

Lao People's Democratic Republic
Peace Independence Democracy Unity and Prosperity

Country Planning Framework

of Lao PDR for 2021-2025



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COUNTRY PLANNING FRAMEWORK OF GGGI LAO PDR FOR 2021-2025

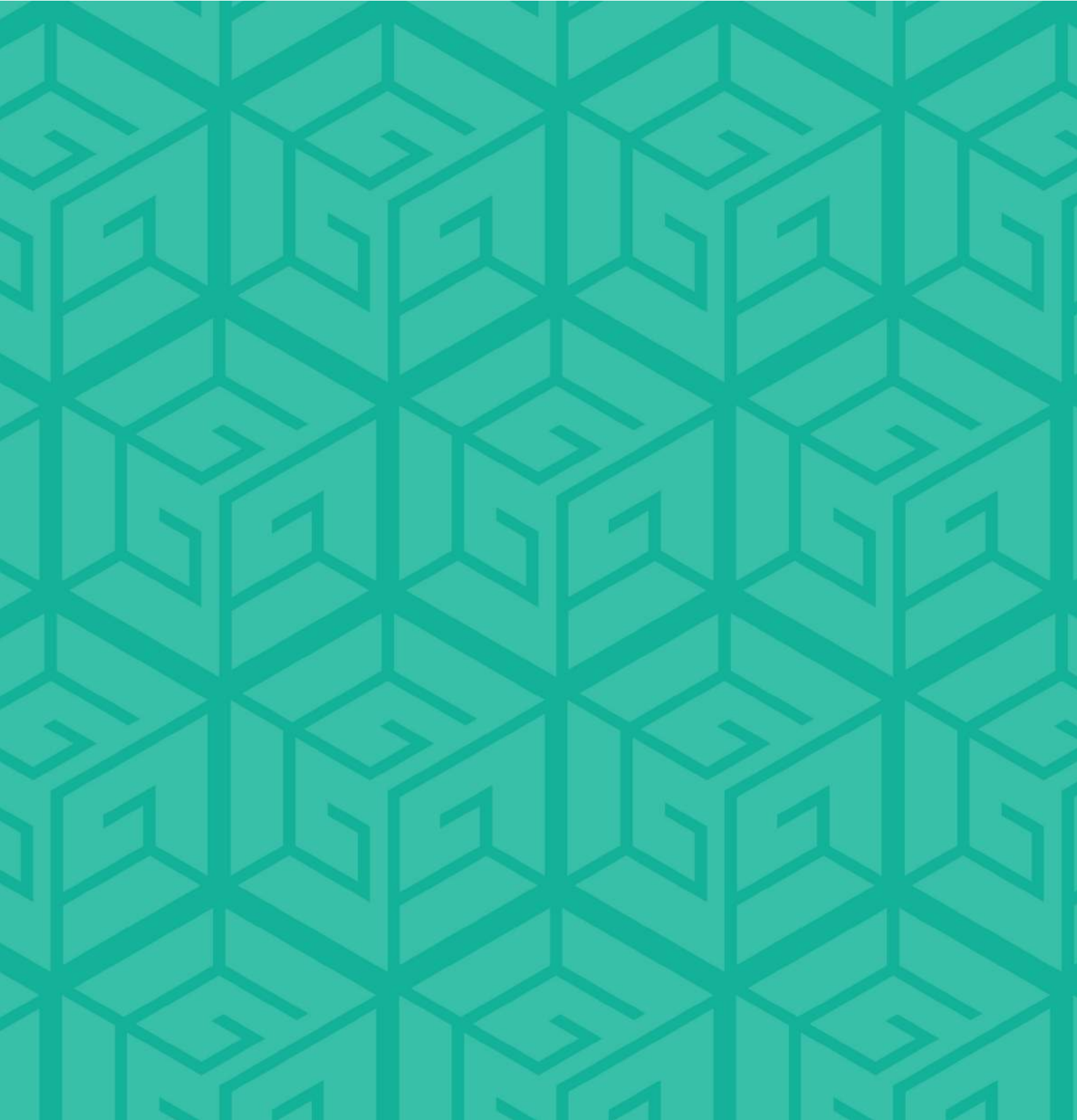


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Foreword

Lao People's Democratic Republic (Lao PDR) is expected to graduate from Least Developed Country status soon, thanks to sustained strong economic growth over the past decade and significant achievements in social development. Recently, the country adopted the National Green Growth Strategy (NGGS) to 2030, based on the Resolution of the 10th Party Congress and the 10-Year Strategy (2016-2025). To transition to a green and sustainable pathway, Lao PDR is integrating the NGGS into the 9th National Socio-Economic Development Plan (NSEDP 2021-2025), and encouraging sectors and government entities at all levels to mainstream green growth in their development plans.

Over the past years, natural disasters induced by climate change, especially floods and droughts, have increased in frequency, intensity and prolongation, resulting in losses of lives, properties and economic opportunities. Currently, the world is faced with an unprecedented pandemic that is causing widespread fatalities and economic downturn. While Lao PDR has put in place efficient measures to protect the health of citizens, its economy is heavily affected. At the same time, the country has an opportunity to strategically utilize domestic resources to promote clean and green investments that will help achieve both economic recovery, environmental protection and social inclusion. Furthermore, achieving the enhanced commitments set out in the 2020 Nationally Determined Contribution (NDC) will put Lao PDR on a course to net-zero emissions by 2050.

Lao PDR became the 28th member country of the Global Green Growth Institute (GGGI) in 2017 and has shown clear commitment to green growth principles through the adoption and mainstreaming of the NGGS. Lao PDR and GGGI have been working in partnership to formulate green growth policies and implement projects in various green growth areas. Over the next five years, both Lao PDR and GGGI have agreed to strengthen cooperation and work together to achieve the targets set out in the 2020 NDC, 9th NSEDP and other policies and strategies to meet the Sustainable Development Goals.

The Country Planning Framework (CPF) 2021-2025 includes strategic objectives that are well aligned with Lao PDR's development objectives and goals. Building on GGGI's success in Lao PDR, the selection of programmatic solutions is based on rigorous analysis and thorough consultation with stakeholders. The CPF will focus on priority areas with strong untapped potential where GGGI can bring added value, including waste management, sustainable energy and energy efficiency, e-mobility, and climate action. Both policy and project work will bring about green investments, create green jobs, reduce greenhouse gas emissions, and enhance resilience of the country to climate change.

We would like to thank line ministries, development partners and stakeholders for their engagement and feedback in the development of this CPF.

Signed by two parties,



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Director General
Global Green Growth Institute



H.E Dr. Sonexay Siphandone
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Abbreviations

AB	Access to Basic Services and Resources
ADB	Asian Development Bank
BE	Biodiversity and Ecosystem Protection
BRT	Bus Rapid Transit
CPF	Country Planning Framework
CV	Cultural and Social Value
DEWATS	Decentralized Wastewater Treatment Systems
EE	Efficient and Sustainable Energy
EQ	Environmental Quality
ESCO	Energy Service Company
EW	Efficient and Sustainable Water Use
GB	Gender Balance
GCF	Green Climate Fund
GDP	Gross Domestic Product
GE	GHG Emission Reduction
GEF	Global Environment Facility
GGGI	Global Green Growth Institute
GGPA	Green Growth Potential Assessment
GHG	Greenhouse Gas
GJ	Green Employment
GN	Green Innovation
GoL	Government of Lao PDR
GOP	Global Operational Priority
GT	Green Trade
GV	Green Investment
HDI	Human Development Index
JICA	Japan International Cooperation Agency
KOICA	Korea International Cooperation Agency
Lao PDR	Lao People's Democratic Republic
LDC	Least Developed Country

LNCCI	Lao National Chamber of Commerce and Industry
MBT	Mechanical Biological Treatment
ME	Material Use Efficiency
MEM	Ministry of Energy and Mines
MOIC	Ministry of Industry and Commerce
MONRE	Ministry of Natural Resources and Environment
MPI	Ministry of Planning and Investment
MPWT	Ministry of Public Works and Transport
MRV	Measurement, Reporting and Verification
NAP	National Adaptation Plan
NDA	National Designated Authority
NDC	Nationally Determined Contribution
NGGS	National Green Growth Strategy
NGO	Non-Governmental Organization
NIER	National Institute for Economic Research
NSEDP	National Socio-Economic Development Plan
PS	Programmatic Solution
SDG	Sustainable Development Goal
SE	Social Equity
SL	Sustainable Land Use
SO	Strategic Outcome
SP	Social Protection
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WASH	Water, Sanitation and Hygiene

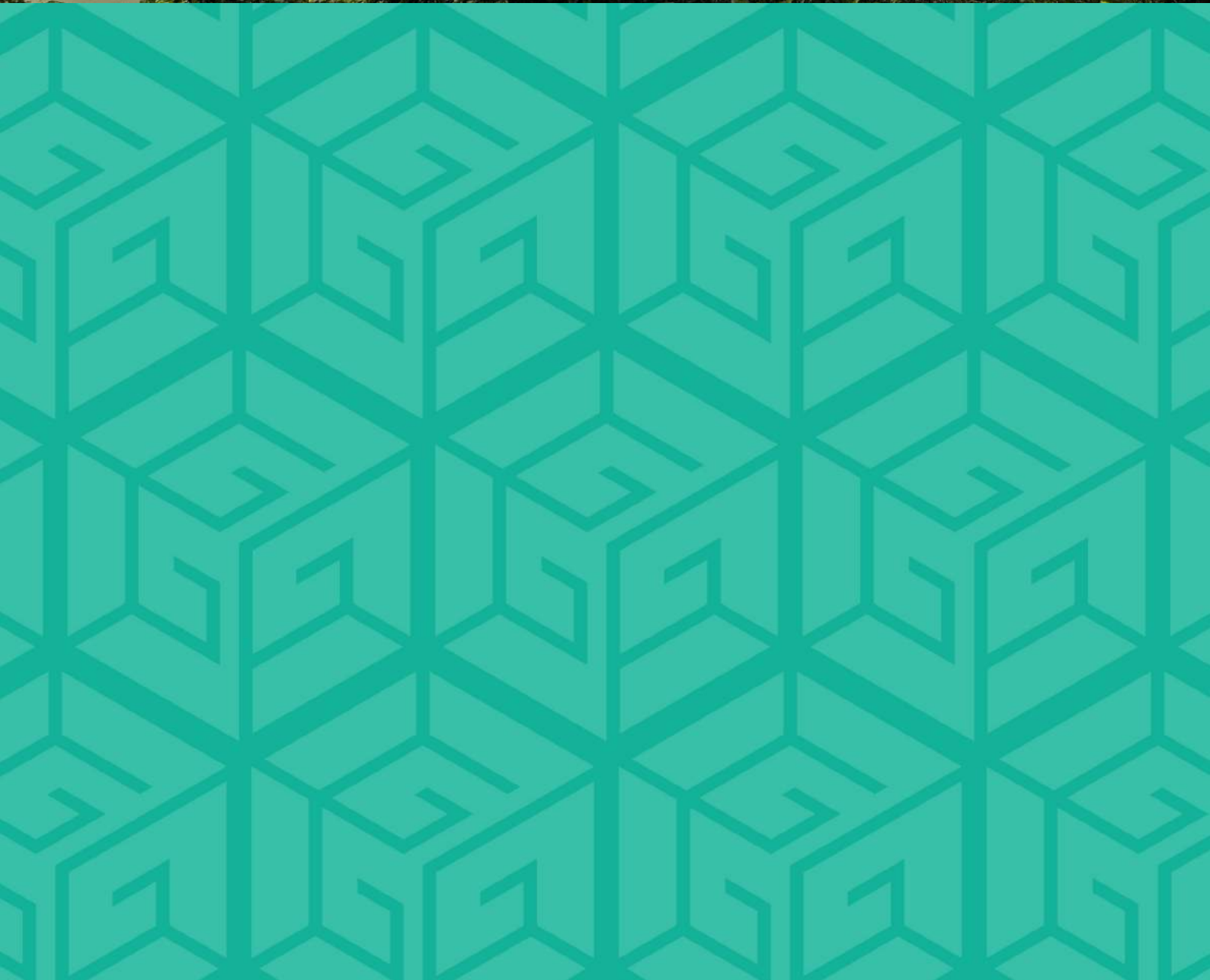
Executive Summary

This Country Planning Framework (CPF) is the strategy of the Global Green Growth Institute (GGGI) Lao People's Democratic Republic (Lao PDR) program for 2021-2025. The inputs to the CPF are based on the GGGI Lao PDR team's assessment of green growth challenges, opportunities and enabling conditions, identification of GGGI's comparative advantage in Lao PDR, and elaboration of priority interventions.

The CPF is centered on supporting Lao PDR maintain the same strong economic growth path with green growth projects without degrading its environment. In the past years, from 2016 to 2019, Lao PDR enjoyed strong economic growth with annual gross domestic product (GDP) growth of 5.9% on average, improving the GDP per capita from US\$2,025 in 2016 to US\$2,645 in 2019. At the same time, poverty rate declined from 23.2% in 2012-2013 to 18.3% in 2018-2019. Much of the growth was driven by taking advantage of natural resources with exports sourced from agricultural, forestry, mining and hydropower industries.

In the next five years, GGGI's support to the Government of Lao PDR (GoL) will focus on developing policies to create an enabling environment for green investments, and preparing projects to directly mobilize investments in the areas of electric vehicles, energy efficiency and green industry. The efforts on policy development and investment mobilization will be in line with the national priorities of Lao PDR by supporting the implementation of the National Green Growth Strategy (NGGS), the updated Nationally Determined Contribution (NDC) and the Green Climate Fund (GCF) country program. In addition, GGGI will contribute to establishing and improving essential sustainable waste management services under an urban setting to accommodate the rapidly expanding urban growth in Lao PDR. The GGGI Lao PDR program proposes the following programmatic solutions for the next five years:

- Green Investment – In partnership with the GoL and private sector players in Lao PDR, GGGI will prepare bankable projects and financing mechanisms to increase the penetration of green growth projects.
- Climate Action – In collaboration with the Ministry of Planning and Investment and Ministry of Natural Resources and Environment, GGGI will continue to support the mainstreaming of the NGGS by operationalizing the Green Growth Promotion Center, and implementing the updated NDC as well as the GCF country program.
- Waste Management – In continuation of existing projects funded by the Korea International Cooperation Agency that are focused on waste management in Vientiane Capital and Pakse City, GGGI will develop national and sub-national policies, implement strategies, and pilot demonstration projects in Vientiane Capital and Pakse. Once GGGI reviews the success of the pilot projects, selected projects will be scaled-up and replicated throughout the cities in Lao PDR.
- Sustainable Mobility – Clean, inexpensive and abundant electricity driven by hydropower in Lao PDR provides an excellent opportunity for electric vehicles to thrive, contributing to economic growth through fuel cost savings and reducing petroleum imports. GGGI will support the Ministry of Public Works and Transport and private sector players to create an enabling environment and prepare bank able projects to attract investments in the sustainable mobility sector.
- Green Buildings and Green Industries – Energy efficiency is still an untapped market in Lao PDR. In order to establish and jump-start the market, GGGI will conduct energy audits in public and commercial buildings to identify the potential of the energy efficiency market for Lao PDR and support the development of energy service companies in the industry sector. In addition, GGGI will collaborate with the Ministry of Industry and Commerce to develop a green industry policy.



1. Introduction

Each country program of the Global Green Growth Institute (GGGI) produces a Country Planning Framework (CPF) to outline its strategy and steer the direction of the program for the next five years. The CPF consists of the most appropriate programmatic solutions that can catalyze inclusive green growth, enhance climate resiliency and support partner governments to achieve the Sustainable Development Goals (SDGs). These choices of programmatic solutions will guide the allocation and prioritization of GGGI's human, technical and financial resources and budget.

The programmatic solutions in the CPF are derived from a set of global operational priorities (GOPs) presented in the most recent organization strategy of GGGI, the Strategy 2030. The strategy aims to better support and serve GGGI members in their transition to green growth, as well as in the implementation of the Paris Agreement and the 2030 Agenda for Sustainable Development. The strategy helps partner governments unlock appropriate climate actions and investments toward a low-carbon, resilient and sustainable future, in line with their national objectives. It prioritizes the key global intervention areas with GOPs, and seeks to maximize the translation of these priorities into inclusive green investment plans and strong institutional capacity. The GOPs are supported by an array of programmatic solutions, including projects, policies, regulations, and all other initiatives and actions. The solutions are identified based on a series of analytical exercises and stakeholder feedback sessions, incorporating inputs from internal GGGI staff, national stakeholders and development partners. Ultimately, they are aligned with the social and economic development objectives of Lao People's Democratic Republic (Lao PDR), its Nationally Determined Contribution (NDC) and SDG priorities, and GGGI expertise where GGGI can make significant environmental, social and economic impacts.

This CPF of GGGI Lao PDR for 2021-2025 highlights the GGGI Lao PDR program's past achievements along with existing development challenges, and summarizes the selection of the programmatic solutions and expected green growth impacts by 2025 and beyond.

2. Current Status of the GGGI Lao PDR Program

Although the program was established only a few years ago in 2017, it quickly grew with strong support from the Government of Lao PDR (GoL), along with a series of wins in earmarked projects amounting to more than US\$7 million. The program budget for 2021-2022 will be about US\$3 million annually. Both the Membership and the Host Country Agreement were signed in September 2017. The program now employs 13 staff, including four international, and is collaborating with five key ministries and one national research institute: the Ministry of Planning and Investment (MPI), the National Institute for Economic Research (NIER), the Ministry of Public Works and Transport (MPWT), the Ministry of Natural Resources and Environment (MONRE), the Ministry of Energy and Mines (MEM), and the Ministry of Industry and Commerce (MOIC). The GGGI Lao PDR program operates five government-embedded offices in Vientiane Capital and one office in Pakse, a secondary city in southern Lao PDR.

GGGI's engagement with the GoL started in 2016 with the implementation of the Green Growth Potential Assessment (GGPA) in collaboration with MPI and NIER. The results of the GGPA were incorporated in the National Green Growth Strategy (NGGS), which was formally adopted by the GoL in 2019 and laid a foundation for a green and sustainable development pathway for Lao PDR. GGGI is now focused on mainstreaming the NGGS in the National Socio-Economic Development Plan (NSEDP) and intends to further support the NGGS with its implementation, monitoring and assessment.

Over the past three years, GGGI collaborated with MONRE in the area of climate change with support on measurement, reporting and verification (MRV) in the energy sector by: (1) conducting gap assessment for MRV systems and an institutional mapping, and developing sector-specific spreadsheets and toolkits; (2) delivering the Green Climate Fund (GCF) readiness project focused on green and resilient cities, and enhancing the capacity of the National Designated Authority (NDA); and (3) supporting revision of the NDC by assessing existing targets and adding new ones.

In addition to technical support in policy and strategy development, GGGI partnered with MPWT to concentrate its efforts on the development of green cities, mainly focused on waste management and sustainable transport. GGGI conducted a solid waste situation analysis in Vientiane Capital and wastewater and sanitation assessment in Pakse, which led to a multi-million-dollar project being financed by the Korea International Cooperation Agency (KOICA). In the area of transport for the promotion of electric vehicles, GGGI identified potential intervention areas, supported the development of the regulatory framework for electric vehicle deployment, and facilitated the mobilization of finance for electric buses in the upcoming Vientiane Bus Rapid Transit (BRT) by conducting a feasibility study on procurement of electric buses. More recently, GGGI started cooperating with MOIC on resource mobilization to support the transition to green industrial practices, with a focus on energy efficiency.

3. Country Overview and Relevant National Goals and Targets

Lao PDR experienced strong economic growth from 2016 to 2019, with annual gross domestic product (GDP) growth of 5.9% on average, improving GDP per capita from US\$2,025 in 2016 to US\$2,645 in 2019. At the same time, poverty rate declined steadily from 23.2% in 2012-2013 to 18.3% in 2018-2019. However, much of this reduction came from the unsustainable use of the country's natural resources, which has not translated into a commensurate decline in poverty, because frequently it benefits the non-poor (World Bank 2015). Access to electricity, schools, transport and health care has improved significantly, enhancing living standards for many Lao citizens. As a result, in 2018, Lao PDR passed the two thresholds for gross national income per capita and Human Assets Index, and became eligible for graduating from Least Developed Country (LDC) status, provided current progress is sustained until the 2021 review. The Lao population is young, 32% of the population is aged 0-14 years (Lao Population Census 2015). There has been progress in advancing the status of women in Lao PDR, although there remains significant room for improvement with 27.5% of parliamentary seats held by women and 35% of adult women with at least secondary-level education compared to 46% of their male counterparts (UNDP HDR 2019).

3.1. Green Growth Challenges

Despite progress made to promote green growth and climate actions, some challenges persist. Key development challenges for the GGGI Lao PDR program include the following:

- Limited institutional and technical capacity to plan, coordinate and strategize development plans, contributing to limited ownership by the GoL.
- High urban population growth (8.6% annually), but cities lack inclusive and sustainable urban services –
 - All the major cities in Lao PDR are vulnerable to flooding and other climate change impacts. Cities need to develop infrastructure that is resilient and mitigates the impacts of climate change, especially flooding. The sanitation infrastructure, riverbank protection, transportation projects and other initiative all need to be designed to reduce the effects of climate change, and ensure their services remain functional during flooding and other natural disasters.
 - The coverage of solid waste collection services is limited due to the lack of infrastructure and the unaffordability of the services. Wastes are not separated and recycled except for limited recycling by informal waste pickers at landfill sites. None of the cities have a solid waste processing facility and scientific landfills. Vientiane, Luang Prabang, Thakek, Kaysone Pomvihane and Pakse have landfills but without proper discharge mechanism for leachate. As the population grows in cities, it will be critical for local governments to improve their solid waste collection and management services to ensure the cities remain clean and hygienic.
 - None of the cities have wastewater collection and treatment systems. Most of the wastewater is disposed at landfill, dumping sites, water bodies or fields without any treatment and processing. The septage system in the cities are not well managed. This has resulted in the contamination of groundwater in urban areas and poses a significant health hazard during flooding or monsoons.
 - Cities lack a plan to develop the wastewater infrastructure and address sanitation, health and hygiene issues in cities. Cities require policy and a planning framework for the development and coordination of the sanitation sector.
 - None of the cities, except Vientiane, have plans for the development of public transportation. The existing form of unorganized transport with tuk-tuks is unregulated and unsustainable. There is significant potential to move from existing intermediate public transport services, such as tuk-tuks and song thaews, to more organized and sustainable electric bus services.

- Government officials have a limited understanding of green city development, which is often perceived by stakeholders as only parks or trees. There is a lack of technical capacity at the sub-national level, and insufficient information to support green city planning such as down scaled climate scenarios and information for city greenhouse gas (GHG) inventory.
- Limited domestic investment capabilities. As an LDC country, Lao PDR is struggling to attract commercial and institutional investors due to a number of barriers that increase the risks of investment, such as
 - Immature national and local financial markets;
 - Limited in-country expertise in operations and maintenance of green growth projects;
 - Insufficient public revenues to cope with rapid economic growth;
 - High risk of default or non-payment;
 - Lack of willingness to pay for public services.
- Weak legal frameworks and limited enforcement of regulations. Policy conditions remain of critical importance to enable capital flows to underserved sectors. Regulatory risks that hinder green growth transition in Lao PDR include –
 - Policies that promote business-as-usual “brown” growth (e.g., fossil fuel subsidies, restrictive permitting and licensing);
 - Insufficient or contradictory enabling policies (e.g., feed-in-tariff and tax incentives);
 - Regulatory changes that adversely impact projects.

The primary challenges to gender equality and the empowerment of women in Lao PDR are in enabling equal access for women and girls to opportunities and resources – particularly for rural and marginalized women (FAO 2018). Illiteracy, poor reproductive and basic health, food insecurity and economic disenfranchisement rank high among development priorities for women in Lao PDR (UN Women 2017).

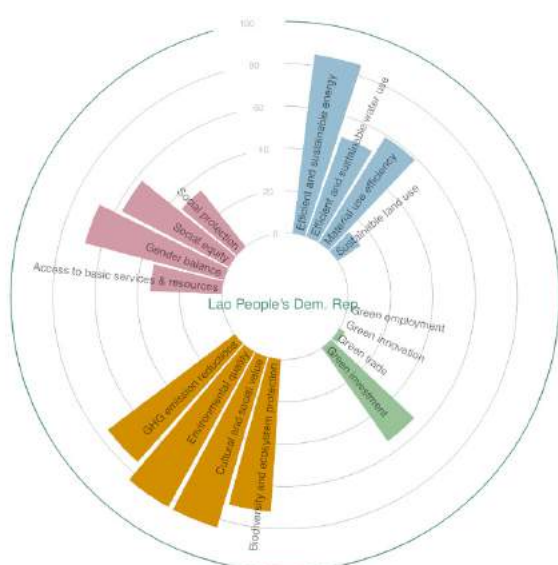
3.2. Green Growth Performance

Some of the observations presented in the previous section are supported by the results of the work on green growth indicators that GGGI completed in 2019. Table 1 presents the 16 indicators identified for the four dimensions of green growth: (1) efficient and sustainable resource use; (2) natural capital protection; (3) green economic opportunities; and (4) social inclusion.

Table 1. Dimension and indicators for green growth

Dimension	Green Growth Indicators	Indicator Codes
Efficient and Sustainable Resource Use	(1) Efficient and Sustainable Energy (2) Efficient and Sustainable Water Use (3) Sustainable Land Use (4) Material Use Efficiency	EE EW SL ME
Natural Capital Protection	(5) Environmental Quality (6) GHG Emission Reduction (7) Biodiversity and Ecosystem Protection (8) Cultural and Social Value	EQ GE BE CV
Natural Capital Protection	(9) Green Investment (10) Green Trade (11) Green Employment (12) Green Innovation	GV GT GJ GN
Social Inclusion	(13) Access to Basic Services and Resources (14) Social Equity (15) Social Protection (16) Gender Balance	AB SE SP GB

The circular bar plot in Figure 1 shows the distance of these indicators to the sustainability targets³, where a score of 100 implies that a target has been achieved. Many of the targets are based on the SDGs. GGGI analysis shows that Lao PDR is performing well in natural capital protection with very high scores of over 80 for indicators on environmental quality and cultural and social value. The indicators that are notably underperforming with scores below 40 are green trade, sustainable land use, access to basic services and resources, and social protection. These results suggest that there are still enormous opportunities for the GoL to improve the population’s access to essential basic services.



The underperformance of Lao PDR against the targets is also evident when its scores are compared with those of other groups of countries. The dashboard in Figure 2 presents the scores in color gradients – the greener the

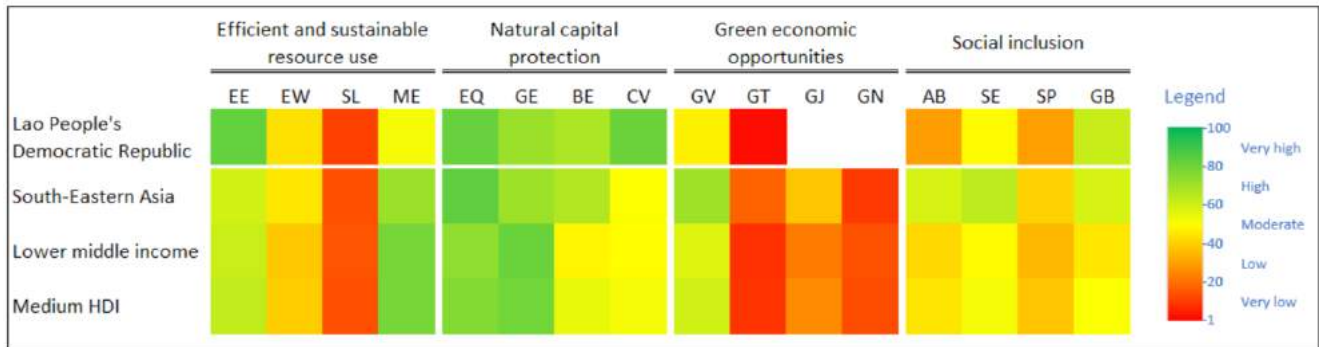
¹See GGGI, “GGGI Technical Report No. 5: Green Growth Index – Concepts, Methods and Applications,” October 2019, http://greengrowthindex.gggi.org/wp-content/uploads/2019/12/Green-Growth-Index-Technical-Report_20191213.pdf.

²The methodology for score calculations for each indicator is available in the GGGI Technical Report No. 5.

³The targets were derived from literature, see “Table 4: Details on the sustainability targets used to benchmark the normalization functions,” on page 41 of the GGGI Technical Report No. 5.

color, the better the performance. On average, Lao PDR performs better than other countries in South-East Asia, other low middle-income countries, and countries with medium Human Development Index (HDI) value, with respect to efficient and sustainable energy (EE) and cultural and social value (CV). Like most countries in these country groups, Lao PDR's performance is very low in sustainable land use (SL) and green trade (GT). However, Lao PDR is lagging behind other countries in the region in the areas of material use efficiency (ME), green investment (GV), and access to basic services and resources (AB). In Section 4, GGGI introduces the areas for future interventions to improve Lao PDR's green growth performance.

Figure 2. Performance dashboard for green growth indicators



3.3. Green Growth Goals and National Targets

The goals and targets of the GGGI Lao PDR program are mainly based on the NGGS, NSEDP, updated NDC and GoL commitments to the SDGs. The NGGS puts forth its ambition to achieve economic growth that is efficient, clean, comprehensive, inclusive, fair, and resilient to climate change and global economic uncertainties. The updated NDC aims to enhance the capability of Lao PDR to mitigate and adapt to climate change while also promoting sustainable economic growth. Table 2 shows the proposed national and sub-national targets captured from the NGGS, 8th NSEDP, updated NDC and SDGs that the GGGI Lao PDR program aims to support the GoL to achieve.

Table 2. Proposed national and sub-national indicators and targets for 2025 and 2030

GGGI's Programmatic Solution (PS)	Targets/Indicators	2025	2030	Source
Climate Action (PS2)	Propor	74 tons/ GDP million	69 tons/ GDP million	NGGS
	Average GHG emission/person/year	0.50 ton	1.1 ton	NGGS
	Percentage of economic losses caused by disasters (% of GDP)	<0.24%	0.18%	NGGS
	Average number of populations affected by natural disasters	<160,000	<120,000	NGGS
Waste Management (PS6)	Waste collection rate in Vientiane	-	100%	Sustainable Solid Waste Management Strategy and Action Plan for Vientiane 2020-2030
	Percentage of waste reused or disposed through proper methods to increase from 50% to:	65%	80%	NGGS

	Average waste generation per capita to be reduced from 237 kg/person/year to:	210 kg/ person/year	180kg/ person/year	NGGS
	Sustainable municipal solid waste treatment capacity in Vientiane	-	500 tons/ day	2020 NDC
	Population with access to improved sanitation	-	100%	SDG
	Proportion of wastewater treated including reuse/recycling	-	>50%	SDG
Sustainable Mobility (PS7)	Electric vehicle penetration for two-wheelers and passenger cars in national vehicles mix	-	30%	2020 NDC
	Share of biofuels in transport fuels	-	10%	2020 NDC
Green Buildings (PS8)	Reduction of final energy consumption compared to business-as-usual scenario	-	10%	2020 NDC
Green Industries (PS10)	Reduction of final energy consumption compared to business-as-usual scenario	-	10%	2020 NDC

3.4. Green New Deal for COVID-19 Recovery

In 2020, GGGI was asked to participate in a series of meetings hosted by the GoL and the United Nations to develop recommendations to revise the 9th NSEDP in light of the COVID-19 pandemic. Given that lockdowns and travel restrictions hampered economic growth and led to a decrease in employment, GGGI strongly advocated green growth measures to support economic recovery. For example, higher penetration of electric vehicles has multiple economic and environmental benefits for Lao PDR. The low price of hydropowered electricity creates fuel cost savings over petroleum cost – significant enough to make electric vehicles economical compared to fossil-fueled vehicles. The reduced fossil fuel demand will lower trade deficit⁴ and steer Lao PDR to a low emission development path. GGGI also emphasized enhanced efforts on waste management, including sanitation. With waste management closely linked to sanitation and public health, GGGI's current project, funded by KOICA, on solid waste management and wastewater treatment has garnered a lot of attention from local stakeholders.

Using these examples, GGGI will collaborate with KOICA to develop a new proposal on a green new deal in 2021. The proposal will include developing policies and implementing pilots that could create an enabling environment to catalyze private sector investments in sustainable mobility, green buildings and green industries. Together with existing efforts on waste management, GGGI will strive to mobilize at least US\$500 million of green investments from 2021 to 2025 that could put the country on the recovery path from the COVID-19 pandemic.

3.5. Stakeholder Mapping

The ministries driving the agenda of green growth and climate actions in Lao PDR are MPI, MONRE, MPWT and MEM. GGGI has established a strong partnership with each of these ministries by collaborating on strategic projects aimed at mainstreaming green growth and catalyzing green investments. With green growth being a significant pillar of the development strategy of Lao PDR, MPI, with support from NIER, is leading the agenda setting and national policymaking. These two organizations constitute the management team of the secretariat for the National Green Growth Committee. MONRE, as the NDA for GCF and the focal point for the Global Environment Facility (GEF), is leading the planning and implementation of the NDC and GCF country program. Enhancing access to urban services such as sustainable transport and waste management is led by MPWT along with local governments, such as Vientiane Capital responsible for implementation. MEM is interested in expanding sustainable energy, but it prioritizes hydropower over solar and wind. However, with surplus electricity, MEM is interested in increasing domestic consumption by collaborating with MPWT to increase the penetration of electric vehicles .

⁴It was US\$163.95 million in the second quarter of 2019 (Trading Economics 2019).

Amongst key donors to Lao PDR, KOICA actively engages with international organizations by providing earmarked projects to GGGI and United Nations agencies. Given that KOICA's priority sectors are agriculture, education and public health, early engagement with the local KOICA office is very important to agree on project topics and gain the necessary support for proposal development. Development agencies representing landlocked countries such as Lux Aid and Swiss Agency for Development and Cooperation are key bilateral donors to Lao PDR. Their priority sectors vary, but, in the past, GGGI has discussed potential collaborations in the areas of green finance and waste management.

Multilateral donors and development partners such as the GCF, the Asian Development Bank (ADB), the World Bank and the United Nations are also very keen on promoting green growth and climate action. Much of their focus areas overlap in agriculture, forestry, sustainable energy, urban development and public health. GGGI has supported the NDA to operationalize the GCF country program and collaborated with the World Bank in the development of the NGGS.

More detailed analysis based on the assessment of interest and influence of stakeholders is presented in Annex 2.

4. Programmatic Solutions and Intended Results

The GGGI Lao PDR program will focus on the following programmatic solutions from 2021 to 2025: (1) Green Investment; (2) Climate Action; (3) Waste Management; (4) Sustainable Mobility; (5) Green Buildings; and (6) Green Industries. The rationale for selecting these programmatic solutions is as follows:

- Green Investment – The GoL has limited budgetary resources to fund green growth projects, and the availability of private sector financing is also limited. GGGI will contribute to ameliorating these issues by developing inclusive green growth focused financing mechanisms and preparing green projects toward bankability.
- Climate Action – GGGI supported the development of the NGGS and is helping to incorporate the NGG in the 9th NSEDP. Also, GGGI updated the NDC and is currently supporting the GoL to implement its GCF country program. GGGI will continue to support the mainstreaming of the NGGS by operationalizing the Green Growth Promotion Center, and implementing the updated NDC and GCF country program.
- Waste Management – Lao PDR lacks solid waste and wastewater treatment in its rapidly growing urban centers. With support from KOICA, GGGI has tackled these issues by developing national and sub-national policies and implementation strategies, and piloting demonstration projects in Vientiane Capital and Pakse. In the next five years, GGGI will scale-up and replicate successful pilot projects throughout the cities in Lao PDR.
- Sustainable Mobility – Lao PDR's abundant hydropower resources allow access to electricity at affordable prices; therefore, the promotion of electric vehicles makes not only environmental but also sustainable and economic sense. Total cost of ownership analysis suggests that owning electric vehicles is already cheaper than regular gasoline/diesel-powered vehicles due to lower operating costs.
- Green Buildings – Lao PDR has uncaptured economic opportunities with energy efficiency in public and commercial buildings because energy efficiency has never been seriously implemented before in Lao PDR, and energy service companies (ESCOs) do not exist.
- Green Industries – Lao PDR heavily focuses on hydropower and mining industries to propel its economies. GGGI will concentrate its efforts on developing an adequate green industry policy framework and preparing bankable green projects in the sector. The implementation of energy efficiency measures will increase the competitiveness of the overall domestic industry.

More specific impact pathways for each programmatic solution are described below.

4.1. Green Investment

GGGI aims to mobilize initial commitment from financiers and project developers to invest and further advance green projects in member and partner countries. Toward this end, GGGI works with private and public investors and policymakers to develop bankable projects, design gender-responsive and socially-inclusive financial instruments, and build national financing vehicles. In Lao PDR, GGGI has been supporting MPWT and MEM in securing financing for electric buses in Vientiane Capital and solar power generation in secondary cities. Planned green investment activities and results for the next five years are presented in Table 3.

Table 3. Planned activities and intended results for green investment

Policy	<ul style="list-style-type: none"> • Support the development of green investment criteria for local banks • Support GCF readiness, including through supporting the accreditation of a national entity for on-lending fiduciary services
Finance	<ul style="list-style-type: none"> • Support the establishment of the Green Growth Promotion Fund • Develop a financing mechanism to accelerate e-mobility transition • Support the implementation of renewable energy auctions
Projects	<ul style="list-style-type: none"> • Develop national financing vehicles and financial instruments • Support the Bank of Lao PDR in GCF accreditation • Support the GoL and its partners with gender and social assessments, SDG and gender-related risks and opportunities in green investments, and use inclusive strategies in sector-specific green growth plans to advance gender equality as well as financial returns

Through this programmatic solution, GGGI will contribute to the objective of the NGGS to enhance public and private, domestic and foreign investments in green growth sectors, and mobilize US\$150 million toward sustainable development projects by the end of the five-year period.

4.2. Climate Action

GGGI has collaborated with MPI and NIER to develop and mainstream the NGGS. Similarly, GGGI has supported MONRE to update its NDC and implement the GCF country program. The NGGS is closely intertwined with the NDC and the GCF country program, and they make the core of climate action in Lao PDR. GGGI facilitates discussions amongst different line ministries to raise awareness, coordinate projects to maximize the synergy and mobilize green investments. Planned climate action activities and results for the next five years are presented in Table 4.

Table 4. Planned activities and intended results for climate action

Policy	<ul style="list-style-type: none"> • Integrate green growth into the 9th NSEDP by developing a green growth planning manual, identifying gender-responsive green growth indicators and planning green growth investment projects • Support the adoption of green city action plans for Vientiane Capital and Pakse • Operationalize the Green Growth Promotion Center • Develop the net-zero emission strategy for Lao PDR • Support implementation of the updated NDC and GCF country program • Develop adaptation strategies and action plans for crucial vulnerable sectors for NDC implementation
Finance	<ul style="list-style-type: none"> • Mobilize US\$1 million from GCF to support the National Adaptation Plan (NAP) process to develop sectoral adaptation strategies and action plans for key vulnerable sectors • Mobilize investments for NDC implementation
Projects	<ul style="list-style-type: none"> • Build the capacity of MPI and NIER on green growth planning and adopt an inclusive participatory approach involving all stakeholders • Build the capacity of MONRE on climate modeling and GHG scenarios • Enhance the capacity of NDA to leverage GCF resources

All of the projects aim to strengthen green growth and climate policies. Ultimately, GGGI expects to contribute to the adoption of the 9th NSEDP, and development of the low emission development strategy and sectoral adaptation plans. When adopted, these policies and strategies will indirectly impact all six strategic outcomes in the GGGI Strategy 2030. In particular, with GGGI's work in the development of the sectoral adaptation strategies and action plans, GGGI will contribute to preventing adverse impacts of natural disasters for up to 160,000 people from 2020 to 2025, and up to 120,000 people from 2025 to 2030.

4.3. Waste Management

The municipal waste management system is limited in Lao PDR in terms of both adequate collection and discharge. The waste collection and discharge. The waste collection service has been introduced in major cities in the country. Nevertheless, more than half of the population has no access to the service due to limited spatial reach or lack of affordability⁵.

While access to toilets has improved, the wastewater management systems are practically absent. None of the urban areas in Lao PDR have organized sewerage systems or fecal sludge management systems. This lack of wastewater management has serious implications for public health. Most of the wastewater is disposed in rivers and water bodies without treatment. The presence of ill-maintained septic tanks and soak pits has led to groundwater pollution in most urban areas. The lack of wastewater management has raised public health concerns, especially during flooding and monsoons.

To tackle these issues, GGGI will strive to achieve the intended results presented in Table 5.

Table 5. Planned activities and intended results for waste management

Policy	<ul style="list-style-type: none"> • Develop the Sustainable Solid Waste Management Strategy and Action Plan for Vientiane 2020-2030 • Improve, finalize and assist in the implementation of the national urban sanitation strategy • Prepare the wastewater management strategy for Pakse and provide guidelines for other cities to prepare city-level wastewater management strategies
Finance	<ul style="list-style-type: none"> • Mobilize US\$13 million for the development of a mechanical biological treatment (MBT) facility for Vientiane Capital • Mobilize US\$1.5 million for incorporating wastewater reuse components in addition to the proposed decentralized wastewater treatment systems (DEWATS) and fecal sludge treatment plant in Pakse • Mobilize investments for upscaling of DEWATS in other secondary cities such as Thakek and Kaysone Pomvihane • Mobilize financing for the implementation of innovative wastewater reuse and recycling options
Projects	<ul style="list-style-type: none"> • Pilot and scale-up decentralized waste collection services in Vientiane • Facilitate environmental and social safeguards analysis and implement community level waste-to-resource projects in Vientiane (ensuring that the various needs of waste pickers are taken into consideration and projects improve people's livelihoods and well-being) • Establish a fecal sludge treatment plant in Pakse • Establish four DEWATS to demonstrate the decentralized approach to wastewater management in Pakse

⁵GGGI, Green Growth Potential Assessment: Lao PDR Country Report (2017), <https://ggi.org/site/assets/uploads/2018/01/GGPA-of-Lao-PDR-Final-Report.pdf>.

The results will lead to both attributed and contributed strategic outcomes for creating green jobs and increasing sustainable services. Specifically, GGGI will directly attribute to creating about 100 jobs through the implementation of decentralized waste collection services and the development and maintenance of four DEWATS. In terms of contributed job creations, GGGI will formalize employments for 220 waste pickers currently working and residing at the landfill with decentralized waste collection services and a manual sorting system when the MBT facility is successfully operationalized by 2025.

Project impacts for enhancing access to sustainable waste management services include providing access to waste collection services, recycling and reuse to 135,000 people in Vientiane Capital and fecal sludge management services to 94,000 people in Pakse by 2030. With the very rapid growth of urban populations in Lao PDR, GGGI will contribute to expanding the access to more than 1 million people in Vientiane Capital alone in 2025.

4.4. Sustainable Mobility

Large hydropower resources in Lao PDR offer a tremendous economic opportunity to shift the transport sector to sustainable mobility with electric vehicles. To eliminate barriers to electric vehicle deployment, the GoL aims to publish technical standards, develop a policy framework, raise awareness among stakeholders and set up an incentive mechanism. These will play a key role in supporting Lao PDR to mitigate the strong growth of internal combustion engine vehicles, which causes trade deficit due to fuel imports, GHG emissions and air pollution, affecting the economy, the environment and health, especially in urban areas. The Lao PDR draft renewable energy strategy and updated 2020 NDC set a 30% electric vehicle penetration target for two-wheelers and passenger cars by 2030.

In 2021-2022, GGGI aims to step-up efforts through the design of a financing mechanism and associated funding proposal to the GCF that will support the 30% electric vehicle penetration target for two-wheelers and passenger cars by 2030. The planned activities and results in the area of sustainable mobility are presented in Table 6.

Table 6. Planned activities and intended results for sustainable mobility

Policy	<ul style="list-style-type: none"> Support the adoption of the regulatory framework on electric vehicles and any subsequent policy/awareness-raising efforts to stimulate electric vehicle transition Support the adoption of green city action plans for Vientiane Capital and Pakse
Finance	<ul style="list-style-type: none"> Develop a financing mechanism to incentivize electric vehicle buyers, with the support of the GCF
Projects	<ul style="list-style-type: none"> Support sustainable public transport and non-motorized transport, while mainstreaming inclusive considerations in public transport Support the development of electric vehicle charging infrastructures Support projects that create new kinds of jobs that can provide meaningful, fair and fulfilling employment in the mobility sector

These results will contribute to attributed impacts in emission reductions amounting to 300,000 tCO₂e for the 2020-2030 period, through the displacement of internal combustion engine vehicles by electric two-wheelers and cars, after deducting indirect emissions from electric vehicles.

4.5. Green Buildings

The MPWT is playing an essential role in urban development in terms of building code, green buildings and green infrastructure. Green buildings will be a new area of intervention for the GGGI Lao PDR program. The core of green buildings will be energy efficiency measures for public and commercial buildings with the promotion of roof-top solar panels to reduce reliance on grid electricity and to diversify energy sources during the dry season. As blackouts are still prevalent, batteries storage systems such as back-up electricity sources for key public buildings, including hospitals, schools, airports and government offices, could be an excellent option to mitigate climate impacts. The planned activities and results in the area of green buildings are presented in Table 7.

Table 7. Planned activities and intended results for green buildings

Policy	<ul style="list-style-type: none"> Promote the green building policy, conduct energy audits and develop business cases laid out in the updated NDC as a target on energy efficiency Develop the green building policy (and mainstream inclusion perspectives in the policy, which will be informed by sex/age-disaggregated data, different energy needs of the Lao people, etc.)
Finance	<ul style="list-style-type: none"> Develop a financial incentive program for building energy efficiency
Projects	<ul style="list-style-type: none"> Capture electricity cost savings through the implementation of energy efficiency in buildings

GGGI's signature four-step process will be applied to this programmatic solution: (1) assess current practices to establish baseline conditions, identify gaps and challenges in implementing stricter standards, and identify target markets and sectors, focusing on hard-to-reach segments and/or segments that can have the most impact for reducing emissions; (2) establish target technical standards for upgrading the efficiency of building envelopes; (3) structure financial incentive program to promote the adoption of building upgrades to meet target standards; and (4) build capacity to promote a sustainable marketplace to mainstream the adoption of more efficient building materials and/or appliances. Target attributed impact amount to 1,000,000 tCO₂e reduced between 2020 and 2030 from energy efficiency measures in buildings, and target contributed impact is 2,800,000 tCO₂e reduced between 2020 and 2030.

4.6. Green Industries

Lao PDR relies on natural resources for its primary industries such as hydroelectricity, mining, ecotourism and agricultural production. As the country seeks to find another source to fuel its economic development, the development of green industries is an essential topic for the GoL. The MOIC has recently requested GGGI to develop an overall strategy for green industries. In the next couple of years, GGGI will collaborate with MOIC to: (1) identify industrial sectors with high potential for green jobs and enhanced productivity and efficiency; (2) support the development of the ESCO industry; and (3) strengthen entrepreneurship activities.

In particular, there exists the untapped potential for industrial energy efficiency measures in Lao PDR. GGGI prepared a GCF readiness proposal together with MOIC, which aims to address policy gaps, improve sectoral expertise, identify investment opportunities and potential financiers, and engage stakeholders, including the domestic private sector, to catalyze investments in the deployment of energy efficiency measures in large, medium and small industrial enterprises. The proposed GCF readiness project consists of five outputs: (1) green industry policy development; (2) ESCO training program; (3) energy audits; (4) business case development; and (5) awareness-raising and expertise improvement for government officials.

Promoting entrepreneurship activities will be another focus of the GGGI Lao PDR program. GGGI will start collaborating with the Lao National Chamber of Commerce and Industry (LNCCI) and local incubators and accelerators to develop new business models, produce green products and attract investors. The planned activities and results in the area of green industries are presented in Table 8

Table 8. Planned activities and intended results for green industries

Policy	<ul style="list-style-type: none">• Support the development and adoption of the green industry policy/strategy
Finance	<ul style="list-style-type: none">• Prepare business models and information memorandum to highlight commercial investment opportunities to financiers• Organize an investor forum to match investment opportunities• Develop local ESCOs and conduct vocational training for the ESCO industry
Projects	<ul style="list-style-type: none">• Promote entrepreneurship activities by collaborating with LNCCI, local accelerators, incubators, and small and medium enterprises to develop business models and identify green technologies requiring investments• Leverage on projects that promote income generation and sustained increase in living standards for all people, and provide technological solutions for environmentally-sound industrialization

Emission reductions will be achieved through reduced electricity from the grid and fossil fuel consumption. The attributed impact is the abatement of 570,000 tCO₂ between 2020 and 2030, equivalent to 10% of energy consumption in the industry sector by 2030. The contributed impact is the abatement of 2,800,000 tCO₂e in total between 2020 and 2030, equivalent to a 10% reduction of total 2030 energy demand.



Annex 1: Lao PDR CPF – Impact Pathway

CPF Area/ Programmatic Solution	Outcomes			Impacts		Country Goals/Targets
	Policy <i>(Indicator: Policies adopted)</i>	Financing <i>(Indicator: US\$ mobilized)</i>	Project Development <i>(Indicator: US\$ mobilized)</i>	Attributed Impacts	Contributed Impacts	
Green Investment		US\$40 million mobilized by renewable energy auctions US\$40 million mobilized for national financing vehicle	US\$250 million mobilized for bankable projects, including but not limited to sustainable energy, industrial and buildings energy efficiency, and sustainable transport	SO2 Green jobs created: 4,900 (= 250 * 19.6) ⁶	SO2 Green jobs created: 15,000 (= 250 * 60.1)	Proportion of GHG emission to GDP: 74 tons/GDP million in 2025 69 tons/GDP million in 2030 Average GHG emission/person/year: 0.50 ton in 2025 1.1 ton in 2030
Climate Action	9th NSEDP adopted The net-zero emission strategy for Lao PDR adopted Adaptation strategies and action plans for key vulnerable sectors for NDC implementation adopted		US\$1 million mobilized from GCF to support NAP process for the development of sectoral adaptation strategies and action plans	SO6 Enhanced adaptation to climate change	SO6 Enhanced adaptation to climate change: <160,000 in 2025 <120,000 in 2030	Percentage of economic losses caused by disasters (% of GDP): <0.24% in 2025 <0.18% in 2030 Average number of populations affected by natural disasters: <160,000 in 2025 <120,000 in 2030
Sustainable Mobility	Regulatory framework on electric vehicles adopted. Green city action plans for Vientiane Capital and Pakse adopted	US\$60 million mobilized by financing mechanism to accelerate electric mobility transition	US\$5 million mobilized for development of electric vehicle charging infrastructures	SO1 GHG reduction: 300,000 tCO2e for 2020-2030		Electric vehicle penetration for two-wheelers and passenger cars in national vehicles mix: 30% in 2030 Share of biofuels in transport fuels: 10% in 2030

⁶ The number of job creations were projected using jobs multiplier estimated for the case of wind power in Indonesia. The estimates are presented in page 158 of: GGGI and United Nations Industrial Development Organization, Global Green Growth: Clean Energy Industrial Investment and Expanding Jobs Opportunities (2015), https://www.greengrowthknowledge.org/sites/default/files/downloads/resource/Clean_energy_industrial_investment_vol1_GGGI_UNIDO.pdf.

Waste Management	<p>Sustainable Solid Waste Management Strategy and Action Plan for Vientiane 2020-2030 adopted</p> <p>National urban sanitation strategy adopted</p> <p>Wastewater management strategy for Pakse adopted</p>	<p>US\$13 million mobilized for development of an MBT facility in Vientiane</p> <p>US\$XX million mobilized for upscaling of DEWATS in secondary cities</p> <p>US\$XX million mobilized for implementation of innovative wastewater reuse and recycling options</p> <p>US\$4 million mobilized for pilot and scale-up of decentralized waste collection services in Vientiane</p> <p>US\$3 million mobilized for community level waste-to-resource projects in Vientiane</p>	<p>SO2 Green jobs created: 100</p> <p>SO3 Access to sustainable waste management services: 135,000 people in Vientiane Capital and 94,000 people in Pakse by 2030</p>	<p>SO2 Green jobs created: 220</p> <p>SO3 Access to sustainable waste management services: 1 million people in Vientiane Capital in 2025</p>		<p>Waste collection rate in Vientiane: 100% in 2030</p> <p>Percentage of waste reused or disposed through proper methods to increase from 50% to: 65% in 2025 80% in 2030</p> <p>Average waste generation per capita to be reduced from 237kg/person/year to: 210kg/person/year in 2025 180kg/person/year in 2030</p> <p>Sustainable municipal solid waste treatment capacity in Vientiane: 500 tons/day</p> <p>Population with access to improved sanitation: 100% in 2030</p> <p>Proportion of wastewater treated including reuse/recycling: >50% in 2030</p>
Green Buildings	<p>Green building policy adopted</p> <p>Green city action plans for Vientiane Capital and Pakse adopted</p>	<p>US\$10 million mobilized for financial incentive scheme for building energy efficiency</p>	<p>US\$5 million mobilized for implementation of energy efficiency in buildings</p>	<p>SO1 GHG reduction: 1,000,000 tCO₂e for 2020-2030</p>	<p>SO1 GHG reduction: 1,000,000 tCO₂e for 2020-2030</p>	<p>Reduction of final energy consumption compared to business-as-usual scenario: 10% in 2030</p>
Green Industry	<p>Green industry policy adopted</p>	<p>US\$10 million mobilized for development and financing of local ESCOs</p>	<p>US\$0.3 million mobilized for energy audits and bankable energy efficiency opportunities' feasibility studies</p>	<p>SO1 GHG reduction: 570,000 tCO₂ for 2020-2030</p>	<p>SO1 GHG reduction: 2,800,000 tCO₂e for 2020-2030</p>	

Annex 2: Stakeholder Mapping Analysis

Climate Action and Green Growth

Level of Interest and Influence	Stakeholders
High interest and high influence	<ul style="list-style-type: none"> ● MPI: Tasked to lead NGGS formulation and implementation. ● NIER: Tasked to lead NGGS formulation. Plan to establish and operationalize the Green Growth Promotion Center, which is important for research and recommendations, as well as capacity building. ● MONRE: Mandated to coordinate work related to climate change, including NDA for GCF and focal point for GEF, climate change strategy development, and NDC implementation. A focused sector in NGGS, has strong interest to develop net zero-emission strategy, and important for adaptation strategy and action plan for water resources. ● MPWT: A focused sector in NGGS and mandated with overarching responsibilities for urban services and infrastructure. Increased interest in climate resilience in this sector, and important for adaptation strategy and action plan for the public works and transport sector. ● World Bank: Credit support for Programmatic Green Growth Development Policy Operation, and support for NDC implementation and net zero-emission strategy development. ● GCF: Funding proposal related to climate change.
High interest but low influence	<ul style="list-style-type: none"> ● MEM: A focused sector in NGGS and mainly relevant to mitigation efforts in the energy sector. ● United Nations Development Programme (UNDP): Works on the circular economy and climate change, and chair of the Sub-Sector Working Group on Disasters, Climate Change and Environment. ● United Nations Environment Programme (UNEP): Implementing projects (GCF, NAP, Capacity Building Initiative for Transparency) that may be directly affecting the outcomes of GGGI's work. ● Sector Working Group on Natural Resources and Environment: Is part of the roundtable meeting process and meets once a year prior to the roundtable meeting. Important platform to communicate GGGI's engagement in climate change. ● International non-governmental organizations (NGOs) – CARE, Oxfam and Save the Children International: Interested in climate change and disaster space. Need to be engaged for inclusive consultation.
Low interest but high influence	<ul style="list-style-type: none"> ● Ministry of Agriculture and Forestry: Despite a focused sector, GGGI does not have any project in this space as of now. Important for adaptation strategy and action plans for the agriculture and forest sector. ● MOIC: Important for energy efficiency in industrial and commercial premises. Proposed readiness project. ● Ministry of Finance: Mandated to formulate a national environmental tax law important for NGGS and perhaps climate change fund under climate change decree. ● Ministry of Labor and Social Welfare: Tasked with disaster risk management and relief response. Responsible for collecting all disaster-related data (e.g., number of affected people). ● GEF-GCF Committee: To be established as a mechanism to approve GEF/GCF projects. Members of this committee will be engaged to raise awareness about NDA.
Low interest and low influence	<ul style="list-style-type: none"> ● Sub-Sector Working Group on Disasters, Climate Change and Environment: Mandated to meet twice a year to report on progress and challenges. ● LNCCI: Important for private sector engagement. As of now, their interest and engagement in green growth and climate change are still low.

Waste Management and Sanitation

Level of Interest and Influence	Stakeholders
High interest and high influence	<ul style="list-style-type: none"> ● Ministry of Health: National water, sanitation and hygiene (WASH) policy, and rural sanitation. ● MPWT: Development of national solid waste management strategy. ● MONRE: Environmental policy and regulation. ● Department of Pollution Control. ● Ministry of Agriculture and Forestry: Organic fertilizer promotion. ● Vientiane Capital Office for Management and Services: Municipal solid waste management reform for Vientiane. ● Vientiane Provincial Office of Natural Resources and Environment: GGGI Project Implementation Unit member ● Department of Public Works and Transport of Vientiane Capital: GGGI Project Implementation Unit member ● District Office of Natural Resources and Environment. ● District Office of Public Works and Transport. ● KOICA: Donor for waste management project in Vientiane ● Japan International Cooperation Agency (JICA): Donor for improving waste sector in Lao PDR. ● World Bank: Investment projects in the waste sector. ● European Union: Provides technical assistance and potential donor for plastic waste. ● Deutsche Gesellschaft für International Zusammenarbeit (GIZ): Delivery partner for pilot projects for waste-to-resource initiatives in Lao PDR (Vientiane and Luang Prabang). ● ADB: Existing player in the waste sector for secondary cities. ● District governors and village authorities: Mobilize citizens' participation in GGGI pilot projects. ● United Nations International Children's Emergency Fund (UNICEF): Supports Ministry of Health in coordinating WASH policy. ● World Health Organization: Focuses on public health, water safety plans and rural WASH. ● Cement association: Potential buyers for refuse-derived fuel. ● Waste collection companies (operators).
High interest but low influence	<ul style="list-style-type: none"> ● Swisscontact: Potential delivery partner in the community-level waste-to-resource project and informal sector engagement. ● UN Lab: Potential partner for waste recycling project through innovation. ● Stella: A local NGO for raising awareness and campaigning. ● Green Vientiane: A local NGO. ● Group for Research and Technology Exchanges: International NGO. ● SNV Netherlands Development Organization: International NGO.
Low interest but high influence	<ul style="list-style-type: none"> ● Mekong River Commission: Developing plastic waste monitoring and assessment in the Mekong River. ● MOIC: Industrial waste management. ● Schools: Influential partners for glass bottle recycling projects. ● Bio-fertilizer companies: Potential buyers for organic fractions from municipal waste. ● Recycling factories. ● Farmer's associations: Potential buyers for bio-fertilizers.

Sustainable Transport

Level of Interest and Influence	Stakeholders
High interest and high influence	<ul style="list-style-type: none"> ● MPWT: Aims to develop and publish policy/regulation on electric vehicles based on GGGI's report. Department of Transport is promoting low-carbon transport options and improving transport services. ● Vehicle Inspection Center: Monitors standards of vehicles. ● MEM, Institute of Renewable Energy Promotion: Focuses on the development and implementation of the renewable energy strategy. ● Vientiane Sustainable Urban Transport Project: Preparing to mobilize funding to develop the BRT system in Vientiane. ● Vientiane Bus Enterprise: Public transport services in the city to promote low-carbon transport options. ● GCF: Funding proposal related to climate change. ● World Bank: Projects on infrastructure development. ● European Investment Bank: Provides loans for Vientiane BRT development. ● JICA: Projects on infrastructures developments. ● KOICA: Projects on renewable energy. ● ADB: Urban and sustainable transport development. ● Agence Française de Développement (AFD): Infrastructure development.
High interest but low influence	<ul style="list-style-type: none"> ● Ministry of Finance: Developing law on taxation that aims to minimize import tax for low-carbon vehicles. ● MOIC, Department of Import and Export: Monitors import and export standards. ● Électricité du Laos: Main electricity generation and pricing.

Green City and Green Buildings

Level of Interest and Influence	Stakeholders
High interest and high influence	<ul style="list-style-type: none"> ● MPWT: Tasked with implementing the urban development strategy through the following entities – <ul style="list-style-type: none"> ○ Public Works and Transport Research Institute for advice on urban master planning and working on building code. ○ Department of Housing and Urban Planning on building code, energy efficiency in residential building, drainage canals and indicators for resilient cities. ○ Department of Waterways on riverbank protection and green infrastructure features. ○ Department of Water Supply on water supply and sanitation in urban areas. ○ Department of Transport for promoting low-carbon transport options and improving public transportation services in city. ● MONRE: Issued guidelines on green clean beautiful cities – <ul style="list-style-type: none"> ○ Department of Water Resources on urban water management through green infrastructure. ○ Department of Climate Change on urban ecosystem-based adaptation through restoration and rehabilitation of natural waters. Department of Environment on standards and indicators for implementing green, clean and beautiful cities.

	<ul style="list-style-type: none"> ● Vientiane and Pakse authorities, including the Vientiane Capital Office for Management and Services and Pakse City Office for Management and Services: For endorsement of green city action plans, and improvement of services and management in urban areas. ● MOIC: For energy efficiencies in commercial buildings (hotels, resorts, etc.). ● JICA: Funding city master plan for Vientiane, building code and other infrastructure work. ● ADB: Provides loans for investment projects such as riverbank protection, drainage, landfill and solid waste management, and livable city for Pakse. ● World Bank: Focuses on resilient cities in general and other infrastructure projects.
High interest but low influence	<ul style="list-style-type: none"> ● UN-Habitat: Overall work on urban development and urban settlements. ● International Council for Local Environmental Initiatives (ICLEI): Implementing the Urban LEDS II Project with MONRE and cities to formulate an urban low emission development strategy for Pakse. ● UNEP: Focuses on urban ecosystem adaptation projects. Good practices and lessons learned on the application of nature-based solutions in city space can be generated.
Low interest but high influence	<ul style="list-style-type: none"> ● LNCCI: For energy efficiency in commercial buildings and industrial sites.
Low interest and low influence	<ul style="list-style-type: none"> ● UNDP: A proposal to GEF on ecosystem-based adaptation for integrated urban water management in Luang Prabang – the Project Identification Form was submitted. ● Lao Front for National Construction: Implementing a project on green, clean and beautiful village. ● Private companies doing urban planning and architecture.

Green Industries

Level of Interest and Influence	Stakeholders
High interest and high influence	<ul style="list-style-type: none"> ● MOIC, Department of Industry and Handicraft, Clean Production Center: Tasked to develop and publish green industry policy, plays a key role in environmental impact management and leading engagement with industrial enterprises across the country. ● MONRE, Department of Climate Change: NDA for GCF. ● GCF: Funding and involved in the proposed readiness project's coordination mechanism.
High interest but low influence	<ul style="list-style-type: none"> ● MEM, Institute of Renewable Energy Promotion: Published the energy efficiency and conservation policy. ● LNCCI: Provides access to industry players. ● Private sector (large, medium, small industrial enterprises). ● National University of Laos, Faculty of Engineering: Develop and conduct ESCO training program.

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