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▶ Regional Study on Green Jobs Policy Readiness in ASEAN

Final Report

June 2021



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► Foreword

His Excellency Minister of Human Resources of Malaysia

First and foremost, I wish to commend the great work of the project team consisting of dedicated officers from the Ministry of Human Resources of Malaysia, with strong support from the International Consultant, in conducting the Regional Study on Green Jobs Policy Readiness in ASEAN. The same appreciation also goes to all Senior Labour Officials of ASEAN Member States for their unwavering support and contribution towards the success of this study.

Undeniably, the inputs provided in the country-level assessment for the study have been beneficial towards the analysis on green jobs policy readiness of each member state. This is indeed another important milestone to promote the concept of Green Jobs amid the COVID-19 outbreak that threaten livelihood and employment.

The idea of having this study began in 2018 when Malaysia as the Chair of the ASEAN Labour Ministers' Meeting (ALMM) introduced the theme 'Promoting Green Jobs for Equity and Inclusive Growth of ASEAN Community'. In the same year, Malaysia led ASEAN Member States in developing the ASEAN Declaration on Promoting Green Jobs for Equity and Inclusive Growth of ASEAN Community, which was endorsed in the 25th ALMM and notated by the ASEAN Leaders during the 33rd ASEAN Summit in Singapore in November 2018.

As part of the implementation of the Declaration, Malaysia led the Regional Study on Green Jobs Policy Readiness in ASEAN. The study aimed to assess the policy readiness of ASEAN Member States in promoting and the transition towards green jobs. This study was the first ASEAN-directed regional study on green jobs. In view of the promising future for green jobs, it is high time and indeed a priority for ASEAN Member States to actively promote the transition towards and creation of green jobs.

Notably, ASEAN Member States have great potential in developing green jobs and green skills, which will then not only reap enormous economic benefits in terms of the creation of new jobs opportunities but will also promote environmental sustainability. It is indeed timely for ASEAN to create a vast pool of skilled and competent workforce that will facilitate a high-income workforce as well as the support efforts to green employment and economies.

This study report will serve as a significant benchmark in the implementation of the ASEAN Declaration on Promoting Green Jobs for Equity and Inclusive Growth of ASEAN Community. Undoubtedly, more work needs to be completed in promoting green jobs and green skills in the region. I am optimistic that we can continue to work together in this journey towards a sustainable development in ASEAN.

Thank you.



Datuk Seri M. Saravanan

Minister of Human Resources Malaysia



Secretary-General of ASEAN for the Regional Study on Green Jobs Policy Readiness in ASEAN

The growing need to address environmental impacts around the world, this region included, has paved the way for green jobs. According to the Fifth ASEAN State of Environment Report, the energy-related CO₂ emission levels in the region could rise by 61% from 2014 to 2025.¹ Amidst the region's economic growth, the report also stated that patterns of production and consumption are increasingly unsustainable.

The COVID-19 pandemic has accelerated a shift in the region's world of work and disrupted economic growth. These circumstances have underscored the urgency for ASEAN to design a post COVID-19 recovery strategy to help economies and societies transit to a more environmentally sustainable and resilient future.

Recognizing the linkages between the protection of the environment and economic growth, ASEAN has demonstrated both vision and commitment to promote a sustainable economic development agenda. These are embodied in the ASEAN Economic Community Blueprint 2025, the ASEAN Socio-Cultural Community Blueprint 2025, and the ASEAN Declaration on Promoting Green Jobs for Equity and Inclusive Growth of ASEAN Community. The ASEAN Comprehensive Recovery Framework which was adopted at the 37th ASEAN Summit also called for the upskilling and reskilling of the region's workforce for green jobs. To this end, ASEAN Member States have been adapting strategies to engage in sustainable economic activities that has paved the way for green jobs.

Although most ASEAN Member States have some conceptual definitions of green jobs and green skills, gaps exist in knowledge and data sources at the regional level. This Report of Regional Study on Green Jobs Policy Readiness in ASEAN goes some way to encourage policy makers to work on a common definition, along with knowledge sharing and understanding best practices in promoting green jobs and skills. Led by the Ministry of Human Resources of Malaysia in collaboration with the ASEAN Secretariat and the International Labour Organization, the report aims to highlight a policy framework for the promotion of green jobs and just transition, then utilizes the framework to assess the policy readiness of ASEAN Member States. The study is an activity in the ASEAN Labour Ministers' Work Programme 2016-2020 with relevant findings and timely inputs to ASEAN Member States in promoting green jobs in the region.

I hope that the study's analysis and recommendations will result in concrete follow-up initiatives that contribute to ASEAN's preparedness and support the gradual transition towards green jobs for a more sustainable and resilient future. Only through holistic and coordinated actions may we achieve sustainable economic development and a high quality of life for all.



A handwritten signature in black ink, appearing to read 'Lim Jock Ho'.

DATU LIM JOCK HOI

Secretary-General of ASEAN

¹ ASEAN Secretariat, the Fifth ASEAN State of Environment Report (2017) accessible online at <https://environment.asean.org/soer5/>

▶ Acknowledgements

The Regional Study on Green Jobs Policy Readiness in ASEAN is one of the activities planned under the ASEAN Labour Ministers' (ALM) Work Programme 2016-2020 to implement the ASEAN Declaration on Promoting Green Jobs for Equity and Inclusive Growth of ASEAN Community that was adopted by the 33rd ASEAN Summit in November 2018. The Ministry of Human Resources Malaysia, in collaboration with the ASEAN Secretariat and International Labour Organization (ILO), coordinated the implementation of the Study.

The Study Report has fulfilled its objective of supporting ASEAN policy makers with assessment and recommendations pertaining to policy adaption and readiness of ASEAN Member States (AMS) to promote green jobs and just transition.

The Study Report was produced through a series of consultations with ASEAN Member States including through the conduct of the ASEAN Inter-Ministerial Forum on the Implementation of the ASEAN Declaration on Promoting Green Jobs for Equity and Inclusive Growth in ASEAN Community that was hosted virtually by the Ministry of Human Resources of Malaysia on 7-9 October 2020.

The Ministry of Human Resource of Malaysia would like to express sincere appreciation to the following individuals for their technical expertise and knowledge in making this study worthwhile.

- ▶ To the focal points, all of whom we cannot acknowledge individually, of labour ministries of ASEAN Member States for your invaluable time, information and insights;
- ▶ To the team from the International Division, Ministry of Human Resource of Malaysia, led by Dr. Zaki Bin Zakaria, for their coordination and invaluable inputs, ensuring the realisation of the study and managing the online forum;
- ▶ To the ASEAN Secretariat, particularly Ms. Mega Irena, Ms. Pitchanuch Supavanich (Former Senior Officer), Ms. Madyah Rahmi Lukri, Mr. Carl Rookie Daquio, Ms. Sarah Choirinnisa (Former Officer) Mr. M. Alvin Pahlevi, and Ms. Felicia Clarissa for sharing their time and invaluable inputs at various stages of the Study;
- ▶ To the ILO Team, particularly Dr. Cristina Martinez, and report author, Dr. Samantha Sharpe, for their expertise that made this Study Report possible; and to Ms Rakawin Leechanavanichpan, Ms Laurel Hoffner, Ms Hongye Pei, and Mr Monty Chanthapanya for their coordination support and invaluable inputs and revisions.





► Executive Summary

Green jobs are a high priority in ASEAN as evidenced by the ASEAN Economic Community Blueprint and the ASEAN Declaration on Promoting Green Jobs for Equity and Inclusive Growth adopted at the ASEAN Summit in 2018. Many ASEAN Member States (AMS) have already made inroads into defining and counting green jobs within their economies and building the skills and capacities of policy makers. Each AMS is working at a different pace, and with a differing focus. The consequence is that gaps exist in knowledge and data sources for green jobs at the ASEAN level.

The aims of this report are to:

1. highlight a policy framework for the promotion of green jobs and just transition, and then
2. use this framework to assess the policy readiness of AMS for promoting green jobs and just transition.

The policy mix for promoting green jobs and skills, as well as a just transition, is broad, encompassing many policy fields including development and employment policy, energy policy, industry policy, training and skills development, as well as sectoral level policies and policies at different jurisdictional levels. The broad array means that policy coherence and coordination are also critical issues in the successful implementation of policies for promoting green jobs.

The ILO *Guidelines for a just transition towards environmentally sustainable economies and societies for all* highlight that the greening of economies and work will require “a country-specific mix of macroeconomic, industrial, sectoral and labour policies that create an enabling environment for sustainable enterprises to prosper and create decent work opportunities by mobilizing and directing public and private investment towards environmentally sustainable activities” (2015: p6).

A policy framework for promoting green jobs and just transition was developed for this work, combining the nine key policy areas identified in the Guidelines for a Just Transition, and categorising each into the three broad areas of policies that promote green jobs; i) creating demand for green jobs, ii) enhancing supply for green jobs and iii) institutional arrangements.

The resulting policy framework was then used to assess policy readiness for promoting green jobs and just transition across AMS. In completing these assessments, we drew on responses to an extensive questionnaire completed by AMS between April and September 2020. Results from this questionnaire, along with other document analysis, were then used to develop the country narratives and summary assessment tables. The table below provides colour coded summary of the findings, with green representing significant elements of the framework element in place, orange representing need for additional processes policies needed and are identified in development, grey representing no policy elements identifiable to date.

Key findings:

- Most AMS have some conceptual definitions of green jobs and green skills, and in many cases, these are developed from the ILO definition of green jobs. The specific defining of green jobs has been of less focus than the overall implementation of the green economy agenda with the belief that creating low carbon development and adapting to climate change will create momentum in the economy for green jobs.

- The delineation of green and non-green is more important when developing specific sector strategies, considering negative employment impacts of greening and when considering the skills needs and re-skilling tasks associated with green economies.
- Many AMS have explicit strategies in place to implement the green economy in priority sectors – with agriculture, tourism services, the built environment, energy and environmental services (water, waste water, waste) identified as priority sectors in countries. These sector strategies usually include investments and incentives from governments at various levels. The more comprehensive strategies combine these incentives (pull factors) with research and development activities, innovation support and public procurement (push factors).
- A range of institutional mechanisms were identified across AMS for coordinating policy frameworks for promoting green jobs and just transition. These typically consisted of inter-ministerial groups and related senior-officer groups. The emerging nature of these institutions means that we do not have a good understanding of how coordination is successfully managed, and what ingredients are critical to the establishment and maintenance of these mechanisms.
- Across all AMS, a range of incentives to create private sector demand and awareness for green jobs exist. These range from subsidies, tax exemptions, preferential investment treatment and various forms of regulation. The emerging status of most of these incentives mean they are relatively new, so there is no clarity and evidence of efficacy yet.

► Summary policy readiness assessment in AMS

Policy area	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
Development policies establish the green agenda	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Significant
Industrial and sector policies for greening	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Significant
Enterprise policies and initiatives for greening	Significant	Some	Significant	Some	Significant	Significant	Significant	Significant	Some	Some
Skills development for green skills	Some	Some	Some	Some	Significant	Limited	Significant	Significant	Some	Some
Active labour market for greening	Limited	Limited	Limited	Some	Significant	Limited	Significant	Significant	Limited	Significant
OSH for climate change issues	Limited	Some	Limited	Some	Significant	Limited	Significant	Significant	Limited	Significant
Social protection	Some	Some	Some	Some	Some	Some	Some	Significant	Some	Significant
Cross-cutting issues – labour rights, standards & social dialogue processes in greening	Limited	Some	Some	Some	Some	Some	Significant	Significant	Some	Significant

■ Significant policy elements in place
 ■ Some policy elements in place
 ■ Limited/ No policy elements in place

Recommendations

Recommendation 1: ASEAN Member States to work together to agree on common and workable definition of green jobs, using a spectrum approach to identify core green, indirectly green, and non-green occupations across different sectors and geographies.

Recommendation 2: Using these definitions of green jobs, analyse labour markets to highlight where green jobs potential, skill needs and just transition hotspots are located.

Recommendation 3: Seek to differentiate likely occupiers of green jobs by age and gender.

Recommendation 4: Create knowledge sharing platform and opportunities for dialogue between TVET specialists, policy makers and other stakeholders to discuss, identify and share best practice in developing green skills in ASEAN Member States.

Recommendation 5: Map and share promising examples of integrating push and pull factors in developing sector specific strategies, including for active labour market policies.

Recommendation 6: Map and share promising examples and evaluations of financing mechanisms and incentives for private sector activity in the green economy.

Recommendation 7: ASEAN Member States to work together and share evaluations of efficacy of private sector incentives for green jobs. One practical way to do this is to hold an annual Green Jobs Forum where progress can be discussed and strategies and initiatives which proved to be effective in promoting green jobs and green employment can be shared among ASEAN Member States.

Recommendation 8: Map and assess the OSH implications of the greening of employment across ASEAN, and identify how OSH frameworks and training activities will need to be enhanced in order to manage these risks.

Recommendation 9: Map and assess the implications for and suitable modes of social protection associated with achieving a just transition.

Recommendation 10: Examine coordination mechanisms across ASEAN Member States to identify and establish what successful coordination across green jobs policy framework looks like and how to replicate it.



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▶ Acronyms

ALM	ASEAN Labour Ministries
AMS	ASEAN Member States
ASEAN	Association of Southeast Asian Nations
BCG	Bio-circular Green Model (Thailand)
CCC	Climate Change Commission (The Philippines)
CO₂e	Carbon emissions equivalent
ESCOs	Energy Services Companies
ESR	Environmental and Social Risks
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
OSH	Occupational Health and Safety
ILO	International Labour Organisation
ILSSA	Institute of Labour Science and Social Affairs (Viet Nam)
IMCC	Inter-Ministerial Committee on Climate Change (Singapore)
INWG	International Negotiations Working Group (Singapore)
ITM	Industry Transformation Maps (Singapore)
LCDI	Low Carbon Development Initiative (Indonesia)
LEDS	Long-term Low Emissions Development Strategy (Singapore)
MSFA	Mongolian Sustainable Finance Association
NAPACC	National Adaptation Programme of Action to Climate Change (Lao PDR)
NCCS	National Climate Change Secretariat (Singapore)
NESDP	National Economic and Social Development Plan (Thailand)
PGJA	Philippines Green Job Act (The Philippines)
PPP	Purchasing Power Parity
REDD	Reducing Emissions from Deforestation and Forest Degradation
RWG	Resilience Working Group (Singapore)
SDGs	UN 2030 Sustainable Development Goals
SSB	Sustainable Singapore Blueprint (Singapore)
TACs	Trade and Associations Chambers (Singapore)
TESDA	Technical and Skills Development Authority (The Philippines)
TVET	Training and vocational education
UNEP	United Nations Environment Program
UNDP	United Nations Development Program



1. Introduction

Green jobs are a high priority in ASEAN¹ as evidenced by the ASEAN Economic Community Blueprint² and the ASEAN Declaration on Promoting Green Jobs for Equity and Inclusive Growth³ adopted at the ASEAN Summit in 2018. ASEAN is actively promoting green employment in clean energy, energy efficiency and green buildings and urban planning, as well as developing policy to support sustainable production and consumption systems such as circular economy. Despite these commitments the growth of green jobs and the supportive policy ecosystem that enables future growth is not fully developed. Member countries are requesting specific advice on how they should understand the impact of green jobs and greening on their workforces, what the labour market and skills and training development implications of green jobs will be, and how best to respond to these.

Many ASEAN Member States (AMS) have already made inroads into defining and counting green jobs within their economies and building the skills and capacities of policy makers. For example, the green job mapping studies have been completed in Malaysia and the Philippines. Each AMS is working at a different pace, and with a differing focus. The consequence is that gaps exist in knowledge and data sources for green jobs at the ASEAN level, including understanding the country and sectoral level supply and demand drivers for green jobs, the resultant impacts on labour standards and occupational health and safety, as well as the implications for education structures, particularly TVET systems.

1.1 Context of this study in ASEAN

This project represents the first ASEAN-directed regional study on green jobs. Previously, sharing of knowledge among AMS took place at the ASEAN Forum on Green Jobs Promotion hosted by Thailand in 2015 and the ASEAN Workshop on Drafting the ASEAN Declaration on Promoting Green Jobs for Equity and Inclusive Growth of the ASEAN Community hosted by Malaysia in 2017.

This study also considers significant work completed in other studies and projects of the ILO with individual AMS that have investigated green jobs, including:

- ILO and IGES (2014) *Green Jobs Mapping in Malaysia* (publication⁴);
- ILO and IGES (2014a) *Green Jobs Mapping in the Philippines* (publication);
- Malaysia/ ILO project *Assessing green jobs potential and supporting skills development* (2012-2015) (project⁵);

1 ASEAN includes the following country members - Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam

2 ASEAN Economic Community Blueprint <https://asean.org/wp-content/uploads/archive/5187-10.pdf>

3 ASEAN Declaration on Promoting Green Jobs for Equity and Inclusive Growth <https://asean.org/storage/2012/05/ASEAN-Declaration-on-Promoting-Green-Jobs-for-Equity-and-Inclusive-Growth-of-ASEAN-Community.pdf>

4 Publication citations and weblinks are available in the Reference List

5 Project information available at https://www.ilo.org/global/topics/green-jobs/projects/asia/WCMS_218868/lang--en/index.htm

- Indonesia/ ILO *Green entrepreneurship promotion* (2012-2014) (project⁶) and *Green livelihoods in response to climate change* (2012-2013) (project⁷);
- Greener Business Asia project in the hotel and automotive sectors in Thailand and the Philippines (project⁸);
- The Philippines/ ILO project *Implementing the Guidelines for a Just Transition towards environmentally sustainable economies and societies for all* (2016-2018)⁹ and *Climate change adaptation for vulnerable farming populations demonstration project* (2008-2011)¹⁰.

In shaping this regional study, we have drawn outcomes from the preparatory meeting that was held in Bangkok, Thailand, on 12-13th December 2019. The purpose of the meeting was to scope and discuss this project and the forthcoming ASEAN Green Jobs Forum (held in October 2020). The preparatory meeting discussed and agreed on the following priorities for a regional study on green jobs:

Situational analysis of the initiatives and readiness of ASEAN Member States for promotion of green jobs, including:

- **Definitions and categorisations** of green jobs and how **qualifications** for green skills are awarded and available in AMS. Such definitions should include both decent work and green standards. Ministries in charge of such categorisation and qualification to be identified;
- **Identify the priority sectors** of green jobs and green skills in individual AMS where available;
- Summarise the **green economy agendas** of AMS where available;
- **Highlight the policy frameworks** to promote green jobs where available, and compliance mechanism of AMS;
- Identify the range of **institutional mechanisms** to promote the green economy and/or green jobs of AMS. This includes inter-ministerial committees and roles of labour, environment, industry and education ministries in such committees in light of green job promotion;
- Highlight the **awareness level and demands of the private sector** for green jobs and green skills in AMS.

The ASEAN Green Jobs Forum provided a platform to exchange information and views on various aspects of the above list and explore inter-sectoral cooperation in ASEAN for actions to implement the ASEAN Declaration on Promotion of Green Jobs. The Forum highlighted a number of actions for the way forward:

- Most AMS have streamlined green jobs within national development plans, with the next steps to clearly map priority sectors for green jobs and skills needs;

6 Project information available at https://www.ilo.org/global/topics/green-jobs/projects/asia/WCMS_250667/lang--en/index.htm

7 Project information available at https://www.ilo.org/global/topics/green-jobs/projects/asia/WCMS_218872/lang--en/index.htm

8 Project information available at https://www.ilo.org/global/topics/green-jobs/projects/asia/WCMS_218865/lang--en/index.htm

9 Project information available at https://www.ilo.org/manila/projects/WCMS_522318/lang--en/index.htm

10 Project information available at https://www.ilo.org/global/topics/green-jobs/projects/asia/WCMS_218885/lang--en/index.htm



- ▶ AMS collaboration on common definition of green jobs and green skills for ASEAN;
- ▶ Enhancing the capacities of human resources is a key focus of AMS, translating what greening means and requires in terms of TVET systems is a priority, as well as developing skill standards for greening education and training;
- ▶ Promoting green investment through research on productivity and greening in SMEs and through entrepreneurship;
- ▶ Future Green Jobs Forum could link with COVID-19 recovery agenda to ensure greening of recovery packages;
- ▶ Develop and implement strategy for further regional cooperation and knowledge sharing for promoting green jobs and just transition in ASEAN, including resource mobilisation. The strategy would include priorities for implementing the ASEAN Green Jobs Declaration, timeline of dialogue (e.g. future ASEAN Green Jobs Forums) and be linked to the ASEAN 5-year workplan;
- ▶ Strengthen knowledge sharing platform to include inter-sectoral collaboration and coordination with ASOEN, ASEAN MSMES, ASOMED, ATUC, and ACE.

1.2 Aims and Objectives of the Regional Study on Green Jobs Policy Readiness

This *Regional Study on Green Jobs Policy Readiness* is part of a suite of knowledge development and capacity building activities with AMS labour ministries and related stakeholders (including employers' and workers' organisations) to assist in the promotion of green jobs and just transition in AMS. This report provides analysis, results and recommendations from the situational analysis, including:

- A summary of relevant literature and policy practice on green jobs and green skills definition, categorisations and associated policy frameworks for promoting green jobs;
- Results from an assessment of policy readiness for promotion of green jobs and skills in AMS. This includes individual country analyses of AMS as well as comparative commentary and recommendations for further activities at the regional level to support policy readiness.

1.3 Method

In developing this project, a two-stage method was used. The first included a review of relevant literature and policy practice to identify the necessary elements of green job policy frameworks, and to determine a methodology for assessing national green job readiness in the AMS context. The findings of this work are detailed in Sections 2 and 3.

The second stage of the method involved the creation and implementation of a questionnaire on existing policies and mechanisms supporting green jobs in AMS. This questionnaire was completed by officials in the labour ministries of all but one country (Indonesia) of the AMS. The questionnaire was completed between April and September 2020. The questionnaire provided data for summary and comparative analysis of the different policy systems in AMS for promoting green jobs, and provides the basis for the policy readiness assessment. The results of this policy readiness assessment are presented in Sections 4 and 5. The Green Jobs Forum held in October 2020 provided further validation of these results.

1.4 Structure of this report

This report has six sections. After this introductory section, Section 2 provides an overview of green jobs and green skills in ASEAN. Section 3 discusses and summarises the results from the review of literature and policy practice on green jobs and sets out what represents policy readiness. Section 4 presents the green jobs policy readiness assessment for each country. Section 5 discusses the findings from the country analysis, reflecting back on the priorities for this study (definitions and categorisations of green jobs and green skills, green economy agendas and how employment considerations are linked, priority sectors for green jobs, awareness and promotion of green jobs/ skills in the private sector and institutional mechanisms to support policy coherence and coordination). Section 5 also highlights recommendations for enhancing policy readiness and knowledge sharing at the regional level.





2. Green Jobs in ASEAN

2.1 What are green jobs?

The ILO defines green jobs as jobs that are good for people, good for the environment and good for the economy. They are both a mechanism to achieve sustainable development, as well as an outcome. They provide the double dividend of employment and reduced negative environmental impacts. Green jobs are decent jobs in economic sectors and activities that contribute to the preservation and restoration of the environment in either traditional sectors such as agriculture and manufacturing, as well as new, emerging green sectors such as renewable energy and energy efficiency.

Green jobs must be quality, decent jobs and in line with the four strategic objectives at the heart of the ILO decent work agenda, which seek to:

- set and promote standards and fundamental principles and rights at work;
- create greater opportunities for women and men to obtain decent employment and income;
- enhance the coverage and effectiveness of social protection for all; and
- strengthen tripartism (government, workers’ and employers’ organizations) and social dialogue.

At the enterprise level, green jobs can produce a variety of goods and services that benefit the environment. Some of these activities are easy to identify such as green buildings, recycling services or clean transportation. However, these goods and services are not always based on green production processes and technologies. Green jobs can also be derived from contributing to more environmentally sustainable production processes, even when the final outputs of these activities are not environmental goods and services. Figure 1 provides an overview of the range of activities that can be considered green jobs.



Figure 1: Green Job activities, ILO (2017)

There is no universal definition or accepted way of categorising and counting green jobs. Most definitions of green jobs consider greening on a spectrum with some jobs being classified as directly green, and other indirectly. In Malaysia (ILO and IGES, 2014) and the Philippines (ILO and IGES, 2014a) where, green jobs studies have taken place, this spectrum approach to identifying and counting green jobs has been utilised.

For most of the workforce, greening will change their work by only a small amount. For other occupations, greening will change them significantly and new occupations will be created and other occupations will diminish or be phased out. This is why Just Transition is also discussed with green jobs. Just Transition ensures that in the process of transitioning to a green economy, people in jobs and occupations that are reduced and phased out have pathways to transition to other viable employment, and have social protection on this pathway. Social protection is a critical enabler of a just transition – facilitating decarbonisation by ensuring the provision of essential guarantees against social risks affecting income and health for workers (ILO, 2019c).

Social protection systems include a range of policies and mechanisms that help people manage the social risks associated with employment disruption from climate change and climate action. Policies include unemployment benefits, maternity benefits, sickness and disability benefits, child benefits, old age pensions and other social assistance. The policies are further underpinned by public services in health, education and care (ITUC, 2019).

The need to define and categorise green skills is equally as pressing. Identifying the difference between a green job and a non-green job will help determine where and the degree of re-training and re-skilling required in the transition to a green economy.

The European Centre for the Development of Vocational Education and Training (Cedefop) defines green skills as “the knowledge, abilities, values and attitudes needed to live in, develop and support a sustainable resource efficient society” (Cedefop, 2012). Cedefop further states that the demand for green skills is driven by a range of factors, including public policies and targets, and are defined by three main trends:

- across occupations and industries, greening requires upgrading skills and adjusting qualification requirements;
- new or emerging economic activities create new or renewed occupations and related qualifications and skills profiles; and
- structural changes create a need to realign sectors that will decline as a result of the greening of the economy and retrain workers accordingly.

2.2 The need for green jobs in ASEAN

The ASEAN region, comprising the ten-member countries of the inter-governmental Association of South-East Asian Nations, has a population of more than 640 million people and has diverse economic, geographical and cultural characteristics. On average, populations are growing across AMS, and the working age population (aged 15-64 years old) is 68% of the total¹, which is comparatively high by global comparison.

The following sections provide further details of labour force characteristics in ASEAN including employment by sector and levels of vulnerable employment. The opportunities for the greening of

¹ Data and statistics presented in this report are drawn from the ILO International Labour Force Statistics and associated analysis. In some cases, these statistics may be different, or cover earlier time periods than is the latest available data in individual countries. To enable cross-country analysis and consistency this report uses ILO Labour Force Statistics unless otherwise referred to in text.

employment and skills vary by sector, and levels of vulnerable employment also provide motivations for green jobs as they provide both environmentally sustainable and decent work opportunities.

Labour force characteristics in ASEAN

In 2018, the labour force participation rate in ASEAN region was 70.3 percent, although there are significant differences in the participation rate across the genders with the male participation rate 18 percentage points higher than the female participation rate. Furthermore, in many countries women who do participate in the labour force are more likely to be concentrated in industries and occupations with lower pay and limited opportunities for career advancement (Dasgupta and Verick, 2016). The unemployment rate for the region is 2.7% (2018 figures) with youth unemployment much higher at 9.6% (ILO, 2018).

The services sector provides a significant source of employment in all ASEAN countries, in some cases more than half of the jobs are in the sector. In Brunei Darussalam and Singapore, the services sector makes up more than 75% of employment (see Figure 2). The services sector includes employment in wholesale and retail trade, restaurants and hotels, transport, storage, business services, community and health services and personal services.

Agriculture (which also includes forestry and fishing activities) also provides a significant source of employment, accounting for a third of employment in most AMS. In Lao People’s Democratic Republic and Myanmar, agriculture contributes more than 45% of employment.

Industrial activities, including manufacturing, construction, energy and public utilities make up the third category of employment in the region. Again, there is diversity in the proportion of employment that comes from the industrial sector, although for most AMS this equates to more than 20% of total employment.

► Employment by Sector, 2018 (15+ years)

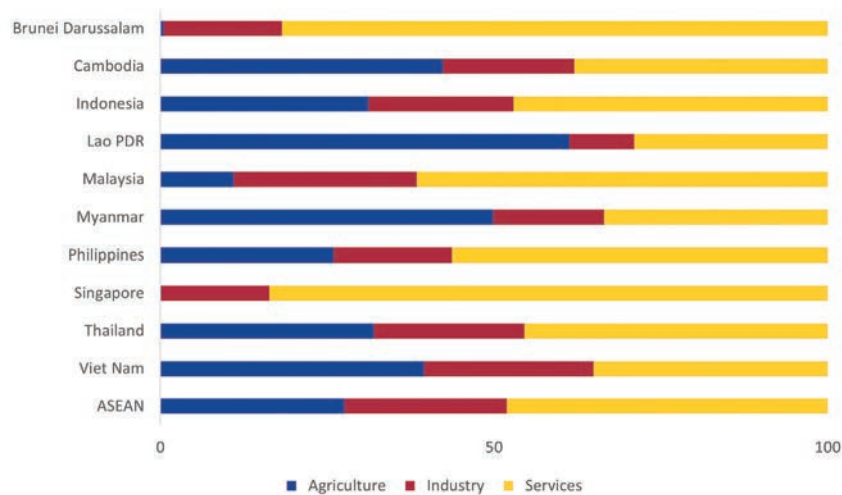


Figure 2: Employment by Sector, 2018 (15+ years)

Source: ILO (2019)

In terms of skill levels of employment, based on occupational classifications, about two thirds of employment are classified as medium-skilled professions (see Figure 3). These are professions where formal training and skill competencies are required (at least skill level 2 out of a possible 4). Occupations in this category include clerical, sales and service workers, skilled agricultural and trade workers, plant machinists and assemblers.

► Skill level in ASEAN and by AMS

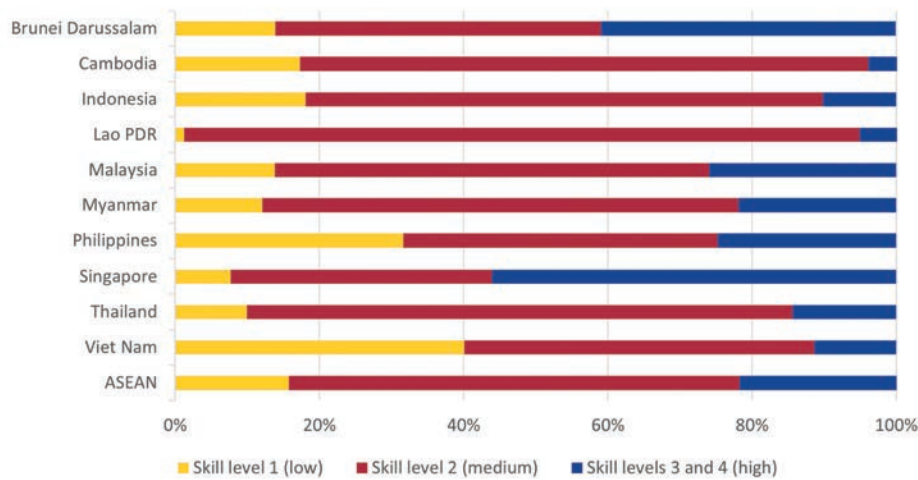


Figure 3: Skill level in ASEAN and by AMS

Source: ILO (2019)

Estimates of vulnerable employment varies greatly across ASEAN. This is due to sectoral composition of employment as well as other labour force characteristics. Vulnerable employment is a term used to highlight employees who work in circumstances that are prone to informal work arrangements, less social security and are less able to participate in and benefit from social dialogue processes (ILO, 2018). This vulnerability arises from self-employment – either through own-account worker or work as a contributing family member. Self-employment has a high economic risk in that remuneration is directly dependent on the profits of goods and services produced. These workplaces and the workers within them have little authority in the economy, either as unrecognised business units, or as informal workers within these workplaces (such as family members).

Across the ASEAN region, the ILO estimates more than 47 per cent of the employment in the region could be classified as ‘vulnerable’ – see Figure 4 (ILO, 2018a). The Lao PDR is estimated to have the largest concentration of estimated vulnerable workers, at 83 per cent. This is likely linked to the country’s high reliance on agriculture. Other countries with high estimates of vulnerable employees include Myanmar, Viet Nam, Cambodia and Thailand, all of which have more than 50 per cent of workers that can be classified as vulnerable (Fig. 4). The proportion of vulnerable workers is estimated to be less than 10 per cent in Brunei Darussalam and Singapore, in part because these countries have less reliance on agricultural employment.

There is also a gender dimension to vulnerable employment in that women are more likely to be over-represented in vulnerable work, owing in part to disproportionate care duties as well as direct and indirect forms of discrimination (ILO, 2016). Although women are more likely to be in vulnerable work,

the gap between women and men in vulnerable work in Asia narrowed in the period between 2010 and 2015, correspondingly there were more women in formal, wage employment (ILO, 2017). The impacts of the Covid-19 pandemic will likely set these results go into reverse, and progress on reducing vulnerable employment will need to be closely monitored in the coming years (ILO, 2020).

► **Vulnerable employment in ASEAN and individual AMS**

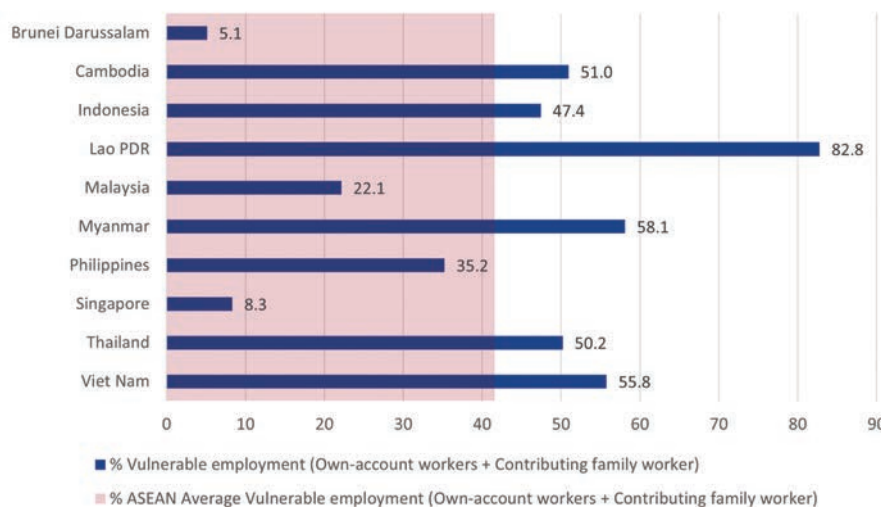


Figure 4: Vulnerable employment in ASEAN and individual AMS

Note: ILO estimates, Vulnerable employment includes own-account workers and contributing family workers from ILO status of employment data.

Source: ILO estimates and compilation using ILOSTAT, www.ilo.org/ilostat (accessed 13 June 2018)

Climate action and climate impacts in ASEAN²

The Paris Agreement commits signatories to limit global warming to between 1.5 and 2 degrees Celsius. The Agreement requires strong climate action for rapid decarbonisation and adaptation measures, but also measures that address the underlying socio-economic and health impacts of climate change. In the world of work, climate action and addressing these underlying socio-economic and health conditions requires a just transition of the workforce.

The employment implications from climate change will arise in two main areas:

- **employment changes due to decarbonisation of economic activities** to meet commitments for the Paris Agreement (i.e. to keep global warming to less than 2 degrees above pre-industrial levels). All AMS are signatories to the Paris Agreements and each country has made pledges regarding mitigation activities, detailed in their Nationally Defined Contributions (NDCs). Employment changes will be both positive and negative – as certain industries reduce carbon intensive activities, for example in the energy sector; and other industries grow in response, for example renewable energy, energy efficiency and resource efficient manufacturing.

² ASEAN has made a number of related commitments to environmental sustainability, in addition to commitments to the Paris Agreement, including addressing marine debris, conventions of biodiversity conservation, management of hazardous chemicals, and broader waste management. For further details see <https://environment.asean.org/statements-and-declarations-2011-2019/>

- **employment changes due to climate impacts** in the ASEAN region. This includes the economic and employment disruptions associated with extreme weather events (storms, floods, etc.) and other physical impacts of climate change, for example sea level rise (inundation of low-lying urban areas, workplaces and agricultural assets), increased ocean temperature/ acidification (changes in fish stocks, etc.).

Decarbonisation of economic activities

Decarbonisation is expected to generate up to 24 million green jobs by 2030, the majority in Asia. In the same time, some 6 million jobs are expected to be lost, particularly in carbon-intensive industries. Although the green transition will deliver a net growth in the amount of jobs, the geographies and workforces of where jobs are made or lost do not align, and therefore additional measures to manage and alleviate the negative employment impacts of decarbonisation are needed to ensure a just and equitable transition.

In making Paris Agreement commitments (NDCs), countries can make unconditional and conditional commitments. Unconditional commitments are pledges the country will undertake regardless of the actions and activities of other countries. Conditional commitments include the unconditional activities, as well as further more ambitious commitments to emissions reduction if certain conditions for global climate action, financial assistance and technology transfer are also met.

Unconditional commitments across ASEAN will require additional abatement of 400Mtco₂, equivalent to emissions reduction of 11% by 2030 against the current trajectory across ASEAN. If conditional commitments are also included emissions reductions of 24% are required by 2030 (MIT, 2017). ASEAN countries face the challenge of reducing greenhouse gas emissions while at the same time expanding energy supply to meet the needs of rapidly developing economies. The ASEAN region is predicted to see high growth in energy demand – 100% increase in total energy consumption in ASEAN between 2015 and 2030 (MIT, 2017).

CO₂ emissions have been growing across ASEAN for the past few decades (see Figure 5). In 2015 the ASEAN region accounted for 8.6% of global population, 5.6% of global GDP, and 4.5% of Greenhouse Gas Emissions (GHG) for all emission sources except land use. Figure 6 breaks down ASEAN GHG emissions by source.

► CO₂ emissions in the ASEAN region 1990-2014

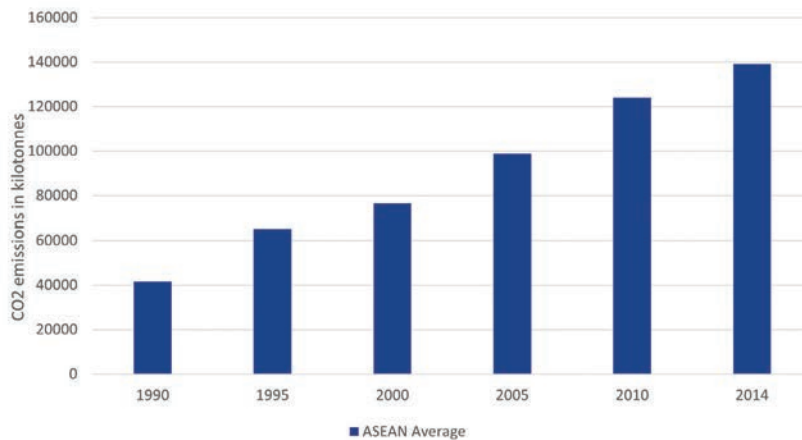


Figure 5: CO₂ emissions in the ASEAN region 1990-2014

Source: ILO (2019)

▶ ASEAN GHG emissions by source

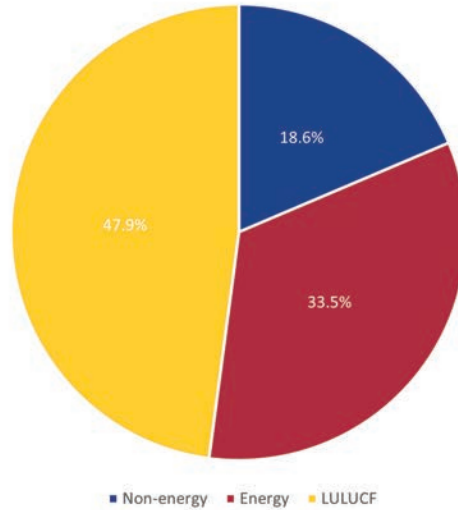


Figure 6: ASEAN GHG emissions by source

Note: Excludes Lao PDR (no IEA data available)

Source: MIT (2017)

The largest source of emissions is from Land use, Land use change and Forestry particularly arising from land clearing. Vegetation and soils remove and store carbon from the atmosphere, and are referred to as carbon sinks in the terrestrial ecosystem. Any changes or alterations to vegetation or soils released this stored carbon into the atmosphere. Activities reducing emissions include sustainable land management, planting and rehabilitation of forests that can conserve or increase forest carbon stocks, whereas deforestation, degradation and poor forest management reduce these carbon stocks.

The second highest source of emissions is the energy sector, with the remaining emissions found in non-energy sectors including construction and building, manufacturing and services. Emissions reductions will ultimately be required from all sectors, but land-use and forestry and energy are the primary focus on emission reduction activities because their impact on overall GHG levels. A just transition will therefore require both social protection for the workers negatively affected by decarbonisation, as well as investment in their communities to sustain and vitalise their future. Specific measures needed include income security and job transition measures for workers, as well as skill development measures for worker to take up new opportunities for green jobs (ITUC, 2019).

Employment impacts from greening will also impact all sectors, although are likely to be concentrated in industries such as energy, agriculture, and forestry in the time to 2030. The agricultural, forestry and fishing sectors have significant potential for green job creation in ASEAN, because of the size of the agricultural workforce in AMS – as shown in Figure 7. Opportunities also exist in energy and electricity supply, waste management and waste water management and mining and quarrying activities.

► Employment in sectors with strong green growth potential, ASEAN region

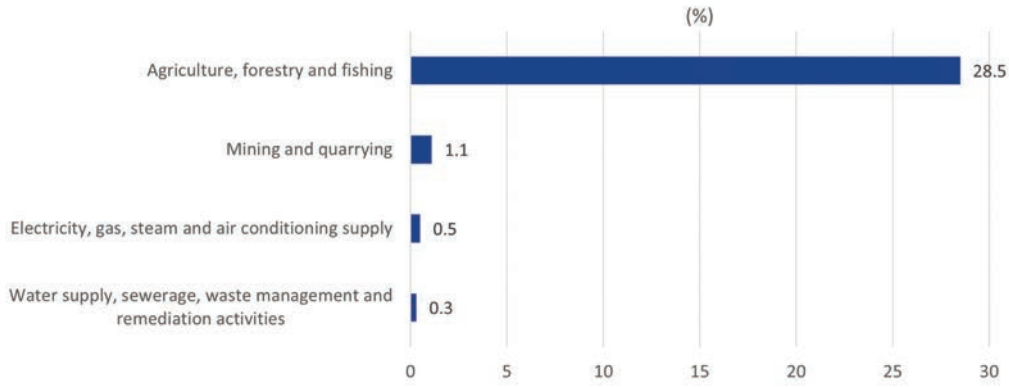


Figure 7: Employment in sectors with strong green growth potential, ASEAN region

Note: These sectors have the most potential for green jobs opportunities. Employment by selected 1-digit sector level (ISIC – Rev. 4, 2008)

ASEAN average calculated from the latest data available (2008-17). Myanmar, Philippines, Viet Nam (2017); Malaysia, Thailand (2016); Indonesia (2015); Brunei Darussalam (2014); Cambodia (2012); Lao PDR (2010) Singapore (2008). Only data of mining and quarrying is available for Singapore.

Source: ILO estimates and compilation using ILOSTAT, www.ilo.org/ilostat (accessed 25 June 2018).

Employment in renewable energy sectors has been a focus for analysis for green jobs. Renewable energy sources are being rapidly adopted into the energy systems of AMS. Expanding access to renewable energy, especially centralised renewable energy directly creates jobs in the local communities where the energy is generated and used (Power for all, 2020). On average across ASEAN a quarter of energy is derived from renewable sources, but some countries including Cambodia, Myanmar and Lao PDR have more than 50% of energy from renewable sources, see Figure 8. There is a diversity in renewable energy sources contributing to energy supply, as shown in Figure 9 examining employment in renewable energy by energy type, liquid biofuels, hydro (large and small) and Solar PV account for the majority (92%) of employment in renewable energy across ASEAN.

► Renewable energy share of total final energy consumption in AMS in 2016

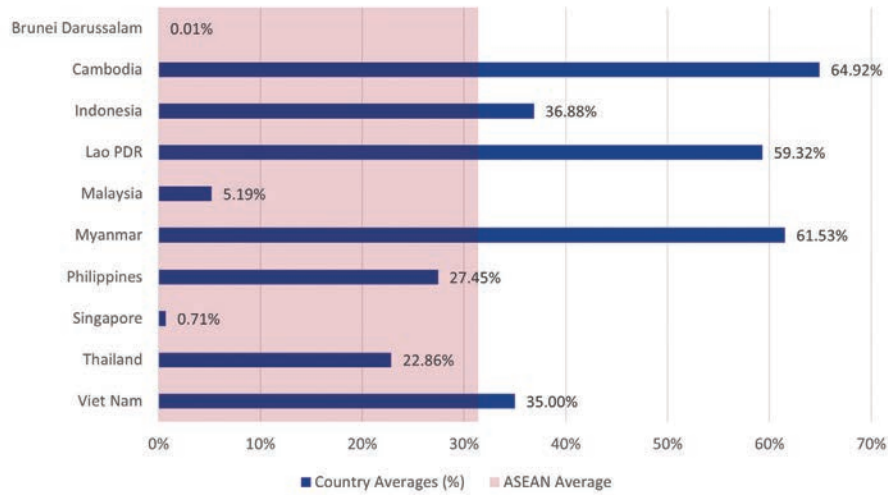


Figure 8: Renewable energy share of total energy consumption in AMS in 2016

Source: ILO compilation using UN SDG indicators: Global Database, Last updated 20 November 2017. Available at: <https://unstats.un.org/sdgs/indicators/database/> (accessed on 13 June 2018)

► ASEAN average employment in renewable energy, by source 2017

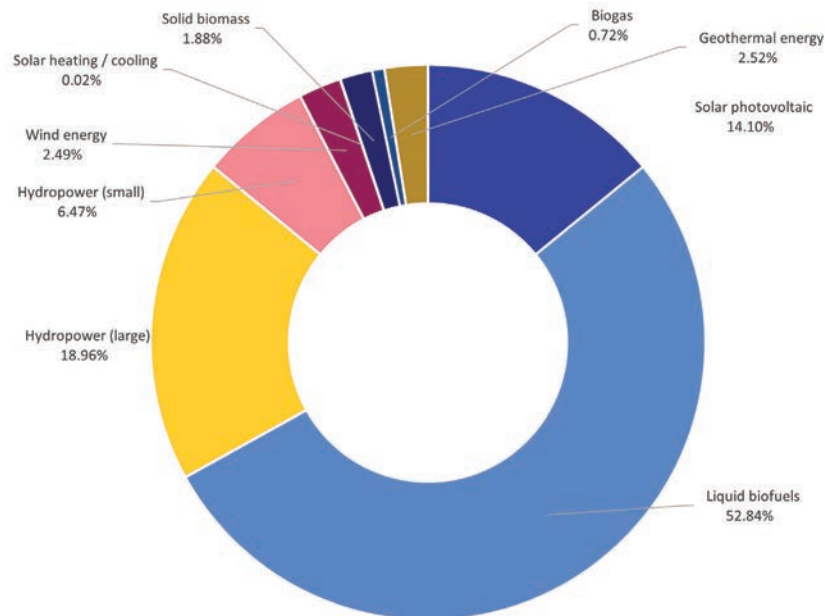


Figure 9: Employment in renewable energy, by source 2017

Note: The graph is the sum of data from all ASEAN Member States.

Source: ILO compilation using IRENA (2018), Renewable capacity statistics 2018, updated on December 2017, available at: <http://resourceirena.irena.org/gateway/dashboard/> (accessed 24 July 2018).

Women’s participation in green jobs is also an issue. Gender inequalities in labour markets emerge from the different roles and identities given to individuals depending on whether they are male or female. This impacts whether they are assigned particular positions, or segregated into particular occupations or sectors (ILO, 2015). These existing patterns of gender inequalities in accessing employment, training activities and gaining workplace experience will affect women’s access to green jobs in the same way they already impact access to existing jobs. Greening of jobs and economies offers both the opportunity to address these barriers to gender equality in work, but also bring a range of activities that women already fulfil into the realm of decent work (ILO, 2015, 2012). These activities include women’s role as forest stewards, farmers, entrepreneurs in ecotourism and waste management. This will require active policy engagement to create the conditions and structures necessary for gender equality in green jobs, including providing support for and redistribution of unpaid care work (Power for all, 2020).

Employment disruptions form the physical impacts of climate change

As noted at the beginning of this section, the physical impacts of climate change are also a significant driver of employment change in ASEAN. Climate change is already impacting the world of work. The increasing frequency and intensity of natural disasters is one example of this. Figure 10 shows the incidence and cost of natural events including extreme weather events in ASEAN from the 1980 to 2017. Both the incidence and cost of damages have increased significantly over these decades.

► Natural disaster occurrence and damage costs in ASEAN countries

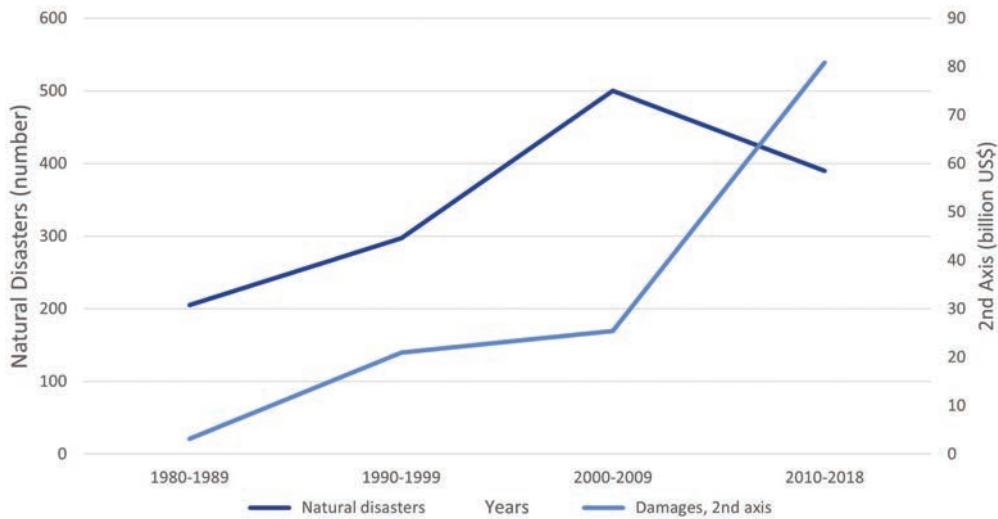


Figure 10: Natural disaster occurrence and damage costs in ASEAN countries

Note: Sum of data for ASEAN Member States. Natural events include climatological, hydrological and meteorological.

Source: EM-DAT: The Emergency Events Database – Universite catholique de Louvain (UCL) – CRED, D. Guha-Sapir – www.emdat.be, Brussels, Belgium. Data accessed on: 20 July 2018.

As a result of each of these aspects, jobs and productivity are lost. Estimates suggest an average loss of 536 working life-years in the Asia-Pacific region between 2008 and 2015 as a result of climate change, including extreme weather events and other forms of environmental degradation³ (ILO, 2018). The loss of working life-years in Asia-Pacific is the highest across the globe, with Africa the next affected region at 376 working life years.

Increasing temperatures and predicted changes in rainfall, without adaptations, will affect agriculture. Rising temperatures will also increase the incidence of heat stress and related health risks for workers. Heat stress will lead to decreased worker productivity, especially in workplaces where temperatures will rise above 38 degrees. The ASEAN region is highly vulnerable to heat stress. ILO analysis suggests that 2 per cent of the total number of working hours in 1995 was lost to heat stress, and by 2030 this will have increased to 3.1% on average across the region (ILO, 2019b). This is the equivalent of 62 million full time jobs. Figure 11 shows working hours lost to heat stress by sector and country.

Country	1995						2030					
	Agriculture (in share) (%)	Industry (%)	Construction (in shade) (%)	Service (%)	Total (%)	Total (thousand full-time jobs)	Agriculture (in share) (%)	Industry (%)	Construction (in shade) (%)	Services (%)	Total (%)	Total (thousand full-time jobs)
Brunei Darussalam	1.64	0.27	1.64	0.01	0.27	0	4.27	0.88	4.27	0.03	0.45	1
Cambodia	9.05	3.99	9.05	0.67	7.53	394	14.52	7.80	14.52	1.70	7.83	769
Indonesia	4.00	1.03	4.00	0.03	2.14	1885	7.68	2.80	7.68	0.17	2.97	4018
Lao PDR	3.18	1.28	3.18	0.21	2.80	52	5.71	2.66	5.71	0.49	4.51	158
Malaysia	3.09	0.71	3.09	0.04	1.05	83	6.18	1.91	6.18	0.12	1.51	246
Myanmar	5.21	2.09	5.21	0.30	3.21	720	8.71	4.12	8.71	0.67	2.65	855
Philippines	3.20	0.89	3.20	0.06	1.62	426	6.50	2.35	6.50	0.23	2.33	1217
Singapore	4.33	0.80	4.33	0.01	0.50	8	9.30	2.52	9.30	0.07	0.84	33
Thailand	8.10	3.76	8.10	0.71	5.34	1695	13.03	7.08	13.03	1.63	6.39	2637
Viet Nam	5.71	2.38	5.71	0.35	4.40	1650	9.71	4.96	9.71	1.03	5.14	3062
Southeast Asia	5.20	1.68	5.20	0.19	3.10	6913	8.87	3.89	8.87	0.54	3.66	12999

Figure 11: Working hours lost to heat stress by sector and country in 1995 and 2030 (projections) in ASEAN

Note: The table shows the percentage of working hours lost to heat stress (and the associated health, well-being and productivity effects) in each sector and in the economy as a whole. It also shows the equivalent loss in terms of full-time jobs for the economy as a whole. Work in agriculture and construction is assumed to be carried out in the shade. The heat stress index for work in the sun in the afternoon adds about 2-3°C to the in-shade WBGT (see Appendix II for further details). The data are based on historical observations and on estimates obtained using the RCP2.6 climate change pathway, which envisages a global average temperature rise of 1.5°C by the end of the century.

Source: ILO estimates based on data from the ILOSTAT database and the HadGEM2 and GFDL_ESM2M climate models.

³ The estimates take into consideration casualties, people affected and damages resulting from meteorological (storms, fog, extreme temperature), hydrological (floods, landslides, wave action), climatological (drought, glacial lake outburst, wildfires), biological (insect infestation) and certain technological (industrial or miscellaneous accidents) hazards. Estimates do not include casualties, people affected or damages resulting from geophysical (earthquake, mass movement, volcanic activity), biological (viral, bacterial, parasitic, fungal or prion disease epidemics, animal accidents), extra-terrestrial (impact, space weather) or certain technological (transport accidents) hazards. The methods used follow Noy’s (2014) approach, with adjustments for retirement age and national employment-to-population ratios (ILO, 2018)

2.3 Global examples of policies promoting green jobs and just transition

Establishing policy settings to encourage the creation of green jobs and a just transition is a task facing all nations across the globe, and a task that most countries are just starting on. There are two relevant global examples of policy frameworks that are, or are being, established to assist in the promotion of green jobs and just transition; i) the European Union (EU) Green Deal, ii) the UN Climate Action for Jobs Initiative.

EU Green Deal

The EU Green Deal is the plan to enable the EU to achieve climate neutrality by 2050. The plan targets all areas of the economy and includes activities such as⁴:

- investing in sustainable technologies at all scales through the economy;
- supporting industry to innovate to carbon neutrality;
- supporting cleaner, cheaper means of public and private transport;
- decarbonising the energy sector;
- ensuring energy efficiency in the built environment; and
- working with international partners to improve global environmental standards.

The Green Deal also includes a €100 billion Just Transition Mechanism to assist the most affected workers and regions in alleviating the negative socio-economic impacts of transition. The funding is to be invested between 2021-2027. The Just Transition Mechanism has three pillars:

- A new Just Transition Fund - €40 billion, leveraging a further €89-€107 billion in investments to support Just Transition;
- InvestEU Just Transition Scheme;
- European Investment Bank public sector loan facility.

Territorial just transitions plans will identify the regions and areas where the Just Transition fund will be targeted. These plans set out the Just Transition challenge faced by regions and how development activities and investments will address these challenges by 2030.

UN Climate Action for Jobs Initiative

The UN Climate Action for Jobs Initiative⁵ was launched out of the 2019 UN Climate Summit and commitments by 46 nations to formulate national plans for a just transition through social dialogue, creating decent and green jobs and fulfilling ambitious climate action.

The Climate Action for Jobs initiative provides a roadmap to boost climate action, ensuring that people's jobs and well-being are at the centre of the transition to a carbon-neutral and climate-resilient economy.

4 The European Union Green Deal https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

5 UN Climate Action for Jobs Initiative https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/generic-document/wcms_732092.pdf

The Initiative brings a programmatic response and technical support for countries making commitments on just transition to achieve ambitious climate change mitigation and adaptation goals, while enhancing job creation and economic diversification, and ensuring a transition that is fair and inclusive.

The Initiative has five expected outcomes:

- ▶ Higher cumulative impact through coordinated environmental, employment and social policies;
- ▶ Broad-based support mobilised around bold climate action and a job-rich transition to environmental sustainability;
- ▶ Stronger national capacity to address skills gaps and supply the skills needed for new employment opportunities in ambitious climate action;
- ▶ Public and private investment and enterprise practices directed towards a carbon-neutral economy with decent work;
- ▶ Social and economic risks of climate change and responses addressed through effective social protection measures.

The ILO is mandated to implement the initiative through a strategy. A strategy of action until 2030 has been developed under the advice of an International Advisory board.



3. Policy readiness for supporting green jobs promotion and a Just Transition in AMS

There is no question that environmental sustainability and employment are closely linked. As much as 1.2 billion jobs globally rely directly on the effective management and sustainability of the environment. The transition to a green economy, addressing the challenges of climate change, environmental degradation and resource limits will require a decoupling of economic growth from greenhouse gas production and resource use (ILO, 2018).

ILO has calculated that the measures taken to reach a green economy by decarbonise the production and use of energy will lead to job losses of 6 million as well as the creation of some 24 million new jobs – a net increase of 18 million jobs resulting from changing the energy mix to renewable energy and taking up energy efficacy opportunities (ILO, 2018). Also, the move to more sustainable agricultural practices can both reduce emissions as well as enhance the decency of work in agriculture by introducing additional opportunities for wage employment, for example medium and large organic farms, as well as allowing small holders to diversify income sources through conservation agriculture.

Policy is necessary to both ensure the maximum amount of potential green jobs are created, and the labour force is skilled and ready to take up this employment. Policy must also ensure that workers who are in industries negatively affected by greening are provided with support and opportunities for skills development and training so they can effectively transition to new employment. Just transition includes a set of principles, processes and practices that produce plans, policies, investments and concrete measures designed to move the world towards a future where jobs are green and decent, carbon emissions are net zero, poverty has been eradicated, workers and their families enjoy their human right to social protection and communities are thriving and resilient (ILO, 2019). There is significant scope for policies in the world of work to advance environmental sustainability, and for environmental sustainability to enhance decent work conditions (ILO, 2018).

3.1 Policy elements for green jobs and a Just Transition

The policy mix for promoting green jobs and skills, as well as a Just Transition, is broad, including measures to produce green jobs in traditional and emerging sectors, but also measures to reduce the impacts of job losses and industry phase-outs on workers and communities. This encompasses many policy fields including development and employment policy, energy policy, industry policy, training and skills development, as well as sectoral level policies and policies at different jurisdictional levels. The broad array means that in addition to a policy mix; policy coherence and coordination are also critical issues in the successful implementation of policies for promoting green jobs. For analysis purposes three broad areas are helpful in distinguishing green jobs policies:

- Policy influencing the demand for green jobs;

- Policy influencing the supply of workers to undertake green jobs; and,
- Institutional arrangements.

Policies influencing the demand for green jobs include macro-economic national development policy, and, increasingly, how these policies encompass the green agenda of individual nations (including how they will meet Paris Agreement targets through the NDCs), and how the impacts of this national development agenda manifest in labour markets. It is important to know how the employment implications of green economic policies and NDCs – essentially climate action and climate change – will map to employment and the employment of specific groups of people, including women, young people, and people working in specific geographical areas.

Other key policy areas affecting demand for green jobs include policies for mitigating and adapting to climate change, energy policy, and industry policies – particularly in target sectors for green jobs such as agriculture, forestry and fishing, manufacturing, construction and the built environment, transport and waste. Other strategies and plans for how public investments in infrastructure, procurement, and research and development support all play a role in creating demand for green products, services and organisations and thereby, green jobs.

The government's role encouraging private sector activities in the green economy is also critical. This includes specific policy support for subsidies and access to finance for greening production and employment, support for commercialisation and green entrepreneurship, the creation and enforcement of a supportive regulatory system for environmental sustainability and the creation of new, green markets – such as through payments for ecosystem services.

Policies and mechanisms that influence the supply side for green jobs include skills development policies and the institutions that provide and assess these skills such as Vocational and Technical Training organisations (Sakamoto and Sung, 2018). For green skills to adequately diffuse through the work force, an understanding of what green skills are, and how they are different/ additional to the skills that are already in the workforce, helps to define the re-skilling and re-training needs of the green economy. As the greening of the economy will impact most occupations and professions to some degree, understanding how and where these skills can be learnt on-the-job, and that these skills can be recognised and assessed.

The availability of social protection for workers and communities who are affected by the physical impacts of climate change or adverse effects from green policies is also important. A comprehensive social protection system includes measures that enhance the adaptive capacity of individuals and communities to absorb and respond to shocks. Measures include affordable health care, unemployment protection and facilitated early retirement for workers of advanced age at risk of losing their jobs due to phase-outs of carbon-intensive industries (ILO, 2019). Social protection measures also need to extend to workers who lose their jobs or working hours due to climate related impacts such as extreme weather events. In this case, examples of relevant measures are unemployment benefits and employment guarantee schemes that engage workers in the rebuilding of their communities after natural disasters associated with climate change (ILO, 2019). Cash transfer schemes that are flexible and rapidly scalable to expand coverage to affected groups can also be effective measures to cushion populations against climate-related impacts.

The creation of just transition plans for sectors and geographies that are highly impacted by decarbonisation will ensure that workers and communities negatively impacted by greening in the economy will not be left behind and have pathways to transition to new employment. Just transition planning is a new skill set for policy makers.

As the employment implications of the green economy are far-reaching and involve many public institutions, how policy is coordinated across government and the economy is integral to the success

of these green policy frameworks. Therefore, part of the policy mix also needs to consider how policies are coordinated and coherent in total.

3.2 Green Jobs policy readiness and how we assess

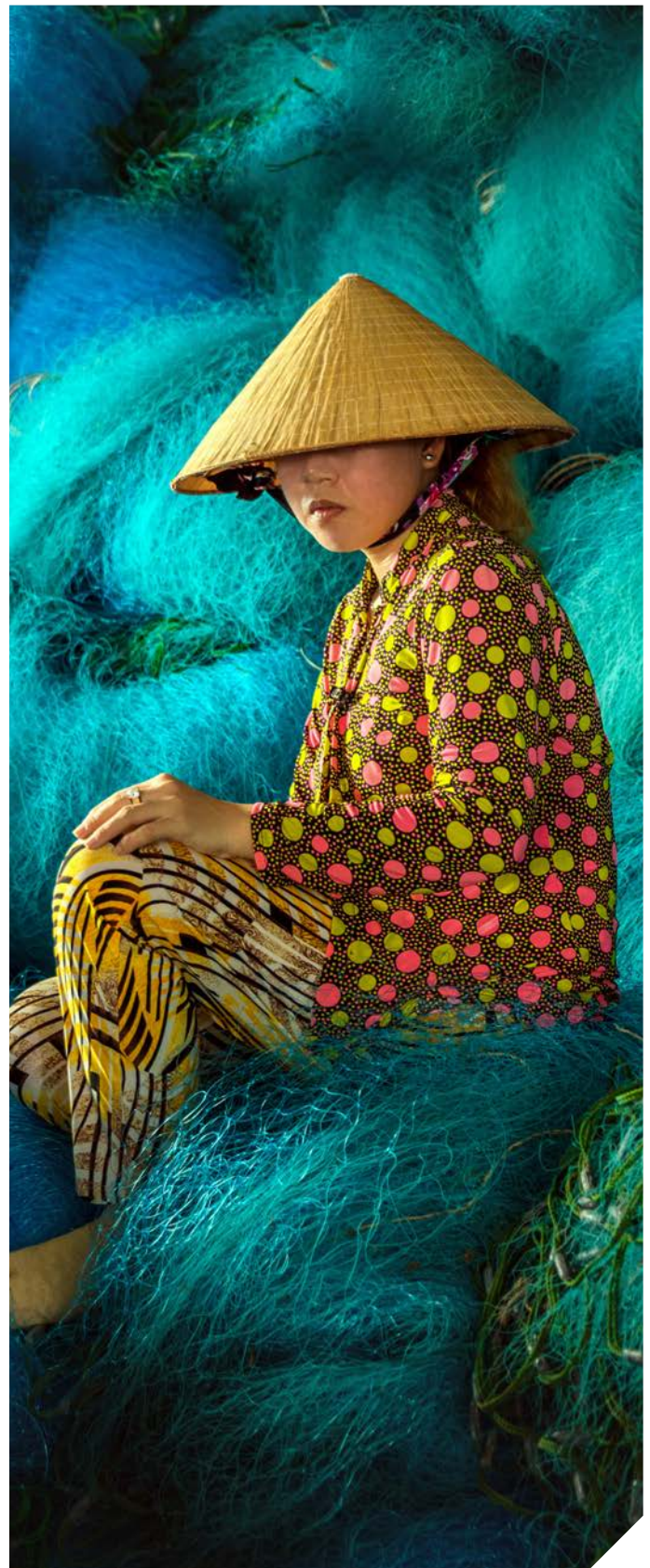
The ILO *Guidelines for a just transition towards environmentally sustainable economies and societies for all*¹ (ILO, 2015) highlight the greening of economies and work will require “a country-specific mix of macroeconomic, industrial, sectoral and labour policies that create an enabling environment for sustainable enterprises to prosper and create decent work opportunities by mobilizing and directing public and private investment towards environmentally sustainable activities” (2015: p6).

The Just Transition guidelines highlight nine key policy areas for Just Transitions:

1. Macroeconomic and growth policies
2. Industrial and sectoral policies
3. Enterprise policies
4. Skills development
5. Occupational safety and health
6. Social protection
7. Active labour market policies
8. Rights
9. Social dialogue and tripartism

Table 1 shows a policy framework for promoting green jobs and just transition. This framework was developed by combining the nine key policy areas identified in the Guidelines for a Just Transition, and categorising each into the three broad areas of policies that promote

¹ https://www.ilo.org/global/topics/green-jobs/publications/WCMS_432859/lang--en/index.htm



► **Table 1: Promoting green jobs and just transition policy framework**

Category	Macro-economic and growth policies	How assessed?
Creating demand for green jobs	National development framework <ul style="list-style-type: none"> Green agenda established in National Development Framework Climate change impact and assessment plans Links to international agreements such as the Paris Agreement and Nationally Defined Contributions 	National development plans and Questionnaire
	Public investment leveraged for green jobs <ul style="list-style-type: none"> Infrastructure investments – climate and green job issues included Policies for green public procurement Policies for green eco-innovation/ R&D support 	National development plans, policies for public procurement, innovation support and questionnaire
	Industrial and sector policies	
	<ul style="list-style-type: none"> Target sectors for green jobs/ just transition identified, scoped, sectoral strategies developed involving social dialogue processes Sector specific policies e.g. Energy, Waste, Industry, Agriculture, Built Environment 	Green Jobs studies and questionnaire Sector policies
	Enterprise policies	
	<ul style="list-style-type: none"> Information, assistance and financial incentives for greening in enterprises Green Entrepreneurship support, including support for women and young entrepreneurs Business resilience programs to support enterprises in implementing adaptation especially in MSMEs and SMEs 	Green economy plans and strategies and questionnaire
Creating supply for green jobs	Skills development	
	<ul style="list-style-type: none"> Green skills consensus Identification of skills needs, including for target groups such as women and young people Assessment of adequacy and availability of green skills training, plans for enhancements Integration of on-the-job training/ skill acquisition into formal training and accreditation systems 	Questionnaire and skills studies
	Active labour market policies	
	<ul style="list-style-type: none"> Green jobs and green skills labour market information available by demographics and geography Just transition plans and social dialogue in impacted industries/ hotspots Re-training and transition programmes for affected workers Labour market policies linked to infrastructure and industry development policies 	Green jobs studies/ Questionnaire
Institutional arrangements	Occupational Safety and Health	
	<ul style="list-style-type: none"> OSH risks associated with climate change and resource scarcity assessed Convention 155 on OSH in force 	ILO Conventions and questionnaire
	Social protection	
	<ul style="list-style-type: none"> Unemployment protection Social protection mechanisms that contribute to offsetting the impacts of climate change and the challenges of the transition on livelihoods, incomes and jobs 	ILO Conventions ² and Recommendations and questionnaire
	Cross-cutting elements	
	<ul style="list-style-type: none"> Inclusion of labour rights and standards into green job and just transition policies Social dialogue processes informing the development and implementation of greening policies Convention 144 on social dialogue in force Measures to achieve policy coordination and coherence 	ILO Conventions and questionnaire

² ILO Convention 102 covers social security minimum standards. To date no ASEAN countries have ratified C102. A number of countries recognise Recommendation 202 on Social Protection Floors. Recognition of recommendations is an important step, but ratification of conventions provides a higher, preferential standard, and hence is still included in the discussion on social protection in this report. Social Protection, especially as how the further needs for social protection will be impacted by greening requires further discussion and analysis in AMS (see recommendation 9 of this report).

3.3 Policy readiness and how to assess

Policy readiness is a multi-level construct, but essentially refers to the ability of a policy framework to signal and implement change. Here change refers to the economy that transitions it to a green economy, but more specifically to the task of managing the employment implications of this transition by promoting green jobs and a just transition.

Measuring readiness involves a systematic assessment of an organisation's, or in this case a policy framework's, ability to undertake transformational change. The assessment examines the current infrastructure – the presence of elements of the policy framework outlined in Table 1 identifies challenges, where new procedures, processes and policies are needed, and gaps. In assessing readiness, we are looking to identify the elements of the green jobs and Just Transition policy framework, highlight where they are sufficient (containing all the sub-elements listed in the table), and identify where there are challenges and gaps.

In order to assess the available policies in each AMS against this policy mix, a detailed questionnaire was completed by each country³ (questionnaire is available in Annex A). This questionnaire sought details on each of the elements listed above. This questionnaire represents a significant resource of comparative policy on green jobs and skills, and is the first of its kind for ASEAN.

The questionnaire responses and additional document analysis were assessed for each AMS in order to develop a narrative analysis for each country. This narrative analysis describes the specific evolution and context for the green jobs policy framework. This narrative analysis is organised into four sections:

- Green economy agenda, plans and strategies;
- Green jobs and green skills policy support and integration;
- Private sector activities, initiatives and support; and,
- Co-ordination.

In addition to the narrative analysis, there is a summary table for each country. This table provides a colour coded summary of the findings, with green representing significant elements of the framework element in place and readiness for activities to promote green jobs and just transition, orange representing the need for additional processes and policies which in many cases are identified/in development, grey representing no policy elements identifiable to date from questionnaire and document analysis.

³ To date all countries except Indonesia have completed the questionnaire, the Indonesian narrative presented in this section is based on desk-top analysis.



4. Country-level analysis

This section presents analysis from each of the AMS that completed the questionnaire. This analysis was also supplemented with additional information from other relevant studies and reports. These studies are referred to in-text when used, otherwise it should be assumed that information for each country is derived from the questionnaire responses.

4.1 Brunei Darussalam

The Sultanate of Brunei Darussalam is located on the northern coast of Borneo island in Southeast Asia. With a population of 442, 400 (2018), it has the smallest population in ASEAN. The majority of the population lives in urban regions that are rapidly growing. Around 72 per cent of the population is of legal working age (15–64 years), with a labour force participation rate of 67 per cent and a employment-to-population ratio of 62.34 per cent. Both these rates are more than 15 to 20 percentage points higher for men than for women. The total unemployment rate in 2018 was 9.32 per cent. Additionally, the youth unemployment rate was 28.15 per cent, with the female unemployment rate in this age group being 5.25 points higher than the male rate (ILO, 2019)¹.

Brunei Darussalam is a high-income country with a GDP (purchasing power parity (PPP)) per capita exceeding USD 80,000 (World Bank, 2019). This is mainly due to its oil and gas resources. The country's economy is highly dependent on trade, with exports and imports constituting 52 and 42 percent of GDP, respectively (World Bank, 2019). The country's average carbon dioxide emissions per capita was 17.91 tonnes in 2017 (OWID, 2020).

Green economy agenda, plans and strategies

The overall greening agenda in Brunei is developed within the Brunei Darussalam Vision 2030 and the Strategic Planning and Policy Framework of the Ministry of Development (2018-2023). Both these policies provide for the planning and implementation of development projects to adhere to National and Regional Environmental Planning laws, and act to conserve natural resources. This includes systems for Environmental Impact Assessment and Environmental Management and Monitoring Plans as well as activities to increase human capital, with an emphasis on scaling vocational education and training activities. These strategic documents also have links to further strategies and plans with specific sustainability domains such as waste, energy, climate change adaptation and bio-diversity conservation.

Brunei Darussalam has a target of zero waste by 2035 which includes various regulatory and education programs to phase out plastics and address marine and river debris. Currently Brunei Darussalam generates around 1.3kg of solid waste per capita per day, which is one of the highest levels in ASEAN. The Policy and Program to Promote Resource Use Efficiency aims to reduce solid waste to equivalent of 1kg per day/ capita and a target recycling rate of 35% by 2035.

¹ Country level data is drawn from ILO data sets to allow for cross-country comparisons. Specific country data is used in some cases and may differ slightly in total figures or collection year to ILO data sets.

An estimated 16-20 percent of this solid waste is plastic (Akenji et al, 2019). Current waste policy in Brunei has a clear focus on reducing plastic waste and pollution especially in marine environments. An initiative that restricted the use of polythene plastic bags on the weekend, the 'No plastic bag weekend', was then extended to all days of the week in January 2019, with the 'No Plastic Bag Everyday' Initiative (Norjidi, 2019). This initiative has been extended to other plastic products, such as plastic bottles, and is further supported by the other Zero Waste policy measures including the gradual phase-out of the import of plastic bags and their distribution at retail outlets (APEC, 2019). Other regulatory measures and initiatives have focused on plastic waste and plastic pollution in coastal areas and at sea, including the Brunei River Clean-up project, and support and activities as part of the adoption of the Bangkok Declaration on Combating Marine Debris in the ASEAN region and the Framework of Action on Marine Debris adopted at the 34th ASEAN Summit in June 2019.

The Energy Department's 2013 White Paper on energy (March 2013) outlines Brunei's plans for increasing renewable energy. Currently only a small amount of the country's electricity is derived from renewable sources, but the energy paper called for a target of 10% by 2035, and an overall reduction in primary energy consumption by 63% by 2035 (from 2009 levels) and 20MW of installed solar capacity (ILO, 2019).

Brunei Darussalam is also in the process of approving the Brunei National Climate Policy (BNCP). This policy will map climate adaptation strategies and pathway to Paris Agreement Commitments. Strategies to reduce carbon emissions include a renewable energy target for electricity (what is it), and activities to increase carbon sinks. Adaptations include efforts to build resilience in the urban environment through flood mitigation, slope and coastal protection projects and other Environmental Impact Assessment prescribed activities.

In addition, the Water Conservation Policy aims to reduce the per capita water consumption and track accounted water usage, as well as building public awareness for the need for water conservation through education and community participation programs

Green jobs and green skills policy support and integration

The policies establishing the green agenda and green economy in Brunei are the primary mechanisms for triggering demand and supply for green jobs and skills. The Energy White Paper set out an employment target of 30,000 jobs in the energy industry by 2017 and 50,000 by 2035. The forthcoming BNCP is anticipated to further create demand in green jobs and green skills in energy, transportation (electric vehicles and associated service and maintenance activities), and forestry (ILO, 2019a).

Brunei has a conceptual definition of green jobs – employment involved in the preservation and restoration of environmental quality including in sectors such as agriculture, manufacturing, services, as well as research and development activities. Some green jobs are easily recognisable, such as jobs in waste recycling facilities, sustainable farmers and environmentalists, forestry officers and landscape architects. Where these jobs are existing and easily recognisable, skills and qualifications are developed and certified through a National Government Scheme of Service.

In the energy sector, an Energy Industry Competency Framework was adopted in 2013 through collaboration with the Energy Department of the Prime Minister's Office, the Ministry of Education and the wider energy industry. The framework i) defines competencies of jobs in the energy sector, ii) creates alignment between training providers and industry requirements, and iii) increases employability of workers in the sector through upskilling. The Framework also contributes to Energy department activities such as sponsored jobs fairs and careers roadshows (ILO, 2019a).

Just Transition planning appears to be a new concept, and it not identified or integrated in green economy policies. Overall the integration of labour market outcomes in green economy activities is more implicit and indirect. No specific policies exist to support the adoption of green jobs, green skills acquisitions or

the manage the negative impacts of decarbonisation. The impacts of decarbonisation will impact the labour market as global energy consumption transitions to renewable energy sources.

Private sector activities, initiatives and support

Private sector plays a clear role in the creation of green jobs and demand for green skills in Brunei, especially in the energy sector (hydrogen and solar). Reducing emissions and energy consumption in industry is seen as pathway to future industrial development and green job creation. There are a range of financial support mechanisms available to the energy sector including tax incentives, entrepreneurial support, incubators and global networking and mentoring to support private sector uptake of clean energy.

Coordination

Climate change and the need for mitigation and adaptation activities, and their linkages to the green economy are coordinated through strengthened governance mechanisms for cross-sectoral climate action. Governance is provided through the National Council on Climate Change, the Executive Committee on Climate Change and three working groups of climate mitigation, climate adaptation and Resilience and support frameworks. The forthcoming BNCP works from a whole-of -government approach, with support from various ministries and other stakeholders.

Policy readiness assessment

Policy area	Notes
1. Macro-economic growth plans and development policies establish the green agenda	Green economy ambitions and agenda established in development plans
2. Industrial and sector policies for greening	Energy, waste, water, climate adaptation
3. Enterprise policies and initiatives for greening	Focused on the energy sector
4. Skills development for green skills	Focused on the energy sector
5. Occupational Safety and Health for climate change issues	No information available, ILO C155 on OSH still to be ratified
6. Social protection ²	ILO C102 on social protection still to be ratified, no unemployment benefits, some medical and sickness benefits, and old-age, work injury, invalidity and survivors' allowances
7. Active labour market for greening	No detail available
Cross-cutting issues – labour rights and social dialogue processes in greening	ILO C144 on social dialogue still to be ratified

² The data on social protection for each of the AMS is drawn from ILO (2015a) The State of social protection in ASEAN at the dawn of integration, https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-jakarta/documents/publication/wcms_428982.pdf

4.2 Cambodia

Cambodia is located in the southern Indochina peninsula of Southeast Asia, sharing contiguous borders with Thailand, Lao PDR, and Viet Nam. Cambodia is predominantly a rural country. With an estimated population of 16.48 million, roughly 80 percent of Cambodia's population resides in rural areas. Around 64 per cent of the population is of legal working age (15–64 years). In 2018, the labour force participation rate was 84.9 per cent and the employment-to-population ratio was 84.45 per cent. Both these rates are more than 7 percentage points higher for men than for women. The total unemployment rate in 2018 was 0.18 per cent and the youth unemployment rate was 0.42 per cent, with near gender parity in both rates. The proportion of youths aged 15-24 years not in education, employment or training was 12.7 per cent in 2013. Employment is heavily reliant on agriculture and services, and on medium-skilled occupations (ILO, 2019)

Cambodia is divided into two dominant topographical regions: one is formed by the Tonle Sap and the Bassac river systems, located in the central part of the country. The other is made up by the Mekong River, which flows from Tibet through Southeast Asia into Cambodia and continues on to the South China Sea via southern Viet Nam.

Having maintained an average growth rate of 7.7% between the years 1995 and 2018, Cambodia has long held the status of being one of the fastest growing countries in the world (World Bank, 2019). Due in part to these trends, domestic consumption has expanded rapidly, accompanied by widening gaps in waste service provision (Akenji et al, 2019). Per capita carbon emissions in 2017 were 0.63 tonnes.

Green economy agenda, plans and strategies

In Cambodia there are three main policy elements that are informing the green economy and green job agenda in the country. The Cambodia Climate Change Strategic Plan 2014-2023, the National Policy on Green Growth and the National Strategic Plan on Green Growth 2013-2030 provide the overall policy framework for action on climate change.

The National Council on Green Growth formulated this plan with close linkages to Cambodia's national development priorities, as highlighted in the Rectangular Strategy-Phase IV for Growth, Employment, Equity and Efficiency - Building the foundation towards realising the Cambodia Vision 2050 of the Royal Government of Cambodia (RSP4). A central focus of the RSP4 is to ensure environmental sustainability and to anticipate and manage the impacts of climate change.

These policies mainstream the green growth agenda throughout the development plans for Cambodia. *The National Policy of Green Growth* and the subsequent *National Strategic Plan on Green Growth 2013-2030* has four pillars: economy, environment, society and culture. It also includes the following strategic focuses:

- Green Investment and Green Jobs Creation;
- Green Economy Management in balance with Environment;
- Blue Economy Development with Sustainability;
- Green Environment and Natural Resources Management;
- Human Resources Development and Green Education;
- Effective Green Technology Management;
- Promotion of a Green Social Safety System;

- Uphold and Protection of Green Cultural Heritage and National Identity; and,
- Good Governance on Green Growth (Kingdom of Cambodia, 2013).

The National Green Growth Road Map provides the path to implementation of the higher-level policy and national development plan instruments. The Roadmap is produced in consultation with line ministries.

The Cambodia Climate Change Strategic Plan prioritises adaptation activities in the agriculture sector, the largest employing sector in the country. Adaptation activities include adopting crop varieties better suited to the changing climate, increasing productivity, promoting the use of new and appropriate technologies and watershed and ecosystem management (ILO, 2019a). The plan includes a strategic objective to ‘promote adaptive social protection and participatory approaches in reducing loss and damage from climate change’, as well as access to climate-risk insurance and microfinancing for adaptations in local communities (ILO, 2019a)

The Cambodia Climate Change Strategic Plan also looks at mitigation activities including the promotion of renewable energy and energy efficiency, and includes planning for climate resilience in new infrastructure projects – all these activities are recognised opportunities for green job creation.

Green jobs and green skills policy support and integration

In Cambodia, *The National Strategic Plan on Green Growth 2013-2030*, the related *National Employment Policy 2015-2025* and the *ILO decent Work Country Program for Cambodia 2019-2023* set out definitions of green jobs as individuals engaging employment activities that preserve and restore environmental quality and help reduce negative environmental impacts. Green jobs can be found in green agriculture, green industry, green economy, green investment, green tourism, green infrastructure and other green-growth related sectors.

The Ministry of Labour and Vocational Training leads and manages employment and skills development in Cambodia. *The National Technical Vocational Education and Training Policy 2017-2025* refers to green skills as technical skills, knowledge, values and behaviours that the workforce needs to support socio-economic and environmental development in a sustainable manner. This policy has four main goals including i) improving TVET quality to meet national and international market demand, ii) increasing equitable access to TVET for employment generation, iii) promoting public-private partnerships and aggregate resources from various stakeholders to support the sustainable development of the TVET system, and iv) improving the governance of the TVET system.

Government scholarships and stipends are available for students to undertake training programmes, especially technical certificates 1, 2 and 3.

The National Strategic Plan on Green Growth also seeks to mainstream green skills in formal but also “non-systematic education” to ensure that greening is mainstreamed across the whole economy (ILO, 2019a).

Private sector activities, initiatives and support

The Cambodia green growth policy framework seeks to encourage, facilitate and incentivise private sector activities in the green economy. The policies and plans include priorities for technology transfer in energy, other pollution reduction technologies, energy efficiency technologies and clean energy technologies.

The policies also include a green certification policy for greening enterprises, and other fiscal and financial support mechanisms such as green finance and green credit, including micro-credit for enterprises to use environmentally sustainable production processes. Private investment activity in green investments

is actively sought including in the agriculture, industry, trade, transport, tourism and energy sectors. This investment is seen as a major source of green job creation.

The National Training Board provides for dialogue between line ministries, employers, trade unions and development partners on skill needs, development and employment. A number of sector specific Skills Councils also exist, including for auto-mechanics, construction, electrical works, and manufacturing. These Councils help identify occupations and labour market demands and develop relevant training standards in line with the Cambodian Qualification Framework. Membership of these Councils include government, private sector representatives and training providers. Green skills and TVET policies are seeking to both mainstream greening and also provide closer coordination between industry green skill needs and available training courses.

Cambodia has recently introduced the 2nd Occupational Safety and Health (OSH) Plan 2018-2022. The plan consists of six priority actions:

- Strengthen national occupational safety and health systems;
- Improve safety and health inspections and compliance with the labour law;
- Promote OSH activities by employers' and workers' organizations;
- Implement special programmes for hazardous occupations;
- Extend OSH protection to small enterprises and rural informal economy workplaces; and,
- Support and promote OSH collaboration on child labour elimination, combating drug, communicable diseases and other communicable disease in enterprise and establishments.

The Plan does not specifically address OSH-related risks associated with climate change, greening and environmental degradation, although the Plan does aim at strengthening the overall institutional capacity to identify and manage workplace risks. However, green technology was introduced at the Environmental Risk Assessments (EIAs) Meeting, which was attended by inter-ministerial representatives to assess and evaluate all projects invested in Cambodia. In addition, the various topics of training programmes were conducted in SMEs and rural areas in collaboration with ILO and other partners to improve the working conditions by using the ILO training manual on Work Improvements in Small Enterprises (WISE), Work Improvement for Safe Home (WISH), Work Improvement at Small Construction Sites (WISCON) and Work Improvement in Neighbourhood Development (WIND), which is under the implementation of the 2nd OSH Master Plan. Cambodia's high vulnerability to the physical impacts of climate change make this an important priority for future action plan.

The National Social Protection Policy Framework 2016-2025 adopted by the Council of Ministers in the plenary session on 24th March 2017 is a long-term roadmap that focuses on two main pillars: Social Assistance System and Social Security System. The Social Assistance System foresees interventions for the poor and most vulnerable people and subsidies from the national revenue such as taxes and Official Development Assistance (ODA). This social assistance system in Cambodia is divided into 4 components: (i) emergency response, (ii) human capital development, (iii) vocational training and (iv) welfare provision for the most vulnerable people, whereas the Social Security System includes programs and schemes that aim at protecting people from abrupt income declines due to sickness, maternity, employment injury, invalidity, old age and survivors' benefits. In the Cambodian context, the social security system is obligatory and requires its members or certain groups of citizens to pay contributions based on their level of income. The social security system in Cambodia consists of 5 components: (i) pension, (ii) health insurance, (iii) employment injury insurance, (iv) unemployment insurance and (v) disability insurance.

The Law on Social Security Schemes, which aims to establish social security schemes of the Kingdom of Cambodia with a view to ensuring equity and social solidarity and promoting the welfare and livelihood

of all citizens, was promulgated on 02 November 2019³. This law defines common principles, procedures, mechanisms and administration system of social security schemes of the Kingdom of Cambodia such as Pension, Health Care, Occupational Risk and Unemployment Schemes and covers the persons under public sector, persons defined by the provisions of the Labour law including personnel serving in air and maritime transportation as well as domestic workers and the self-employed.

Coordination

The green growth policy framework provides for a number of opportunities for policy coordination, including the production and implementation of the National Green Growth Roadmap, which was produced with repeated consultations with line ministries.

Line ministries have implementation responsibilities that are detailed in subsidiary plans such as the *National Technical Vocational Education and Training Policy 2017-2025*. There are also examples of institutions that allow dialogue on policy issues between government, enterprises and the private sector, workers’ and employers’ organisations and other civil society actors. For example, the National Training Board and Sector Skills Councils.

Policy readiness assessment

Policy area	Notes
1. Macro-economic growth plans and development policies establish the green agenda	Green economy well established in development plans
2. Industrial and sector policies for greening	Energy, Industry, Agriculture, Climate Change, TVET and Education
3. Enterprise policies and initiatives for greening	Including regulations, incentives, access to finance and training activities
4. Skills development for green skills	Greening mainstreamed in emerging TVET and training providers, efforts to cover greening in non-systematic educational settings
5. Occupational Safety and Health for climate change issues	OSH plan in place for increased capacity building and monitoring of OSH (has not ratified – ILO C155)
6. Social protection	Medical care, old-age benefits, survivors’ benefits, sickness, employment injury, and maternity benefits are available; no family allowance and the recent law introduced for unemployment benefits for future implementation (has not ratified – ILO C102)
7. Active labour market for greening	No information available
Cross-cutting issues – labour rights and social dialogue processes in greening	Social dialogue processes have been included in the development of green economy agenda (has not ratified – ILO C144)

³ For further reference please see https://nspc.gov.kh/Images/SPFF_English_2019_10_28_12_10_56.pdf

<http://www.nssf.gov.kh/default/wp-content/uploads/2020/09/Law-on-Social-Security-Schemes.pdf>

4.3 Indonesia

Indonesia is the world's fourth most populous nation and the 10th largest economy in the world in terms of purchasing power parity (World Bank 2020). Indonesia consists of more than 17,504 islands, with over 900 inhabited. Its population of more than 257 million is majority urban, and is growing at a fertility rate of 2.4 children and life expectancy at 69.1 years. Around 67 per cent of the population is of legal working age (15–64 years) (ILO, 2019).

As of 2017, the labour force participation rate is 67.3 per cent and the employment-to-population ratio is 63.4 per cent. Both of those rates are more than 30 percentage points higher for men than for women. The total unemployment rate is 5.8 per cent, and the youth unemployment rate is 19.2 per cent - with the female youth rate 2.4 percentage points higher than the male rate. Formal employment is heavily reliant on services (at 46.2 per cent), followed by agriculture (at 31.4 per cent) and industry (at 22.4 per cent) and on medium skilled occupations (ILO, 2019).

Indonesia has a significant manufacturing and services sectors, and unlike many of ASEAN countries agriculture, forestry and fisheries contributing only 12.8 per cent to GDP (PAGE stocktaking, 2020). As the largest economy in the ASEAN region, Indonesia has significant carbon emissions (585 million tonnes in 2017) and is the fourth largest contributor of carbon emissions in the world. Per capita this equates to 2.21 tonnes per person in 2017, which is low in ASEAN (OWID, 2020). Indonesia has committed to reduce GHG emissions by 29% by 2030 as part of its commitments to the Paris Agreement.

Green economy agenda, plans and strategies

Indonesia is explicitly incorporating environmental considerations (such as carbon emissions targets and estimated carrying capacity of ecosystems) into their development planning. The Low Carbon Development Initiative (LCDI) commenced in 2017 and aims to incorporate environmental elements (carbon emission reduction targets and carrying capacity of natural resources) into the national development plans, balancing environmental impacts with economic and employment growth. This means Indonesia's National Medium-Term Development Plan (2020-2024) is being developed with insights from Strategic Environmental Assessments, including a system dynamic modelling tool that allows social, environmental and economic impacts of various development scenarios to be modelled and assessed. The LCDI is coordinated by the Ministry of Development Planning/ National development Planning Agency of the Republic of Indonesia, BAPPENAS.

The Ministry of Finance has also developed the Green Planning and Budgeting Strategy for Indonesia's Sustainable Development (2015-2020). This strategy identifies six policy areas for prioritisation in Indonesia's green economy. The sectors are forestry, peatland and marine resources, agriculture, energy and industry, transport, urban and regional development. A further 21 priority programme in the six policy areas are aimed at achieving employment and economic benefits from the transition to a green economy. Agriculture, specifically the palm oil industry, where Indonesia is one of the largest producers of palm oil products, and forestry (where Indonesia has more than 90 million hectares of forests) both offer significant sources of green jobs, with appropriate support and incentives.

Indonesia has a comprehensive suite of energy, renewable energy and energy efficiency policies including the National Energy Policy (GR No. 79/2014) which incorporates principles of fairness, sustainability and environmental protection into energy considerations, and the National General Energy Plan (Presidential Regulation No. 22/2017) which provides for a renewable energy target of 25% by 2025 and 40% by 2050, and a reduction in energy intensity of 1% annually between 2015-2025.

Indonesia has also established a roadmap for waste reduction, *Clean from Waste Indonesia* (Indonesia Bersih Sampah 2025). The Roadmap aims for a 30 per cent reduction in waste and reductions increases



in the amount of waste diverted from landfill. A significant challenge for Indonesia is the low rates of solid waste collection, a low as 15 per cent in some areas (Akenji et al, 2019).

A number of programmes have been implemented associated with this roadmap including 2020 Zero-Waste Indonesia, which requires payment for plastic bags, and an Integrated Waste Management Facility for Reduce-Reuse-Recycle. Indonesia also has policy for addressing marine waste through the National Action Plan on Marine Debris. This Plan aims at reducing marine waste by 70 per cent by 2025, and includes ongoing collaborations with global and local scientific organisations and NGOs for monitoring and mapping marine waste (Akenji et al., 2019). A number of municipal governments have also set up 'waste banks' where people can trade their waste for small amounts of money. More than 5,200 waste banks have been created (as of 2017) handling about 2% of waste flows generated nationally. These waste banks also have the additional benefits of helping to create public awareness and local capacity in waste management as well as generating local employment (PAGE 2020). The Making Indonesia 4.0 Initiative includes efforts to incorporate sustainability standards into production and consumption activities.

Green jobs and skills, policy support and integration

Indonesia's green economy agenda in renewable energy, transport, and emissions reduction and energy efficiency in industry, alongside cleaner production will have labour market impacts. Seven national level government institutions have been identified as partners for promoting and developing green jobs and green skills in Indonesia, including: the National Energy Council (DEN), The National Development

Agency (BAPPENAS), the Ministry of Energy and Minerals, the Ministry of Environment and Forestry, the Ministry of Agriculture, the Ministry of Industry and the Ministry of Manpower. In addition to these government partners, various civil society organisations such as the Indonesia Environmental Forum and KAHUTINDO (an organisation that trains workers in sustainable forest management and reducing emissions from deforestation and forest degradation (REDD)); as well as key multilateral (such as ILO, UNDP) and donor organisations (USAID, CARE Indonesia).

The LCDI, particularly phase 1 includes modelling of development policies in six inter-related areas:

- Energy
- Industry
- Agriculture
- Forestry
- Housing
- Fisheries

The analysis examines the implications on these sectors of emission reduction targets, economic and employment activity, poverty alleviation, with the impacts on environmental carrying capacity and quality. In this model labour market outcomes including employment and employment quality (proxied through salaries and decent work criteria) are included.

The Green Planning and Budgeting Strategy highlights that Indonesia has a high risk of experiencing severe negative economic impacts from climate change impacts and associated adverse impacts on living standards and work opportunities (ILO, 2019a). The Strategy aims to ensure that green economy objectives are included in future initiative and policy activities by line ministries, some of which are linked to labour market outcomes. Green jobs are envisaged to create more employment, outnumbering any employment losses associated with movement away from coal as an energy source.

In terms of green skills, there has been some integration of green skills into the Indonesian TVET system including the inclusion of energy literacy content into relevant subjects, increasing energy literacy through extracurricular activities, and the involvement of some TVET institutions in green campus metrics (Setiawan, 2017).

Private sector activities, initiatives and support

In Indonesia's low carbon development planning, the private sector plays a key role in leveraging necessary funding for and implementation of the green economy agenda. The private sector is involved in developing and implementing green technology, products and services. An identified challenge with private sector involvement in achieving green economy agenda is the provision and alignment of incentives for enterprises, especially small and medium sized enterprises.

A number of enterprises within Indonesia have already developed good practice elements of green jobs and green skills in their respective sectors. For example, the Astra Daihatsu Motor Group with their Green Environment Commitment, HM Sampoerna with environmental health and safety activities and the Pandawa Group model of green business in farming.

Indonesia has a suite of policies and institutions to enable financing by the private sector of green economy agenda. For example, the state-owned financing institution, PT Sarana Multi Infrastruktur (PT SMI), has a mandate to support blended finance schemes that optimise social, environmental and economic outcomes of investments and support the achievement of the sustainable development goals

(SDGs). Recently PT SMI remit has been extended to include financing social and health infrastructure (hospitals, wet-markets, terminals), tourism and transport and rolling stock, as well as cooperating with multilateral and donor organisations in infrastructure projects for electricity, transportation, telecommunications wastewater management irrigation, and road infrastructure (PAGE, 2020).

Coordination

Coordination, and the presence of coordinating mechanisms for regulatory and operational procedures, the need for high engagement and communication with stakeholders and the existing silo-based institutional setting are all identified as challenges in implementing the LCDI. Identifying and implementing coordination mechanisms across regulatory procedures, but also the vast array of stakeholders necessary for the success of low carbon development is a challenge shared with many other AMS.

Policy readiness assessment

Policy area	Notes
1. Macro-economic growth plans and development policies establish the green agenda	Green economy well established in development plans
2. Industrial and sector policies for greening	Specifically, Energy and waste sectors
3. Enterprise policies and initiatives for greening	Focus on access to finance
4. Skills development for green skills	Emerging skills development policies in place, need systematic expansion
5. Occupational Safety and Health for climate change issues	ILO C155 on OSH still to be ratified, no other information available
6. Social protection	ILO C102 on social protection still to be ratified, medical, old-age, work injury, invalidity and survivors' benefit available, no family allowances and limited unemployment and sickness benefit available.
7. Active labour market for greening	Emerging
Cross-cutting issues – labour rights and social dialogue processes in greening	C144 in force, no specific detail on social dialogue processes in green economy plans

4.4 Lao PDR

The People’s Democratic Republic of Lao PDR is a mountainous multi-ethnic inland country traversed by the Mekong River. It has a population of 6.9 million (World Bank, 2017) and although the urban share has grown rapidly in recent years, it is still predominantly a rural economy with an urbanisation rate of just 34 percent.

Administratively, Lao PDR is divided into 18 provinces, 148 districts and 8,464 villages. Around 63 per cent of the population is of legal working age (15–64 years). As of 2017, the labour force participation rate is 77.8 per cent and the employment-to-population ratio is 76.6 per cent, and both rates are almost at gender parity. The total unemployment rate is 1.5 per cent, and the youth unemployment rate (aged

15–24 years) is 10.4 per cent - with the male unemployment rate in this age group 2.1 percentage points higher than the female rate. The youth (aged 15–24 years) not in employment, education or training rate was 5.1 per cent in 2010. Formal employment is heavily reliant on agriculture and on medium-skilled occupations (ILO, 2019). Lao PDR has had one of the strongest GDP growth rates in the ASEAN region, average 7.7 per cent per annum over the last decade (World Bank, 2019). Per capita carbon emissions in 2017 were 2.62 tonnes.

Green economy agenda, plans and strategies

Lao PDR issued the Lao National Strategy on Green Growth to 2030 in 2018 which sets out strategies for promoting green growth and sustainable management of natural resources. This Strategy builds on two specific climate related policy documents – the National Adaptation Programme of Action to Climate Change (NAPACC) 2009 and the Strategy on Climate Change 2010. All these documents are consistent with the Lao Vision 2030, the Ten-year Socio-economic Development Strategy 2016-2025, and the 8th National Socio-economic Development Plan 2016-2020.

The Strategy on Climate Change identifies a number of sectoral-based adaptation activities which also link to green job creation. In the agricultural sector the need for identifying new plant and animal varieties that are better adapted to natural disaster-prone areas as a way of protecting livelihoods in those areas, also strengthening the financial resilience of farmers through building financial capabilities and the availability of financial instruments for the household and community level (ILO, 2019a). Another identified area for adaptation activities is in forestry management, and the related green jobs potential from forestry-based carbon sequestration.

These strategies also provide for climate resilience to be included in infrastructure investments, including water resource management and urban development. Climate resilience assumes that new infrastructure is climate-proofed, but also that new infrastructure improves water and waste management and reduced emissions.

The energy and industry sectors are targeted for mitigation activities including the promotion of renewable and energy efficiency.

Green jobs and skills, policy support and integration

Green jobs and green skills are emerging concepts, with definitions taken from other countries and international organisations. Responsibility for green jobs and green skills is with the Ministry of Labour and Social Welfare, the Department of Skills Development and Employment, and Department of Labour Management, although there is recognition that the creation of green jobs will involve coordination with a large portfolio of Ministries, including Education, Sports, Industry and Commerce; Agriculture and Forestry; Science and Technology; and Natural Resources and Environment.

Currently there is no definitive definition of green jobs and green skills within Lao PDR, although conceptual relevant policy documents rely on international understanding of green jobs and green skills (such as from the ILO) and understand green jobs as employment that either adds to enhanced environmental quality or decreases negative environmental impacts.

There are a number of existing skills development policies that are already in place with the Ministry of Labour and Social Welfare, including the Law on Labour, No. 043/NA (2013) and the Decree No. 036/PM (2010). These two frameworks provide the existing skills standards including labour standards and OSH. Tripartite partners are involved in the development of these skills standards (ILO, 2019a). As new demand for skills and occupations arise, these laws and institutions would be able to incorporate these new jobs and skills. Specifically, Labour Law measures 18 and 19 highlight that training and curriculum including private skills development centres need to match with or respond to a socio-economic development plan

and the current labour market. This would mean that skills standards and curriculum would need to be updated or augmented to keep up with the changing world of work.

There are expectations that these policies will be updated to have a more explicit focus on green economy and green jobs as environmental sustainability, environmental protection and decent work standards become more prominent.

A number of recent projects and initiatives have targeted green skill development:

- ▶ Food security project (2016-2020) which promoted skills and enhanced farmer capabilities to through sustainable rice growing, organic vegetables and fruit, and new skills in improved packaging and products to meet market needs and standards.
- ▶ Qualitative and Quantitative training to respond to labour market needs conducted in all provinces (2016-2020) – a bottom up programme that assisted the workforce, particularly in the informal sector to participate in the labour market and/ or self-employment through skills development process.

Both of these projects targeted disadvantaged groups to enable more equitable access to labour markets.

Private sector activities, initiatives and support

Private sector enterprises and investment is viewed as an important source of generating green jobs. Two specific policies – the Investment Promotion Law and the National Strategies Plan on Rural Employment are the main existing tools for encouraging private sector investment in green jobs.

The National Strategic Plan on Rural Employment has input from multiple stakeholders including Government – Ministry of Labour and Social Welfare, Ministry of Education and Sport, Ministry of Planning and Investment; as well as tripartite social partners including the Lao PDR Federation Trade Union, Lao National Chamber of Commerce and Industry, Lao Youth Union, and Lao Women's Union (ILO, 2019a). The Plan aims to support rural employment and sustainable value chains, and contribute to food security, increased income security and disaster resilience, as well as generating other employment and economic opportunities, for example in sustainable waste management. Agriculture is the largest source of employment in Lao PDR, as well as vulnerable employment.

The Investment Promotion Law No. 14/NA (2016), targets investment in industrial tourism development in line with nature, culture, history that is environmentally friendly and sustainable. The Investment Promotion Law aims to direct new investment into poor and remote areas with little socio-economic infrastructure as a sustainable development strategy. The Law provides tax exemptions and reductions and other incentives (e.g. expedited approvals) for investments that meet these requirements. Tourism is the most active sector in Lao PDR for green job creation.

The Ministry of Labour and Social Welfare Strategic Plan includes activities to encourage private sector participation in green skills development through collaboration on a joint project with the Ministry. The

project will assist enterprises in developing human resources and employment opportunities around greening.

Coordination

The main coordination mechanisms on green growth is the newly released (December 2018) Lao National Strategy on Green Growth 2030. The final details of implementation and coordination are still under discussion.

Policy readiness assessment

Policy area	Notes
1. Macro-economic growth plans and development policies establish the green agenda	Green economy well established in development plans
2. Industrial and sector policies for greening	Specifically, Agriculture, Energy Sectors
3. Enterprise policies and initiatives for greening	Investment promotion and rural strategy
4. Skills development for green skills	Existing skills development policies are linked to Green and Climate Change Policies
5. Occupational Safety and Health for climate change issues	OSH provisions emerging, ILO C155 still to be ratified
6. Social protection	ILO C102 on social protection still to be ratified, some medical, sickness, maternity, old-age, work injury, invalidity and survivors' benefit available, no family allowances and unemployment benefit program in development
7. Active labour market for greening	Emerging through pilot projects
Cross-cutting issues – labour rights and social dialogue processes in greening	C144 in force, no specific detail on social dialogue processes in green economy plans

4.5 Malaysia

Malaysia has a population of 32 million, 70 percent of which live in urban areas. The country is comprised of two regions separated by the South China Sea: peninsular Malaysia and the states of Sabah and Sarawak on the island of Borneo. Around 69 per cent of the population is of legal working age (15–64 years). As of 2017, the labour force participation rate is 63.4 per cent and the employment-to-population ratio is 61.3 per cent. Both of those rates are more than 27 percentage points higher for men than for women. The total unemployment rate is 3.3 per cent, and the youth unemployment rate is 12.4 per

cent - with the female youth unemployment rate 2 percentage points higher than the male rate. Formal employment is heavily reliant on services and medium-skilled occupations (ILO, 2019).

The country's GDP has grown rapidly over many decades; between 1957 and 2005 it increased by 6.5 percent annually (Akenji et al, 2019). The per-capita GDP (PPP) amounts to USD 32,501 (World Bank, 2019). The per capita carbon emission were 7.92 tonnes in 2017 (OWID, 2020).

Green economy agenda, plans and strategies

Malaysia's policy direction for the green economy is detailed in the 11th Malaysia Plan 2016-2020. This plan will again be strengthened in the 12th Malaysia Plan (2021-2025), which is currently in preparation. One of the strategic thrusts of the Plan is "Pursuing green growth for sustainability and resilience" (Thrust 4). There are a number of focus areas targeted through this strategic thrust including: strengthening the enabling environment for green growth, the adoption of sustainable production and consumption concepts, the conservation of natural resources for present and future generations, and the strengthening of resilience against climate change and natural disasters (ILO, 2019a).

In the 12th Malaysia Plan (2021-2025), environmental sustainability is one of the three strategic dimensions, alongside economic empowerment and social re-engineering.

Malaysia has a well-developed green economy agenda dating back to the 2002 National Policy on the Environment, which identified eight principles for sustainable socio-economic development including: stewardship of the environment, conservation of nature's vitality and diversity; continuous improvement in the quality of the environment; sustainable use of natural resources, integrated decision making; the role of the private sector; commitment and accountability; and active participation in the international community.

The National Policy on Climate Change (2010) included the goal to mainstream climate change through effective resource management and enhanced environmental conservation resulting in strengthened economic competitiveness and quality of life; integrate responses into national policies, plans and programmes to strengthen climate resilience; strengthen institutional and implementation capacity to harness opportunities and reduce negative impacts of climate change – 43 individual policy actions are proposed and mapped (ILO, 2019a).

The National Plan sets overall direction, with individual ministries and agencies in national, state and local government encouraged to make additional plans and strategies to support these national goals.

The National Green Technology Policy, the Environmental Quality Act (1974) and the Green Government Procurement Guidelines (2018) are examples of how overall direction of environmental sustainability is translated and implemented through individual line agencies.

Green jobs and green skills policy support and integration

Malaysia's definition of green jobs is guided by the ILO definition – green jobs are decent jobs that contribute to preservation or restoration of the environment. This definition foresees that green job creation will occur in a range of sectors including traditional sectors such as manufacturing, construction and agriculture, as well as in new and emerging sectors such as renewable energy and energy efficiency.

Malaysia has initiated occupational analysis in some of these new and emerging industries in green technology. Green technology encompasses sustainability, viability and waste reduction in the field of energy, green buildings, green design, green purchasing, green chemistry, and green nanotechnology. Green technology is embedded in the development and application of product, equipment and systems

used to conserve the natural environment and natural resources and minimise the negative impacts of production and consumption activities.

The Occupational Structure of the Green Technology Industry project (2011) identified the main sectors likely to utilise occupations in green technologies, but in the first iteration structure identifies six key sectors including energy, manufacturing, transportation, buildings, waste and water. The analysis found 71 job titles that could be classified in green technology. Mapping these occupations within the Green Technology Occupational Framework provides for the development of a future workforce career path, and identifies jobs descriptions and skills needs. In the second iteration of the Framework, this time only focusing on the energy sector (renewable energy and energy efficiency), 112 occupations were identified. This shows the rapid evolution of green occupations.

The 11th Malaysia Plan identifies requirements for new skills, capacities and competencies for greening both in the public and private sector. These include new skills and occupational competencies such as for renewable energy, electricity demand side management, green construction, waste to energy, bioengineering and biosafety. There are a number of Ministries and related agencies that support green skills development and uptake including the Ministry of Education, Ministry of Higher Education, Ministry of Human Resources, Ministry of Transportation, Ministry of Works and various government and private training organisations.

Malaysia is in the process of developing a Circular Economy Roadmap for plastics, as part of a target of zero single-use plastics. This new policy direction is anticipated will create new jobs and occupations as well as demand for additional new skills and training.

There are no specific policies to identify and address negative employment impacts of green economy, however social security protection is available to all employees who contribute to the Social Security Organisation (SOCSSO).

Private sector activities, initiatives and support

Malaysia's green economy agenda encourages all stakeholders, including the private sector, to transition towards greening. The Malaysian Government introduced a Green Public Procurement Policy and associated guidelines as part of the 11th Malaysia Plan. The policy has the effect of creating and increasing demand for local green products and services, and serves as a key mechanism for encouraging private sector activity in the green economy. The public procurement plan will be expanded over future years, and it anticipates private green procurement activity as well.

Malaysia has also introduced the Green Technology Financing Scheme which offers financial support for Producers, Users and also Energy Service Companies (ESCOs) who invest in green technologies and carbon abatement activities. The financing scheme was introduced in 2010 and offers a 2% rebate on interest from financial investment from participating financial institutions that are used to purchase and implement green investments. Participants in the Scheme can also access a 60% government guarantee on the funding required. Up until October 2017, US \$810 million has been invested in 302 projects, and created over 5,000 jobs and abated 3.5 million tonnes of CO₂e.

Malaysia, through the Ministry of Environment and Water also provide Investment Tax Allowance for purchasing green equipment and assets, and Income Tax Exemption for the provision of green services.

Coordination

The green growth agenda in Malaysia has broad involvement of Ministries and Agencies at the Federal, State and Local Government level. Federal Government Ministries include Ministry of Human Resources, Ministry of Education, Ministry of Transport, Ministry of Housing and Local Government, Ministry of International Trade and Industry, Ministry of Works, Ministry of Energy and Natural Resources, Ministry of

Environment and Water, and the Economic Planning Unit. The involvement of a broad range of ministries in developing and implementing the green economy is also reflected in linked national policies such as the National Automotive Policy 2020, the National Transport Policy 2019-2030, the Shared Prosperity Vision 2030 and the National Entrepreneurship Policy 2030.

Information and activities for the green economy are coordinated through Inter-Ministerial Meetings chaired by relevant Ministers and Working Level Meetings chaired by Senior Officials. For example, the Hon Minister of Human Resources in Malaysia chairs the Green Jobs Coordination Meeting to discuss implementation of green jobs in Malaysia.

Further policy actions across government are coordinated through the National 5-year plans, the 12th plan is currently under development. Planning documents are managed by the Economic Planning Unit. Inter-ministerial and inter jurisdictional coordination is an ongoing challenge with personnel changes.

Policy Readiness Assessment

Policy area	Notes
1. Macro-economic growth plans and development policies establish the green agenda	Green economy well established in development plans
2. Industrial and sector policies for greening	Multiple specific sector policies are in place
3. Enterprise policies and initiatives for greening	Policies and initiatives are in place
4. Skills development for green skills	Green skills and occupational analysis underway
5. Occupational Safety and Health for climate change issues	C187 in force
6. Social protection	ILO C102 still to be ratified, old-age, work injury, invalidity and survivors benefit available, limited provisions of medical, sickness, maternity and unemployment benefits, no family allowances
7. Active labour market for greening	Emerging
Cross-cutting issues – labour rights and social dialogue processes in greening	C144 in force, but no specific information on social dialogue processes in Green Economy plans

4.6 Myanmar

Myanmar has a rich, diverse culture and is the largest county in mainland Southeast Asia. The country has a 19 million coastal population (2015) and is another of the fastest growing economies in the world with GDP growth above 7% on average for the last five years (World Bank, 2019). Around 65.5 per cent of the population is of legal working age (15–64 years). In 2018, the labour force participation rate was 66.0 per cent and the employment-to-population ratio was 65.4 per cent (Myanmar Department of Labour, 2018). Both of these rates are more than 28 percentage points higher for men than for women. The total unemployment rate in 2018 was 0.9 per cent, and the youth unemployment rate was 2.0 per cent, both almost at gender parity. The proportion of youths aged 15-24 years not in education, employment or

training was 13.0 per cent in 2018 (Myanmar Department of Labour, 2018). Employment is heavily reliant on agriculture and on medium-skilled occupations (ILO, 2019)

The rapid increase in economic activity and investment driven by Myanmar's emergence as a market-based economy and democratic country. Much of this economic growth has been through investment and development of the country's natural resources including energy, mining, agriculture and forestry sectors (Akenji et al, 2019). There is a lot institutional and policy development occurring in Myanmar, including plans for sustainable development. Myanmar is highly exposed to climate change impacts and the per capita carbon emissions in 2017 were 0.48 tonnes – the lowest in the ASEAN region (OWID, 2020).

Green economy agenda, plans and strategies

Myanmar is currently developing an overarching Green Economy Policy Framework and overall the policy landscape is evolving quickly. The Green Economy Policy Framework builds on other existing climate change and environmental sustainability policies in Myanmar including the National Environmental Policy, Myanmar Sustainable Development Plan, Myanmar Climate Change Policy, Strategy and Master Plan, and the National Waste Management Strategy and Master Plan.

The National Environmental Policy already highlights that environmental sustainability is a central objective in determining Myanmar's economic and social development strategies, where low-carbon and green economy pathways are prioritised, through responsible investment and partnerships with the private sector and civil society (ILO, 2019a). The Myanmar Climate Change Policy presents the country's strategies and actions for adapting to and mitigating the impacts of climate change. The green economy agenda is also established in the Myanmar Sustainable Development Plan 2018-2030, this long-term national planning document also highlights the impacts of climate change and the importance of environmental sustainability in the development of Myanmar.

Green jobs and green skills, policy support and integration

The development of human capital is one of the four policy objectives of the Green Economy Policy Framework, which links closely to green jobs and green skills, but the forthcoming Green Economy Policy Framework does not define green jobs and green skills in a specific way or provide categorisation of either.

Green job creation is expected from additional demand for environmentally sustainable products and services from government and private sector investments. Two sectors where green growth and green jobs are likely is in the agriculture sector (under the Ministry of Agriculture, Livestock and Irrigation) and sustainable tourism (Ministry of Hotels and Tourism) (GGGI, 2017). The Myanmar Climate Change plan links to labour market in the promotion of climate adapted responses to the development of the agriculture, fisheries and livestock sectors, as well as the need for strengthening human capital development for low-carbon development in the energy, transport and industrial sectors. The Ministry of Labour, Immigration and Population has been conducting competency standards development, skills assessment and certification to build green skills in those working in hotel occupations. The competency standards have been developed in collaboration with Hotel Industry Competency Standards Committee which includes experts from government and private sectors. The competency units concerned are inserted in line with green standard in the development of competency standard.

The National Skills Standards Authority (NSSA) is collaborating with Ministry of Natural Resources and Environmental Conservation to implement the Hydrochlorofluorocarbon Phase-out Management Plan to address ozone depletion and limit materials with a High Global Warming Index. The Management Plan provides for limiting the supply of Hydrochlorofluorocarbon and reducing demand for Hydrochlorofluorocarbons for existing air conditioning equipment. The Ministry of Labour, Immigration and Population will change competency units to adapt green skills especially for air conditioning

occupations, to ensure training for essential procedures for preventing leaks and other hazards in the filling of air conditioning refrigerant gas.

Across all these policies there is support for climate resilience infrastructure and creating safeguards and assessment procedures to mitigate and reduce the negative impacts of infrastructure development.

The need for social protection and public employment systems as a means to protect livelihoods in circumstances of climate-induced natural disasters and increasing the overall adaptive capacity of vulnerable communities to the impacts of climate change is highlighted in Climate Change Master Plan and the Myanmar Sustainable Development Plan.

Private sector activities, initiatives and support

The Green Economy Policy Framework aims to create the enabling environment for greening activities within private sector enterprises. Priority 7 of the Framework highlights sustainable consumption and production of enabling conditions for sustainably managing the manufacturing sector including: i) attracting investments for closed-cycle manufacturing; ii) promoting the use and adoption of energy and water efficient technology; iii) and supporting the transition to green jobs. There are also activities to support small and medium-sized enterprises and industries to use sustainable and resource-efficient inputs, technologies and processes.

Further measures such as scaling up of investments in renewable energy generation, incentives and subsidies to promote and leverage investments in sustainable industries, such as eco-tourism, are envisaged as these Plans and Policies are developed and implemented (ILO, 2019a). The private sector has been part of consultations in the development of the Myanmar Climate Change Master Plan, and other Plan, alongside other non-governmental organisations, civil society organisations, development partners and experts form the technical working groups of the Myanmar Climate Change Alliance.

Coordination

Coordination is anticipated across Ministries and through to lower jurisdictions of government. For example, the Environment Conservation Department, Ministry of Planning, Finance and Industry, City development Committee, Ministry of Commerce are involved in the coordination of green economy investments for Priority 7 of the Green Economy Framework. As many of these policies are new or emerging, how implementation will follow and through which Ministerial jurisdiction is still being settled for many areas of the green economy (GGGI, 2017).

Policy Readiness Assessment

Policy area	Notes
1. Macro-economic growth plans and development policies establish the green agenda	Green economy links to national development planning are emerging
2. Industrial and sector policies for greening	The need for sector specific strategies is identified
3. Enterprise policies and initiatives for greening	The need for human resource development for greening is identified
4. Skills development for green skills	The Environmental Conservation Law 2012 in force
5. Occupational Safety and Health for climate change issues	ILO C155 on OSH still to be ratified

6. Social protection	ILO C102 on social protection still to be ratified, medical, sickness, maternity and work injury benefit available, program implementation ongoing for old-age, invalidity, survivors, family allowance and unemployment benefit. The need for social protection in managing climate change impacts is recognised as an issue
7. Active labour market for greening	No information available
Cross-cutting issues – labour rights and social dialogue processes in greening	ILO C144 on social dialogue still to be ratified, but social dialogue processes included in development and climate change planning

4.7 The Philippines

The Philippines is an archipelago in Southeast Asia. Its population is majority rural and growing, with a fertility rate of 2.9 children and life expectancy at 68.4 years. Around 63 per cent of the population is of legal working age (15–64 years). As of 2017, the labour force participation rate is 64.8 per cent and the employment-to-population ratio is 61 per cent. Both of those rates are more than 26 percentage points higher for men than for women. The total unemployment rate is 5.9 per cent, and the youth unemployment rate is 13.8 per cent - with the female youth unemployment rate 3.1 percentage points higher than the male rate. The youth (aged 15–24 years) not in employment, education or training rate was 22.1 per cent in 2016. Formal employment is heavily reliant on services (56.1 per cent) and moderately reliant on medium-skilled occupations (43.6 per cent) (ILO, 2019).

The Philippines per-capita GDP (PPP) is USD 8,360.23 and a growth rate of 6.7 percent (World Bank 2019). Administratively, the country is divided into 18 regions, 81 provinces, 1,489 municipalities, 145 cities, and 42,036 barangays (the smallest government unit in the Philippines). The country's fragmented geography contributes to high domestic transport costs. Per capita carbon emissions in 2017 were 1.25 tonnes per person (OWID, 2020).

Green economy agenda, plans and strategies

The Philippines enacted the Philippine Green Jobs Act (2016) (PGJA), becoming the first AMS to provide legislative support for the promotion for green jobs. The Law represents the first piece of social legislation in the Philippines specifically designed to generate, sustain and incentivise green jobs. The law has the following principles:

- Affirm labour as a primary socio-economic force in promoting sustainable development;
- Afford full protection to labour, land, local and overseas, organized and unorganised;
- Promote full and productive employment and equality of employment opportunities for all; and
- Promote the rights of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature.

The Law includes a range of fiscal and non-fiscal activities to transition workers to low-carbon economy and makes provisions for a just transition.

Prior to the introduction of the PGJA, the Philippines had a comprehensive green economy policy framework in place. This includes international commitments to agreements such as the Paris Agreement, Kyoto Protocol and UN 2030 Sustainable Development Agenda. At the national level the 2009 Climate Change Act integrated climate change into the policy formulation and development plans of all government agencies and units. The subsequent National Framework Strategy on Climate Change 2010-2022 included commitments and plans for ensuring adaptation of ecosystems and communities to climate change. The following sectors are identified as priority sectors for climate change adaptation and mitigation – Agriculture, Waste, Industry, Transport, Forestry and Energy.

The Inclusive Innovation Industrial Strategy has a pillar focused on “building new industries, clusters and agglomerations” which links to environmentally sustainable industrial development. The Philippine Development Plan 2017-2022 also directs government action towards the full implementation of the Green Jobs Act and the provision of incentives to shift the green manufacturing and production, as well as accelerating sustainable resource-based production in forestry and marine economies, as well as the promotion of eco-tourism.

Green jobs and green skills, policy support and integration

The PGJA defines green jobs as employment that contributes to preserving or restoring the quality of the environment, as well as being jobs that are decent, productive, respect the rights of workers, deliver fair income, provide security in the workplace and social protection for families and promote social dialogue.

Environmentally sustainable activities products and services, and hence green job opportunities are available from a number of activities, including: mitigation activities (activities, products and services that reduce emissions of greenhouse gases); adaptation to climate impacts and disaster risk management; protection of ecosystems and habitats and prevention of land degradation from human activities; efficiency of water and natural resource management; pollution prevention and control; environmental compliance; education and training; and public awareness.

Under the Green Jobs Act (2016) the Climate Change Commission in consultation with 7 national government agencies including the Department of Labour and Employment, is mandated to develop standards for assessment and certification of green jobs in the country.

The Climate Change Commission has identified three approaches for determining green jobs:

- Industry approach - is the company's business among those on the green list (green industries);
- Product/ service approach - is the product or services certified as green/ meets green threshold;
- Process approach - do you have core business processes and initiatives that deliver or directly cause delivery of substantial environmental value beyond compliance.

The Philippines has many examples of sector specific greening policies and programs that have identified employment outcomes, including:

- Public Utility Jeepney (PUJ) Modernisation program - this program intends to place a 15-year lifetime on jeepneys after which they must be replaced with cleaner vehicles.
- National Organic Agriculture Program - increasing diffusion of innovation of organic agricultural practice, marketing and product labelling to farmers - the number of organic farmers increased from USD 8,980 in 2011 to 43,470 in 2016.



- Anahaw-Philippine Sustainable Tourism Certification – a program to mainstream energy efficiency and reduce greenhouse gas emissions and by effect reduce operational business costs. The program developed from the Zero Carbon Resorts project and implementing green hotel certification through awards to more than 300 establishments since 2015.
- Sustainable Markets for Recyclables and Recycled Products – Department of Trade and Industry and National Solid Waste Management Commission lead program that promotes recyclables and recycled products to various markets, this includes organising and supporting local trade fairs for said products, promoting the use of compost in the National Greening Program, and simplifying guidelines of incentive schemes to encourage investors’ support for recyclables and recycled products.

Part of the PGJA specifies a National Green Jobs Human Resource Development Plan to enable and sustain the transition to the green economy and the creation and green jobs. This plan will also act as a Just transition Plan and is guided by the four pillars of decent work – employment creation and facilitation, social protection, social dialogue and rights at work.

The Plan commits the Technical Education Skills Development Authority to create required training regulations with a view to executing skills training, assessments and certification programs in order to fill the gap of skilled human resources in the green economy. Such activities are to be focused particularly on sectors that are going through structural transformation as a result of climate change and the transition to a greener economy.

In terms of labour market mechanisms that are available to workers affected by these structural changes the Philippines is developing a system of unemployment insurance. There is a short-term emergency

employment program to support workers displaced as a result of natural disasters and emergency situations linked to climate change.

The Department of Education, the Commission of Higher Education, and the Technical Education and Skills Development Authority are all involved in the promotion of green skills across the economy.

Some of these initiatives specifically target skill acquisition. Green skills, or skills for sustainability, are defined as “the knowledge, abilities, values and attitudes needed to live in, develop and support a sustainable and resource-efficient society” (Cedefop, 2012).

Private sector activities, initiatives and support

The PGJA specifically focuses on incentivising green jobs rather than regulating them, encouraging all businesses and the public sector to create and sustain green jobs. Participation in the assessment and certification of green jobs for the purpose of accessing the fiscal and non-fiscal incentives offered in the law is voluntary, although compliance with minimum national labour and environmental regulations is mandatory.

Incentives to qualifying individuals and businesses include: i) a special tax deduction from taxable income on expenses incurred by the individual or business on skills training and research and development for green jobs, ii) exemptions from customs duties and taxes for the import of capital equipment that is used directly in the promotion, generation and sustenance of green jobs.

The Department of Science and Technology also provides business development related support to micro, small and medium sized enterprises in developing and implementing green technologies and processes, and also providing training on new developed technologies. The Department of Trade and Industries has a special business facilitation program for individuals and businesses that create green jobs.

In discussions with the private sector in the development and implementation of many green economy activities a number of issues to the greater involvement of the private sector in green are highlighted:

- ▶ High degree of difficulty in forecasting employment trends and corresponding skill requirements for green jobs and green skills as both are emerging concepts;
- ▶ Price premium associated with greener products and building and the need to educate consumers and buying behaviour towards greener products and services;
- ▶ Availability of locally sourced green products and construction materials – where companies would like to use sustainable products, including products with recycled content, there are no locally available sources of these products. In addition, importing is expensive, difficult and time consuming for smaller businesses.

There have been a number of initiatives promote greening in the private sector, for example:

- ▶ Securities and Exchange Commission Memorandum Circular No. 4, s2019 requires publicly listed companies to disclose their non-financial performance in economic, environmental, and social terms, commencing from 2020. This information must be submitted with the company's annual report, and must conform to the prescribed template and guidelines following the globally accepted frameworks on sustainability reporting.
- ▶ Promotion of green economic development (ProGED) – program undertaken with the support of GIZ from 2013 to 2016 focusing on greening and streamlining supply chains of MSMEs through information awareness, business facilitation between green suppliers and their end users and the creation of green business guidelines.

Coordination

The Climate Change Act (2009) and the National Framework Strategy on Climate Change 2010-2022 are headed by the Climate Change Commission (CCC) and managed through an inter-agency committee of 21 national government agencies mentioned within the Law, with the CCC and the Department of Labour and Employment co-chairing the committee. These agencies have mandates ranging from labour and employment, climate change mitigation and adaptation, environmental policy and regulation, national development planning, trade, finance, agriculture, education, tourism, science and technology, public works, transportation and interior and local government.

The PGJA does not explicitly identify which agency should take the lead role in coordinating its implementation, including monitoring and reporting of achievements. Specific departments have mandates in specific areas, for example Department of Labour and Employment has a mandate to draft the Implementing Rules and Regulations and the Development of the Green Jobs Human Resource Development Plan, as well as maintain a database of green careers, professionals and skills and a list of emerging business enterprises which generate and sustain green jobs (coordinated with the Philippine Statistics Authority and Technical Education and Skills development Authority (TESDA) and Professional Regulation Authority). The agency is also responsible for providing support to the CCC in the development of the standards for assessment and certification of green goods and services and green technologies and practices.

Policy Readiness Assessment

Policy area	Notes
1. Macro-economic growth plans and development policies establish the green agenda	Green economy well established in development plans
2. Industrial and sector policies for greening	Specific policies in multiple sectors
3. Enterprise policies and initiatives for greening	Enterprise incentives, awareness activities and projects underway
4. Skills development for green skills	Strong emphasis on skill development at individual and institutional level
5. Occupational Safety and Health for climate change issues	Greening mainstreamed into inspectorate system
6. Social protection	ILO C102 still to be ratified, medical, sickness, maternity, old-age, work injury, invalidity and survivors' benefit available, no family allowances and limited unemployment benefits. Unemployment insurance system for workers affected by greening/ Just Transition is under-development, and there are short term financial payments available for workers displaced by climate related natural disasters
7. Active labour market for greening	Multiple studies undertaken and planned
Cross-cutting issues – labour rights and social dialogue processes in greening	Decent work agenda incorporated in the PGJA, C144 in force

4.8 Singapore

The city-state of Singapore has a population of more than 5.69 million⁴ (as of June 2020). The country geographically faces the Singapore Strait and the Straits of Johor. Its population is 100 per cent urban and growing, with a fertility rate of around 1.2 children and life expectancy at 83.6 years. Around 85 per cent of its residents are of age 15 and above. In 2019, the labour force participation rate aged 15 and over is 68.0 per cent and the employment-to-population ratio is 65.2 per cent. Both of those rates are about 14 percentage points higher for men than for women. The unemployment rate is 3.1 per cent, and the youth unemployment rate is 7.7 per cent. The youth (aged 15–24 years) not in employment, education or training rate was 4.5 per cent in 2019. Formal employment is heavily reliant on services and on highly skilled occupations (ILO, 2019).

The country's GDP has grown rapidly for a long time with Singapore's per-capita GDP (PPP) amounting to USD 94,940 in 2017. Carbon emissions per capita were 7.11 tonnes in 2017 (OWID, 2020). While there are no local governments in Singapore, the country is comprised of five community development councils (CDCs) that conduct local administration. Various community and social assistance services are provided by the CDCs (Akenji et al, 2019).

Green economy agenda, plans and strategies

Singapore introduced the Sustainable Singapore Blueprint (SSB), which details the national vision and plans for a sustainable Singapore, in 2015. This is a multi-agency initiative involving central agencies such as the Ministry of Environment and Water Resources, the Ministry of National Development and the Ministry of Manpower. Under the SSB, Singapore aims to be a leading green economy through the following activities:

- Introducing innovative districts with living laboratories such as CleanTech Park, Nanyang Technological University, and future industrial estates like Bulim and Jalan Bahar, and Tengah;
- SolarNova Programme to increase solar power generation capacity in the energy system;
- Singapore providing a test-bed for green initiatives on Semakau landfill;
- Developing a Green Buildings Innovation Cluster to grow capability in green buildings;
- Creating green and quality jobs; and
- Launching initiatives to encourage Singapore-based companies to adopt leading sustainability practices.

Singapore launched their Long-term Low-emissions Development Strategy (LEDS) published in March 2020. This Strategy outlines how Singapore will meet climate commitments under the Paris Agreement and facilitate a well-managed transition to a low-carbon and green economy.

Singapore has a Zero Waste Masterplan launched in 2019, that promotes a circular economy approach to waste and resource management and a shift to more sustainable production and consumption. Some of the measures that are part of the Zero Waste Masterplan include:

- Legislative measures through the Resource Sustainability Act, to close the resource loops for food waste, packaging waste (including plastics) and e-waste. The new regulations will be rolled out in the coming years and require the active participation of both businesses and consumers;

⁴ Source: <https://www.singstat.gov.sg/modules/infographics/population>

- ▶ Promoting resource efficiency at the industrial level through industrial symbiosis. For example, through conducting a Circular Economy Study on Jurong Island to map out the current water, energy, and waste flows and identify synergies and reduce resource use at the systems level;
- ▶ Developing local recycling capabilities to treat and recycle e-waste, food waste, and packaging waste;
- ▶ Reskilling and upskilling workers through initiatives such as the Environmental Services Industry Transformation Map;
- ▶ Enhancing infrastructure to maximise resource recovery, and maintain high environmental public health standards;
- ▶ Partnering and supporting the private sector through grants and incentives for R&D support and encouraging ground-up solutions. For example, through the launch of a S\$45 million 'Closing the Waste Loop' initiative to fund research supporting circular economy approaches to resource management;
- ▶ Partnering with the community to co-create, design and implement ideas, programmes and policies together. For example, in 2019, MEWR convened the #Recycle Right Citizens' Workgroup to co-create solutions to household recycling in Singapore with more than 40 citizens from diverse backgrounds. NEA will also convene a Citizens' Workgroup on Reducing Excessive Consumption of Disposables in 2020 in order to find inclusive ways to collectively address the excessive consumption of disposables in Singapore.

Green jobs and green skills, policy support and integration

There is no national definition of green jobs or green skills in Singapore, but there is support for the definition established in the ASEAN Declaration on Promoting Green Jobs of ASEAN Community, adopted by ASEAN Member States in 2018.

Singapore introduced the Environmental Services Industry Transformation Map (ITM), one of four ITM developed under the Built Environment Cluster. The National Environmental Agency, the lead agency for the Environment Services ITM, worked with tripartite stakeholders to develop 33 initiatives under 4 pillars, to transform the Environmental Services Industry.

The Jobs and Skills Pillar of the Environmental Services ITM seeks to ensure a sustainable supply of workers and to build a resilient and skilled workforce, through three strategies:

- ▶ Moderating manpower demands, e.g. through technological solutions;
- ▶ Ensuring sustainable manpower supply, e.g. through improving the industry image and strengthening HR practices; and
- ▶ Building a skilled and resilient workforce, e.g. by upskilling and reskilling workers through a Skills Framework for Environmental Services.

A further ITM for the Construction industry was launched in 2017. The Construction ITM seeks to keep pace with innovations addressing key challenges in the built environment such as digitalisation, rapid urbanisation and climate change.

In 2020, the Building and Construction Authority and the Singapore Green Building Council initiated development of the Singapore Green Building Masterplan (SGBMP). This is an effort to work with stakeholders from industry and the community to review the policies and supporting schemes that drive green building adoption in Singapore. The Master Plan includes initiatives strengthening the industry's

capabilities to deliver green building projects, supporting R&D for new technologies and practices and identify key business opportunities in the green buildings sector.

In terms of developing new green skills, under the Environmental Services ITM, the National Environment Agency partnered with Workforce Singapore (WSG) and SkillsFuture Singapore (SSG) to develop job placement and skills upgrading schemes. One example of these schemes is the Work-Study Programme led by SSG, which is a structured training programme to prepare new entrants for jobs in particular industries. The National Environment Agency supported the development and launch of a Work-Study Programme leading to a Part-Time Diploma in Applied Sciences (Environmental Services and Management), led by Republic Polytechnic. This scheme has been useful in preparing new entrants to the Environmental Services industry. Participating environmental services firms hire students enrolled in the Work-Study Programme, who gain relevant skillsets through the part-time diploma programme and on-the-job training.

The Skills Framework for Environmental Services is also a SkillsFuture initiative developed to promote skills mastery and lifelong learning amongst the local environmental services workforce. The framework provides information on: (a) sector information; (b) career pathways; (c) occupations and job roles; (d) existing and emerging skills; and (e) training programmes for skills upgrading and mastery.

Singapore places equal emphasis in protecting workers in green jobs alongside all other types of jobs. Singapore's social protection system is universal and there is no distinction between occupational and jobs.

Private sector activities, initiatives and support

The private sector in Singapore is actively engaged in the development and implementation of environmental services, particularly through the ITMs. There are partnerships between the Government and Trade Associations to help companies adopt automation and digital solutions to improve productivity and redesign jobs to make it easier, safer and smarter for the environmental services workforce. There are also job support programmes to help companies find the right employees for their workplaces. These include:

- the Career Support Programme, which provides employers with salary support for up to 18 months; and
- the Place-and-Train programme, which allows companies to hire mid-career jobseekers to undergo skills conversion so as to take on new careers.

Trade unions have also undertaken substantive efforts to promote green jobs in Singapore. The National Trades Union Congress (NTUC) co-organises Green Jobs Symposiums alongside government agencies. These symposiums share industry insights about greater awareness on the type of employment opportunities. The National Trades Union Congress, alongside the Global Compact Network Singapore, is also promoting job opportunities in the sustainability field. For example:

- A sustainability internship programme: a 12-week internship at companies with sustainability initiatives; and
- A sustainability professional programme targeted at professionals with at least 2 years of work experience and who are looking to either upgrade their skills or make a career switch into the sector. It comprises 10 days of classroom training followed by a 4-week mentorship or attachment to a company or consultancy firm.

Trade and Association Chambers (TACs), such as Singapore Green Building Council, and industry stakeholders have participated in the development of Skills Framework for Built Environment, to co-create and support its implementation. Following the development of Skills Framework, the training arms of TACs (which serve as training providers) are working with Building and Construction Authority closely to respond to industry's training needs in a timely manner.

Coordination

Climate change and environmental policy involve issues that cut across the remit of several ministries. The Inter-Ministerial Committee on Climate Change (IMCCC) was established in 2007 with the purpose of overseeing the whole-of-government coordination on Singapore's approach to climate change. The IMCCC is chaired by the Senior Minister and Co-ordinating Minister for National Security and includes the Minister for the Environment and Water Resources, the Minister for Finance, the Minister for Foreign Affairs, the Minister for National Development, the Minister for Trade and Industry and the Minister for Transport. The IMCCC is supported by an Executive Committee comprising the Permanent Secretaries of the respective Ministries. The Executive Committee oversees the work of the International Negotiations Working Group (INWG), Long-Term Emissions and Mitigation Working Group (LWG), and the Resilience Working Group (RWG).

The LWG examines options for emission reduction and identify the capabilities, infrastructure, and policies needed for long-term mitigation. The RWG studies Singapore's vulnerability to the effects of climate change and recommends long-term plans that ensure the nation's adaptation to future environmental changes. The INWG develops Singapore's international climate change negotiations strategy under the United Nations Framework Convention on Climate Change.

To ensure the effective coordination on Singapore's domestic and international policies, plans and actions on climate change, the National Climate Change Secretariat (NCCS) was established as a dedicated unit in July 2010 under the Prime Minister's Office. NCCS is part of the Strategy Group which supports the Prime Minister and his Cabinet to establish priorities and strengthen strategic alignment across Government.

Policy Readiness Assessment

Policy area	Notes
1. Macro-economic growth plans and development policies establish the green agenda	Green economy well established in development plans
2. Industrial and sector policies for greening	Sector specific plans developed for multiple sectors
3. Enterprise policies and initiatives for greening	Individual and organisational support for greening activities in enterprises
4. Skills development for green skills	Multiple programs supporting skills development in the workforce and at the institutional level
5. Occupational Safety and Health for climate change issues	Decent work agenda integrated ILO C155 in force

6. Social protection	ILO C102 still to be ratified, Retirement savings and Central Provident Fund provide for medical, old-age, work injury, invalidity, survivors' benefits and family allowances available. Government paid maternity and paternity leave available. Sickness benefits including Medical Fee Exemption Card available to eligible applicants, unemployment benefits available, with additional Covid-19 support also available
7. Active labour market for greening	Several programs and projects in operation
Cross-cutting issues – labour rights and social dialogue processes in greening	Social dialogue and social partners involved in development planning, ILO C144 in force

4.9 Thailand

The Kingdom of Thailand is located in the centre of mainland Southeast Asia. The country's population is estimated to 66.4 million. Its population is growing and majority urban, although 48.5 per cent of the population lives in rural areas. Around 71 per cent of the population is of legal working age (15–64 years). As of 2017, the labour force participation rate is 71 per cent and the employment-to-population ratio is 70.6 per cent. Both of those rates are more than 17 percentage points higher for men than for women. The total unemployment rate is 0.6 per cent, and the youth unemployment rate is 2.7 per cent - with the female youth unemployment rate 0.5 percentage points higher than the male rate. The youth (aged 15–24 years) not in employment, education or training rate was 14.6 per cent in 2016. Formal employment is heavily reliant on services and agriculture and on medium-skilled occupations (ILO, 2019).

Thailand has the second largest economy in ASEAN, with exports accounting for about two-thirds of its GDP. Key economic sectors include automotive, financial services, electronics and tourism. The country's economy grew by 4.1 percent in 2018 and its per-capita GDP (PPP) reached USD 19,018.307 (World Bank, 2019). Per capita carbon emissions in 2017 were 4.12 tonnes per person (OWID, 2020).

Green economy agenda, plans and strategies

Thailand has established a policy framework to support a green economy including the Bio-Circular Green Model (BCG Model) as part of Vision Thailand 4.0 and the 20-year National Strategy. This framework is targeting five sectors for green industrial development; agriculture and biotechnology, food, biofuels and biochemicals, tourism and medical services. The framework encourages all agencies/ departments to develop action plans and targets that are consistent with the national policy and strategy.

Addressing climate change also features prominently in the 12th National Economic and Social Development Plan (NESDP). A climate change strategy is embedded in the national goal for industrial restructuring, and strategy 4 of the NESDP on environmentally sustainable growth highlights government policies pivoting towards green growth (ILO, 2019a). The Thailand Master Plan on Climate Change 2015-2050 adopted in 2018 addresses mitigation and adaptation activities in the country, and how these activities link with the larger processes of industrialisation in the country. Activities include promotion of eco-tourism and sustainable tourism, green procurement and financial incentives for cleaner production

and investment in greener technologies, including renewable energy, and foreign-direct investment that assists in low-carbon technology transfers (ILO, 2019a).

Green jobs and green skills, policy support and integration

The Department of Employment, under the Ministry of Labour has the responsibility to support the adoption of green jobs. Targeted sectors include those aforementioned in the BCG model. There is no specific definition or categorisation of green jobs or green skills in Thailand. The country has adopted UNEP's definition (2011) of a green economy. One that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It is low carbon, resource efficient and socially inclusive.

Thailand has high vulnerabilities to climate change and the Master Plan on Climate Change highlights how these climate vulnerabilities will impact on labour markets. In sectors such as agriculture, fishing, forestry and manufacturing where forestry products are inputs, climate change will have negative impacts on production and therefore employment. In responding the Master plan on Climate Change highlight adaptation activities in agriculture, and the need to individual and community resilience and disaster risk reduction to protect livelihoods against climate change impacts. The tourism sector also needs to adapt, and shift to an eco-tourism model. This offers opportunities for local economic development in the form of producing local 'biological' products for the tourism market (ILO, 2019a). Green jobs creation is also expected from public investments in renewable energy, energy efficiency and cleaner production.

The importance of green skills and the need to build green skill capacities within the workforce is recognised, and the Master Plan for Climate Change highlights the importance of public-private collaboration in developing the institutional capacity to support the widespread development of green skills. The Department of Skill Development has employed a memorandum of understanding to foster cooperation with the private sector in the area of green skills.

In recent years the focus training promotion activities has been on technical fields including energy conservation for industry, air conditioning repair and tiling. The agricultural sector, responsible for one third of the labour force, has also been prioritised. The enhancement and Conservation of National Environment Quality Act (1992) and the Factory Act B.E 2535(1992) have both contributed to increased demand for green skills.

Private sector activities, initiatives and support

The private sector has a clear role in developing, commercialising and implementing new technologies for cleaner production and training the labour force. Further the Master Plan on Climate Change attributes to the private sector the role of conservation and preservation of the natural environment through corporate social responsibility.

There are mechanisms in the Skill Development Promotion Act (2002) to encourage the private sector to invest in the development and training of their workers. Tax exemptions and other benefits are available to participating enterprises. Some companies in the construction and mechanical sectors have taken

an active role in promoting green skills and some entrepreneurial food producers are moving towards environmentally friendly production without public support.

Incentives are also available for the private sector to facilitate the transition to low-carbon economy and develop new products and services that fill gaps in markets for environmental products and services, such as insurance for crop failure (ILO, 2019a).

Coordination

Policy coordination is achieved through the Bio-Circular model and the NESDP and the Master Plan on Climate Change, with multiple Ministries involved in the implementation of each of these strategies and plans. However specific mechanisms for coordination and achieving policy coherence are not identified.

Policy Readiness Assessment

Policy area	Notes
1. Macro-economic growth plans and development policies establish the green agenda	Green economy well established in development plans
2. Industrial and sector policies for greening	Sector policies identified with labour market implications highlighted
3. Enterprise policies and initiatives for greening	Incentive in place for investment in cleaner production and training of workforce
4. Skills development for green skills	Strategies identified in some skill areas
5. Occupational Safety and Health for climate change issues	No information available, ILO c155 on OSH still to be ratified
6. Social protection	ILO C102 on social protection still to be ratified, but medical care, sickness, maternity, old-age, work injury, invalidity, survivors and unemployment benefit available as well as family allowances.
7. Active labour market for greening	Some labour market activities in place
Cross-cutting issues – labour rights and social dialogue processes in greening	Green economy notes decent work agenda, C144 on social dialogue still to be ratified

4.10 Viet Nam

The Socialist Republic of Viet Nam is located along the east side of the Indochina Peninsula; it has a long coastline facing the South China Sea. The population is 93.7 million (2017) mostly living in rural areas. Around 70 per cent of the population is of legal working age (15–64 years). In 2018, the labour force participation rate was 78.2 per cent and the employment-to-population ratio was 76.5 per cent. Both these rates are more than 9 to 10 percentage points higher for men than for women. The total unemployment rate was 2.1 per cent, and the youth unemployment rate was 7.3 per cent, with near gender parity in both rates. The proportion of youths aged 15- 24 years not in education, employment

or training was 0.6 per cent in 2016. Employment is heavily reliant on agriculture and services, and on low-to medium-skilled occupations (ILO, 2019).

Viet Nam is a one-party socialist republic, which over the last three decades has launched extensive free-market economic reforms. The country has industrialised rapidly, with electronics and textiles as major export goods, and experienced one of the highest economic growth rates in the world; the current GDP per capita (PPP) stands at UDS 7,435.329 (World Bank, 2019). Per capita carbon emissions were 1.95 tonnes per person (OWID, 2020). Administratively, Viet Nam is divided into 58 provinces and 5 municipalities (major cities), at equal level, and the country also has two lower tiers of governance.

Green economy agenda, plans and strategies

The National Strategy on Green Growth (2011-2020) and Visions 2050 both set out the green economy agenda for Viet Nam. These policies provide direction for both sustainable production (clean industrialisation, resource efficiency, development of green sectoral plans) and consumption (promoting sustainable lifestyles and consumption).

The Green Growth Strategy provides an important legal basis for formulating policies related to green economy in Viet Nam. Support this Strategy the Prime Minister issued Decision No. 403/QD-TT approving the creation of the National Action Plan for green growth 2014-2020. This Plan has four themes: i) establishing local green growth plans and institutions; ii) reducing GHG emissions intensity and increasing renewable energy sources in the energy system; iii) activities for greening production, iv) activities for greening lifestyles and sustainable consumption. A further Decision (No. 622/QD-TTg) extends the remit of the Plan to include implementation of the Sustainable Development Agenda, with 17 general goals and 115 specific goals. Further activities in the green economy include a National Action Program on production and sustainable consumption by 2020 with a vision to 2030 (Decision No. 76/QD-TTg), Implementation Plan for the Paris Agreement (Decision No. 2053/QD-TTg).

Seven of the major government ministries are required to develop specific action plans to implement the Green Growth Strategy including the Ministry of Industry and Trade, Ministry of Finance, Ministry of Construction, Ministry of Transport, Ministry of Agriculture and Rural Development, Ministry of Natural Resources and Environment and Ministry of Labour, Invalids and Social Affairs. The same requirement exists for the State Bank and 34 provinces and cities.

There are other specific policies with targets for energy efficiency, shifting industry towards green growth, and promoting organic agriculture and regulations for organic agricultural products.

Green jobs and green skills, policy support and integration

The concept of green jobs was introduced through the National Strategy on Green Growth. Green jobs are jobs in agriculture, manufacturing, research and development, administrative management and services that make significant contribution to the preservation and restoration of environmental quality. Green jobs are understood to be specific jobs that result from green economic sectors.

The Institute of Labour Studies and Social Affairs has proposed an official definition of green employment as follows: “Green employment is a decent and satisfactory job, created in different sectors of the economy to help preserve or restore the environment and bring about sustainable development. Therefore, green job is decent work that also (i) reduce the consumption of energy, raw materials, (ii) to reduce carbon emissions, (iii) minimize the creation of waste, pollutants, (iv) protect water resources, restore ecosystems and biodiversity; and (v) support adaptation to the effects of climate change.

Further work within the Department has begun to classify green jobs into ‘core’ environmental sectors, such as renewable energy, forestry, clean water services and other environmental services. In these sectors most jobs are green jobs. Sectors considered to be partly green – such as organic agriculture,

recycling activities, transportation (involving electric vehicles, public transport) and tourism. Some jobs in these sectors would be considered green jobs, but would also have to meet the decent work classifications.

Two specific policy decisions relate the green jobs context for Viet Nam. The first is the Ministry of Labour, Invalids and Social Affairs action plan for implementation of the Green Growth Strategy includes activities to improve labour and social policies in line with the National Strategy, and develop green jobs and training activities to support the creation of green jobs. The Action Plan sets out six priority areas:

- ▶ Completing the system of legal instruments and policies;
- ▶ Training systems for human resources;
- ▶ Scientific research;
- ▶ Communication and awareness raising activities;
- ▶ Modernising management systems;
- ▶ Investment and public procurement activities.

The second specific policy decision relating to green jobs and green skills is the Plan for Implementing the Paris Agreement 2019-2030 (Decision No. 1290/QĐ-BLĐTBXH). This plan has five areas of focus including:

- ▶ Mitigation of greenhouse gas emissions;
- ▶ Climate change adaptation;
- ▶ Preparing resources;
- ▶ Establishment of transparent system to adapt to climate change;
- ▶ Develop complete policies and institutional arrangement to support meeting the Paris Agreement commitments.

A number of Ministries and agencies are involved in addressing issues of green skills including: Ministry of Labour, Invalids and Social Affairs (General Department of Vocational Education); Department of Labour, Invalids and Social Affairs at the province/city level; as well as vocational training institutions, such as Industrial College II (wastewater treatment training), Irrigation Mechanic College (selected to become a Green Vocational Training Facility with 22 key training courses), Lilama 2 International Technology Vocational College (supported by GIZ to build into a high-quality centre for vocational training, including 2 “green” occupations: electronic technology and building energy; technology mechanical heating and air conditioning) and the University of Natural Resources and Environment

Green vocational skills training and greening of vocational training facilities have been implemented mainly through GIZ’s cooperation and development program. In the framework of the Viet Nam-Germany Vocational Training Innovation Program, the General Department of Vocational Education and a number of vocational colleges in cooperation with GIZ.

Private sector activities, initiatives and support

Collaboration with the private sector is seen as essential to develop green jobs and skills. Article 60 of the Labour Code highlights employers’ responsibilities for training, fostering and improving occupational skills for workers. The Law on Vocational Education 2014 has a chapter regulating businesses participating in vocational training. However, the participation and role of the private sector in skills training is still

modest. The current popular model of public-private partnership in vocational training is public vocational training institutions and schools entering into cooperation agreements with the private sector on placing trainees in enterprises for internships and labour supply contracts. Other forms of collaboration such as enterprises' participation in the development of vocational standards, output standards and student assessment are very limited.

The private sector is strongly involved in renewable energy and power transmission networks. The Government's preferential mechanism for purchase prices for solar power (9.3 cents/kw) has led to billions of dollars of private and foreign-invested investment in renewable energy (mainly solar) projects. In 2018, investment in renewable energy of Viet Nam reached a record of US \$ 5.2 billion, 9 times higher than the previous year. In 2019, renewable energy investment rose to the third position after financial technology and education. A wide range of job opportunities in construction, installation, and operation and maintenance of wind and solar power plants is expected. Increasing demand for skilled labour in these sectors is driving demand for new training and training providers in these areas.

Traditionally major environmental service providers (wastewater, waste treatment, air pollution) were mostly owned by state-owned enterprises, however this has changes in recent years.

Organic agriculture is also developing; although the proportion of organic agriculture is still very small (estimated that only 2% of the land is cultivated organically), there are many private businesses, cooperatives, farms, and houses. Organic agriculture has a lot of potential to develop green jobs in the field of organic agriculture in Viet Nam. Tourism is also an industry that has grown tremendously in recent years, and is a high potential source of green jobs. Private market operators are providing



‘green’ tourism services and the Vietnamese government has developed a number of policies to encourage sustainable tourism activities and tourism.

Viet Nam has also provided various financial incentives and policies to support the promotion of environmentally friendly production and consumption activities, and responding to climate change. Specific policies include tax policies (corporate income tax subsidies, export tax, import tax exemptions, special consumption tax and agricultural land use tax exemptions). Policies to apply tax exemptions to encourage organizations, individuals and businesses to participate in environmental protection activities (environmental protection) also exist. Currently, the state budget spending policies related to climate change are divided into two groups (state budget expenditure for environmental protection, climate change mitigation and disaster recovery). In particular, the state budget has to ensure expenditure on environmental protection is no less than 1% of the total state budget expenditure.

Coordination

The Green Growth Strategy and the various Ministerial responses and implementation plans represent a degree of policy coordination. The coordination challenges of increasing awareness of the need implement further measures to raise awareness about green jobs also exists.

Policy Readiness Assessment

Policy area	Notes
1. Macro-economic growth plans and development policies establish the green agenda	Green economy well established in development plans
2. Industrial and sector policies for greening	A number of sectors identified as priority for green jobs
3. Enterprise policies and initiatives for greening	Investment incentives for enterprises, some training incentives, but potentially mis-aligned
4. Skills development for green skills	Ongoing work to identify and map green skills needs
5. Occupational Safety and Health for climate change issues	C155 in force
6. Social protection	ILO C102 still to be ratified, but medical care, sickness, maternity, old-age, work injury, invalidity, survivors and unemployment benefit available. No family allowances
7. Active labour market for greening	Emerging activities especially linked to green jobs identification and training
Cross-cutting issues – labour rights and social dialogue processes in greening	ILO C144 in force, social dialogue processes evident in some green economy policy making



5. Discussion and recommendations

The aims of this report are to

- ▶ highlight a policy framework for the promotion of green jobs and just transition, and then
- ▶ use this framework to assess the policy readiness of AMS for promoting green jobs and just transition.

The policy readiness assessment drew on responses from AMS to an extensive questionnaire. Results from this questionnaire, along with other document analysis, were then used to develop the country narratives and summary assessment tables presented in Section 4. Summary assessment results are presented in a colour coded way, with green representing significant elements of the framework element in place and readiness for activities to promote green jobs and just transition, orange representing need for additional processes and policies which in many cases are identified/in development, and grey representing no policy elements identifiable to date from questionnaire and document analysis.

This section brings together all these assessments to develop a picture and recommendations on policy readiness and the regional level and the types and content of knowledge sharing activities that could take place across ASEAN to further promote policy readiness for green jobs and just transition. Table 2 provides a summary highlight of the policy readiness assessment in AMS.

► Table 2: Summary policy readiness assessment in AMS

Policy area	Brunei Darussalam	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
Development policies establish the green agenda	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Significant
Industrial and sector policies for greening	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Significant
Enterprise policies and initiatives for greening	Significant	Some	Significant	Some	Significant	Significant	Significant	Significant	Some	Some
Skills development for green skills	Some	Some	Some	Some	Significant	Limited	Significant	Significant	Some	Some
Active labour market for greening	Limited	Limited	Limited	Some	Significant	Limited	Significant	Significant	Limited	Significant
OSH for climate change issues	Limited	Some	Limited	Some	Significant	Limited	Significant	Significant	Limited	Significant
Social protection	Some	Some	Some	Some	Some	Some	Some	Significant	Significant	Significant
Cross-cutting issues – labour rights, standards & social dialogue processes in greening	Limited	Some	Some	Some	Some	Some	Significant	Significant	Some	Significant

■ Significant policy elements in place
■ Some policy elements in place
■ Limited/ No policy elements in place

In developing this discussion section, reference is made to the initial objectives of the study including:

- **Definitions and categorisations** of green jobs and how **qualifications** for green skills are awarded and available in AMS. Such definitions should include both decent work and green standards. Ministries in charge of such categorisation and qualification to be identified;
- **Identify the priority sectors** of green jobs and green skills in individual AMS where available;
- **Highlight the policy frameworks** to promote green jobs, where available, and compliance mechanism of AMS;
- Identify the range of **institutional mechanisms** to promote the green economy and/or green jobs of AMS. This includes inter-ministerial committees and roles of labour, environment, industry and education ministries in such committees in light of green job promotion;
- Highlight the **awareness level and demands of the private sector** in the country for green jobs and green skills.

The following section is organised around the three high level categories for promoting green jobs; i) creating demand for green jobs, ii) creating supply for green jobs and iii) institutional arrangements.

Creating demand for green jobs

Recommendation 1: AMS to work together to agree common and workable definition of green jobs, using spectrum approach to identify core green, indirectly green, and non-green occupations across different sectors and geographies.

Most AMS have some **conceptual definitions of green jobs and green skills**, and in many cases, these are developed from the ILO definition of green jobs. The specific defining of green jobs has been of less focus than the overall implementation of the green economy agenda with the belief that creating low carbon development and adapting to climate change will create momentum in the economy for green jobs.

A common definition for green jobs will allow knowledge sharing of green jobs analysis across the region and allow countries to leverage on other AMS's understanding of green jobs in various sectors, further accelerating knowledge and evidence for policy making and support.

► Box 1 – Example of defining green jobs: Viet Nam

The initiation of green economy in Viet Nam began with Decision No. 1393/QD-TTg from the Prime Minister in 2012. This decision approved the National Strategy on Green Growth for 2011-2020 and the Vision 2050, both of which set out two tasks – i) to green production through clean industrialisation, economical and efficient resource use, development and implementation of green technologies and greening of agriculture; and ii) to green lifestyles and promote sustainable consumption.

The decision also set out a definition for green jobs – “...as jobs in agriculture, manufacturing, research and development, administrative management and services, which make significant contribution to the preservation and restoration of environmental quality”. This definition understood green jobs as located in green economic sectors, without consideration of the characteristics of the job.

With further decisions of Viet Nam government to implement the SDGs in 2017 and research by the Institute of Labor Science and Social Affairs (ILSSA) the definition of green jobs was defined as employment in sectors that help preserve or restore the environment or bring about sustainable development, and also employment with decent and satisfactory working conditions.

Viet Nam currently classifies green jobs based on criteria of impact on environment – reducing

GHG emissions, protecting biodiversity and the environment. Three levels of impact are identified – core green job sectors (e.g. renewable energy, clean water supply, forestry), partly green sectors (organic agriculture, recycling, green construction) and non-green or brown sectors (e.g. health care, finance and business services). Decent work criteria are also applied to identify green jobs including salaries and payment, contracting and availability of social protection, freedom of association and collective bargaining, no forced labour or child labour.

Analysis of green jobs in Viet Nam highlights ongoing challenges in promoting green jobs. The current global economic and employment growth models are based on the availability of low-cost labour, unlimited resource extraction, high energy costs and environmental pollution. The overall number and scale of green jobs is relatively small, and in Viet Nam these green jobs are concentrated in specific industries and mainly attract low skilled workers. Challenges to the promotion of green jobs include, continuing limited awareness of green jobs concept, lack of data and knowledge to support evidence-based policy making, as well as lack of coordination and coherence between sectors and existing policy mechanisms.

Source: Viet Nam presentation to ASEAN Green Jobs Forum, October 2020

Recommendation 2: Using these definitions of green jobs, analyse labour markets to highlight where green jobs potential, skill needs and just transition hotspots are located.

The delineation of green and non-green is more important when developing specific sector strategies, considering negative employment impacts of greening and when considering the skills need and re-skilling task associated with green economies. For most of the workforce greening will change their work by only a small amount. For other occupations greening will change them significantly and new occupations will be created and other occupations will diminish or be phased out. Definitions and categorisation of green jobs, especially definitions that implement a spectrum approach - consider greening on a spectrum, with some jobs categorised as 'core green' (renewable energy installers, recycling officers etc) and others as 'indirectly' green (construction workers on green buildings, workers in factories with cleaner production). It is also important to consider non-green jobs, and identify those jobs that can and will transition and those that will phase out. This will allow for Just Transition planning to take place.

Recommendation 3: Seek to differentiate likely occupiers of green jobs by age and gender.

The gender and age dimensions of greening also needs investigation. People who are socially, economically, culturally and institutionally marginalised are especially vulnerable to the impacts of climate change. This includes low income, low skilled workers, workers in informal employment (ILO, 2018). Women also have less access to resources to adapt to climate change and may face additional barriers or discrimination in participating in opportunities from the green economy. Gender-responsive policies for green jobs and skills are necessary to ensure women have equal access to these jobs.

Creating supply for green jobs

Recommendation 4: Create knowledge sharing platform and opportunities for dialogue between TVET specialists, policy makers and other stakeholders to discuss, identify and share best practice in developing green skills in AMS.

Identifying what tasks in a green job are different to a non-green job, and how to develop the skills associated with the green task highlights in what sectors/ occupations / demographics re-training needs will be greatest. The so-called skill-distance (Autor et al, 2003), the extent of re-training required to transition from one (non-green) job to another (green) job also signals how re-training and re-skilling can occur (Bowen et al, 2018). Where the distance is short, on-the-job training can be used to build these skills.

Enhancing the capacities of people through the acquisition of green skills is critical to the broad promotion and creation of green jobs within the economy. Many AMS have active programs and policies to green their TVET systems and develop and integrate standards for green education and training within curriculum and competency frameworks. The Green Jobs Forum highlighted that knowledge and practice sharing on policies and programs for greening of TVET systems, and assessing the effectiveness of these systems, is a key need for future ASEAN level regional corporation in promoting green jobs.

Recommendation 5: Map and share promising examples of integrating push and pull factors in developing sector specific strategies, including for active labour market policies.

Many AMS have explicit strategies in place to implement green economy in **priority sectors** - with agriculture, tourism services, the built environment, energy and environmental services (water, wastewater, waste) identified as priority sectors in countries. These sector strategies usually include investment and incentive from government at various levels. The more comprehensive strategies

► **Box 2: Example of greening TVET system: Philippines**

The Philippines has led the way in ASEAN in promotion of green jobs and just transition through the legislating of the Green Jobs Act in 2016. The law is designed to generate, sustain and incentivise green jobs by providing fiscal and non-fiscal incentives, develop human resources and ensure workers' rights. The Act provides a mechanism for assessing and certifying green jobs – this is how the Philippines can be assured that work that is described as green – actually meets definition – decent work, that also protects and conserves the environment.

To achieve green job certification and therefore access benefits and incentives, enterprises need to prove their compliance with labour regulations and green standards specific to their sector. After various evaluation and verification processes certification is then awarded. Certified enterprises have access to grants and incentive, business support activities (including technological and business services support), tax concessions on training and research and development expenses (up to 50%), duty free importation of capital equipment and preferential access to financial packages.

The Philippines has a three-level approach to determine if an economic activity/ job is green: i) Industry approach – specific industries are identified as green, ii) Product and service approach – product or service either verified as green, or meets certain thresholds/ standards for being environmentally sustainable, iii) Process approach – if a business has a process or

initiatives that delivers substantial environmental value beyond compliance.

The focus on developing human resources has seen the Philippines develop set of policies to support assessment of green skill needs and enhancing pathways for green skill acquisition. The Green Jobs Act supports the development and maintenance of a database on green careers, professions, skills and emerging business enterprises that are creating green jobs. Knowledge of green economy is also implemented into school curriculum. TESDA is responsible for formulating regulations for training, program registration and skill need for the green economy now and into the future – this includes the development (with PRC) of qualification frameworks that facilitate and recognise knowledge, skills and competencies of professionals working (and future work) in the green economy and impacts on industries and sectors due to physical impacts of climate change.

The Philippines is formulating the national Green Jobs Human Resource Development Plan 2020-2030, with the objective to enable the transition into a green economy and the generation of green jobs, the promotion of social justice and workers' welfare. The Plan is an evolving strategic document aimed at capturing current initiatives and challenges, and will be underpinned by operationally focused action plan.

Source: Philippines presentation to ASEAN Green Jobs Forum, October 2020

combine these incentives (pull factors) with research and development activities, innovation support and public procurement (push factors).

Recommendation 6: Map and share promising examples and evaluations of financing mechanisms and incentives for private sector activity in the green economy.

The Green Jobs Forum 2020 also highlighted the critical need to mobilise investment – both public and private for green infrastructure, as well as to support research, development and commercialisation of green products, processes and services. However, experience of other countries including Mongolia (see box below) shows that access to finance alone does not necessarily translate into green jobs. Additional measures including guidelines, checklists and capacity building is required to ensure that investments in green or sustainable infrastructure or projects also translated into decent and green work.

► Box 3: Financing green jobs and just transition in Mongolia

The Mongolian Sustainable Finance Association (MFSA) includes membership of all of Mongolia's commercial banks. Part of the MFSA work plan is to identify how green jobs and just transition can be identified and enhanced through the investment activities of Mongolia's commercial banks.

A focus on sustainable finance in Mongolia emerged out of a 2013 unanimous commitment of members of the Mongolia Bankers' Association to integrate environmental and social considerations into their banking practices. The commitment resulted in the signing of a Joint Commitment Statement to Develop Sustainable Banking Practices in Mongolia signed in 21 November 2013 and the decision to instigate the Mongolian Sustainable Finance Initiative. A working group was convened including members from all commercial banks; the Central Bank of Mongolia; Ministry of Environment, Green Development and Tourism; and the Financial Regulatory Commission.

The working group established the eight Mongolian Sustainable Finance Principles:

1. Protect the natural environment
2. Protect people and communities
3. Protect cultural heritage
4. Promote "green economy" growth
5. Promote financial inclusion
6. Promote ethical finance and corporate governance

7. Promote transparency and accountability

8. Lead by example – practice what we preach

The MFSA is responsible for operationalising these eight principles and providing tools and guidance as well as building capacity for the principles to be acted upon in the financial sector. This has included the production of four sector guidelines (for Construction, Mining, Agricultural and Manufacturing) to identify, assess and manage environmental and social risks (ESR) within these sectors. These sectors were targeted because they have associated risks of higher negative environmental and social risks. These sectors are also more regulated, providing an existing compliance framework to build these ESR guidelines from. A fifth sector guideline is currently being produced for the textile sector.

The Guidelines include an ESR checklist for assessing and managing risk and compliance for new investment/loan activities under consideration by the commercial banks. While the checklist highlights areas of potential negative social and environmental impact; challenges exist in assessing the labour market impacts (positive and negative) of assessing environmental risks in investment decision making, and accessing and working out what data to collect against various metrics, and how to verify these data. Collaboration with ILO is developing further criteria for the ESR guidelines to include these labour market impacts.

Recommendation 7: AMS to work together and share evaluations of efficacy of private sector incentives for green jobs. One practical way to do this is to hold an annual Green Jobs Forum where progress can be discussed and strategies and initiatives which proved to be effective in promoting green jobs and green employment can be shared among AMS.

Across all AMS a range of incentives to create **private sector demand and awareness for green jobs** exist. These range from subsidies, tax exemptions, preferential investment treatment and various forms of regulation. There are some examples of where these activities have been in place for a number of years, but for most incentives they are relatively new, so there is not clarity and evidence of efficacy yet. In many cases there is the assumption that these incentives will lead to the creation of green jobs, but this is untested, or at least the number of types of green jobs that are created. Activities that assess the

number of types of jobs generated by these incentives and assess whether these match expectation for public expenditure.

Institutional arrangements

Recommendation 8: Map and assess the OSH implications of the greening of employment across ASEAN, and identify how OSH frameworks and training activates will need to be enhanced to manage these risks.

The implications of greening for Occupational Health and Safety (OSH) and the role of social protection in achieving a Just Transition are emerging and critical issues. Climate change is one of the most significant drivers of change in the workplace; it will also become a significant source of workplace harm. Environmental risks resulting from climate change including air, water and soil pollution; heat and increasing temperatures; erosion; sea-level rise and risks from rapid onset events, such as extreme weather events (bush fires, severe storms, floods) will be a major driver of change in the world of work (ILO, 2018). Climate change will alter the intensity and frequency of these events, and lead to cascading effects. This means that whereas in the past these impacts were not seen as workplace risks, now and into the future they will be.

Recommendation 9: Map and assess the implications for and suitable modes of social protection associated with achieving a just transition.

Social protection is identified as a critical enabler of a just transition, and is one of the elements identified in the policy assessment framework for promoting green jobs used in this report. The methods of assessment used in this report – ratification of ILO convention 102 and assessment of elements of social protection systems in ASEAN from a 2015 ILO report highlight that there are gaps in our knowledge about social protection systems across AMS and the adequacy and need that greening and climate change will place on these systems. The implications of greening and just transition on social protection, and particularly the modes and forms that this protection needs to be the focus on further analysis and discussion across ASEAN. The need for this renewed focus was acknowledged in discussions at the Green Jobs Forum.

Recommendation 10: Examine coordination mechanisms across AMS to identify and establish what successful coordination across green jobs policy framework looks like and how to replicate it.

A range of **Institutional mechanisms** were identified across AMS for coordinating policy frameworks for promoting green jobs and just transition. These typically consisted of inter-ministerial groups and related senior-officer groups. The Philippines has highly developed range of institutions to support the implementation of the Philippine Green Jobs Act and Climate Change Plan, including the creation of a Climate Change Commission. The emerging nature of these institutions means that we do not have a good understanding of how coordination is successfully managed, and what the critical ingredients are in the establishment and maintenance of these mechanisms.

Mechanisms for coordination and coherence of policy for promoting green jobs and just transition are common requirements for all AMS, and therefore provide another area that is highly relevant for knowledge sharing and cooperation at the regional level. As all AMS manage the health, social and economic disruptions from the COVID-19 pandemic, ways and means for AMS to work together and develop best practice mechanisms in developing green jobs will provide an effective investment of public and private resources for sustainable development.

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► Annex A

Regional Study on Green Jobs Policy Readiness in ASEAN

Green Jobs, Policy and Issues questionnaire

Introduction: ASEAN is undertaking a range of knowledge development and capacity building activities with AMS labour ministries and related in developing and promoting green jobs. One of these activities is the Regional Study on Green Jobs Policy Readiness in ASEAN. The study is being completed in collaboration between Malaysia (Ministry of Human Resources), ASEAN Secretariat and the ILO (Bangkok Regional Office). ILO technical expert, Dr Samantha Sharpe, from the Institute for Sustainable Futures, UTS is engaged in conducting the study.

This questionnaire will provide data for the regional study. The aim of this questionnaire is two-fold; i) to assess the current situation of policy and program activity promoting green jobs across ASEAN, and ii) highlight priority areas for further knowledge sharing and awareness raising initiatives across AMS.

Instructions: Please complete each of the sections. Guidance and further explanation of key terms are provided with each question. Each question should be answered with 3-4 paragraphs, with links to policy documents, reports and further analysis, wherever possible.

Please return completed questionnaire to Samantha.sharpe@uts.edu.au with Cc to: LCSD@asean.org by 17 April 2020. Please also send any questions or queries to Dr Samantha Sharpe of the Institute for Sustainable Futures, University of Technology Sydney, at the above email address.

The questionnaire has 9 questions and will take 60 minutes to be completed.

The results of this questionnaire will be collated, analysed and presented at the ASEAN Green jobs Forum in 2020 in Malaysia.

**Thank you for providing this information for the Regional
Study on Green Jobs Policy Readiness in ASEAN**

1. Describe the existing national policy framework for Green Economy

- 1.1. What are the main elements of the framework for green economy – for example policies, regulations, legislation, targets?
- 1.2. What parts of government are responsible for/ involved in this issue, including geographic (national, regional, local), Ministerial (central agencies, environment, labour, education)?
- 1.3. What are the linkages between this issue and national development policies/plan of actions and other economic and environmental policies/plan of actions?
- 1.4. How do you anticipate your country's green economy framework will change in coming years to meet Paris Agreement Commitments?
- 1.5. Please provide references/ links/copies to reports/ evidence

2. How are green jobs and green skills currently defined in your country?

- 2.1. What are the definitions of green jobs and green skills in policy documents?
- 2.2. What are the categorisations of green jobs, if available?
- 2.3. What are the qualifications of green skills, if available?
- 2.4. Do these definitions include all aspects of decent work principles?
- 2.5. Please provide references/ links/copies of reports/ evidence

3. What policies exist to support the adoption of green jobs?

- 3.1. Which Ministries, agencies and levels of government are involved?
- 3.2. What mechanisms used or are being proposed – for example incentives, regulations, targets?
- 3.3. Who/ what populations and/or priority sectors are the specific target of policies? For example, focus on specific sectors (agriculture, construction, energy, waste management) specific populations (young people, women), specific technologies (electric vehicles) or specific regions or local areas?
- 3.4. What has been successful in encouraging green jobs? Please describe how success is measured and any evidence of success/ failure (for example links to evaluation reports)?
- 3.5. Please provide references/ links/copies of reports/ evidence

4. What policies exist to support the uptake of green skills?

- 4.1. Which Ministries, agencies, institutions (universities, technical colleges) and levels of government are involved?
- 4.2. What mechanisms used or are being proposed – for example incentives, training activities, subsidies, regulations, targets?
- 4.3. Who/ what populations and/or priority areas are the specific target of policies? For example, focus on specific sectors (agriculture, construction) specific populations (young people, women), or specific regions or local areas?
- 4.4. What has been successful in encouraging the development of green skills? Please describe how success is measured and any evidence of success/ failure (for example links to evaluation reports)?

4.5. Please provide references/ links/copies of reports/ evidence

5. Do you have policies/ incentives to identify and address negative employment impacts of green economy (such as Just Transition plans)?

Some of the employment impacts associated with climate action will result in job losses/ relocations in some sectors. Just transition planning refers to plans that provide for re-skilling and new employment opportunities, and access to social protection for workers experiencing these negative changes.

- 5.1. Which Ministries, agencies and levels of government are involved?
- 5.2. What mechanisms used or are being proposed – for example social protection mechanisms, retraining opportunities, economic development plans?
- 5.3. Who/ what populations and/or priority areas are the specific target of policies? For example, focus on specific sectors (agriculture, construction) specific populations (young people, women), or specific regions or local areas?
- 5.4. What has been successful in encouraging the development of green skills? Please describe how success is measured and any evidence of success/ failure (for example links to evaluation reports)?
- 5.5. Please provide references/ links/copies of reports/ evidence

6. What role does the private sector play in encouraging green jobs or green skills?

- 6.1. What is the current relationship between public and private actions to encourage green jobs or green skills? Are future public interventions proposed?
- 6.2. What are the barriers and enablers to greater private sector involvement in encouraging green jobs or green skills? How can barriers be overcome/ enablers strengthened?
- 6.3. In which sectors that the private sector is mostly active in promoting green jobs or green skills?

7. Have you identified labour market impacts of these green economy policies and/or Paris Agreement commitments?

- 7.1. For example, have green jobs mapping studies been undertaken, other sectoral level analysis of green jobs, or green job potential
- 7.2. Please provide references/ links/copies of reports/ evidence

8. What additional labour market information is required to support green jobs and green skills?

- 8.1. Green skills standards across countries
- 8.2. Green job mapping and occupational analysis
- 8.3. Employment implications of specific trends/ policy positions – for example circular economy, or electric vehicle uptake

9. What mechanisms are in place to ensure co-ordination and coherence of policies across Ministries? How is this implemented and evaluated?

- 9.1. How are information and activities co-ordinated across multiple ministries and agencies?

- 9.2. Policy coherence refers to the creation of mutually reinforcing policy actions across governments that support the achievement of whole-of government objectives for green economy. How are mutually reinforcing policy actions identified and implemented?
- 9.3. What are the challenges in achieving policy coherence? Evidence of successes or failures?
- 9.4. How could policy coherence be incorporated better in future policy actions?

Contact person

- Please include your name, contact details if we need to follow up for further information and clarification.
- Will you be attending the Green Jobs Forum in 2020 in Malaysia?

References

Please list and provide links to relevant documents, reports news articles used in preparing this report

**Thank you for providing this information for the Regional
Study on Green Jobs Policy Readiness in ASEAN**

Green jobs are a high priority in ASEAN. The COVID-19 pandemic is challenging all ASEAN Member States as they balance the health crisis with economic downturn and additional calls for fiscal stimulus. The need for green jobs is even more important now, yet resources both in the public and private sectors are constrained. Knowledge sharing and understanding best practice in promoting green jobs is essential to ensure scarce resources are used in the most effective ways. This report contributes to this knowledge sharing by using data from each of the ASEAN Member States to develop a policy framework and assess the level of policy readiness needed to promote green jobs and just transition in ASEAN countries.



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