 %	2,206,330	0.09 %	7,426,597,537	106
2010	6,323,418	1.56 %	94,090	-27,446	20.2	3.15	27	29.7 %	1,877,890	0.09 %	6,985,603,105	107
2005	5,852,970	1.51 %	84,423	-24,171	18.4	3.67	25	26.7 %	1,564,297	0.09 %	6,558,176,119	103
2000	5,430,853	1.96 %	100,684	-34,009	17.3	4.40	24	21.6 %	1,171,236	0.09 %	6,148,898,975	103
1995	4,927,432	2.69 %	122,598	-14,290	16.8	5.35	21	17.1 %	843,190	0.09 %	5,743,219,454	105
1990	4,314,443	2.89 %	114,568	-3,100	16.7	6.08	19	15.2 %	657,373	0.08 %	5,316,175,862	111
1985	3,741,604	2.56 %	88,817	-1,388	16.7	6.36	16	13.6 %	509,071	0.08 %	4,861,730,613	113
1980	3,297,519	1.82 %	56,960	-17,366	16.7	6.33	14	12.2 %	403,247	0.07 %	4,444,007,706	115
1975	3,012,720	2.40 %	67,487	-13,881	17.4	6.29	13	11.2 %	338,147	0.07 %	4,069,437,231	115
1970	2,675,283	2.37 %	59,165	0	17.5	6.31	12	9.7 %	258,749	0.07 %	3,695,390,336	117
1965	2,379,456	2.31 %	51,385	0	17.7	6.32	10	8.3 %	198,298	0.07 %	3,337,111,983	115
1960	2,122,532	2.31 %	45,829	0	18.1	6.29	9	7.9 %	168,533	0.07 %	3,019,233,434	116
1955	1,893,389	2.36 %	41,743	0	18.4	6.26	8	7.6 %	143,427	0.07 %	2,746,072,141	115

Source: **Worldometer** (www.worldometers.info)

2. Disaster Risk Situations in Lao PDR

Lao PDR is a landlocked country, with a number of unique geographical regions. About two-thirds of the land area is mountainous. The country has a tropical climate with two seasons. The dry season is between mid-October and mid-May and is influenced by the northeast monsoon, mainly during October to February. The coolest period of this season is November to January while the hottest period is from March to May. The rainy season is from mid-May to mid-October, when the southwest monsoon winds from the Indian Ocean and the Gulf of Thailand bring high humidity into Lao PDR. Between July and September there are heavy rainfalls, especially very frequent rainfalls in August. The average annual rainfall across the country is between 1,900 to 3,500 mm. The wet season is generally hot to extremely hot.

Due to its geographical conditions and the location of the country, Lao PDR has a high risk from natural disasters and climate change, such as floods, droughts, storms, and landslides, as well as epidemics, etc. The country still relies on natural resources and agricultural production and has limited and insufficient disaster prevention, preparedness and response capabilities, and this is partly why it

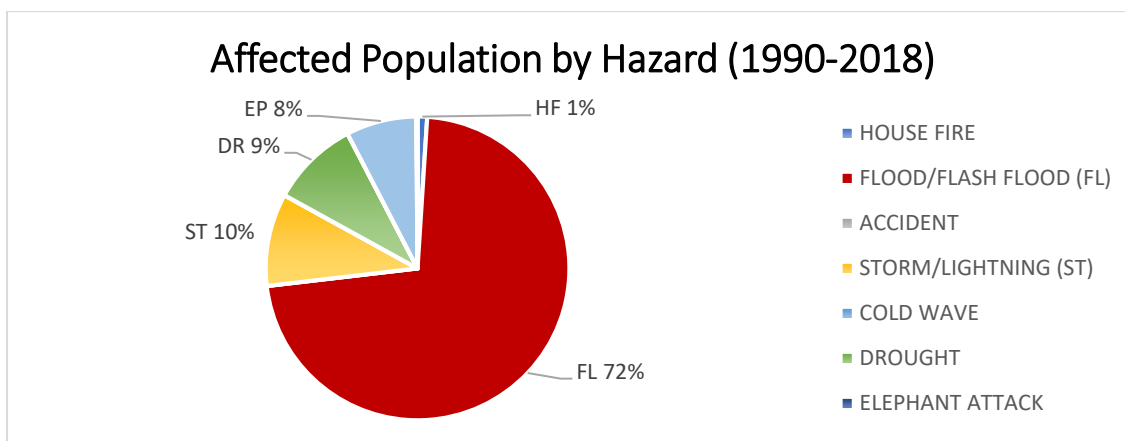
remains a least developed country. Climate change is also a risk factor for Lao PDR, as more people will be affected by natural disasters. Increasing rainfall and temperatures are expected to alter the Mekong hydrological system, and flood and drought risks are expected to increase.

The National Disaster Risk Report 2010 indicated the situations of risk and vulnerable areas affected by major disasters such as floods, landslides, storms and droughts as follows:

+ **Flood risk areas:** 8 rivers are risky for flooding, include: Nam Ou, Nam Ngum, Nam Ngiep, Nam Xan, Xe Bang Fai, Xe Bang Hieng, Xedon and Xe Kong. The data analysis indicated that many districts located along the eight rivers are vulnerable to floods in different areas and depths. It was estimated that a total of 115,322 people in the eight flood-prone areas are unable to help themselves or still dependent on other people, who are at risk of being affected by the floods, of which 77% are in floodplains with a depth of more than 2 meters. In addition, the infrastructure that is at risk and may be affected by floods, includes: residential buildings and housing, agriculture, hospitals / clinics (health centers), schools, clean water sources etc.

+ **Storm risk areas:** This includes typhoons or cyclones, and tropical storms, which cause strong winds and heavy rain as well as hailstorms that may cause death or injury and affect or damage property of people, residential houses, public buildings, schools, hospitals, agricultural production areas etc. It was estimated that approximately 67.96% of the population may be affected by these storms with intensity of 63.17 km/h about 28.45% will be affected by tropical low pressure in the range of 0-62 km/h; about 3.53% will be affected by Type 1 storms with the intensity of between 119-153 km/h; and about 0.06% will be affected by Type 2 storms with the wind speeds of between 154-177 km/h, mainly in Khammouane province.

+ **Drought risk areas:** Droughts mostly have direct impacts on agriculture and food security, people's livelihoods, clean water sources, and sanitation. The data analysis indicated the common drought risk areas in different provinces with moderate and severe levels.



Source: MLSW, Government of Lao PDR, 2020, using data from Lao-Di (1990-2018)

Figure 1 shows that floods accounted for 72% of those affected by disasters, during 1990-2018. Storms, droughts, and epidemics affected 10 percent, 9 percent, and 8 percent of the population respectively.

2.1 Role and Significance of a National Strategy on Disaster Risk Reduction

The Government has recognized the importance and necessity of continuing to reduce poverty and promote better living standards and opportunities for the Lao people through sustainable development, especially in terms of operational capacity and resource availability for disaster risk reduction, preparedness, emergency response and recovery. The DM Law in 2019 and NSDRR in 2021, and the changes in the legal framework and the institutional arrangement it brings, are aimed at addressing this issue. This National Strategy on Disaster Risk Reduction to 2030 is significantly important and has the goal to strengthen disaster management in prevention and reduction of disaster impacts, preparedness emergency response and recovery after a disaster, including resilient reconstruction. The intention is to extend the implementation of the DM Law adopted in 2019, and also to implement regional and global policies and strategies on DRR, including the Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR), the Paris Agreement on climate change, the ASEAN Agreement on Disaster Management and Emergency Response, the ASEAN Action Plan on Disaster Management and Emergency Response for 2021-2025, the ASEAN Declaration on Unity in Disaster Response, and the 2030 Agenda for Sustainable Development (the Sustainable Development Goals, or SDGs).

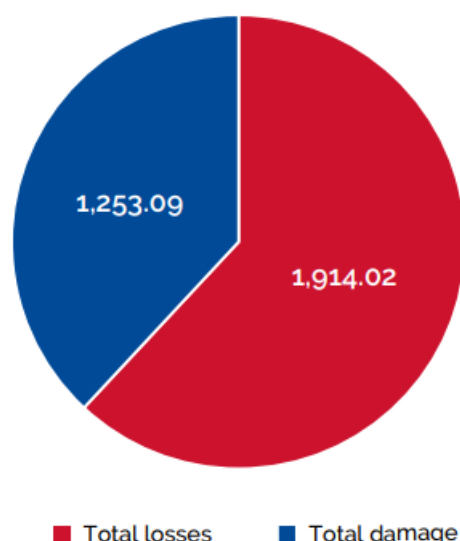
2.2 Historical Disaster Situations and Impacts

In the past, Lao PDR has faced increasing losses from severe climate and climate-related disasters, especially floods, droughts, landslides, summer storms and cyclones, in addition to epidemics, earthquake, and large areas of the land being contaminated with UXO. From 1970 to 2019, there were 37 significant natural disasters (mostly floods and droughts) that affected nearly 9 million people and caused economic damage . Flood is the major natural disaster in Lao PDR, with the Mekong river and its tributaries the main sources of regular floods. The development of hydropower projects generates more impacts on the hydrological system of the Mekong River with discharge of water from the dams. Without proper water management, the flood risk from such projects will increase.

Lao PDR has experienced a number of major flood disasters, including the floods caused by Typhoon Ketsana in 2009 and Typhoon Haima-Nokten in 2011, which caused damage of US\$ 248 million. There was also a significant flood in 2013 that caused damage of more than US\$ 270 million. The most notable floods were those caused by Typhoon Son-Tinh and the collapse of the Xe Pian-Xenam Noi Dam in Attapeu Province in 2018, and Typhoon Bebinca and severe floods in 2019, all of which had a significant impact on socio-economic development. The estimated total flood damage in 2018 was LAK 3,166.9 billion (approximately US\$ 371 million) or about 2.1 percent of GDP. The impacts of the Covid-19 virus outbreak have also forced the Government to revise and adjust its 2020 economic growth targeted from 6.5 percent to 3.3 to 3.6 percent, based on macroeconomic projections.

Lao PDR has been severely affected by floods between July and September 2018.’ (currently says ‘in recent months’). On July 18–19, Tropical Storm Son-Tinh caused heavy rains and flooding in 55 districts of 13 provinces across the country. On the night of July 23– 24, a breach in the Xe Pien-Xe Nam Noy hydropower saddle dam caused an unprecedented flash flood in Attapeu Province. And on August 16–18, Tropical Storm Bebinca also affected the northern part of Lao PDR. The post-disaster needs assessment (PDNA) valued the total overall effects of the floods on the economy at an estimated 3,166.99 billion Lao kip, or approximately US\$371.5 million (see Table 1). Total damage accounted for 1,253.10 billion Lao kip, and losses totalled 1,914.02 billion Lao kip.

Figure 2 — Cost Breakdown of the 2018 Floods by Damage and Losses (billion Kip)



Source: Estimates based on data from the Government of Lao PDR.

In terms of geographical spread, Vientiane Capital, Huaphanh, Khammuane, and Attapeu were worst affected. Attapeu and Huaphanh had the highest per capita impacts. Following the dam break, Attapeu Province had damage and losses estimated at US\$35 million—just under 10 percent of the total effects—an amount that includes additional flooding from heavy rains. The floods produced different effects across economic and social sectors. Agriculture, including crops, fisheries, livestock, forestry, and irrigation, suffered the most losses, amounting to 57 percent of the total losses. The transport sector, including roads, bridges, transport services, and government buildings, accounted for 65.6 percent of the overall damage and 40 percent of losses. The waterways sector was also heavily affected. Overall, the public domain was heavily affected in terms of both losses and damage, especially the productive and infrastructure sectors. Private domain losses were driven by reduced income to farmers, persons involved in small- and medium-sized enterprises (SMEs), and those providing services in the culture and tourism sectors. Small farmers, workers, and owners of SMEs have directly felt the burden of the disaster.

In 2018 floods affected each economic and social sector differently, with the agriculture and forestry sector, including crops, livestock, fisheries, forestry and

irrigation, facing severe losses, up to 57 percent of the total losses. The transport sector, including roads, bridges, transport services and government buildings, accounted for up to 65.5 percent of the total damage. Overall, the state sector faced severe effects in terms of loss and damage, especially in the areas of production and infrastructure. The damage to the private sector is due to declining incomes of farmers, individual people engaged in small and medium enterprises, and those who provide services in the cultural and tourism sector. Smallholder farmers, workers and owners of small and medium enterprises were directly burdened by the disasters, as shown in Table 2.

Table 1: Economical Damage and Losses by Floods in 2018

Sector	Damage (billion LAK)	Loss (billion LAK)	Total (billion LAK)
Social sector:			
Housing and settlement	21.12	0.57	21.69
Education	18.73	1.68	20.41
Health and Nutrition	8.58	3.32	11.89
Culture	10.11	0.25	10.36
Production sector:			
Agriculture: Crops, Livestock, Forestry, Irrigation	139.80	1,087.60	1,227.30
Industry and Commerce	0.80	2.99	3.78
Tourism	21.87	9.59	31.46
Infrastructure sector:			
Transport	822.02	785.80	1,607.82
Electricity	42.20	3.20	45.40
Water and sanitation	50.96	19.02	69.98
Waterway	116.90		116.90
Total (billion LAK)	1,253	1,914.02	3,166.99
Total (million USD)	147	224.5	371.5

Source: PDNA Report 2018

Figure 2: Major hazards of Lao PDR, identified in terms of Multiple Damage and Loss Indicators (1990–2018)

Hazards	Death	Injured Population	Affected Population	Destroyed Houses	Damage d Houses	Economic Loss
Flood	1	1	1	1	1	1
Drought	4	4	3	2	4	3
Storm	4	4	2	3	2	2
Epidemic	2	2	3	4	4	4
House Fire	4	4	4	4	4	4
Accidents	3	4	4	4	4	4



Key: 1 Red = high impact (> 30%). 2 Brown = Moderate impact (10–30%). 3. Gold = Low impact (5–10%). 4 Blue = Very low impact (1–5%). White = Zero impacts.

Source: MLSW, Government of Lao PDR, 2020, using data from Lao-Di (1990–2018)

3. Related Laws and Regulations

The DM Law 2019 sets out disaster management principles and measures to make implementation efficient, effective and modern, ensuring information is provided quickly and clearly, and aiming at surveillance, reduction of disaster impacts on health, life, property of the state, communities and people, the environment and infrastructure, including recovery, restoration and rebuilding after a disaster. It can be linked to regional and international cooperation, contributions to green and sustainable socio-economic development and national security. The Government policy considers the importance of disaster management by formulating the strategy, measures, action plans, programs/projects, education, awareness raising, staff allocation, information, budget, equipment, vehicles, and mobilizing assistance to ensure peaceful, safe, efficient and effective work and a

reduction of risks to life, health, property, rights and legitimate interests of citizens. The DM Law identifies three main tasks as follows:

- 1) Disaster prevention tasks aim to prevent and mitigate disaster risks, such as data collection and inventory of risk areas, risk zoning, risk mapping, risk information system development, access and use of information, risk assessment and mitigation, disaster preparedness and response, early warning, and announcement of evacuation;
- 2) Disaster management tasks aim to limit the disasters that are occurring so that they won't cause serious harm or significant damage to health, life, property of the state, community and people, which needs actions such as ensuring safety, emergency assistance, search and rescue, initial impact and need assessments, repairing essential infrastructure, declaration of a disaster area, and cancellation of the declared disaster area; and
- 3) Post-disaster rehabilitation tasks are aimed at rehabilitation of livelihoods of disaster victims, restoration and rebuilding the infrastructure that was affected and/or damaged by a disaster to the same standard or better than before, requiring actions such PDNA, post-disaster recovery planning, implementing the post-disaster recovery, and monitoring and evaluating the recovery.

The Decree on Social Welfare sets out principles, regulations and measures for implementing social welfare policies for disaster victims and other disadvantaged people in order to ensure they receive assistances and services in an efficient, effective, fair and comprehensive manner.

3.1 National Socio-Economic Development Plans (NSEDP)

1). 8th Five-Year National Socio-Economic Development Plan (2016–2020):

The Government has implemented resolutions of the 10th Party Congress, which aimed to lead the country to become a middle-income country, to integrate with regional and international cooperation, and to build the society with fairness and solidarity that allows all people to access quality social services. In order to achieve the goal, the NSEDP sets out the direction to ensure green and sustainable

development, which uses economic development as the center for country development, ensuring consistency and harmony between the development of the economy, social-cultural and environmental protection, as well as responding to natural disasters in a timely manner and ensuring comprehensive rural development in close connection with poverty alleviation of the people: the “Three Build Policy”. The objectives and targets related to DRR were also identified, with a focus on effective preparedness for natural disasters and climate change, as well as restoration of disaster damage to build back better. The tasks and key areas are as follows:

- The key areas related to DRR include to: establish and improve station networks and warning systems in priority river basins; improve earthquake warning stations; develop an effective and efficient natural disaster management and prevention plan (warning, response, emergency assistance, evacuation of people and property, rehabilitation system) throughout the country; establish a disaster prevention and control system to ensure the safety of people in a timely manner throughout the country; establish mechanisms and capacity building for disaster impact reduction, emergency response to natural disasters in the areas of land use change and forestry, agriculture, energy, industry and environment, including integration of climate change adaptation into the priority areas (agriculture and forestry, water and health); establish a disaster prevention fund as an important financial mechanism for coping with impacts; studying climate change and disaster-prone areas, promoting research and applying new innovations; develop national and local DRR and preparedness plans; set up a National Disaster Emergency Coordination and Command Center and an ICT-Disaster Statistics System.

- The key areas related to policies and legislation include: develop NSDRR and programs; implement disaster response policies, such as the protection of wetlands and forests in steep slope areas in order to reduce the risk to communities and unpredictable impact of natural disasters; develop a disaster law; develop a Decree on the National Disaster Prevention and Control Fund; develop a guideline on integrating/mainstreaming the disaster impact mitigation activities into NSEDPs, strategies, programs and plans of concerned sectors, especially in agriculture and forestry, water, and health sector.

2). 9th Five-Year National Socio-Economic Development Plan for 2021–2025

identifies a goal and targets on disaster management by focusing on strengthening prevention, control and post-disaster recovery as follows:

- Systematically integrate adaptation to climate change and mitigation of the impacts of climate change and natural disasters into relevant sector and local development plans; develop SOPs on early warning for meteorological and hydrological hazards; implement management plans, prevention measures and mitigation of the effects of climate change and natural disasters effectively and efficiently (warning, prevention, and emergency assistance system); build forecasting capacity on floods, droughts and earthquakes in high-risk areas throughout the country; continue to improve and expand the meteorological and hydrological station network throughout the country; improve and expand the National Early Warning Center as well as the network for receiving and transmitting disaster information, forecasting and early warning effectively; improve the quality of reporting, warning of extreme temperature, weather, earthquakes and water levels effectively.

- Enhance the prevention, control and recovery of natural and man-made disasters by strengthening the capacity of the Disaster Management Committees at both central and local levels in DRR and preparedness; promote the establishment and capacity building on emergency reserves for national, provincial, district and village level in order to provide timely and effective relief to disaster victims; and at the same time, strengthen the coordination between central government agencies and local authorities in addressing damage and loss, provide effective assistance to those affected by a natural disaster, and promote participation of all sectors of society, as well as both domestic and international organizations.

3.2 Sectoral Development Plans Related to Disaster Management

The National Social Protection Strategy sets out the goal for developing and strengthening the social welfare system to be strong and effective in providing relief services to disaster victims.

The 5th Five-Year Labor and Social Welfare Development Plan from 2021 to 2025 outlines the goal to strengthen the prevention, control and post-disaster recovery to be strong and effective, focusing on disaster prevention, control and post-

disaster recovery and rehabilitation through capacity building on DRR and disaster preparedness for Disaster Management Committees in both central and local level; coordination between government agencies and local government in addressing disaster losses effectively; promote all sectors in society, including both domestic and international organizations, for disaster prevention, control and recovery.

3.3 Achievements in Disaster Management for Lao PDR

In the recent past, Lao PDR has experienced more natural disasters, more impacts and losses, so the Government has focused on strengthening disaster prevention, preparedness and mitigation of the effects of disasters, as well as post-disaster recovery. It has focused on developing and improving legislation for disaster impact management and mitigation, such as DM Law No. 71/NA, the Law on Meteorology and Hydrology No. 36/NA, the Decree on Climate Change No. 321/GOL, the Decree on Disaster Management Fund No. 631/GOL, the Decree on Organisation and Roles of Disaster Management Committee No. 239/PM, the Draft NSDRR, and the National Action Plan on Climate Change Adaptation.

Disaster management and climate change were mainstreamed into the NSEDP and concerned sectoral development plans under the framework of Sustainable Development and Poverty Alleviation, for example: in public works and transport and agriculture and forestry sector, the annual drought and flood prevention action plan was prepared, as well as a plan to deal with pest outbreaks.

The disaster management mechanism has also been improved and strengthened by improving and establishing Disaster Management Committees in central, provincial, district and village level. Awareness-raising activities on disaster risks and impacts as well as appropriate prevention and disaster loss reduction measures for the community and society were also widely implemented. Disaster preparedness plans were developed and updated annually, as well as disaster response exercises were implemented at the national, provincial, district and village levels. Disaster impact assessment, emergency needs assessment and post disaster recovery assessment tools were developed for concerned sectors, with capacity building for application of the tool to responsible staff in both central and local levels.

Weather forecasting and early warning were also developed and strengthened through modernizing weather forecast methods, mechanisms and reporting, establishing the National Water Resources Information Center, upgrading and constructing 163 meteorological and hydrological stations, setting up the National Earthquake Information Center and building 15 new earthquake monitoring stations across the country and also upgrading 2 stations. A community-based alert system was developed and improved by launching a pilot project to use mobile alert messaging tools through Lao Telecom, Lao Telecommunications Enterprise, UNITEL and Beeline network; messages were also further broadcast by using sound systems and loudspeakers (village loudspeakers).

Logistics to support emergency disasters was enhanced by improving the MLSW's warehouse in Km 17, equipped with materials and systematic placement of supplied and consumption goods. The responsible social welfare warehouse management staff in both central and provincial level received trainings on logistics and management of supplied and consumption goods, providing the training management warehouses (1 unit per province) for using for emergency response to Oudomxay, Xayabouly, Bokeo, Luangnamtha, Khammouane, Savannakhet, Sekong and Attapeu provinces.

During the emergency assistance and response, the Government had advised and assigned the Disaster Management Committees in each level and concerned sectors in both central and local levels to implement the assistance effectively and efficiently, ensuring that all disaster affected people receive assistance quickly, timely, and with safe life during emergencies. Many central party-state leaders also visited to motivate the affected people, to encourage and direct the responsible parties to provide assistances in the disaster affected provinces.

The Government had issued national disaster declaration areas and welcomed international supports through the Central Disaster Management Committee. In the aftermath of the national disaster, the Government had coordinated with development partners and international organizations to ensure immediate humanitarian assistance, including search-and-rescue, distribution of relief supplies, use of medical and emergency assistance supplies, construction of

shelters and temporary evacuation centre, victim assistance and evacuation activities.ⁱ

Post-disaster rehabilitation: The Government had allocated many billions LAK of the state budget to use for post-disaster rehabilitation, by allocating to concerned departments at the central and local levels, such as public works and transport, agriculture and forestry, health, education and sports. Concerned sectors in central and local level (provincial) also seek support from international partners to implement emergency aid and recovery programs after a disaster, including strengthening disaster and climate change management projects, so the impacted people received assistance and recovered to their normal living conditions. Their houses were repaired or newly constructed, basic infrastructure such as roads and bridges, irrigation systems, public buildings and facilities, health services, clean water, electricity, etc. had been restored.

Important outstanding disaster recovery work was seen in Sanamxay district Attapeu province, which had been successfully implemented. Success such as social welfare works, impact assessments and compensation, restoration of basic infrastructure and job allocations, especially land clearing and allocation, promoting and setting up production groups, construction of irrigation, building permanent houses, electricity work, construction of a hospital, health centers, etc. The total value of the compensation for the damage and post disaster recovery was LAK 828,516 billion.

International Cooperation: Under the leadership of the Ministry of Investment and Planning, the Government has established a Round Table process, which brings together governments and national development agencies, United Nations agencies, civil society organizations and the private sector to ensure funds, time and have the maximum impact in development across the country. It consists of 10 Sector Working Groups to coordinate actions among various stakeholders by theme, covering: health, education, governance, infrastructure, macroeconomics, trade and the private sector, mine action, illicit drug control, agriculture and rural development, and natural resource management and the environment. A number of Sub-Sector Working Groups provide additional platforms for coordination around specific priorities within these sectors. Disasters, Climate Change & Environment is one of the Natural Resources & Environment Sub-Sector Working

Groups, chaired by Department of Climate Change, Ministry of Natural Resources and Environment, and Co-Chaired by UNDP.ⁱⁱ

Budget and Disaster Risk Financing: The Government has the main financial tools for Disaster Risk Management, including 1). State Reserve Fund (SRF) (State Budget Department, Ministry of Finance), 2). National Contingency Fund (State Budget Department, MOF), 3). Social Welfare and Emergency Fund (Department of Social Welfare, MLSW), 4). Road Maintenance Fund (RMF) (Ministry of Public Work and Transport), and 5). Provincial Emergency Funds (Provinces). In 2016 the total resources allocated to these various funds include approximately LAK 800.6 billion for FY2014/15 (LAK 300 billion to the SRD, LAK 100 billion to the National Contingency Fund, LAK 0.5 billion to the Social Welfare Fund, LAK 400 billion to the Road Maintenance Fund and LAK 0.1 billion to the Provincial Emergency Funds.ⁱⁱⁱ

In recent years, the Government has 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 had purchased the disaster insurance under the SEADRIF project in the value of US \$5 million in the three-year term beginning from 2021, including two components: Parametric Insurance with the value of US\$ 3.5 million and Soft Trigger with the value of US\$ 1.5 million. This project will be an important financial potential for Lao PDR to provide emergency assistance in a disaster event.

4. Key Challenges and Lessons learned

Although the disaster management in the past were positive progress and success, there were also many problems, challenges and lessons to be addressed in the future.

4.1 Key Problems and Challenges

- Although the Government has made great efforts to provide emergency assistance and post-disaster recovery, due to the limited budget and lack of available disaster funds, the implementation of such work was delayed and unable to meet the actual needs, such as the implementation of social welfare policy and

relief, social rehabilitation, infrastructure and production, etc. For example, during 2018 and 2019, many provinces were affected by floods, which caused damage to housing and production areas, damage to socio-economic infrastructure such as roads, bridges, irrigation, schools, electricity, etc., which need the budgets for both emergency response and post-disaster recovery;

- The structural protection measures were not able to be implemented to the extent needed. For example, the investment in construction of flood protection banks, riverbank landslide protection, and roadside landslide protection;

- The information and early warning transmission system to the communities in some areas is still limited, people receive the information late or cannot access the information quickly and in time, especially in remote rural areas, due to lacking and outdated essential facilities and equipment;

- Disaster risk zoning identification and mapping, especially in high risk provinces, districts, and villages is still not available. This resulted in the development of disaster risk prevention and mitigation plans facing difficulty, due to the lack of data/information for sector development projects to avoid disaster damages and losses, including to avoid generating new problems, for example: the flood disaster caused by Xe Pian Xe Namnoy dam development project;

- The established local Disaster Management Committees in most provinces, districts and villages still have limited knowledge of disaster management and disaster risk mitigation, which leads to lack of initiatives in planning to prevent and respond to emergencies in advance, and this creates difficulty in emergency response during a disaster event;

- Emergency response teams have limited capacity in some areas to provide assistance during an emergency event, including lacking suitable and appropriate tools, vehicles, and equipment in accordance with the situation and condition of the actual disaster, for example: rescue tools and equipment, rescue boats, equipment and tools for cleaning and keeping of corpses;

- Large and medium warehouses to store relief materials and equipment for response during a large disaster emergency are still limited (only available in the central level), while they are not available in local, province, and district levels. Transportation systems and logistics management are not systematic, which leads

to difficulty receiving large relief supply and consumption goods, some of which were expired, low quality, etc. for example: during the flood event in Attapeu province in 2018, the facilities such as offices and meeting halls in the province and districts were used to store the relief aid;

- Zoning for evacuation centers, temporary shelters or emergency shelters are not yet identified. This resulted in disaster impacted people not receiving suitable temporary shelter or they were not safe, for example: during the flood disaster event in Sanamxay district in 2018, many thousands of disaster impacted people had moved into the shelters that were very crowded, humid, limited toilet and bathroom facilities and insufficient clean water, some had diarrhea and flu, the disadvantage groups such as children, new mothers, pregnant women, people with physical disability, mental illness and depression, etc. suffered the most;

- Data collection and initial need assessments are not yet systematic, unified and centralized. Different government sectors and international aid organizations implement their own aspects. The impact and assessment for recovery

- Most of the disaster risk reduction works focus on post-disaster emergency response, which still does not yet focus on investing in resilient infrastructure of critical infrastructure due to insufficient budget;

- Basic sector data/information for emergency response is limited and the data/information recording is not systematic; and capacity building on supporting implementation of DRR activities at the national, provincial, and district levels is also limited.

4.2 Lessons learned

- Increase the investment in disaster prevention, emergency response preparedness and DRR, as well as post-disaster recovery that ensures safety and resilience to future disasters;

- Mainstream DRR into priority tasks in socio-economic development plans in each period, strategies, programs and projects of government at all levels, institutions, business sector and local communities under the frameworks of sustainable development, socio-economic development and poverty reduction;

- Strengthen information and early warning transmission systems to ensure that people have access to and receive early warning information quickly and in time, especially in remote rural areas, as well as using modern equipment to facilitate the system;
- Conduct studies on risk identification and disaster risk mapping in high risk areas at provincial, district and village levels, to be used in the development of disaster prevention and mitigation plans and to provide information to concerned sectors for project developments to avoid disaster losses and creating of new disaster problems;
- Build the capacity of the Disaster Management Committees from the central to local level, including provincial, district and village levels, in order to enhance their knowledge on DM and DRR, and enable them to initiate disaster prevention plans and prepare for emergency response in advance;
- Strengthen the emergency response teams, for example, search-and-rescue teams, medical assistance teams, emergency shelter assistance, as well as procurement and provision of adequate and appropriate vehicles, materials and equipment;
- Setup and improve the warehouse system for emergency equipment at the central, provincial and district levels that have high disaster risk, as well as strengthen the logistics system to be ready for effective implementation during a disaster event;
- Identify zoning for evacuation centers, temporary shelters or emergency shelters to accommodate the disaster victims who will be evacuated during emergencies, and to ensure that they have all the facilities, such as safety in temporary shelters, sanitation facilities, clean water, etc.;
- Strengthen the coordination mechanism for emergency assistance and post-disaster recovery, including impact and needs assessments for emergency assistance and disaster recovery in a systematic, unified and centralized manner;
- All sectors must increase their ownership in collection and creation of disaster risk data/information related to their sector in a systematic manner and share with all parties, including the Disaster Management Committee Secretariat to record in a national disaster integration database;

- Enhance climate change adaptation in different sectors, such as agriculture, cropping, etc. to build resilience to the risks from climate change;
- Both public and private investment projects should consider social and environmental impacts to ensure that they won't create a new risk and adversely impact the people in the project development areas;
- Raise awareness and build understanding of the public, society, private sector, as well as other entrepreneurs on disaster impacts and the need to change the concept of disaster risk and impact prevention, mitigation, and disaster preparedness to increase their contribution and participation to disaster risk reduction, as well as responsibility for their activities;
- Prevention, control and post-disaster recovery measures for the periods during, and after a disaster, should be clearly identified;
- Increase cooperation and seek assistance from international partners to enhance capacity, develop and transfer technology, support the implementation of disaster prevention, preparedness response, and post-disaster recovery.

5. Develop National Strategy for Disaster Risk Reduction 2021-2030

Vision

By 2030 Lao PDR will be strong in disaster management, able to reduce the damage and loss from disasters to the society, economy and environment, and able to integrate DRR in National Socio-Economic Development Plans and sectoral plans in each period.

Overall Goal

By 2030 the Disaster Management and Risk Reduction System will be strengthened and more effectively developed, with the goal of strengthening disaster prevention, control and post-disaster recovery.

The NSDRR sets out the strategies, objectives and priority focus areas. It is fundamental for the implementation of the Disaster Management Law, the development and implementation of national disaster risk reduction plans, and also for integrating disaster risk reduction into the development plans over the next decade from 2021 to 2030, in line with the Sendai Framework is Following this 7 Strategy .

Strategy 1: Develop and strengthen the disaster prevention system, disaster risk reduction, disaster preparedness and response.

Strategy 2: Strengthen disaster response and emergency assistance.

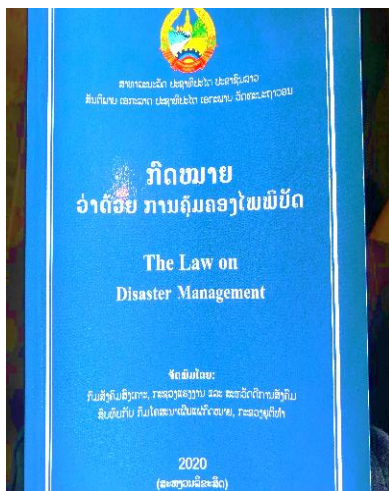
Strategy 3: Develop and strengthen post-disaster recovery.

Strategy 4: Strengthen sectoral coordination on disaster risk reduction, emergency response and recovery.

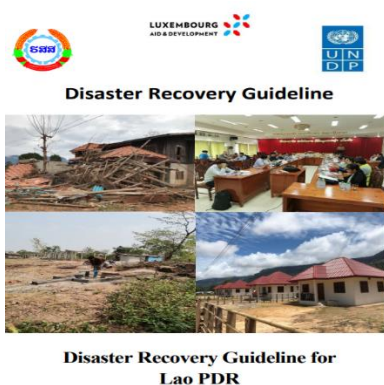
Strategy 5: Enhance national and local DRR education and training

Strategy 6: Promote participation and stakeholder engagement and inclusion.

Strategy 7. Budget and disaster risk financing



(National Strategy for Disaster Risk Reduction 2021-2030)



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