

Linking climate policy and spatial planning in Lao PDR: Urban implication, vertical integration, and spatial planning framework opportunities

URBAN LEADS II | Lao People's Democratic Republic
Urban Low Emission Development Strategies

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The Urban-LEDS project is funded by the European Union.

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ABOUT THE URBAN-LEDS II PROJECT

The Urban LEDS project is an initiative funded by the European Commission under its Global Climate Change Alliance Plus initiative and UN-Habitat and ICLEI-Local Governments for Sustainability (ICLEI) are jointly implementing the project. This initiative addresses **integrated low emission and resilient development in more than 60 cities in 8 countries: Brazil, India, Indonesia and South Africa (from Phase I) and countries added in Phase II: Bangladesh, Colombia, Lao PDR and Rwanda.** In addition to these countries, 16 European cities act as source cities and support peer-to-peer exchange and cooperation.

The overall objective is to **“contribute to the reduction of greenhouse gas emissions by the promotion of Urban Low Emission Development Strategies (Urban LEDS) in cities / towns in emerging economies (Brazil, Colombia, India, Indonesia and South Africa), and Least Developed Countries (Bangladesh, Lao PDR and Rwanda).”** One of the four specific objectives is to **“enhance vertical and horizontal integration of climate action in support of National and Local Strategies and Policies.”** This initiative is being implemented in the wake of the Paris Agreement signing at COP21 in 2015. There has been a growing awareness of the need for a coordinated effort from all levels of government to reduce greenhouse gas (GHG) emissions, as noted in the Paris Agreement.

In Lao PDR, the country is facing rapid urbanisation in an environment of weak urban planning, with no operational comprehensive urban strategy, poor coordination at the local level, and a growing vulnerability to climate change. As there is a critical need to mainstream climate action into urban development before settlements progress in a haphazard, the Urban LEDS project is therefore particularly relevant in enhancing vertical and horizontal integration in support of climate action.

This report is an output from the Urban LEDS II project in Lao PDR. It aims at **understanding the linkages between climate policies and spatial planning in Lao PDR**, capturing climate policies, their urban/human settlement development implications, their vertical integration from international to national and sub-national levels, and **opportunities for the development of a spatial planning framework.**

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Abbreviations and acronyms

ADB	Asian Development Bank
BUR	Biennial Update Reports
CCA	Common Country Analysis
CDM	Clean Development Mechanism
DCC	Department of Climate Change
DoNRE	District Offices of Natural Resources and Environment
DNA	Designated National Authority
DRR	Disaster Risk Reduction
GCF	Green Climate Fund
GHG	Greenhouse Gas
INDC	Intended Nationally Determined Contribution
IPCC	Intergovernmental Panel on Climate Change
LDC	Least Developed Country
MAF	Ministry of Agriculture and Forestry
MoNRE	Ministry of Natural Resources and Environment
MPI	Ministry of Planning and Investment
MPWT	Ministry of Public Works and Transport
NAP	National Adaptation Plan
NAPA	National Adaptation Programme of Action
NDA	National Designated Authority
NDC	Nationally Determined Contribution
NEC	National Environment Committee
NSCC	National Strategy on Climate Change
NSCCC	National Steering Committee on Climate Change
NSEDP	National Socio-Economic Development Plan
PoNRE	Provincial Offices of Natural Resources and Environment
POP	Persistent Organic Pollutants
SDG	Sustainable Development Goals
SEDP	Socio-Economic Development Plans
TWGCC	Technical Working Group on Climate Change
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN-Habitat	United Nations Human Settlements Programme
WASH	Water, Sanitation, Hygiene



Village in Attapeu province, Lao PDR / UN-Habitat Lao PDR

Executive summary

Communities in Lao PDR face significant climate-related hazards, exacerbated by poverty, malnourishment, and high exposure of poor and marginalised groups. As a result, the country is among the most vulnerable countries to climate change effects, and over the past few years, Lao PDR has experienced increased extreme climatic events. At the same time, the country faces rapid and unplanned urbanisation trends with the deployment of basic services not keeping pace, considerably increasing pre-existing vulnerabilities and inequalities.

In this particular context of rapid development, cities worldwide are also responsible for a significant amount of GHG emissions while being particularly vulnerable to climate change. In Lao PDR, one of the countries in Southeast Asia with the highest rate of urbanisation due to intense rural-urban migration, this challenge has to be taken into account to ensure a sustainable, resilient and low carbon urban development. Engaged in several actions to mitigate and adapt to the consequences of the climate crisis, the country is therefore committed to mainstream climate change into policies to tackle this phenomenon holistically.

Climate change has spatial consequences and implications. With more than 50 per cent of the global population living in cities¹, and over 70 per cent of these cities located in vulnerable coastal areas², spatial planning can support efforts to minimise climate change effects and determine the potential for climate adaptation. However, spatial planners often lack relevant local information on climate-related hazards, exposure and vulnerability, illustrating existing difficulties in properly considering climate risks in planning processes and policy, leading to human settlements being still developed without appropriate consideration for climate risks.

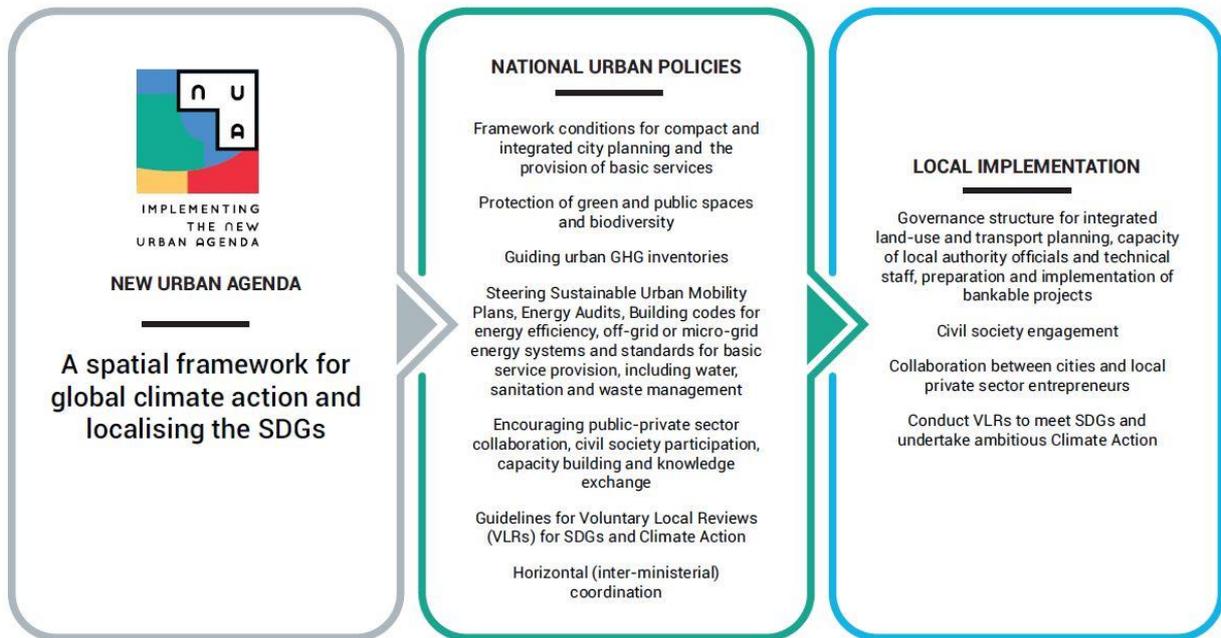
In order to better understand the linkages between climate policies and spatial planning in Lao PDR, this background document aims at capturing climate policies, their urban/human settlement development implications and their vertical integration from international to national and sub-national levels.

At the same time, as Lao PDR is currently refining its National Urban Strategy, integrating a spatial planning framework is a key opportunity to prevent inadequate integration of climate actions into spatial planning, fill gaps between climate action, spatial planning and design, and also to provide a “soft” tool to prepare and anticipate future impacts. In this respect, this paper captures additional opportunities for Lao PDR to develop such a framework to lay the foundations for climate-adaptive spatial planning and change paradigms in spatial planning practices to mainstream climate change at the national, provincial and local levels.

¹ United Nations (2008). *World Urbanization Prospects. The 2007 Revision, Executive Summary*, United Nations, New York.

² Kreimer, A., Arnold, M. and Carlin, A. (2003). *Building Safer Cities: The Future of Disaster Risk*, The International Bank for Reconstruction and Development/The World Bank, Washington, DC.

Figure 1. Schematic approach to vertical urban policies



I. Current governance structure and climate change coordination

As a complex and multisectoral issue, climate change governance has many aspects, making it challenging to integrate into a national governance system. Countries are also bound to international commitments, exacerbating the degree of climate governance complexity. These commitments require participation from all levels of governance and the development of multisectoral mechanisms to enhance vertical and horizontal integration.

In Lao PDR, climate change initially came under the umbrella of the environment, but it has increasingly been dealt with as a standalone issue, although still in the environment sector. There have been many institutional changes as the climate change governance system evolves. In 2002 a National Environment Committee (NEC) was established, which had cross-sectoral representation and was chaired by the Deputy Prime Minister. The NEC mandate was later extended to cover climate change. It is a non-standing committee that meets when there is a need to attend to an environmental matter. The NEC is the highest-level entity in Laos to guide policy and legal issues concerning climate change and other environmental matters.

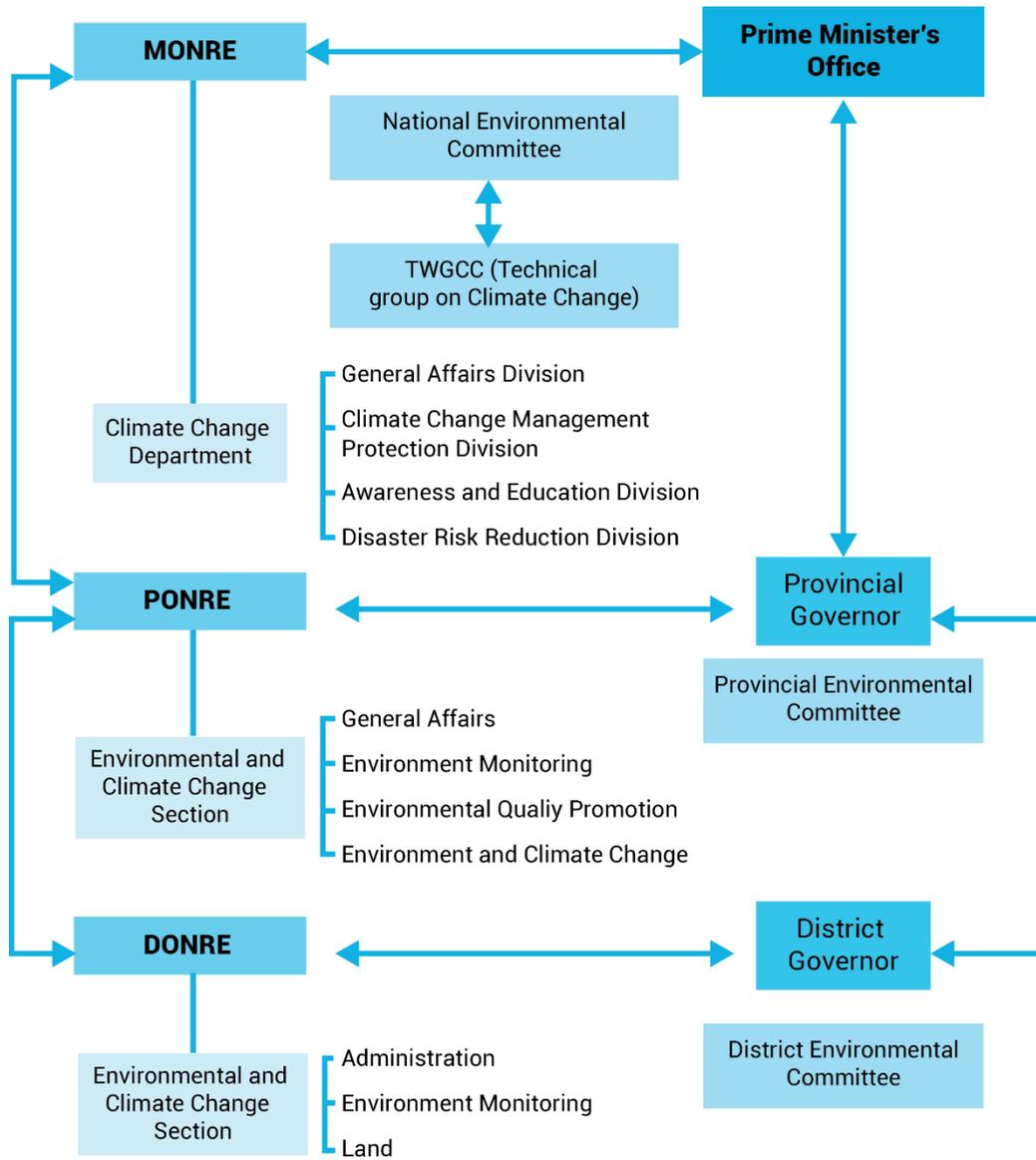
In parallel, when the need arose to formulate strategies, programmes, and projects specifically focused on climate change, the National Steering Committee on Climate Change (NSCCC) was involved. The NSCCC was established in 2008, along with eight cross-sectoral working groups to assess climate change issues and to identify priority actions in preparation for a climate change strategy. Since the approval of the Climate Change Strategy in 2010, the NSCCC has evolved into the Technical Working Group on Climate Change (TWGCC) and has been more closely integrated into the NEC³. The TWGCC is the focal point for coordination between sectors, and it meets as the need arises, providing technical guidance on climate change strategies and action plans, adaptation plans, GHG inventories, and UNFCCC requirements such as National Communications, NDCs and Biennial Update Reports (BURs) The TWGCC comprises technical experts from the Ministry of Energy and Mines, Ministry of Science and Technology, Ministry of Health, Ministry of Industry and Commerce, Ministry of Education and Sports, Ministry of Agriculture and Forestry, Ministry of Public Works and Transport, and the Lao Women's Union.

To enhance coordination with broader partners, climate change is linked to development partners and other critical stakeholders through the Round Table process. This mechanism brings together government and national development agencies, the United Nations and civil society organizations and the private sector to support the country's national development plans, providing a channel of communication for progress updates on the Sustainable Development Goals (SDGs) and other key indicators. It is chaired by the Ministry of Planning and Investment (MPI) and co-chaired by the UN. The Disasters, Climate Change and Environment Sub-Working Group, which comes under the Natural Resource Management & Environment Working Group, is the channel of communication that MoNRE uses to report on their plans and strategies to the Minister and then to MPI. It is chaired by the Department of Climate Change, with UNDP as the co-chair, and it makes recommendations on policies, strategies and legal frameworks relating to environmental issues, climate change and disaster risk management.

Finally, with guidance from the NEC, the Ministry of Natural Resources and Environment (MoNRE) has the mandate for natural resources and environmental policies and plans. MoNRE's Department of Climate Change (DCC) focuses on climate change, and the DCC is also the national focal point for the UNFCCC and the National Designated Authority for the Green Climate Fund.

³ MoNRE (2019). *Law on Climate Change*.

Figure 2. Schematic representation of climate change governance in Lao PDR (UN-Habitat, 2020)



I.1. Climate change and vertical governance

National level

In line with the 2019 Climate Change Decree, the national focal point for climate change is MoNRE, and more particularly, its Department of Climate Change (DCC). MoNRE oversees and supports provincial and district natural resources and environment sectors.

MoNRE key responsibilities:

- **Coordination.** MoNRE's role is critical in vertical and horizontal integration. It coordinates with the ministries of other sectors, local authorities, and other relevant organisations with climate change duties. MoNRE is also the point of contact for foreign, regional and international organisations.
- **Planning.** MoNRE is responsible for the development, improvement, and dissemination of strategies, plans, and regulations related to climate change mitigation by reducing GHG emissions and increasing carbon sinks. MoNRE is in charge of taking the strategies, plans and regulations to the stage of implementation plans, programmes, projects and activities.
- **International commitments.** The DCC is mandated as the coordinating entity for meeting UNFCCC obligations such as preparing National Communications, NDCs and other reports to submit to the Government for approval before submitting them to the UNFCCC.
- **Adaptation.** Assess and map vulnerabilities and develop plans for adaptation which are to be mainstreamed into sector and local socio-economic development plans and programmes.

Provincial level

At the provincial level, Provincial Offices of Natural Resources and Environment (PONRE) are the referent for climate change. These institutions play a key role in climate change knowledge at this governance level.

Key responsibilities of PONRE:

- **Coordination.** Coordinate with the provincial and district offices of other relevant sectors and local authorities to implement climate change activities. Cooperate with foreign, regional and international organisations as directed by higher authorities.
- **Planning.** Disseminate and implement strategic plans, decrees and regulations related to climate change.
- **Adaptation.** Assess vulnerabilities and develop plans for adaptation.
- **Mitigation.** Define alternatives to prevent and reduce GHG emissions.

District level

Finally, District Offices of Natural Resources and Environment (DONRE) are the institution for climate change governance at the district level.

DONRE key responsibilities:

- **Coordination.** Coordinate with village offices and authorities in implementing climate change activities.
- **Planning.** Disseminate and implement strategic plans, laws and regulations related to climate change.
- **Adaptation.** Participate in assessing vulnerability and developing plans for adaptation.
- **Mitigation.** Participate in defining alternatives to prevent and reduce GHG emissions.

II. Climate policies and urban implications

II. 1. International commitments

Lao PDR has been engaged in climate change mitigation and adaptation efforts for many years. As a result, the country has ratified and engaged in many international conventions and frameworks.

UNFCCC and Kyoto Protocol

Lao PDR has ratified and engaged in most international conventions related to the environment and climate change. It ratified all three Rio Conventions, including the United Nations Framework Convention on Climate Change (UNFCCC) in 1995, the Convention on Biological Diversity and the UN Convention on Combatting Desertification in 1996. It also ratified several other agreements, including the Montreal Protocol on Substances that deplete the Ozone layer, the Convention on International Trade in Endangered Species of Fauna and Flora and the Stockholm Convention on Persistent Organic Pollutants (POPs).

Specifically related to climate change, the Government of Lao PDR ratified the UNFCCC in 1995 and the Kyoto Protocol in 2003. Since then, a series of legal and regulatory frameworks, and institutional arrangements, as well as strategies, were designed to ensure ecological sustainability measures have been put in place. The high-level inter-agency National Steering Committee on Climate Change (NSCCC), chaired by the Deputy Prime Minister and the chairman of the National Environment Committee, has been providing insight and guidance for climate change policies and programs; and eight Technical Working Groups were established in 2008 to assess the impacts and outline priority actions for adaptation and mitigation. The Ministry of Natural Resources and Environment (MONRE) has been assigned as the UNFCCC national focal point for climate change and the Designated National Authority (DNA). Moreover, the Government submitted its first Intended Nationally Determined Contribution (INDC) to the UNFCCC in 2015 and signed the Paris Agreement in 2016. More recently, it submitted the second updated National Determined Contribution (NDC) to the secretariat of the UNFCCC in 2021.

Lao PDR is greatly affected by, and vulnerable to, climate change, particularly in coping with natural disasters such as floods and droughts. Lao PDR has no legally binding obligations under the Kyoto Protocol to reduce GHG emissions; however, the country actively participates with other partners to mitigate GHG emissions. Under the Protocol, Lao PDR, for example, completed the first and second GHG inventories and submitted it to the UNFCCC in 2000 and 2013, respectively. The first GHG inventory estimated and reported emissions of GHG in the year 1990, and the second GHG inventory focused on GHG removal in the year 2010.⁴ In addition, the government is carrying out the third GHG inventory, which has been completed in 2021.

Although Lao PDR has no specific national policy on climate change mitigation, the National Strategy on Climate Change, approved by the Government in 2010, identified measures for reducing GHG emissions, focusing on several key sectors, including measures related to the preparation and

⁴ MoNRE (2018). Biennial Update Report

implementation of the Clean Development Mechanism (CDM) project activities in Lao PDR. Furthermore, Lao PDR has assessed technology needs for reducing GHGs emissions and expects that the results of the assessment will be an essential factor for the country to contribute to GHG emission reduction in general and in particular, the implementation of CDM project activities in Lao PDR.⁵

Urbanisation and human settlements implications

The UNFCCC also includes a specific instrument to advance climate action for cities. Through the Cities Climate Registry, commitments have been made to scale-up city climate resilience efforts, energy efficiency low-carbon and resilient financing mechanisms. This initiative designated as a central repository of the Compact of Mayors serves as a platform for city climate data that can be used by cities, national governments and international climate mechanisms worldwide.

The City Climate Finance Leadership Alliance is also a strategic platform for cities with about 20 public and private sector partners united to stimulate investments in low-carbon and climate-resistant infrastructure in cities in low-and middle-income countries. This alliance aims to stimulate public and private investment to generate the trillions of dollars needed each year for climate-smart infrastructure.

Sendai Framework for Disaster Risk Reduction

In 2015, Lao PDR ratified the Sendai Framework for Disaster Risk Reduction (Sendai Framework). This was the first significant agreement of the post-2015 development agenda and provides the Member States with concrete actions to protect development gains from disaster risk. It works hand in hand with the other 2030 agenda agreements, including The Paris Agreement on Climate Change, The Addis Ababa Action Agenda on Financing for Development, the New Urban Agenda, and ultimately the Sustainable Development Goals.

It recognizes that the State has the primary role of reducing disaster risk, but that responsibility should be shared with other stakeholders, including the local government, the private sector, and other stakeholders.

Urbanisation and human settlements implications

The four priorities of the Sendai Framework concentrate on (1) understanding disaster risk, (2) strengthening disaster risk governance to manage disaster risk, (3) investing in disaster risk reduction for resilience, and (4) enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction. Cities and human settlements are therefore well placed to advance those goals.

Linked to the SDGs, the Framework is consequently targeting SDG 11:

“Make cities and human settlements inclusive, safe, resilient and sustainable” especially indicators:

⁵ MoNRE (2012). Guideline on the Development of Clean Development Mechanism in Lao PDR

- 11.5.1. Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population.
- 11.5.2. Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters.
- 11.b.1. Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030.
- 11.b.2. Proportion of local governments that adopt and implement local disaster risk strategies in line with national disaster risk reduction strategies.

Paris agreement

More recently, Lao PDR has signed the Paris agreement (2016) and agreed on the implementation of the Intended Nationally Determined Contribution to reduce greenhouse gas emissions. Consequently, the country is committed to supporting efforts to limit global warming to 1.5°C and achieve carbon neutrality by 2050 at the latest.

Urbanisation and human settlements implications

Under the Paris Agreement, cities are actively engaged, especially as the vision of the agreement aims at acting locally to preserve the climate. Given the potential of cities to reduce GHG emissions and accelerate climate adaptation, mayors of major international cities signed the Paris Declaration and committed to achieving carbon neutrality as soon as possible.

Among the commitments made by the signatory cities is the willingness to:

- Put climate action at the centre of the local agenda, to achieve carbon neutrality and create a sober and equitable society.
- Integrate all actors (political leaders, business leaders, trade unions, investors and civil society, especially youth) to work together against climate change.
- Inform annually and transparently about the progress of climate policies.
- Bring real climate justice to protect the most vulnerable from climate change and fuel poverty.
- Commit with all our public and private partners to implement the right to renewable and carbon neutral energy for all our citizens by 2050.

II. 2. National and sub-national policies

National efforts outline both adaptation and mitigation, focusing generally on seven key economic sectors: agriculture and food security, forestry and land use change, water resources, energy and transport, industry, urban development, and public health. The objective of these initiatives is to secure a future in which Lao PDR is capable of mitigating and adapting to changing conditions in a way that promotes sustainable economic development, reduces poverty, protects public health and safety, enhances the quality of the Lao PDR's natural environment, and advances the quality of life of all of the country's inhabitants in both rural and urban settlements.

Most policies and strategies aim at (i) strengthening institutional and human resource capacities on climate change, (ii) enhancing adaptive capability for coping with climate change, (iii) mitigating the impacts of climate change by reducing greenhouse gas (GHG) emissions, and (iv) strengthening education and raising public awareness of climate change.

2009 National Adaptation Programme of Action (NAPA)

As a consequence of the COP 7 in 2001 and recognition of the Lao government on the challenge of adapting to climate change, in 2008, a National Steering Committee on Climate Change (NSCCC) and a National Climate Change Office were established.⁶ Thereafter, in 2009, the Government developed the National Adaptation Programme of Action (NAPA)⁷ that identified the immediate need for the country to adapt to climate change, led by the Ministry of Natural Resources and Environment, with support from relevant other ministries and organizations. The NAPA maps out a country-driven programme to address climate change adaptation requirements in the agriculture, forestry, water resources and public health sectors. It identifies 45 priority projects on climate change adaptation; 13 of these projects are under the agriculture sector; 14 projects are under the forestry sector; 10 projects are under the water sector and 8 projects in the public health sector. Out of 45 priority projects, 12 project proposals have been categorized as a priority and the other 33 projects are considered as secondary.⁸

Urbanisation and human settlements implications

The NAPA also highlights the importance of managing and addressing urban environmental issues such as pollution, waste, sewage, and greenhouse gas emissions. At the same time, it stresses that it is necessary to generate optimum benefits that actively contribute to poverty reduction of all ethnic groups, ensuring equitable and sustained growth for socio-economic development. The National Adaptation Plan (NAP) is currently under development. The Adaptation Fund project "Building climate and disaster resilience capacities of vulnerable small towns in Lao PDR" implemented by UN-Habitat, aims to reflect the challenges of climate change adaptation in basic services and infrastructure within the NAP, including the provision of infrastructure in a way that benefits women.⁹

⁶ UNDP (2017). Lao PDR National Adaptation Programme of Action: Project details. Climate Change Adaptation. Available at: <http://adaptation-undp.org/projects/laos-pdr-national-adaptation-programme-action-napa> [accessed 13.11.2017].

⁷ National Adaptation Programme of Action to Climate Change (NAPA) (2009). Lao People's Democratic Republic: Peace Independence Democracy Unity Prosperity.

⁸ *Ibid*

⁹ United Nations Human Settlements Programme (2016). Project Proposal to the Adaptation Fund: Building climate and disaster resilience capacities of vulnerable small towns in Lao PDR.

2010 National Strategy on Climate Change (NSCC)

Recognizing the importance of promoting green growth and environmental sustainability, the Government of Lao PDR approved a National Strategy on Climate Change (NSCC) in March 2010, focusing on the main domestic priorities such as agriculture and food security, energy, forestry and land use change, and water. The 2010 NSCC was developed to be integrated into the 7th National Socio-Economic Development Plan (NSEDP), with the objective *“to secure a future where the Lao PDR is capable of mitigating and adapting to changing climatic conditions in a way that promotes sustainable economic development, reduces poverty, protects public health and safety, enhances the quality of Lao PDR’s natural environment, and advances the quality of life for all Lao people”*.¹⁰

The NSCC is the key climate policy at the national and sub-national level, specifically providing guidance for climate change adaptation and mitigation and promoting sustainable development. This strategy defined directions and specific measures for seven sectors on climate change adaptation and six sectors on climate change mitigation. Those adaptation sectors are (1) agriculture and food security, (2) forestry and land use change, (3) water resources, (4) energy and transport, (5) industry, (6) urban development and (7) public health, while mitigation excluded health sector. The key measures include:

- Mainstreaming climate change into the 7th National Socio-Economic Development Plan (NSEDP) as well as sectoral strategies, programmes and projects;
- Strengthening international partnerships and networks for knowledge exchange and transfer of technology to support adaptation and low carbon growth;
- Enhancing capacity as a priority for government agencies, technical institutions, the private sector and local communities to be able to carry out appropriate climate change mitigation and adaptation at all scales;
- Bolstering synergies in the development and implementation of mitigation and adaptation measures in order to maximize benefits;
- Building innovative financial mechanisms to ensure financial support and investment for the implementation of mitigation and adaptation action plans;
- Increasing awareness, education and community participation on climate change trends to mobilize and realize effective climate change mitigation and adaptation.

One of the guiding principles of the NSCC is to develop and implement integrated, low-cost adaptation and mitigation solutions, improve energy efficiency, promote cleaner production, and provide adaptation and mitigation synergies as well as economic, environmental, and socioeconomic benefits. While this is not principally targeting cities, urban and rural settlements have the potential to contribute to the achievement of this objective.

¹⁰ Ministry of Natural Resources and Environment, Government of Lao PDR (2010). Strategy of Climate Change of the Lao PDR, p. 8.

Urbanisation and human settlements implications

In considering human settlements development, the NSCC focuses mainly on increasing the resilience of urban development and infrastructure to climate change, under the transportation and urban development key priority sector.

Transportation is particularly targeted with the development of transport-focused nationally appropriate mitigation actions. As a result, Lao PDR wishes to systematically develop road networks and the provision of public transport options to meet the increasing demand for travel and mitigate GHG emissions.

Finally, several adaptation and mitigation options identified can support the sustainable development of Lao human settlements:

Adaptation options:

- Developing climate proofed urban environmental development plans;
- Formulation of climate proofing to the climate change policy and action plan;
- Conducting climate change risk audits for each of the key infrastructure services, to identify climate vulnerability; Climate-proofing the most vulnerable existing infrastructure to protect the current assets;
- Building storm surge barriers for wastewater treatment plants and landfills; and,
- Developing new design criteria for infrastructure that reflect non-stationary hydrologic processes.

Mitigation options:

- Reduction of GHG emissions from the solid waste sector in Lao PDR through applying the 3Rs (reduces, reuse and recycle);
- Upgrading solid waste collection services for full coverage of the major urban centres and neighbourhoods, so as to avoid GHG releases from open burning and decomposition;
- Building recycling facilities in order to reduce the amount of waste to be disposed in landfills;
- Composting organic contents to manufacture organic fertilizers;
- Effectively managing sewage sludge removed from the domestic septic tanks and slurry removed from the waste treatment plants;
- Constructing new landfill facilities that can capture methane; and, if financially viable, retrofitting the existing landfills;
- Promoting environmentally sustainable urban development, integrating the issues of waste management, and low carbon transportation; and,
- Encouraging the participation of the private sector and international partners in GHG emission reduction from waste under the CDM and other financing mechanisms.

2013 Climate Change Action Plan

To implement the NSCC, the Government developed the Climate Change Action Plan in 2013, which details mitigation and adaptation activities for agriculture, forestry, land-use change, water resources, energy, transport and urban development, industry, and public health. The Climate Change Action Plan was formulated in support of the strategy guiding government agencies and other actors in “addressing climate change mitigation and adaptation in a sustainable manner”.¹¹ The plan prioritizes the following four key initiatives:

1. Strengthening institutional and human resource capacities on climate change;
2. Enhancement of adaptive capability for coping with climate change;
3. Climate change mitigation through the reduction of greenhouse gas emissions, and;
4. Strengthening education and raising public awareness on climate change.

According to this action plan, the respective line ministries on the national level are responsible for mainstreaming identified climate change actions into their sectoral strategies, plans and budgets in coordination with the Ministry of Natural Resources and Environment (MONRE).¹² At the sub-national levels, authorities working in each of the sectors are to plan and implement climate change-related activities within their designated area, including capacity building, and integrate them into their Socio-Economic Development Plans (SEDPs) with the support of MONRE.¹³

National Green Growth Strategy of the Lao PDR until 2030

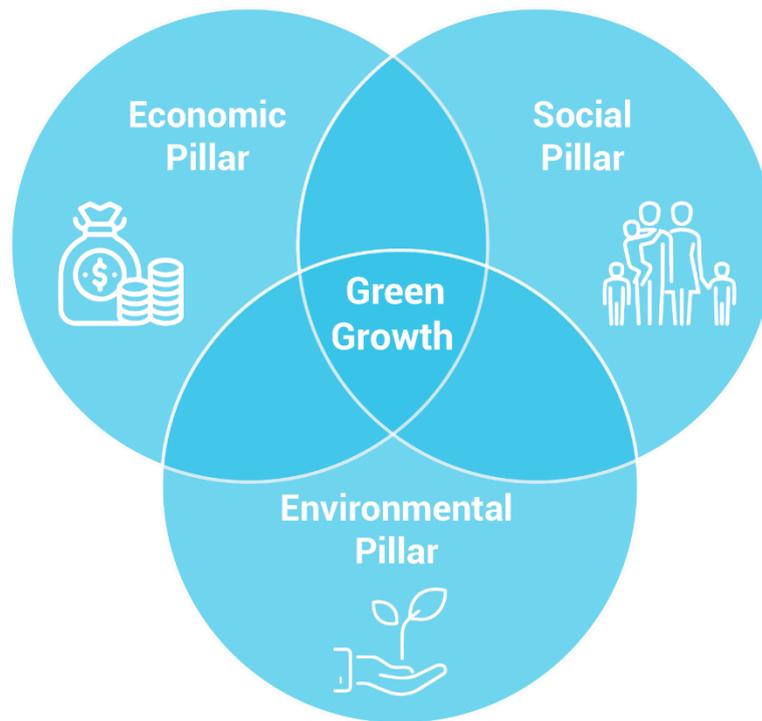
The National Green Growth Strategy of the Lao PDR proposes creating a system of monitoring and evaluating the national socio-economic development in a green and sustainable direction based on the definition of green growth provided in this strategy. According to this definition, the green and sustainable growth of Lao PDR is comprised of 3 pillars of socio-economic development, which are: (1) economic pillar, (2) social pillar, and (3) environmental pillar.

The National Green Growth Strategy of the Lao PDR is the translation of the resolution of the 10th Party Congress, the Vision 2030, the 10-Year Strategy (2016-2025) and the 8th Five-Year National Socio-Economic Development Plan (2016-2020) in detail. The main objectives and goals of the formulation and implementation of this strategy are to develop the potential to integrate green growth into the formulation and implementation of sectoral and local strategies and plans to ensure the achievement of long-term goals of the 8th NSEDP, such as graduating from the status of a least developed country (LDC) and moving towards becoming a developing country with an upper-middle-income following a green and sustainable direction and achieving the Sustainable Development Goals (SDGs) by 2030 with quality.

¹¹ Ministry of Natural Resources and Environment, Government of Lao PDR (2012). Climate Change Action Plan of Lao PDR 2013 – 2020, p.2.

¹² United Nations Human Settlements Program (2018). Accelerating climate action through the promotion of Urban Low Emission Development Strategies (Urban-LEDS II): Opportunities for Vertical Integration Related to Low Emission Urban Development Strategies in Lao PDR.

¹³ *Ibid*

Figure 3. Green growth visualisation (Government of Lao PDR)

Considering climate change, as set out in the Vision for 2030, the Lao PDR intends to balance its development needs without compromising its environment. With respect to climate change adaptation, this framework is translated into the following goals, which are articulated in the NSCC:

- (i) increase the resilience of key economic sectors and natural resources to climate change and its impacts;
- (ii) enhance cooperation, and build strong alliances and partnerships with national stakeholders and international partners to achieve national development goals; and
- (iii) improve public awareness and understanding of various stakeholders about climate change, vulnerabilities, and impacts to increase stakeholder willingness to take actions.

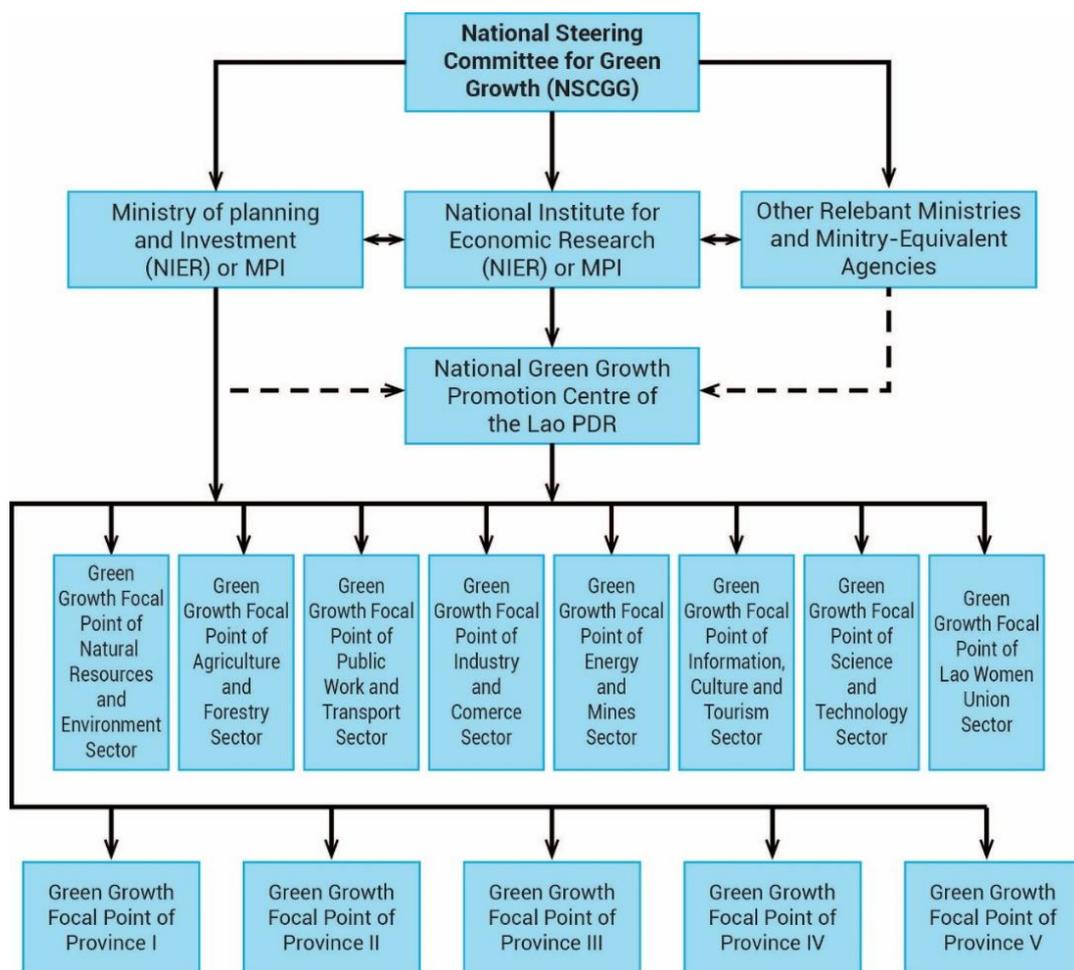
This strategy sets out priorities, activities, and a monitoring framework to support the country's vision of green growth and help mainstream it into Lao PDR's planning systems. The Green Growth Strategy identifies six priority sectors/areas: agriculture, forestry, urban development, transport, energy, and tourism. Climate change mitigation indicators are expected to include total greenhouse gas emissions, average greenhouse gas emissions per person, the share of renewable energy within the energy mix, urban waste reuse and disposal, natural forest coverage rate and conservation forest coverage rate.

Coordination is enabled by national and sectoral focal points from line ministries. Vertical integration has also been considered preferable to ensure the strategy implementation down to the local level. As a result, focal points are responsible for:

- Conduct the advertising, dissemination, and to build public consciousness about green growth to people, the sectors and local administrations;
- Conduct research and analysis on policy as well as on green techniques, technology and innovation to support the formulation and implementation of policies, strategies, plans and programmes;

- Provide information, transfer knowledge and best practices from foreign countries to sectoral and local administrations to enable them to apply these in their actual work, both efficiently and effectively;
- Mainstreaming the Green Growth Agenda into national strategies and socio-economic development plans, as well as sector and local plans;
- Support or promote the sectors and local administrations in the implementation of the plans, programmes, projects and activities related to green growth;
- Assist the sectors and local administrations in seeking and raising funds for the implementation of the plans, programmes, projects and activities related to green growth;
- Study and develop the models of green areas (towns, communities, industrial zones, residential areas and others), green production, green technology, etc. which are to be the venues for the transfer of experiences and knowledge on green growth to relevant sectors and local administrations for implementation to realize actual results;
- Develop the system of monitoring and reporting on the achievements of socio-economic development in a green and sustainable direction to the public and to Government on a regular basis;
- Build capacity and provide advice to sectoral and local administrations on the mainstreaming of the Green Growth Agenda into their strategies, plans and programmes.

Figure 4. Position and Coordinating Mechanism of the National Green Growth Promotion Centre of the Lao PDR (Government of Lao PDR)



Urbanisation and human settlements implications

Objectives of this strategy remain very broad with regard to human settlements development. Falling under the Ministry of Public Works and Transport, urban development is primarily associated with infrastructure and transport development. Moreover, the Green Growth Strategy as developed remains economically oriented.

However, the strategy highlights the need to consider the urban-rural continuum and develop “green” areas, such as towns and communities, to ensure sustainable development while including all ethnic groups, men and women, to reduce spatial and social inequalities. Creating green jobs is also a key objective to enable the country to develop sustainably while creating opportunities for the youth.

Lao PDR Nationally Determined Contribution (NDC)

Since 2016, Lao PDR has ratified the Paris Agreement. The country was the first ASEAN nation to ratify the Agreement, wherein the Intended Nationally Determined Contribution (INDC) formed the basis of the ratification instruments.

As a result, Lao PDR has been engaged in the development of Nationally Determined Contribution, outlining the key steps that the country aims to take in order to contribute to the goals of the Paris Agreement.¹⁴ After the first submission in 2015 setting out adaptation and mitigation activities to be implemented over 2015 to 2030, the country has recently submitted the second update of the NDC in 2021 with the following priorities:

- **Forestry**: To increase forest coverage to 70% of land area (i.e., to 16.58 million hectares) by 2020. Another objective is to promote climate resilience in forestry production and forest ecosystems and technical capacity in the forestry sector for managing forests for climate change adaptation.
- **Agriculture**: To promote climate resilience in farming systems and agriculture infrastructure and appropriate technologies for climate change adaptation.
- **Energy**: To increase the share of renewable energy to meet 30% of energy consumption by 2025. To increase the share of biofuels to meet 10% of the demand for transport fuel by 2025.
- **Transport and Urban Development**: To provide better networks so that vehicle kilometres travelled will be reduced against the business as usual (BAU) scenario. Other objectives include increasing the resilience of urban development and infrastructure to climate change.
- **Water**: To strengthen water resource information systems for climate change adaptation, manage watersheds and wetlands for climate change resilience.
- **Health**: To increase the resilience of public health infrastructure and water supply systems to climate change and improve public health services for climate change adaptation and coping with climate change-induced impacts

¹⁴ MoNRE (2015). Lao PDR National Determined Contribution (NDC)

Urbanisation and human settlements implications

As part of NDC measures, the following areas of mitigation are particularly relevant for human settlements development:

- New Bus Rapid Transit system in Vientiane Capital and associated Non-Motorized Transport components;
- 30% Electric Vehicle penetration for 2-wheelers and passenger cars in national vehicles mix;
- Biofuels to meet 10% of transport fuels;
- Implementation of 500 tons/day sustainable municipal solid waste management project.

Considering adaptation measures, the revised NDC concentrates mainly on health issues. Therefore, implications for urbanisation and human settlements are more focused on WASH improvement for climate change and disaster risks reduction.

Climate Change Law (2019)

The new law on Climate Change was developed in 2019 by the MONRE. The law will be the overarching legal framework for climate change and disaster risk management.¹⁵ Its purpose is to promote the effectiveness and recognition of climate change mitigation and adaptation in Laos. It also ensures that there is a legal mandate for the division of labour across government. Provision is made for *inter alia*:

- the identification of roles and responsibilities as well as coordination mechanisms;
- an enabling environment for accessing international financial sources related to DRR and CCA;
- identifying areas with disaster and climate change risks;
- undertaking CCA measures; and,
- ensuring sufficient and sustainable budgets for effective disaster management and CCA.

¹⁵ MoNRE (2019). Law on Climate Change.

III. Sectoral regulations, plans and strategies related to climate change

Law on Urban Planning

When the Law on Urban Planning was revised in 2017 by MPWT, two climate change-related articles were introduced, stating that (i) risks posed by climate change must be taken into the consideration of any construction, and (ii) environmental impact assessments (EIAs) must be conducted under certain specific conditions. The law states that, at district level, urban planning is concerned with allocating areas for residences, offices, agriculture, industry, trade and services, road networks, transport, culture, sports, public parks, military and defence zones, public utilities, and others. Provincial, municipal and special zone administrations are responsible for studying and designing urban plans for cities before submitting plans to MPWT for consideration and approval. In addition to the Law on Urban Planning, other urban-related regulations have been established by MPWT, such as a construction management law, and solid waste management and waste-water regulations.¹⁶

National Urban Development Strategy 2030

As mentioned in the preceding section, urban development has been identified as one of the top priorities in the NSEDP.¹⁷ The Urban Development Strategy 2030 was, therefore, developed by the MPWT, emphasizing the need for the development of cities and for urban development strategies to be established at all district and city levels in line with the national direction, while ensuring enforcement and implementation. Each Province Urban Development Strategy has been developed in line with the national strategy at the provincial level. The plan also prioritizes the need to close the gap between urban and rural development in terms of infrastructure and environmental protection and strengthen the capacity of staff in cities.¹⁸

Sustainable Transport Development Strategy 2010

This sectoral strategy aims to transform Lao PDR from a land-locked to a land-linked country by providing efficient and reliable transport infrastructure and facilities, particularly transit transport routes, and facilitating the cross border transport of goods and people mobility between and among neighbours and other countries in the region. It sets goals and targets to reduce environmental and social effects of transport development, including targets to address road safety and health effects of transport development, promote public transport, limit the growth of private transport and improve vehicle inspection and emissions standards. It also emphasizes inclusive development by narrowing the gap between urban and rural areas. New regulations are being developed relating to technical vehicle inspections, including emissions. It mentions disaster prevention, readiness and preparedness.¹⁹

¹⁶ Ibid.

¹⁷ MPWT (2015). Government of Lao PDR. Vision toward 2030 and the 10 years Urban Development Strategy (2016-2025) and the 4 years investment plan (2017-2020).

¹⁸ UN-Habitat (2021). Accelerating the Implementation of the ASEAN Sustainable Urbanization Strategy (ASUS)

¹⁹ Ibid

Renewable Energy Development Strategy (2011)

A National Renewable Energy Strategy was set up to promote green investment, specifying long-term targets for renewable energy supply in the total energy mix, and several decentralised renewable energy solutions have been piloted. The strategy aims to increase the share of small-scale renewable energy to 30% of total energy consumption by 2030, including targets for biofuels, micro-hydro, and biogas. The government has, however, not yet come up with specific policy instruments to actively promote renewable energy or an implementation plan.²⁰

National Forestry Strategy (2005)

As forestry is considered as one of the key sectors to tackle climate change challenges in Lao PDR, the National Forestry Strategy sets out the target for increasing forest cover to a total of 70% of land area by 2020 to enable the development of carbon sinks and maintaining it at that level going forward. This is hoped to reduce the risk of floods, prevent land degradation, as well as mitigate greenhouse gas emissions.²¹

²⁰ MEMs (2011). National Renewable Energy Development Strategy

²¹ MAF (2005). National Forestry Strategy

IV. Linking climate policy and spatial planning in Lao PDR

As illustrated by the density of climate-related policies and strategies, Lao PDR is clearly engaged in climate action to mitigate and adapt to climate change. Many strategies are also combined with action plans, enabling policies to shift from theoretical discourses to practice and implementation. However, while efforts have been made to initiate vertical integration, processes are still limited to sectoral silos, and coordination needs to be strengthened to ensure the sustainability of climate initiatives for cities and human settlements at the local level.

Furthermore, the lack of a National Urban Strategy, giving a comprehensive direction for sustainable urban development, is also highlighted. Urban development is often associated with sectoral measures such as transportation, waste management and infrastructure development. Consequently, engaging discussions for developing a strategic planning framework is highly relevant for Lao PDR and may support efforts to bridge gaps between climate action and human settlements development. At the moment, several human settlements components are not yet being considered. This is particularly the case for affordable and resilient housing and inclusive public spaces. Also, the focus remains infrastructure-oriented, and the inclusion of the views of indigenous peoples and local communities, as well as ensuring a gender balance, is not yet undertaken in a systematic form, thereby limiting social benefits and constraining vulnerability reduction. Finally, climate resilience action plans do not yet advocate for soft measures such as the use of nature-based solutions, which can offer several relevant opportunities for human settlements in Laos in both rural and urban contexts.

As Lao PDR is currently refining its National Urban Strategy, integrating a spatial planning framework is a key opportunity to better link climate actions and spatial planning, fill gaps between climate action, spatial planning and design, as well as to provide a “soft” tool to prepare and anticipate future impacts.

IV. 1. The role of spatial planning in reducing climate risks

Spatial planning is essential to reducing climate risk in human settlements and represents an important tool to drive proactive, preventive adaptation of human settlements to the hazards caused or exacerbated by changes in climate patterns and extreme events.^{22 23} As a result, several countries have linked their climate change strategies and urban development agendas, identifying urban and spatial planning measures to address climate mitigation, adaptation and resilience. However, many countries have not yet established a systematic risk management approach that incorporates spatial planning.

The IPCC considers climate adaptation as “the process or outcome of a process” leading to “adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities”.²⁴ As climate effects are highly influenced by local contexts and geographies, planning for climate change is directly concerned with the spatial organisation of functions across spatial areas and regions. Spatial development and the resulting spatial structure of an area are significant factors determining if climate-related hazards lead to disasters or severe negative impacts for human settlements and the environment

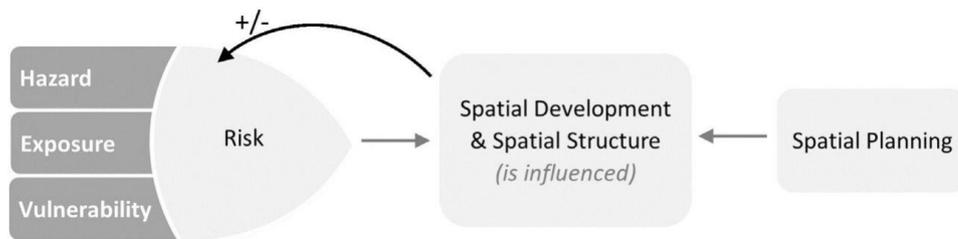
²² ADB (2016). *Reducing disaster risk by managing urban land use: Guidance notes for planners*. Mandaluyong City, Philippines: Asian Development Bank. Retrieved from: www.adb.org/publications/reducing-disaster-risk-urban-land-use-guidance-notes

²³ UN-HABITAT. (2014). *Planning for climate change: Guide—A strategic, values-based approach for urban planners*. Cities and climate change series. Retrieved from: <https://unhabitat.org/books/planning-for-climate-change-a-strategic-values-based-approach-for-urban-planners-cities-and-climate-change-initiative>

²⁴ IPCC. (2018b). *Annex I: Glossary*. In J. B. R. Matthews, V. Masson-Delmotte, P. Zhai, H.-O. Portner, D. Roberts, J. Skea, & T. Waterfield (Eds.), *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*.

they depend upon.²⁵ Spatial planning has, therefore, the potential to reduce risk by influencing the exposure of people and structures (e.g., buildings and roads) to extreme events and/or the vulnerability of these people and structures to crisis and change (relationship between spatial structure, spatial planning, and the dynamics of climate-related risk).

Figure 1. Schematic visualisation of the relationship between climate risk and spatial planning (McMillan et al. 2021)



McMillan et al. stated that this could be achieved through influencing land use, settlement structure, transport networks, open space and infrastructure provision, accessibility to services and resources, and environmental protection.²⁶ This reflects the importance of spatial planning in ensuring quality and access to basic needs and services.

In parallel, consistent local information on climate change and associated risks should be one of the many aspects considered throughout the spatial planning process as integrating this information can strengthen spatial planning and risk management functions.²⁷

IV. 2. Spatial Planning Framework: An opportunity for Lao PDR to link climate change into urban strategies

Lao PDR is experiencing rapid urbanisation due to rural-urban migration and social changes. This has led to the development of unplanned urban areas, resulting in low-density urban sprawl with increased inequalities, vulnerabilities and urban poverty.²⁸ This phenomenon has many causes, with urban expansion characterised by poor land use planning and management and a lack of revised urban development plans.²⁹ Furthermore, similarly to many countries, Lao PDR does not yet connect the complex issue of climate change with spatial planning. However, the country has been engaged in climate change efforts for many years at the international, national and local levels to advance national resilience in a country considered as one of the most vulnerable to climate change.

²⁵ McMillan J., Birkmann J., Tangwanichagapong S. (2021). *Chapter 13 - Climate risk information as a basis for adaptive spatial planning: A case study from Thailand*, in *Disaster Resilience and Sustainability*, Elsevier. Pages 301-320.

²⁶ *Ibid.*

²⁷ Greiving, S. (2016). *Spatial planning and uncertainties associated with future disasters*. In S. Greiving, J. Tesliar, & M. Ubaara (Eds.), *Spatial planning and resilience following disasters—International and comparative perspectives* (pp. 323–344). Bristol: Policy Press.

²⁸ Epprecht M., Bosoni N., Hayward D. (2018). *Urbanization processes in the Lao PDR*. https://www.shareweb.ch/site/Poverty-Wellbeing/equality-equity-inclusion/Documents/Lao_Urbanization_Study_CDE_final.pdf

²⁹ UN-Habitat (2020). *Urbanization: a rapidly emerging development issue for Lao PDR*. http://www.fukuoka.unhabitat.org/docs/publications/pdf/habitat_newsletter/1_Urbanization_Rapidly_Emerging_Development_Issue_for_Lao_PDR_paper_APA.pdf

As the country is currently developing a new National Urban Strategy along with national efforts to advance climate change vertical integration, there are many opportunities for the development of a spatial planning framework aiming at holistically envisaging urban development, filling gaps between urban and climate strategies for maximum impacts and advancing cross-sectoral coordination. Furthermore, over the past years, the Government of Lao, with the support of UN-Habitat, has been engaged in Climate Change Vulnerability Assessments to evaluate local exposure and identify vulnerable communities.³⁰ With more accurate data, the elaboration of such a framework is coherent to ensure consistency between climate change efforts and initiatives developed to ensure an inclusive, resilient and sustainable urban development.

³⁰ UN-Habitat (2020b). *National Climate Change Vulnerability Assessment*.
https://fukuoka.unhabitat.org/docs/publications/pdf/habitat_newsletter/3_Lao_PDR_National_Climate_Change_Vulnerability_Assessment.pdf



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The Urban-LEDS project is funded by the European Union.