Green Growth Potential Assessment

Lao PDR Summary Report

November 2017

Global Green Growth Institute

Photo Credits

Cover photo: Rat007, Village nearby river and hill, Luang Prabang City, Laos.
Page 6: Left-hand side: Tidarat Khanom, The famous view point in Vang Vieng, Pha Ngen, and green rice field from above, North Laos. Right-hand side: Rich Carey, deforestation.
Page 7: isarescheewin, View of Vat Phou or Wat Phu is the UNESCO world heritage site in Southern Laos.
Page 8: Left-hand side: f11photo, Street in old town Luang Prabang, Laos at sunset. Right-hand side: 106569686, Luang Pra bang, View from top.
Page 9: Oxana Mamlina, 567327346.

GGPA Methodology

A national green growth strategy is currently being drafted by the Lao Ministry of Planning and Investment (MPI) and the National Institute for Economic Research (NIER) with technical assistance from the Global Green Growth Institute (GGGI). GGGI has conducted a Green Growth Potential Assessment (GGPA) during 2016/17 to assist the Government of the Lao PDR (GoL) in formulating its green growth strategy and support the national administration in designing and implementing related policies. The GGPA identifies priority areas for green growth interventions and suggests specific recommendations to address those priorities.

The GGPA is a diagnostic tool which consists of a combination of data analysis and stakeholder consultation in order to identify and prioritize a country's opportunities for green growth. The GGPA process consists of the following three stages: (1) preliminary assessment based on data analysis; (2) validation of the preliminary assessment and consultation with stakeholders; and (3) sector analysis and the development of recommendations. (Figure 1) This design aims to ensure that the assessment process is systematic, objective, and participatory.

Preliminary Assessment

Based on 33 comparative indicators covering the economic, environmental and social dimensions of green growth, the GGPA identifies underperforming areas. Underperforming areas are regarded as offering opportunities for high-impact green growth interventions at modest costs. For that purpose, the performance of the Lao PDR in each of the indicators was compared with regional peer countries as well as countries within the same income group (low-middle income countries).

Figure 1 Overview of the GGPA Process
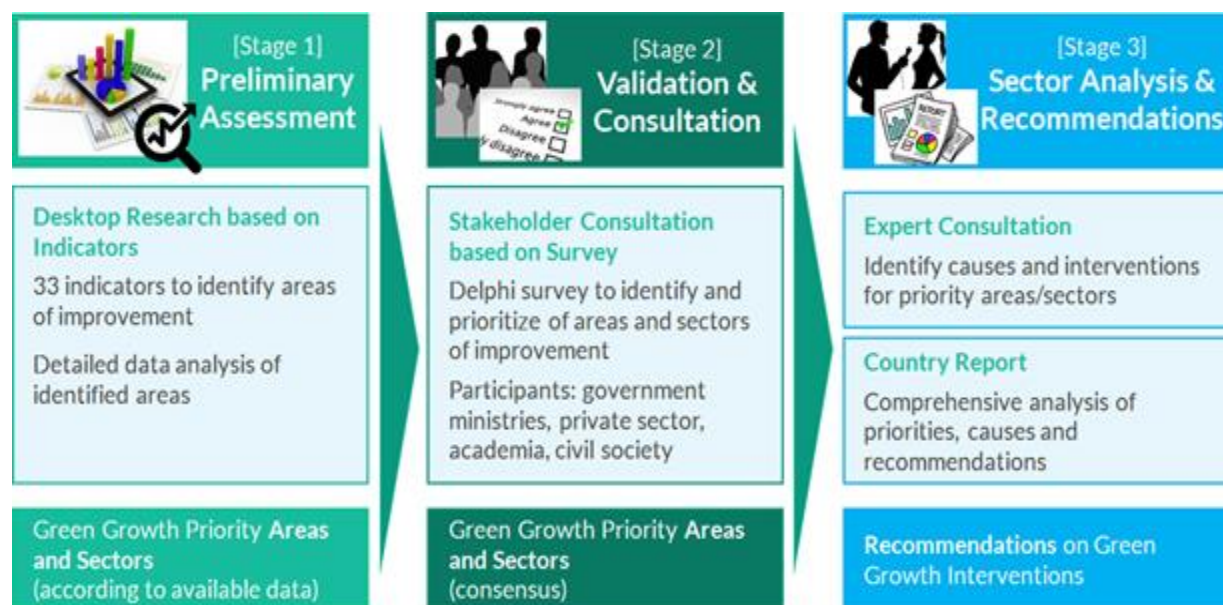
Source: GGGI

Validation and Consultation

An essential part of the GGPA process is to gather input from a broad range of stakeholders through an interactive workshop. This workshop served to validate and/or revise the initial findings from the preliminary assessment. Presenting the results of the data analysis, coupled with a systematic participatory process (Delphi survey), was essential to ensure broad stakeholder consensus on green growth priorities. The consultation process also served to compensate for any lack of relevant data and ensured the alignment of GGPA results with existing policies.

Sector Assessments and Recommendations

Based on the identified priorities, literature review and qualitative analysis was conducted to assess underlying causes and to identify specific interventions considering existing policy targets, outlined in the 8th National Socio-Economic Development Plan. As part of this process, the linkages between priority areas and sectors were analyzed, existing gaps in the Lao PDR's policy framework and the governance structure were identified, and recommendations to address the current shortcomings were developed. A crucial input to this analysis was a series of expert interviews.

Analysis of Green Growth Areas

To analyze the Lao PDR´s current performance on green growth, the country was compared to Low Middle Income Countries (LMIC) and the selected peer countries of Cambodia, Thailand and Vietnam. This comparison is based on 33 indicators across four green growth dimensions, i.e. resource-efficient growth, eco-friendly growth, climate resilient growth, and socially inclusive growth. (Figure 2)

Resource Efficient Growth

The results of the data analysis show that the Lao PDR is consistently performing low on material intensity, logistics and technology. In addition, the LMIC group is performing better than the Lao PDR concerning recycling as well as labor productivity. While water productivity is similar in the Lao PDR and its selected peer countries, it is lower than the LMIC average. Agricultural productivity is comparable to the LMIC group, but considerably lower than in Vietnam.

Figure 2: GGPA Conceptual Framework
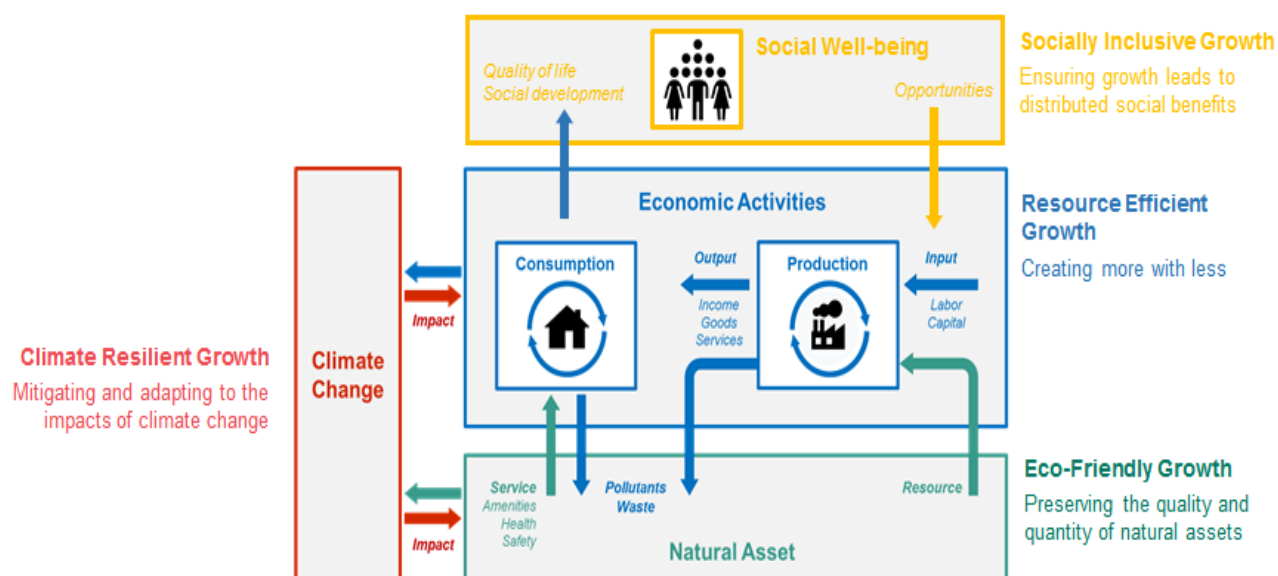
Source: GGGI
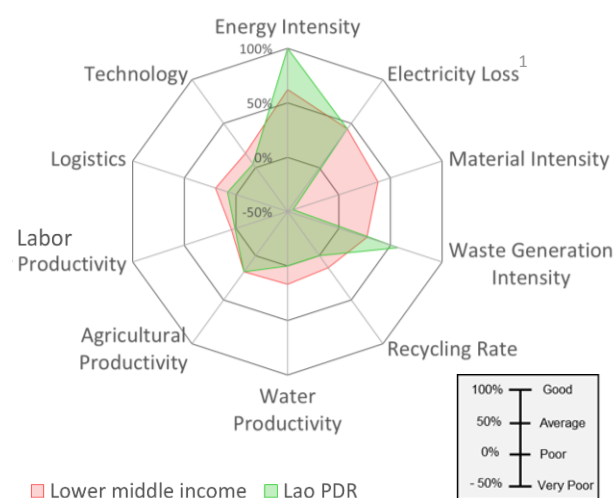
[1] Comparable data on electricity losses is not available for the Lao PDR

[1] Costal fishing not relevant for the Lao PDR

Amongst those indicators for which the Lao PDR is consistently performing below its peers, material intensity shows the largest gap between the Lao PDR and its peers.
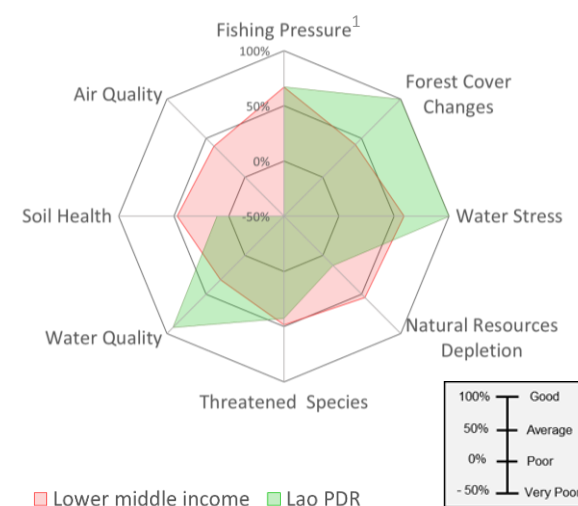
Material intensity is used as an indicator to assess the quantity of material used to produce goods and provide services within a country. It defined as the ratio between GDP and the amount of domestically used materials, including materials used for construction and industrial processes, minerals, metals, ores, fossil fuels and biomass.
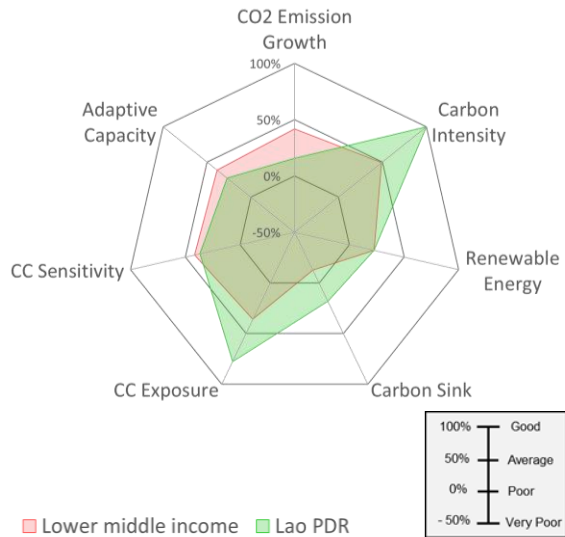
Natural Resource Depletion measures the aggregate of forest, mineral and fossil fuel depletion as a percentage of Gross National Income (GNI). Net forest depletion is resource rents times the excess of round wood harvest over natural growth. Fossil fuel depletion is the ratio of the value of the stock of fossil fuel resources (coal, crude oil, and natural gas) to the remaining reserve lifetime (capped at 25 years). Mineral depletion is the ratio of the value of the stock of mineral resources to the remaining reserve lifetime (capped at 25 years). It covers tin, gold, lead, zinc, iron, copper, nickel, silver, bauxite, and phosphate.

Eco-Friendly Growth

The results of the country comparisons for indicators representing the eco-friendly dimension of green growth suggests that the Lao PDR is consistently performing lower than the low-middle income country average, Cambodia, Thailand and Vietnam concerning the depletion of natural resources as well as soil health. However, indicators for forest cover change, water stress and water quality suggest that the Lao PDR is performing comparatively well in these areas.

Climate Resilient Growth

The comparative analysis for climate-resilient growth shows that the Lao PDR is characterised by a rapid increase in CO_2 emissions compared to the low-middle income country average and Thailand, with only Vietnam witnessing higher growth among the peers considered for this analysis. Furthermore, while showing similar levels of sensitivity to climate change and adaptive capacity as LMIC, both areas are a concern when comparing the Lao PDR to Vietnam and Thailand.

Finally, results for carbon sink in the Lao PDR are higher relative to LMIC, similar to Cambodia and Thailand and significantly lower compared to Vietnam.

Socially Inclusive Growth

For socially inclusive growth, the Lao PDR shows similar scores as the average of LMICs, except for a considerably higher score for education, as measured by the primary school enrolment rate though not reflecting drop-out rates. The Lao PDR shows consistently lower scores for poverty compared to Cambodia, Vietnam and Thailand.

Figure 5: Climate Resilient Growth

Figure 6 Socially Inclusive Growth

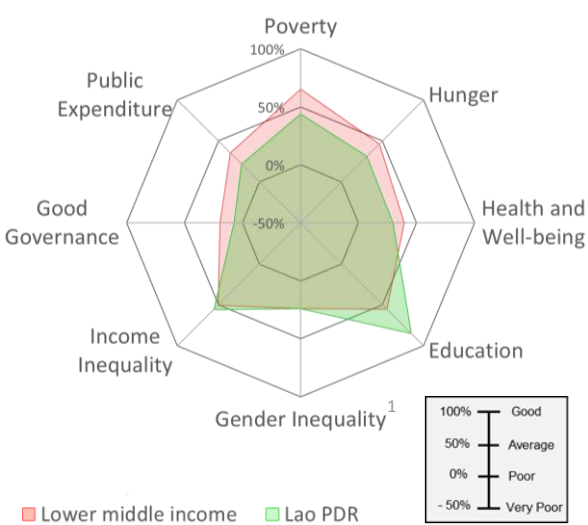[1] Comparable data on gender inequality is not available for the Lao PDR

For the purpose of the GGPA, **vulnerability to the adverse impacts of climate change** is disaggregated into three distinct indicators. First, a country is exposed to climate change when subject to various climate related changes, such as major changes in extreme climate events and weather patterns. Second, a country is sensitive to climate change when the economy relies on sectors where output depends on the climate, such as agriculture. Third, adaptive capacity reflects the ability of a country to manage or reduce the adverse impacts of climate change, despite its level of exposure and sensitivity.

The indicators related to **socially inclusive growth** were not considered separately when identifying priority areas for green growth. Instead, the GGPA considers socially inclusive growth as a cross-cutting dimension that is relevant for all aspects of green growth. Based on this rationale, recommendations for all sector interventions take social inclusion into account.
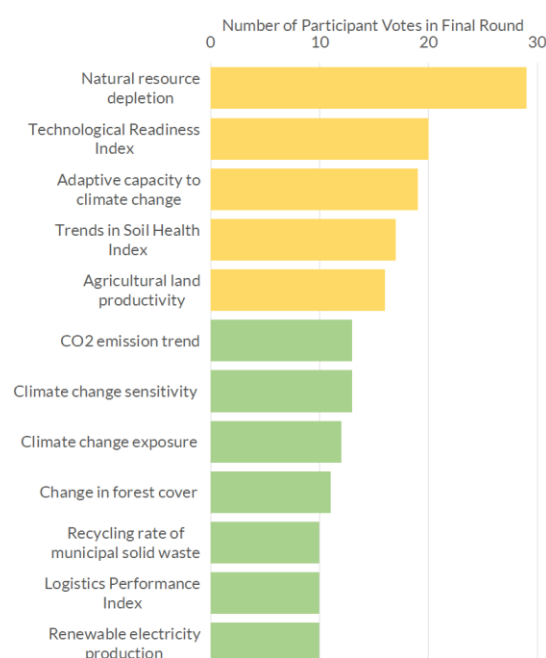
Stakeholder Consultation

An essential part of the GGPA is to gather input from a broad range of stakeholders through an interactive workshop. The aim of this workshop was to validate the findings of the preliminary assessment, to select priority areas, and to identify relevant sectors for each of the areas.

The sequence of surveys and discussions proved very successful in reaching consensus on the priority areas and sectors across the different government ministries and departments. A final list of the relevant areas and sectors was defined after the workshop by combining the result of the surveys with the inputs from individual discussion groups as well as the findings of the preliminary assessment.

The five areas that were prioritized are: natural resource depletion, technological readiness, agricultural land productivity, adaptive capacity to climate change, and soil health (Figure 7).

Figure 7 Identified Priority Areas

For each of the priority areas, workshop participants identified the most relevant economic sectors. These sectors were analyzed and recommendations to address green growth priorities in each sector were developed. (Table 1)

Based on the results of the stakeholder consultation and confirmed by the data analysis the following sectors were identified as entry points for green growth interventions and are discussed in this report: (1) agriculture and fisheries, (2) forestry and land-use, (3) industry/tourism[1], (4) education, (5) energy and mines, as well as (6) urban development.

Table 1: Priority Sectors and Related Areas

Sector	Green Growth Area
Agriculture	Natural resource depletion, technological readiness, adaptive capacity, soil health, agricultural land productivity
Forestry and Land-Use	Natural resource depletion, technological readiness, adaptive capacity, soil health, agricultural land productivity
Industry[1]	Natural resource depletion, technological readiness
Education	Natural resource depletion, technological readiness, adaptive capacity, soil health, agricultural land productivity
Energy and Mines	Natural resource depletion, technological readiness
Urban Development	Natural resource depletion, technological readiness, adaptive capacity

[1] The Lao PDR industry sector is comprised of construction, manufacturing, energy and water, and mining (Bank of Lao PDR 2017). For two reasons, it was decided to replace the initially selected industry sector by the tourism sector. First, significant parts of the Lao PDR's industry sector are captured in other sectors discussed in this report, such as processing of agricultural products, energy, and the mining sector. Second, post workshop consultations identified tourism as an important sector that should be treated independently rather than a sub-sector of Industry.

Results and Recommendations

Agriculture

Promote community participation in climate smart agriculture and forestry

The report recommends to develop projects that promote community participation in climate smart agriculture and forestry. Key elements include to actively promote and invest in agricultural modernization through planned and targeted irrigation, introduction of modern seed/fertilizer technologies as well as training in ecologically based, climate smart farming practices. In the context of promoting climate smart agriculture, the GoL is advised to reconsider investments to expand large scale irrigation. Instead, it is suggested to increase public expenditures on targeted small scale irrigation, as well as agricultural research and extension services.

Employ spatial tools for land use planning

It is also recommended to invest in projects to develop and train agencies in employing spatial tools for integrated land use planning addressing various issues, such as mapping areas at potential risk from disasters, address questions of land use and crop diversification, strengthen land tenure rights, and support decision-making (e.g. for concessions).

Improve extension services

Further recommendations suggest to improve extension services. This includes providing farmers with business and marketing services, such as market information, packaging, and certifications. It should further include teaching farmers and district extension staff about the safe use of agro-chemicals. Beyond being a threat to the environment, exposure to agro-chemicals is an important public health issue in the Lao PDR.

Forestry and Land-Use

Implement a comprehensive review of forest concessions

Consistent with the recommendations for the agriculture as well as the energy and mines sectors, the report suggests to implement a comprehensive review of forest concessions, related regulatory instruments and to compile a concession inventory. The review should address inconsistencies observed between provincial interpretation, implementation and enforcement. It should also clarify the roles and responsibilities across different ministries.

Introduce spatial tools to support decision making and sustainable use of natural resources

In the context of reviewing forest concessions and beyond, the introduction of tools for spatial analysis can support decision making and planning for the sustainable use of natural resources. Such tools have the potential to improve the capacity of the GoL to effectively review, monitor and enforce concession compliance, as well as the implementation of EIA and SIA. It would also facilitate coordination across sectors.

Increase resource rents and royalties

It is suggested for the GoL to increase resource rents and royalties. Currently developers pay 5-6% royalty, but only for a single resource. Royalty contributions should be extended so that developers pay for use of the entirety of affected natural resources and subsequent diminishment of those resources.

Explore potential Payment for Ecosystem Services and Markets for Ecosystem Services

It is suggested for the GoL to explore potential Payment for Ecosystem Services and Markets for Ecosystem Services. Both options should be explored for their potential as viable financial mechanisms to balance the imperatives of conservation and utilization.

Encourage community forest restoration

The GoL should encourage community forest restoration recognizing customary ownership structures. This would help to create awareness of the importance of functioning forest ecosystems and sustainable forestry to livelihoods.

Establish supply chain mechanisms that document compliance with regulatory requirements

Finally, the report recommends to establish supply chain mechanisms that document compliance with regulatory requirements, including reporting requirements on processors and exporters of timber products. This is regarded as an important step to reduce illegal logging and exports.

Tourism

Use eco-tourism as means to create economic growth, improve rural livelihoods and protect natural assets

The report identifies eco-tourism, adventure-related and cultural tourism as opportunities to attract increasing numbers of high-spending tourists. To realize the existing potential, it is suggested to strengthen business associations with experienced high-end tourist operators in other ASEAN countries. These collaborations should be set up in a way that ensures management by Lao nationals, conserves tourist attractions and minimizes tourist revenue leakage.

Strengthen capacity building to foster professional management, services and sustainability

It is further recommended to establish tourism management programs to develop sustainable tourist sites. Capacity building for tour operators and local authorities is crucial to ensure tour operations do not cause ecological damage or impinge on cultural traditions. Vocational training and a university degree in sustainable tourism will help to develop a skilled labor force and foster professional management of tourism operations.

Urban Development

Improve facilities for pedestrians and bicycles for better and safer mobility

The report recommends to align urban planning with a green growth model. Enhancing mobility and access to transport while moving toward lower carbon transport options is an important element. Non-motorized transport represents an important opportunity for green mobility and should be encouraged. It is recommended to investigate options to improve facilities for pedestrians and cyclists for better and safer mobility. It is further recommended to develop an integrated public transport system for larger cities, and to assess options for introducing electric vehicles (e.g. electric busses).

Increase service provision of waste collection and waste water treatment

Beyond transport, waste management and wastewater treatment represent serious challenges in urban centers. Therefore, it is recommended to increase service provision and collection rates as well as divert waste from landfills by increasing recycling. In addition, it is recommended to increase decentralized wastewater treatment to enhance sanitation and public health. In this context, it is suggested to support public private partnerships to develop sustainable business models.

Energy

Promote off-grid renewable energy for rural electrification

The report recommends to promote off-grid renewable energy to provide electricity access in rural areas. Off-grid renewable sources avoid costly grid extensions as well as the major investments required for centralized electricity generation. Off-grid solutions such as micro hydro and solar installations have the additional benefits of minimizing electricity losses associated with long distance transmission, avoiding resettlement conflicts, as well as reducing fish losses and related protein deficiencies associated with large-scale hydropower.

Seek technical and financial assistance to standardize protocols for concession agreements

The report further recommends for the GoL to seek technical and financial assistance to standardize the protocols and implementation checks used in concession negotiations and agreements. Among others, such an initiative should aim to establish of a comprehensive and accessible concession inventory, as well as coordinate concession agreements and their enforcement between districts, provinces and central authorities.

Assess the costs and benefits of measures enhancing energy efficiency

The GoL is also encourages to evaluate the costs and benefits associated with adopting efficiency measures in the Lao PDR. Previous modelling suggests significant energy savings are achievable with a well-designed and well-implemented energy efficiency strategy and policy. Though, more robust analysis for the Lao PDR is needed.

Increase resource rents and royalties

In line with the recommendation for the forestry and land-use sector, it is suggested to increase resource rents and royalties to be paid by mining companies. Currently, developers do not pay for access to the entirety of affected natural resources as part of concession arrangements.

Introduce spatial tools to support decision making and sustainable use of natural resources

In line with the recommendations for other sectors, the report suggests to develop and apply tools for spatial analysis. These tools can support planning and management of sustainable use of natural resources, including land, forests, minerals and water. Use of such tools across different ministries and departments can also support cross sector coordination.

Education

Promote partnerships between educational institutions and the business sector

The report recommends to promote partnerships between educational institutions and the business sector to develop inter-disciplinary curricula and degrees in sustainable development, nature-based tourism and natural resource management. Public private partnerships should also be established to promote vocational training programs to increase the number of skilled labor needed for higher value processing.

Raise quality of education through encouraging research and training more women for high-level jobs

It is suggested for the GoL to support initiatives that encourage scientific research and the application of research results to raise the quality of education. Furthermore, the GoL is encouraged to promote training more women as teachers, entrepreneurs and university lecturers to correct current gender imbalances.

This report presents the process and findings of the GGPA of the Lao PDR. The report synthesizes the results of the assessment process. Based on the results of this assessment, together with its Country Planning Framework, GGGI aims to support the Government of the Lao PDR in developing its national green growth strategy.

The recommendations are intended to address priority areas related to green growth in the Lao PDR. They are meant to identify opportunities for concrete policies and bankable projects to support green growth in the country. They do not represent an exhaustive list of interventions covering the full spectrum of sustainable development needs in the country.

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About the Global Green Growth Institute

The Global Green Growth Institute was founded to support and promote a model of economic growth known as "green growth", which targets key aspects of economic performance such as poverty reduction, job creation, social inclusion and environmental sustainability.

Headquartered in Seoul, Republic of Korea, GGGI also has representation in a number of partner countries.

Member Countries: Australia, Cambodia, Costa Rica, Denmark, Ethiopia, Fiji, Guyana, Hungary, Indonesia, Jordan, Kiribati, Republic of Korea, Mexico, Mongolia, Norway, Papua New Guinea, Paraguay, Philippines, Qatar, Rwanda, Senegal, Thailand, United Arab Emirates, United Kingdom, Vanuatu, Vietnam Operations: Cambodia, China, Colombia, Ethiopia, Fiji, India, Indonesia, Jordan, Laos, Mexico, Mongolia, Morocco, Mozambique, Myanmar, Nepal, Peru, Philippines, Rwanda, Senegal, Thailand, Uganda, United Arab Emirates, Vanuatu, Vietnam