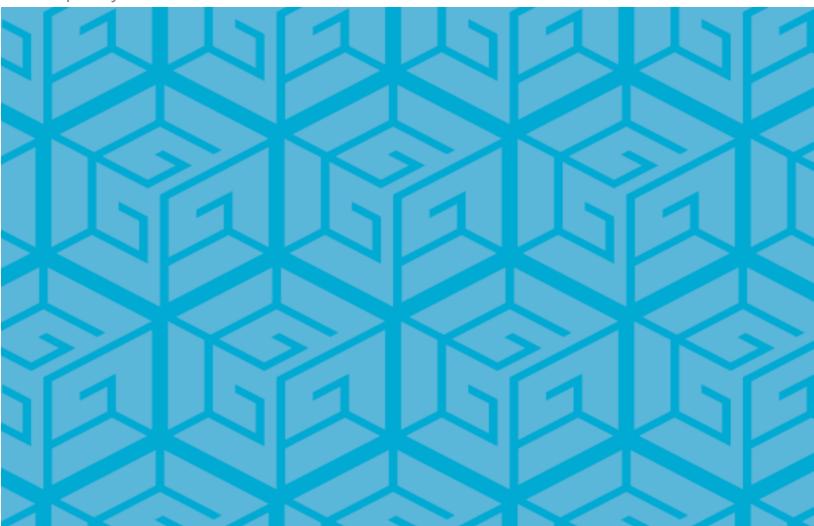


# Gender Inclusive Green Growth in Lao PDR

Recommendations to maximize economic growth through gender equality



#### **Executive Summary**

The Lao People's Democratic Republic (Lao PDR) has achieved steady economic growth over the last decade and made significant progress in reducing poverty. However, much of this growth has come from the unsustainable use of the country's natural resources, which has not translated into a commensurate decline in poverty and gender inequality. Recognizing the long-term risks associated with a natural resource intensive model of growth, the Government of Lao PDR (GoL) has committed to transition to a green growth model of development and is preparing a National Green Growth Strategy (NGGS).

Green growth is defined as economic growth that is environmentally sustainable and socially inclusive. Despite the recognition that social inclusion is a key pillar of green growth, efforts to date have focused on the economy and environment (Bass, et al. 2016). Green growth is not inherently inclusive. Deliberate actions are required to tackle the structural problems behind inequality and poverty to stimulate inclusive, green economic growth.

Furthermore, studies have provided evidence that improving gender equality and women's participation in the economy could drive economic growth. Globally, USD 12 trillion could be added to annual gross domestic product (GDP) in 2025 if parity between women and men is achieved (Woetzel, Madgavkar and Ellingrud, et al. 2015). More than one-third of that additional growth could come from countries in Asia and the Pacific, which have the potential to add USD 4.5 trillion to their annual GDP by 2025 by advancing women's equality in the workplace and society (Woetzel, et al. 2018). This would represent a 12% increase over the business-as-usual trajectory for economic growth in the region (Woetzel, et al. 2018). Lao PDR's commitment to a green growth model of sustainable development will be further strengthened and reinforced by its commitments to gender equality and social inclusion.

This policy brief examines experiences with gender mainstreaming and the situation of women, men, girls and boys in Lao PDR to identify some of the barriers to inclusive economic growth, gender equality and poverty reduction. The purpose is to provide recommendations to help promote gender equality in the NGGS and as green growth is mainstreamed into national planning and policy-making. Gender equality is not only pursued because it is an intrinsic value and right in and of itself, but also because it is instrumental in realizing economic growth (International Labour Organization 2015).

This policy brief includes two sets of recommendations. The first set identifies three strategic gender issues that should be addressed for inclusive green growth. The second set includes three recommendations to enable effective gender mainstreaming in the NGGS.

## Strategic gender issues for inclusive green growth in Lao PDR include the following:

1. Empower women and marginalized people to gain access to green growth benefits, and address gender gaps in Lao PDR's green growth priority sectors.

Transformation toward green growth requires changes in all sectors. Ensuring that women and other marginalized communities are not left further behind in this shift is key. For each of the priority sectors in the NGGS, it will be necessary to understand gender roles in specific value chains. At the same time, it will be vital to identify and address barriers in access to information, technologies, credit, land and other productive inputs needed to transform each sector toward a more sustainable growth model. Additionally, efforts to support women's economic empowerment through financial inclusion, and the removal of legal and structural barriers to women's equal participation in the labor market and entrepreneurship, will help unlock the economic potential of women and contribute to green growth.

2. Maximize potential co-benefits by prioritizing opportunities with broad-based participation.
When selecting priorities, consideration should be given to the creation of broad-based opportunities for women and men to be involved in and benefit from green growth. For example, in the energy sector, engaging women to

address their energy needs through cleaner sources could have multiple benefits – reducing their exposure to indoor air pollution, reducing pressure on forest resources, reducing time spent gathering firewood and creating new income generation opportunities.

3. Tackle social barriers to gender parity in work to drive additional economic growth.

Women in Lao PDR face a number of barriers to full participation in the labor market, especially in quality jobs that go beyond gender differences in access to productive resources (see #1 above). The burden of unpaid care work and social expectations that limit women's opportunities are key barriers. To address these barriers and enable women's participation in the green economy, the following issues should be addressed over the long term in addition to gender equality in education, which is already included in the NGGS:

- Make essential services and social protection accessible to all and responsive to women's needs.
   Invest in and improve access to social protection regardless of employment and socio-economic status, close the gender gaps in education, and make health care more responsive to women's reproductive needs.
- Take steps to better value and invest in care work.
  The burden of unpaid care work falls disproportionately on women and prevents them from fully participating in the economy. Care work, however, could become a major sector in the formal economy if prioritized and developed. This would not only provide services that enable other women to go to work, but it also moves the informal work of women into the formal economy where they could benefit from the social protections and economic opportunities that stem from participation in the formal economy.
- Build on positive aspects of culture and challenge harmful gender stereotypes.
   Green growth is not only a matter for policy-makers, it also requires the engagement of all segments of society.
   The concept of green, healthy lifestyle and consumption should be expanded to include more equitable gender relations. Examples of men helping with housework and care work, and women involved in leadership or working in jobs typically reserved for men, could help to create a more inclusive social environment for both women and men.

## Recommendations for effective gender mainstreaming in the NGGS include the following:

- 1. Commit to mainstreaming gender in the design, implementation, and monitoring and evaluation of green growth by developing a gender action plan for the NGGS and monitoring the progress of its implementation. The practice of gender mainstreaming can help identify gender roles in specific sectors and value chains. It can also help identify and address barriers in access to information, technologies, credit, land and other productive inputs needed to transform the priority sectors toward a more sustainable growth model. With the aim to improve gender equality and maximize the opportunities for economic growth, a gender action plan for the NGGS is essential to set targets for the gender mainstreaming process in green growth, track progress and identify challenges that may arise.
- 2. Partner with the Lao Women's Union (LWU) to tap into their expertise to help mainstream gender in the green growth agenda. Simultaneously, build capabilities to improve gender equality, promote more inclusive green growth and maximize economic growth opportunities.

There is an opportunity to partner with the LWU, and draw on their expertise and investments in gender equality and women's empowerment that are in line with the *Vision 2030* to ensure inclusive green growth (Youn 2018). The LWU's technical support in gender analysis, gender-responsive planning and policy-making, and gender-sensitive monitoring and evaluation, as well as assistance in developing policies and guidelines that can be applied across government, could contribute to making the green growth agenda more inclusive and responsive to the needs of women.

3. Monitor female labor force participation in quality, green jobs.

In Lao PDR there are significant gender differences in employment. Increasing the share of women in waged employment, addressing the disproportionate role of women in unpaid care work and moving women up to the higher rungs of the employment market will be key indicators of success of inclusive green growth. It is important that

associated indicators and targets are included and monitored in the NGGS in addition to improved gender parity in access to education.

#### Introduction

The Lao People's Democratic Republic (Lao PDR) is currently formulating its National Green Growth Strategy (NGGS) to help guide its long-term development agenda. Lao PDR has enjoyed high economic growth, with gross domestic product (GDP) growth averaging 7.8% over the last decade (World Bank Group 2018), and falling poverty rates from 33.5% to 23.2% (World Bank Group 2015). However, much of this growth has come 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 Group 2015). Furthermore, gender inequality remains high in Lao PDR. In 2016, Lao PDR scored 0.468 on the Gender Inequality Index (ranking 106/159 countries) (UNDP 2016). Despite consistent economic growth, many challenges remain for all of Lao PDR's citizens to enjoy the benefits of continued economic development. Besides, there are opportunities to drive additional economic growth through improved gender equality.

Recognizing the long-term risks associated with a natural resource intensive model of growth, the Government of Lao PDR (GoL) has committed to pursue sustainable development through economic growth that makes more efficient use of its natural and human resources. Green growth has been adopted as its approach to economic development, as articulated in the *Vision 2030*, the *Ten-year Socio-economic Development Strategy (2016-2025)* and the *8<sup>th</sup> Five-year National Socio-economic Development Plan* (NSEDP). The NGGS is being developed to further guide the pursuit of these goals and articulate the green growth agenda of the country to be pursued via the current and subsequent NSEDPs.

While gender equality is frequently viewed as a social issue, it is also a core economic issue. Improving gender equality and women's participation in the economy could drive additional economic growth. In the Asia-Pacific region, achieving equality between women and men could result in a 12% increase in GDP by 2025 over the business-as-usual trajectory (Woetzel, et al. 2018). This policy brief explores opportunities for gender mainstreaming in the NGGS that contribute to achieving its objectives of promoting economic growth that is environmentally sustainable and socially inclusive. The Global Green Growth Institute (GGGI) supports the GoL in mainstreaming green growth in policy and planning, and developing bankable projects that help achieve its national green growth objectives. This policy brief considers one of the structural challenges faced by all countries – gender inequality – and identifies opportunities and actions the GoL can take to not only ensure that women, men, girls and boys all share in the benefits of green growth, but also enable Lao PDR to capture the opportunities for additional economic growth from improved gender equality.

#### Green Growth and Gender Equality

Since the industrial revolution more than 250 years ago, economic growth has largely been achieved at the expense of the environment. While there have been many gains, poverty and inequality remain persistent problems, and the basic needs of billions of people around the world remain unmet. Meanwhile, environmental damages have reached a level that threatens not only the prospects for future economic growth, but also the well-being of billions of people.

There is growing recognition that the costs of this business-as-usual model of economic development are too high, and increasingly, the public and private sector are looking to alternative models that see environmental sustainability, social

inclusion and economic growth as reinforcing objectives to be pursued in concert with one another. Although there are different definitions of green growth, those definitions used by development agencies like the Organisation for Economic Co-operation and Development (OECD), United Nations Environment Programme, World Bank and GGGI all recognize three pillars of green growth: economic growth, environmental sustainability and social inclusion (GGGI 2017).

Despite the recognition that social inclusion is a key pillar of green growth, efforts to date have

#### What is Green Growth? Economic Growth · Economic growth is needed for Environmental rapid and effective poverty reduction Sustainability Social inclusion and reduced · Sustained economic inequality support growth growth can only be Poverty Reduction + based on sustainable use Social Inclusion of natural resources To first degrade the Poverty reduction reduces the environment and later risk of overuse of natural restore is more costly resources and degradation of the environment Sustainable use of natural resources enables poverty

focused on the economy and the environment (Bass, et al. 2016). Issues like gender equality tend to be viewed more narrowly as social issues, and the potential for additional economic growth from improved gender equality is not fully recognized. Green growth is not inherently inclusive. Deliberate actions are required to tackle the structural problems behind inequality and poverty to minimize the environmental and social costs of economic growth, and maximize the social and economic benefits. Given ongoing gender-based discrimination and inequality faced by women and girls, gender equality must be pursued within the green growth agenda if it is to deliver on the promise to help all people thrive and maximize the growth potential of the country.

Advancing gender equality could boost economic growth. Globally, USD 12 trillion could be added to annual GDP in 2025 if parity between women and men is achieved (Woetzel, Madgavkar and Ellingrud, et al. 2015). More than one-third of that additional growth could come from countries in Asia and the Pacific, which have the potential to add USD 4.5 trillion to their annual GDP by 2025 by advancing women's equality in the workplace and society (Woetzel, et al. 2018). This would represent a 12% increase over the business-as-usual trajectory for economic growth in the region (Woetzel, et al. 2018). Lack of women in leadership and the burden of unpaid care work are key constraints facing women in Asia and the Pacific (Woetzel, et al. 2018). A number of changes need to be made in order to tap into this economic opportunity including: improving female labor force participation in quality jobs; increasing women's representation in business leadership positions; and shifting attitudes about women's role in society and work (Woetzel, et al. 2018).

#### **Purpose of this Policy Brief**

This policy brief has been prepared to identify ways to tap into the economic growth potential from improved gender equality, and provide recommendations to operationalize the promotion of gender equality and social inclusion in the NGGS. The mandate to promote gender equality is not only integral to the theory of green growth, but it is also incorporated into guiding policies at both international and national levels. Moreover, improved gender equality and women's participation can contribute directly to economic growth, as demonstrated in numerous studies. This policy brief draws from a review of gender policies and experiences in Lao PDR to identify opportunities to promote improved gender equality and maximize economic growth through gender mainstreaming. In addition, it articulates gender-responsive outcomes that can be pursued within the green growth agenda. Please note, Lao PDR is a diverse country and gender identity should be considered together with other social attributes (ethnicity, ability, socio-economic status, etc.) that affect the opportunity landscape the people of Lao PDR face. Gender equality should be pursued not only because it is an intrinsic value and right in and of itself, but also because it is instrumental in realizing economic growth and poverty reduction (International Labour Organization 2015).

<sup>&</sup>lt;sup>1</sup> The pursuit of gender equality is included in the United Nations Sustainable Development Goals and the Paris Agreement on Climate Change, and women's empowerment and gender equality are mentioned in Lao PDR's Constitution, Party Direction, Vision 2030, 8<sup>th</sup> NSEDP and Sam Sang Directive.

### Gender Equality Mandate and Progress in Lao PDR

The equal rights of women and men before the law is enshrined in the Constitution of Lao PDR (amended in 2003), and the need for focused efforts to improve the lives of people, especially people in remote areas, ethnic groups, women and disadvantaged children are recognized in the Constitution. The First Party Congress in 1955 identified women's emancipation and the realization of gender equality as one of the 12 operational programs of the Party, and the policy toward women was further elaborated during the Second Party Congress in 1972, including the mandate to mainstream gender into all sectors (Youn 2018). Since that time, issues of gender equality and women's empowerment have been included in the development priorities of the country. The Lao Women's Union (LWU) and the National Commission for the Advancement of Women (NCAW) have helped to develop policies and institutions to respond to the needs of women, increase women's participation, and integrate gender into the planning, budgeting, and monitoring and evaluation cycle of the line ministries (Youn 2018).

Lao PDR has made steady progress in a number of areas related to gender equality and women's empowerment, and has begun to develop the policies and capabilities to carry out gender mainstreaming. For example, the gender gap in educational enrollment at all three levels has narrowed; maternal and child mortality has dropped significantly; Lao PDR has one of the highest proportions of women in the national parliament – at 27.5% this is well above the world's average; and the *Gender Equality Strategy of Agriculture, Forestry and Rural Development Sector (2016-2025)* was developed as an example of efforts to mainstream gender across line ministries. Despite this progress, a number of challenges remain in achieving gender equality and developing the capabilities of the GoL to mainstream gender into policy-making and development planning.

#### The Practice of Gender Mainstreaming in Lao PDR

Gender mainstreaming is a strategy for promoting gender equality that was globally recognized in 1995 at the United Nations Fourth World Conference on Women held in Beijing. Gender mainstreaming is an approach to assess the implications of any planned action, policy, program or project for women and men, in order to develop deliberate strategies to close the gender gap (SIDA 2015). Gender analysis – or the analysis of the situation of women and men, the relations amongst them, and their effects on development challenges and potential solutions – is at the heart of the practice of gender mainstreaming. Gender analysis is used to identify what needs to be done and how to do it in order to achieve the desired results of any policy, plan, program or project. Gender mainstreaming can include both targeted gender activities as well as the integration of a gender perspective throughout the activities and components of an intervention (SIDA 2015).

In Lao PDR, the LWU plays an important role in the development of GoL policies for women's development and gender equality (Yoon 2018). The LWU is represented across all ministries and from central down to village levels. The NCAW is responsible for (amongst other things) supporting the integration of gender into the planning, budgeting, and monitoring and evaluation cycle of line ministries, and thus plays a lead role in mainstreaming gender within the GoL (Yoon 2018).

A review of national and sectoral strategies in Lao PDR reveals that both targeted and integration approaches to gender equality have been employed in Lao PDR to varying degrees. A brief overview of how gender has been mainstreamed through various stages of the planning cycle is presented for two key national strategies – the 8<sup>th</sup> NSEDP and the *Renewable Energy Development Strategy* (see Table 1). The analysis illustrates that the practice of gender mainstreaming in Lao PDR is very uneven, with considerable efforts to mainstream gender in the 8<sup>th</sup> NSEDP on the one hand, and very limited consideration in the *Renewable Energy Development Strategy* on the other hand.

# Stage in the policy/planning cycle

#### **Design Stage:**

- Was gender analysis used to analyze the issue or problem?
- Were gender equality goals or objectives identified in the strategy?
- Were gender experts engaged in the process?
- Were methods used to incorporate the views and preferences of both women and men?

#### 8<sup>th</sup> NSEDP

- Partial gender analysis was used to inform the development of the 8<sup>th</sup> NSEDP, especially in areas like education important for women and children.
- One specific gender objective was identified in Outcome 2 – that both sexes have access to quality education and health services, and the achievement of gender equality was listed as a target under reduction of the poverty gap in urban areas.
- LWU was part of the plan formulation process, however, it was difficult to ascertain the involvement of other experts in the process.

## Renewable Energy Development Strategy

- The strategy document did not present a gender analysis and the gender impact of various sources of energy was not considered.
- Increased gender equality was identified as one of the main objectives of the strategy.
- It was not possible to determine if gender experts were engaged and if women and men were able to participate in the design of the strategy.

#### **Implementation Stage:**

- Did the implementation plan include activities that specifically strengthen skills of women/girls or men/boys with equal access to services and training?
- Did the implementation plan take into account existing gender roles and interests of both females and males?
- Was sufficient human and financial capacity provided to implement effectively?

- Some activities and targets for the advancement of women were identified.
- However, many of the other implementation activities identified did not include any specific provisions for either women or men.
- Some of the activities and targets were too ambitious to be implemented, for example, "mainstream gender issues in the work of all sectors" was listed as a priority activity, but no further details or resources for implementation were identified.
- No activities that specifically target women/men or ensure their equal access were included.
- No details about gender roles appeared to be considered.
- There was no mention of human and financial resources to integrate gender considerations into planned activities.

#### **Monitoring and Evaluation Stage:**

- Was gender-disaggregated data collected?
- Was the gender impact monitored and evaluated?
- Did the monitoring and evaluation framework provide useful feedback on gender to inform subsequent policy and planning processes?
- Plans to collect genderdisaggregated data were included in education, literacy, employment, nutrition, health, infant mortality, access to social protection, etc.
- Additionally, a set of indicators to assess progress toward gender equality and empowerment of women were identified.
- Monitoring and evaluation provided useful feedback on gender for subsequent policy and planning.

- The targets included in the strategy focused primarily on the volume and source of energy.
- In monitoring and evaluating improvements in households' access to electricity, there was no mention of data on femaleheaded households and singleparent households.
- Based on what was included in the strategy document it was difficult to identify social challenges in the deployment and use of energy services.

Based on the review of policy documents and interviews with key informants, it appears that gender mainstreaming efforts have been most successful in high-profile strategies, where LWU and NCAW have specific mandates, and when specific project resources have been allocated to develop gender strategies and action plans. To date, no specific guidance or tools on how to mainstream gender is available for line ministries and development planners. Furthermore, general guidance for planning, like the *District Socio-Economic Development Planning Guidelines* does not include recommendations on how to mainstream gender and engage women and men in the development of the district development plan.<sup>2</sup> Together, the limited resources of LWU and NCAW, and the lack of formal guidance on gender mainstreaming for government staff, contribute to the uneven implementation of gender mainstreaming, which could potentially hamper efforts to improve gender equality and promote economic growth in Lao PDR.

Unless additional measures are taken to mainstream gender in the development and implementation of the NGGS, the pattern of uneven application of gender mainstreaming observed in the review of the national strategies above will likely be repeated, and both economic growth and progress toward gender equality will be adversely affected.

<sup>&</sup>lt;sup>2</sup> The *District Socio-Economic Development Planning Guidelines*, prepared by the Ministry of Planning and Investment in November 2013 does not include guidance on how to collect gender-disaggregated information, analyze issues from a gender perspective, or ensure participation of both women and men in the process.

#### Rapid Gender Analysis for Green Growth in Lao PDR

To maximize opportunities for sustainable economic growth, a gender analysis was conducted to inform the NGGS. This gender analysis was based on available data and illustrates gender-related trends in the areas of economy, health and education, environmental management, and leadership and decision-making. As the NGGS cascades into sectoral strategies and action plans, additional analysis and inputs from gender experts will be required to maximize opportunities for the achievement of gender-responsive green growth. A gender action plan should be developed to help ensure gender mainstreaming during the implementation phase of the NGGS.

#### **Gender, Employment and Economic Opportunities**

There are important gender differences in employment in Lao PDR that affect women and men's economic opportunities. Gender differences in economic opportunities in turn reinforce gender differences in time use and access to productive resources, and perpetuate market and institutional failures (World Bank Group 2011). Women and men experience different opportunities and constraints in their ability to engage in and benefit from green growth opportunities, and employment segregation by gender does not automatically disappear because of economic development (World Bank Group 2011). In order to create more equitable economic opportunities, specific policy measures need to be identified to address the structural causes of gender differences in employment.

In Lao PDR, the working population is made up of an equal share of women and men, but generally women occupy the lower rungs of the labor market (UNDP n.d.). Key statistics include the following:

- The share of women in wage employment is low in all sectors at 35%, while 65% of unpaid family workers are women.
- Generally, women occupy the lower rungs of the employment market, representing 64% of workers in elementary occupations and 63% of service, shop and sales workers.
- Men account for the majority of workers in the formal sector, and as a result have greater access to social protections offered to formal sector workers.
- The number of male government employees is 2.5 times higher than female employees (Lao Statistics Bureau 2015).
- Women represent more than 90% of vendors in fresh food markets throughout the country. Women market vendors
  in Vientiane regularly report the lack of access to finance and credit as a key barrier to their economic success (UN
  Women 2017).
- In various construction and civil engineering activities, employment is male-dominated reaching as high as 85% (Lao Statistics Bureau 2015).
- Women spend four times the amount of time on housework each day (2.6 hours) compared with men (0.6 hours) (UNDP n.d.).
- Female workers on average earn only two-thirds the monthly wage of their male counterparts (World Bank Group 2017).
- Females tend to migrate for work at a much younger age than their male counterparts, contributing to their vulnerability. The average age of female migrants is 16.5 years and for males it is 21 years. 63% of female migrants are under the age of 16, while only 14% of male migrants are under the age of 16 (UNDP n.d.).
- According to a World Bank study, there are legal differences for women and men of the same marital status in 6 of 21 areas critical for women's equal employment and entrepreneurship in Lao PDR (World Bank Group 2015).

The gender gap in education undoubtedly contributes to gender differences in employment in Lao PDR, and addressing this gap has been included in the draft NGGS. However, there are other contributing factors that must also be addressed if women and men are to reach their full potential. They include the following:

1. **Gender roles and the unequal access to and control of resources and productive inputs limit women's economic opportunities.** For example, women have less access to farming inputs and credit, which affects their productivity despite playing a significant role in agriculture. Bridging the gap between customary and modern laws in land use, and reducing gender/ethnic/geographic gaps in asset ownership would help poor rural communities, ethnic minorities and women gain access to greater economic opportunities (Youn 2018). It is also essential that training

and extension services are accessible to both women and men given their respective roles in agriculture, forestry and aquaculture value chains.

- 2. **A significant share of women's work is undervalued and often invisible.** In Lao PDR, 65% of unpaid family workers are women, and women spend four times the amount of time on housework each day than men. Care work plays a central role in fueling economic growth, whether it is provided by a family member or domestic worker, but its value is rarely acknowledged or compensated accordingly. Domestic workers and unpaid family workers do not have access to the social protections that formal sector workers enjoy, putting them at greater risk of poverty. Investing in care work and the supporting infrastructure, and tracking the economic value of care work<sup>3</sup> can help to promote economic growth and gender equality (Slaughter 2016).
- 3. Gender stereotypes, stigma and violence constrain women and men. Women and men's unequal access to education and types of employment opportunities, and the unequal division of household chores, are shaped by social attitudes and expectations that can change and evolve over time. Gender roles are not static. Despite resistance to social and cultural changes by some, cultures are continuously evolving. Therefore, there are opportunities for both policy-makers and people to challenge harmful stereotypes and create a more inclusive economy and supportive society.

#### Gender, Education and Health

There are critical gaps in education and health for women and girls in Lao PDR that have lasting effects on their opportunities, quality of life and prospects for overcoming poverty. The gender gap for education enrollment in Lao PDR has narrowed at all three levels of education. However, challenges remain for education completion, with many families still prioritizing boys' education especially in upper secondary school and higher education (UNDP n.d.). Poverty and accessibility are key contributing factors. Early marriage also has a negative impact on the education and economic opportunities of women. One-third of women marry before the age of 18 and one-tenth marry before age 15 (UNDP n.d.). Moreover, early marriage results in pregnancy with 19.4% of reproductive-aged women giving birth by the age of 18 (UNDP n.d.).

There is also a gender gap in professional development, training and capacity building. Many training opportunities are open to both women and men, but women's participation is often limited due to gender roles and expectations. For example, 88% of government officers that participate in Masters' degree programs in Lao PDR and 86% that participate in Master's degree programs abroad are male. Women's multiple roles as mothers, wives and professionals leave little space to participate in training opportunities (Youn 2018). Family support is a key factor enabling women in Lao PDR to participate in and complete skills training opportunities. Women, especially those from rural areas, tend to find it difficult to take advantage of training opportunities without family support (Youn 2018).

There are a number of critical health issues affecting women in Lao PDR that need to be addressed, especially those related to reproductive health and nutrition. Although there has been good progress in reducing maternal mortality, the rate is still relatively high at 220 per 100,000 live births (World Bank Group 2017). Early marriage and pregnancy raise the risk of health complications for mothers and babies (Asian Development Bank and The International Bank for Reconstruction and Development/The World Bank 2012). There is evidence of a recurring cycle or trap, where low education, social norms and poverty contribute to early marriages and unplanned pregnancies, which in turn lead to low education attainment, and poverty can persist across generations (Asian Development Bank and The International Bank for Reconstruction and Development/The World Bank 2012).

Additionally, nutrition remains a critical challenge in Lao PDR with almost one-fifth of the population undernourished (UNDP n.d.). Stunting is still high amongst children under five in Lao PDR, and stunting of children of uneducated women is four times higher than for the children of mothers with secondary education or higher (Youn 2018). Food poverty affects maternal nutrition and reproductive health, and subsequently affects children's well-being and opportunities to overcome poverty in the next generation. An inclusive, green economy must deliver essential education and health services and is key to dismantling structural gender inequality.

<sup>&</sup>lt;sup>3</sup> A 2015 report by McKinsey, *The Power of Parity*, estimated the value of unpaid care work to be about USD 10 trillion globally (Slaughter 2016).

#### **Gender and Environment**

Women and men have different environmental footprints, and they are affected differently by pollution and unsustainable management of natural resources (this also varies by socio-economic status). Women and men use natural resources and interact with the environment differently, and because of their respective gender roles it is important that green growth interventions take these differences into account. There are a range of challenges and opportunities, including the following:

- Illness and disease as a result of biomass smoke from cooking activities hit women harder than men given their roles in the household (World Bank Group 2017). Indoor air pollution poses a significant health risk to women and children in Lao PDR. Given women's responsibilities in the household and community, they are key stakeholders in strategies to adapt to changing environmental realities. An example is the engagement of women in the switching to clean fuels for household heating and cooking, benefitting both family health and the environment through reduced pressure on natural resources and lower greenhouse gas emissions (Asian Development Bank and The International Bank for Reconstruction and Development/The World Bank 2012).
- Natural resource-based economic activities like mining and hydropower that have made important contributions to economic growth also result in new risks like landlessness, resource loss, food insecurity and changes in social capital (World Bank Group 2011). All of these risks have important gender dimensions.
- Flooding has intensified in Lao PDR over the last few years driven in part by climate change (United Nations Environment Programme 2017). Women and men experience the impacts of floods and droughts differently. Given women's roles in the home, their responsibility for family care and the nature of their employment, they are likely to bear the brunt of the impacts of floods and droughts.
- Whether in urban or rural areas, low-income households tend to be more exposed to environmental hazards than
  better off ones (Donor Committee for Enterprise Development 2012). Low-income groups are more likely to live in
  places where they are exposed to pollution and poor sanitation, and work in industries that offer less protection from
  toxic substances. In Lao PDR, artisanal miners have limited knowledge of health, safety and environmental risks, and
  women undertake the amalgamation and mercury evaporation processes without protective gear in their kitchens at
  home (Youn 2018).
- Globally, men tend to consume more resources and live less sustainably than women, whether they are rich or poor (Donor Committee for Enterprise Development 2012). One estimate suggests that women make over 80% of consumer purchasing decisions, but men spend over 80% of household income (Donor Committee for Enterprise Development 2012). In rich countries, women tend to make more ethical and sustainable consumer choices, and while these decisions are influenced by income levels and social conditions, gender is also a key factor (Donor Committee for Enterprise Development 2012). In Lao PDR, understanding the consumption behavior of women and men and their influence over each other's spending could be a key factor in green growth for activities such as promoting use of clean energy, using more sustainable transport options and reducing waste.

#### Gender, Leadership and Decision-making

Globally, women are underrepresented in management and decision-making positions in both the public and private sectors, despite numerous studies that demonstrate the benefits and improved performance of entities with women in leadership positions. Lao PDR has made important progress related to women's leadership with women representing 27.5% of the National Assembly (UNDP n.d.). However, women make up less than 5% of high-level government officials and 89% of village chiefs are men (Youn 2018). In the private sector, 30% of small and medium-sized enterprises in Lao PDR are owned by women, and 31% of formal enterprises with more than five employees are owned by women (Youn 2018). Recent statistics on the share of women in management positions in business is not available, but in 2006, it was around 24%.<sup>4</sup>

Improving the gender leadership gap in Lao PDR could help advance green growth. An OECD study identifies difference in women's priorities and leadership styles as a contributing factor to improved governance, lower corruption, higher

<sup>&</sup>lt;sup>4</sup> A 2006 report by the Japan International Cooperation Agency (JICA), *Lao PDR: Country Gender Profile*, found that 186 out of 761 managers in the business sector were women. The proportion of women decision-makers in the public sector is similar today as it was in the JICA report in 2006.

performance and profits, and improved environmental and social policies when women are better represented in decision-making (OECD 2008).

The rapid gender analysis above reveals several key issues that should be considered as Lao PDR moves toward a more inclusive, green economy. Working to address some of the structural challenges that limit women's potential will not only help improve gender equality, but also help fuel economic growth and achieve the vision of graduating from Least Developed Country status and becoming an upper middle-income country.

#### Recommendations for Gender Inclusive Green Growth

Tapping into the opportunities for economic growth from improved gender equality, and ensuring that women, men, girls and boys are able to benefit from green growth will require deliberate action in the NGGS. The pursuit of Lao PDR's green growth agenda will create new opportunities and services that have the potential to reduce poverty and inequality, and contribute to a better future for the people of Lao PDR. But this will not happen automatically. The analysis of the situation of women and girls in Lao PDR shows that women and rural communities face a number of challenges that prevent them from sharing in the benefits of green growth (Youn 2018). If the pursuit of green growth is to deliver on the promise of creating an inclusive and sustainable development path, Lao PDR will need to systematically address the structural challenges that prevent women, men, girls and boys from achieving their full potential. In fact, evidence suggests that improving gender parity could drive additional economic growth.

Below, two sets of recommendations are provided. The first set identifies three strategic gender issues that should be addressed for inclusive green growth. The second set includes three recommendations to enable effective gender mainstreaming in the NGGS.

#### Strategic Gender Issues for Inclusive Green Growth in Lao PDR

1. Empower women and marginalized people to gain access to green growth benefits, and address gender gaps in Lao PDR's green growth priority sectors.

Transformation toward green growth requires changes in all sectors. Ensuring that women and other marginalized communities are not left further behind in this shift is key. For each of the priority sectors in the NGGS, it will be necessary to understand gender roles in specific value chains. At the same time, it will be vital to identify and address barriers in access to information, technologies, credit, land and other productive inputs needed to transform each sector toward a more sustainable growth model. Targeted interventions may be necessary to ensure that women have access to education and training opportunities that can help them benefit from future green job opportunities. Continued commitment to decent and dignified work through the labor laws and collaboration with the private sector to ensure good working conditions will be important. Additionally, ensuring that informal workers enjoy improved conditions as jobs in certain sectors are formalized (i.e., solid waste, markets, transportation, etc.) is a critical issue for inclusive growth.

2. Maximize potential co-benefits by prioritizing opportunities with broad-based participation.

Green growth has helped bring to attention the environmental costs and benefits of various economic activities. These same activities and changes in natural capital also have social costs and benefits. A core part of green growth is recognizing and internalizing the externalities and we need to do it for both environmental and social externalities. Green growth challenges and opportunities affect various segments of the population differently. When selecting priorities, consideration should be given to the creation of broad-based opportunities for women and men to be involved in and benefit from green growth. For example, in the energy sector engaging women to address their energy needs through cleaner sources could have multiple benefits – reducing their exposure to indoor air pollution, reducing pressure on forest resources, reducing time spent gathering firewood and creating new income generation activities. On the other hand, given the current gender patterns in the labor market, targeted measures are necessary to improve female participation in the natural resource-based drivers of economic growth like hydropower and mining, and ensure that women are able to participate in Lao PDR's green growth priorities.

3. Tackle social barriers to gender parity in work to drive additional economic growth.

Women in Lao PDR face a number of barriers to full participation in the labor market, especially in quality jobs that go beyond gender differences in access to productive resources (see #1 above). The burden of unpaid care work and social expectations that limit women's opportunities are key barriers. To address these barriers and enable women's participation in the green economy, the following issues should be addressed over the long term in addition to gender equality in education, which is already included in the NGGS:

Make essential services and social protection accessible to all and responsive to women's needs.

Invest in and improve access to social protection regardless of employment and socio-economic status, close the gender gaps in education and make health care more responsive to women's reproductive needs.

Since natural capital is the main source of Lao PDR's wealth, these resources not only need to be managed well, but a share of the revenues and royalties should be used to invest in social protection. These investments, if designed accordingly, can help address the gender differences in economic opportunities. They can also reduce the burden of women's unpaid care work by providing better coverage for life cycle vulnerabilities from child care to elder care that affect women's ability to participate in economic activities. Some examples of social protections that have been used in other countries include: maternity leave provisions, community-level child care, microsaving and micro-finance products (including micro-pensions), and health and unemployment insurance, amongst others. Improving public financial management and creating more consistency and transparency in private sector investments in order to ensure taxes and royalties are available to invest in social protection and other development priorities will be an essential part of building an inclusive, green economy. Ensuring that social protections are available to informal workers and unpaid family workers, 65% of which are women, and that the services respond to the needs of women, can not only help to break vicious cycles of poverty, but also help expand the economic opportunities available to women.

• Take steps to better value and invest in care work.

Estimating the value of environmental assets and services, and developing financial incentives to protect those assets and services that are vital to both economic and human development, has become a widely accepted practice for environmental sustainability. The same logic can be applied to unpaid care work and household production work. Estimating the market value of care work and other unpaid household work can help draw attention to this essential work and ensure that it is recognized in economic policy discussions (UNDP 2016). A number of countries have already been attempting to measure the economic value of unpaid care work, so there are approaches to doing this that Lao PDR could learn from.

In addition to making unpaid care work more visible, care work could become a major sector of the formal economy. In many advanced countries, like the U.S. for example, care work is one of the fastest growing sectors of the economy (Slaughter 2016). However, this does not only apply to rich countries. Ecuador developed community-based child care services and gradually professionalized this work over time – developing relevant academic degrees and paying regular wages with health care and pensions. These kinds of activities not only provide services that enable other women to go to work, but they also move the informal work of women into the formal economy where they can benefit from the social protections and economic opportunities that stem from participation in the formal economy.

Build on positive aspects of culture and challenge harmful gender stereotypes.
 Green growth is not only a matter for policy-makers, but it also requires the engagement of all segments of society. One of the cross-cutting issues the NGGS will consider is lifestyle and consumption choices of all members of society. This concept of green, healthy lifestyle and consumption should be expanded to include more equitable gender relations. Examples of men helping with housework and care work, and women involved in leadership or working in jobs typically reserved for men, could help to create a more inclusive social environment for both women and men.

#### Recommendations for Gender Mainstreaming in Green Growth

The practice of gender mainstreaming can help identify gender roles in specific sectors and value chains. It can also help identify and address barriers in access to information, technologies, credit, land and other productive inputs needed to transform the priority sectors toward a more sustainable growth model and contribute to improved gender equality. There are many tools and experiences across a range of sectors and institutions that can be used to help mainstream gender into Lao PDR's green growth agenda.

## 1. Commit to mainstreaming gender in the design, implementation, and monitoring and evaluation of green growth by developing a gender action plan for the NGGS and monitoring the progress of its implementation.

- Set targets for the gender mainstreaming process in green growth to track progress and identify challenges that may arise. This could be part of a gender action plan for green growth. Some action examples include the following:
  - Conduct a gender analysis to diagnose important gender roles in key priority sectors and value chains, and identify any specific barriers that need to be addressed and/or targeted with trainings or support to enable women's participation;
  - Set a target for the participation of women and involvement of relevant gender experts in policy- and decision-making related to green growth;
  - Set target percentage or budget for green growth initiatives (public investments) that include gender activities for 2025 and 2030.
- Use relevant gender analysis tools and guidelines when developing and implementing green growth initiatives and select tools for implementing green growth that include social and gender analysis (i.e., landscape approaches). Some examples include the following:
  - o United Nations Industrial Development Organization's guides on gender mainstreaming for energy and climate change projects<sup>5</sup> and environmental management projects<sup>6</sup>
  - UN Women's Leveraging Co-benefits Between Gender Equality and Climate Action for Sustainable Development: Mainstreaming Gender Considerations in Climate Change Projects<sup>7</sup>
  - o Asian Development Bank's Gender Tool Kit: Public Sector Management<sup>8</sup>
- Integrate gender into the policies and tools that guide implementation of green growth initiatives. For example, make sure that the criteria for public investment plans includes gender, and improve the *District Socio-Economic Development Planning Guidelines* to integrate gender. Any additional tools used to operationalize green growth should also include gender perspectives.
- Ensure that the monitoring and evaluation framework includes gender-responsive indicators for tracking the progress of green growth.<sup>10</sup>
- Raise awareness about gender in the context of green growth. Green growth is still primarily associated with the
  environment. In the communication activities and capacity building efforts of the GoL, make sure to include
  gender and social inclusion, and communicate the relevance of these issues to green growth.

# 2. Partner with the LWU to tap into their expertise to help mainstream gender in the green growth agenda. Simultaneously, build capabilities to improve gender equality, promote more inclusive green growth and maximize economic growth opportunities.

There is an opportunity to partner with the LWU and draw on their expertise and investments in gender equality and women's empowerment that are in line with the *Vision 2030* to ensure inclusive green growth (Youn 2018). The LWU's technical support in gender analysis, gender-responsive planning and policy-making, and gender-sensitive monitoring and evaluation, as well as assistance in developing policies and guidelines that can be applied across government,

<sup>&</sup>lt;sup>5</sup> Available online at: <a href="https://www.unido.org/sites/default/files/2015-01/Guide">https://www.unido.org/sites/default/files/2015-01/Guide</a> on Gender Mainstreaming ECC 0.pdf.

<sup>&</sup>lt;sup>6</sup> Available online at: https://www.unido.org/sites/default/files/2015-02/Gender Environmental Management Projects 0.pdf.

<sup>&</sup>lt;sup>7</sup> Available online at: <a href="https://unfccc.int/files/gender and climate change/application/pdf/leveraging cobenefits.pdf">https://unfccc.int/files/gender and climate change/application/pdf/leveraging cobenefits.pdf</a>.

<sup>&</sup>lt;sup>8</sup> Available online at: https://www.adb.org/sites/default/files/institutional-document/33643/files/gender-tool-kit.pdf.

<sup>&</sup>lt;sup>9</sup> Some potential gender-responsive screening criteria for public investment plans include: 1) plans for creating safe and sustainable employment opportunities are accessible by women and men; 2) budget includes activities for improving women and rural people's access to information about the issues/project; 3) LWU or other gender expert or women's representative is included as a member of the project governing board; 4) evidence of gender analysis; and 5) stakeholder analysis includes women and ethnic groups (Youn 2018).

<sup>&</sup>lt;sup>10</sup> Some examples of indicators of the International Labour Organization and United Nations Sustainable Development Goals that could be used include (but are not limited to): 1) proportion of population below the poverty line by sex, age, employment status and geographical location; 2) proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions; 3) proportion of population covered by social protection by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims, and the poor and vulnerable; and 4) proportion of total adult population with secure tenure rights to land, with legally recognized documentation, and who perceive their rights as secure by sex and type of tenure. However, it is recommended that context-specific indicators that fit with the priorities of the NGGS be identified.

could contribute to making the green growth agenda more inclusive and responsive to the needs of women. The following recommendations will help take advantage of this opportunity:

- The LWU is currently working to revise the national law and expects that it will be presented to the National Assembly in 2019. Before the new gender policy is adopted, the concept of green growth could be integrated into the new policy.
- Provide an information session specifically for the LWU to enhance their understanding of green growth, and at the same time, draw from their knowledge and experiences to inform the NGGS.
- Include the LWU as part of the national green growth secretariat and green growth promotion center, so that they can provide recommendations on how to integrate gender into the green growth strategy.
- Seek technical support to ensure the tools used to implement green growth, like the *Public Investment Guidelines*, incorporate gender criteria.
- In addition to resources from the government budget, consider tapping into funding from the World Bank and other opportunities where resources may be available, such as preparing a Gender Action Plan for the United Nations Framework Convention on Climate Change, or development partners working in relevant sectors.

#### 3. Monitor female labor force participation in quality, green jobs.

In Lao PDR, there are significant gender differences in employment. Increasing the share of women in waged employment, addressing the disproportionate role of women in unpaid care work and moving women up to the higher rungs of the employment market will be key indicators of success of inclusive green growth. It is important that associated targets and indicators are included and monitored in the NGGS in addition to improved gender parity in access to education and much of this data is already collected through the national census. Consider including the following:

- Increase the share of women in wage employment from 35% in 2015;
- Reduce the share of women working as unpaid family workers from 65%;
- Improve gender balance of employment in the formal sector;
- Improve the gender balance in the amount of time spent on housework currently women spend four times longer on housework than men each day.

#### Toward Gender Inclusive Green Growth in Lao PDR

If the green growth model is to live up to its fullest potential and help Lao PDR ensure that no one is left behind in its economic growth, concerted efforts will be necessary to not only make efficient use of the natural capital and protect the environment, but also tackle structural problems like gender inequality. Women and men both contribute essential knowledge and labor that fuels the Lao economy. Understanding the respective roles of women and men in the market systems for the priority sectors in Lao PDR's green growth strategy will help optimize use of human resources and develop targeted interventions that enable both women and men to benefit from and contribute to the country's green growth agenda. Given the persistent challenges facing women and girls in Lao PDR, the green growth strategy should include both targeted and integrated approaches to improve gender equality and achieve its green growth objectives. Lao PDR's commitment to transition to a green growth model of sustainable development will be further strengthened and reinforced by its commitments to gender equality and social inclusion.

#### References

- Asian Development Bank and The International Bank for Reconstruction and Development/The World Bank. 2012.

  "Country Gender Assessment for Lao PDR: Reducing Vulnerability and Increasing Opportunity." Accessed May 8, 2018. http://documents.worldbank.org/curated/en/286061468266675141/pdf/NonAsciiFileName0.pdf.
- Bass, Steve, Paul Steele, Camilla Toulmin, Oliver Greenfield, Chris Hopkins, Inhee Chung, and Thomas Nielsen. 2016. "Propoor, Inclusive Green Growth: Experience and a New Agenda." *GGGI, IIED and GEC*. May. Accessed May 1, 2018. http://pubs.iied.org/G04050/.
- Donor Committee for Enterprise Development. 2012. "Women's Participation in Green Growth A Potential Fully Realised?" Accessed May 7, 2018. https://www.enterprise-development.org/wp-content/uploads/Womens\_participation\_in\_Green\_Growth.pdf.
- GGGI. 2017. Green Growth Potential Assessment: Lao PDR Country Report. Seoul: Global Green Growth Institute (GGGI).
- International Labour Organization. 2015. *Green Growth Knowledge Platform*. April. Accessed April 24, 2018. http://www.greengrowthknowledge.org/resource/gender-equality-and-green-jobs.
- Lao Statistics Bureau. 2015. *Population and Housing Census*. Vientiane: Lao Statistics Bureau. Accessed February 13, 2018. https://www.lsb.gov.la/pdf/PHC-ENG-FNAL-WEB.pdf.
- Ministry of Planning and Investment. 2013. *Guidelines: District Socio-Economic Development Planning*. Vientiane: Ministry of Planning and Investment.
- OECD. 2008. *Gender and Sustainable Development: Maximizing the Economic, Social and Environmental Role of Women.*Paris: Organisation for Economic Co-operation and Development (OECD).
- SIDA. 2015. "Gender Tool Box: Gender Mainstreaming." *Swedish International Development Cooperation Agency (SIDA)*.

  March. Accessed April 19, 2018. https://www.sida.se/contentassets/3a820dbd152f4fca98bacde8a8101e15/gender-tool-mainstreaming.pdf.
- Slaughter, Anne-Marie. 2016. "The Work that Makes Work Possible: The labor of caregivers often invisible and undervalued is crucial for economic growth and gender equality." *The Atlantic*. March 23. Accessed May 7, 2018. https://www.theatlantic.com/business/archive/2016/03/unpaid-caregivers/474894/.
- UN Women. 2017. *The Situation of Women Market Vendors in Vientiane: A Baseline Report.* Vientiane: UN Women. http://www2.unwomen.org/-/media/field%20office%20eseasia/docs/publications/2017/01/women-market-vientiane.pdf.
- UNDP. 2016. "Human Development Reports Table 5: Gender Inequality Index." *United National Development Programme* (UNDP). Accessed June 21, 2018. http://hdr.undp.org/en/composite/GII.
- —. 2016. "Human Development Reports: Valuing Care Work." March 15. Accessed May 18, 2018. http://hdr.undp.org/en/content/valuing-care-work.
- —. n.d. "United Nations in Lao PDR: SDG 2 Zero Hunger." Accessed May 9, 2018. http://www.la.one.un.org/sdgs/sdg-2-zero-hunger.
- —. n.d. "United Nations in Lao PDR: SDG 5 Gender Equality." Accessed May 1, 2018. http://www.la.one.un.org/sdgs/sdg-5-gender.
- United Nations Environment Programme. 2017. "The trucker and the vendor: Mapping gender to boost urban resilience in Laos." November 1. Accessed May 8, 2018. https://www.unenvironment.org/news-and-stories/story/trucker-and-vendor-mapping-gender-boost-urban-resilience-laos.

- Woetzel, Jonathan, Anu Madgavkar, Kevin Sneader, Oliver Tonby, Diaan-Yi Lin, Sha Sha, Mekala Krishnan, Kweilin Ellingrud, and Michael Gubieski. 2018. "The Power of Parity: Advancing Women's Equality in Asia Pacific." *McKinsey*. April. Accessed May 25, 2018. https://www.mckinsey.com/featured-insights/gender-equality/the-power-of-parity-advancing-womens-equality-in-asia-pacific.
- Woetzel, Jonathan, Anu Madgavkar, Kweilin Ellingrud, Eric Labaye, Sandrine Devillard, Eric Kutcher, James Manyika, Richard Dobbs, and Mekala Krishnan. 2015. "The Power of Parity: How advancing women's equality can add \$12 trillion to global growth." *McKinsey*. September. Accessed May 25, 2018. https://www.mckinsey.com/featured-insights/employment-and-growth/how-advancing-womens-equality-can-add-12-trillion-to-global-growth.
- World Bank Group. 2011. "Gender differences in employment and why they matter." In *World Development Report 2012: Gender Equality and Development*, 198-253. Washington, DC: World Bank Group. Accessed May 2, 2018.

  http://siteresources.worldbank.org/INTWDR2012/Resources/7778105-1299699968583/77862101315936222006/chapter-5.pdf.
- World Bank Group. 2015. Lao PDR Poverty Policy Notes: Drivers of Poverty Reduction in Lao PDR. Working Paper,
  Washington, DC: World Bank Group.
  http://documents.worldbank.org/curated/en/590861467722637341/pdf/101567-REPLACENENT-PUBLIC-Lao-PDR-Poverty-Policy-Notes-Drivers-of-Poverty-Reduction-in-Lao-PDR.pdf.
- —. 2018. The World Bank in Lao PDR. March. Accessed May 1, 2018. http://www.worldbank.org/en/country/lao/overview.
- —. 2015. Women, Business and the Law 2016: Getting to Equal. Washington, DC: World Bank Group. Accessed June 27, 2018. https://openknowledge.worldbank.org/bitstream/handle/10986/22546/9781464806773.pdf.
- World Bank Group. 2017. World Bank Group Country Partnership Framework for the Lao People's Democratic Republic, 2017-2021 (Vol. 2). Washington, DC: World Bank Group. http://documents.worldbank.org/curated/en/381061497445645649/pdf/116234-WB-v2-116p-CPF-Long-Report-Eng-V6-final-LR.pdf.
- Youn, Hyunjoo. 2018. *Background Paper for Developing Gender Responsive National Strategy for Green Growth in Lao PDR*. Consultant's Report, Vientiane: GGGI.



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