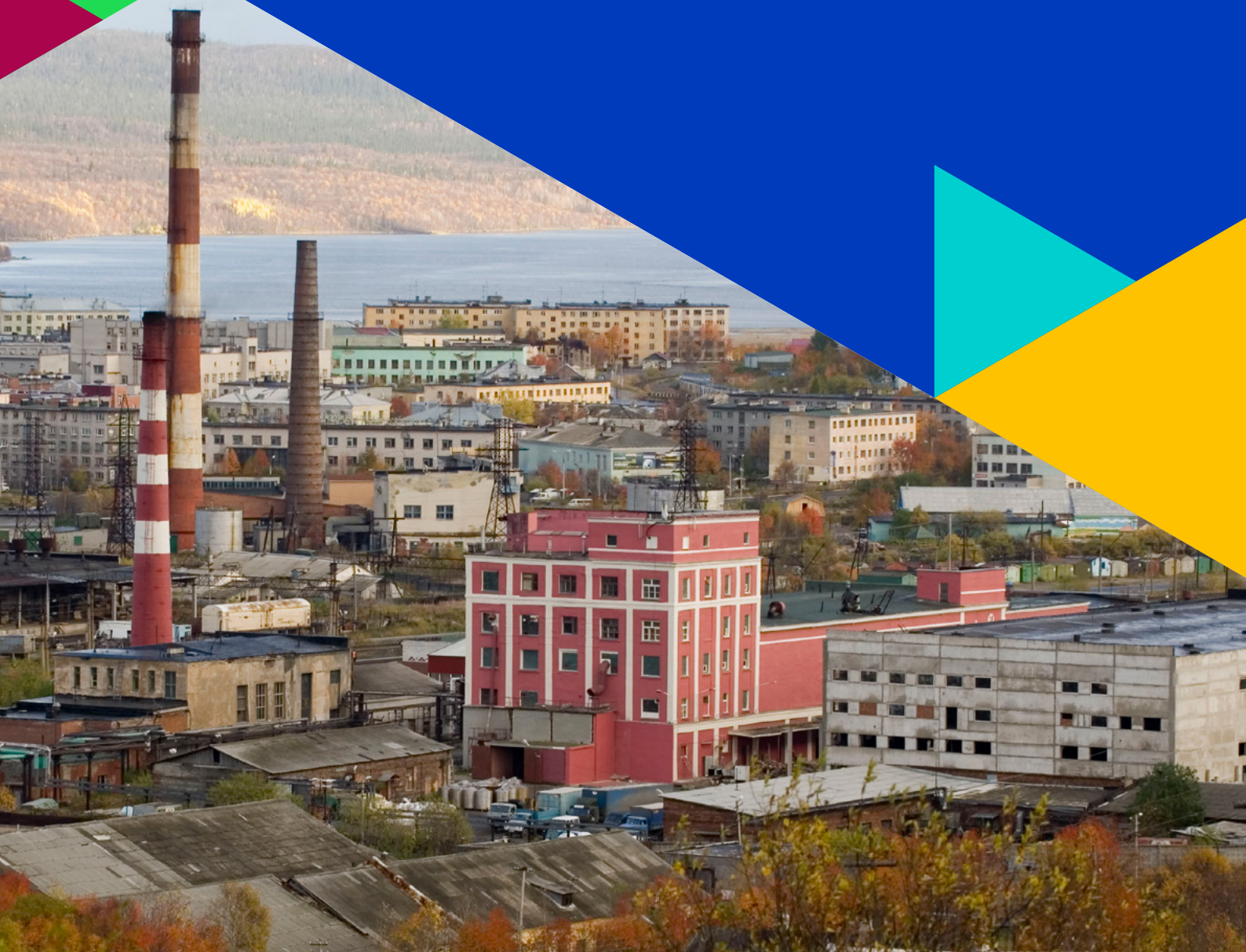
International Labour Organization

Guidelines on Green Employment Diagnostics for Just Transitions



Guidelines on Green Employment Diagnostics for Just Transitions

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▶ Foreword

Climate change is arguably the most pressing challenge the world is facing today with far-reaching effects on economies and labour markets, especially in developing countries. Climate change has substantial implications for the working conditions of those most exposed, such as agricultural and construction workers, and has the potential to precipitate the migration of workers in response to changing climatic conditions. At the same time, policy efforts to reorient the economy away from carbon-intensive production impacts labour markets through both job creation and destruction.

Understanding these complex interactions between the labour market and climate change and environmental sustainability measures requires the use of a range of data sources and methodologies to build an analysis that can serve policymakers and other stakeholders. To reach this goal, the International Labour Organization (ILO), in collaboration with Genesis Analytics, has co-developed these guidelines for undertaking green employment diagnostics at the country level, supporting the goal of just transitions. The guidelines, complemented by an overarching ILO framework for employment diagnostics, aim to enhance the understanding of the interplay between the environment, economy and employment, empowering ILO constituents to identify trends, constraints and opportunities related to climate change impacts on the labour market.

Specifically, the guidelines highlight how to analyze the impact of climate change and the transition to environmental sustainability on the labour market and provide evidence based and computational approaches to identify challenges and opportunities for sustainable pathways towards productive employment for all in low- and middle-income countries. The ultimate objective of deploying a green employment diagnostics study is to provide specific and actionable recommendations to governments and the ILO's social partners to assist them in proposing policy interventions to improve the sustainability and inclusiveness of national employment policies and their coherence with climate policies and strategies.

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▶ Contents

▶ Foreword iii

▶ Acknowledgements iv

▶ 1. Introduction and key objectives 1

▶ 2. Overview of the Green Employment Diagnostics for Just Transitions Framework 5

2.1. Key concepts for green employment diagnostics 6
2.2. Analytical framework for green employment diagnostics 7

▶ 3. Step I: Country profiling to identify focus areas for investigation 11

▶ 4. Step II: In-depth assessment by key implications 19

4.1. Economic implications 20
4.1.1. Physical impacts and their effects on the economy 20
4.1.2. Transition risks and their economic implications 23
4.1.3. Transition opportunities and their economic implications 26
4.2. Labour market implications 28
4.2.1. Physical risks and their labour market implications 28
4.2.2. Transition risks and their labour market implications 30
4.2.3. Transition opportunities and their labour market implications 31
4.3. Poverty and inequality implications 33
4.3.1. Physical risks and their poverty and inequality implications 33
4.3.2. Transition risks and their poverty and inequality implications 34
4.3.3. Transition opportunities and their poverty and inequality implications 35

▶ 5. Step III: Developing policy recommendations 37

Module i 39
Module ii 40
Module iii 46

▶ 6. Step III: Developing policy recommendations 49

▶ Annexure 52

▶ References 55

List of boxes

- **Box 1.** Summary of insights to be developed on economic implications 28
- **Box 2.** Summary of insights to be developed on labour market implications 33
- **Box 3.** Summary of insights to be developed on poverty/inequality implications 35
- **Box 4.** Summary of insights towards developing policy recommendations 47

1

Introduction and key objectives

Addressing climate change is one of the defining challenges of the 21st century. Climate change will have profound implications for economies, labour market dynamics and people's welfare. It is already directly impacting an estimated 85 per cent of the world's population,[1] indirectly impacting all and is radically disrupting global health, development and welfare[2]. These effects are expected to disproportionately impact the poorest and most vulnerable in society.

Employment landscapes across the world are undergoing climate-induced transformations and longer-term changes. The physical impacts of climate change threaten to reduce productivity in many sectors and are detrimental to the ability of many workers to sustain decent livelihoods. Climate change-induced migration may also put great strain on labour markets. Those who are at risk of negative impacts of climate change and whose jobs and livelihoods rely on activities that are threatened by, or incompatible with, agreed environmental objectives need to be identified and supported where needed. Responding to the risks posed by climate change requires a fundamental reorientation of the economy away from greenhouse gas (GHG) emissions-intensive (and climate-vulnerable) activities, as well as decoupling of growth from emissions and improvement of resilience within economic sectors. For many sectors and countries, this poses fundamental challenges as models for growth and development are predicated on activities that are incompatible with agreed climate and environmental goals.

But responding to climate change and other environmental pressures by reducing emissions and supporting biodiversity and other environmental objectives is not only about risks and costs. There is robust evidence that, at the aggregate level, reducing emissions will support economic growth and welfare[3]. Developing new economic activities, or reformulating existing ones, can help countries and sectors to flourish. Understanding prospects of the long-term benefits while addressing the pain of transition and dealing with the shorter-term costs is vital for formulating policy measures that promote human well-being. This involves examining how climate-induced changes influence society, identifying persistent obstacles that hinder various groups, and ensuring that short-term shocks do not lead to long-term deprivation. Such changes should be viewed as opportunities to explore alternative avenues for achieving prosperity.

Effective policies to catalyse green economies are vital to ensure full, productive and decent employment and to achieve sustainable development and a just transition. Efforts to reduce adverse climate/environmental impacts can and must simultaneously lead to socially just outcomes with employment opportunities for all to be socially sustainable and to ensure the necessary support for the required reforms. Furthermore, understanding complex policy processes requires solid knowledge of intertwined development process and countries need support to exploit the employment opportunities provided by 'green growth', and ensure that their workforce is equipped to flourish in these new areas.

Analyses of changes in the economy and the labour market are a cornerstone of the International Labour Organization's (ILO's) policy advice. Employment diagnostics are commonly used as a first step when designing employment policies that seek to achieve full and productive employment for all. The importance of updating the analytical base on which policy decisions are taken has increased as the number and scale of shocks affecting the global economy has grown.

The purpose of these guidelines is to complement existing employment diagnostic approaches to support countries understand and respond to the opportunities and threats posed by climate change, and policy responses to promote just transitions. Developed in line with the ILO's

1 Callaghan, M., Schleussner, CF., Nath, S. et al. Machine-learning-based evidence and attribution mapping of 100,000 climate impact studies. Nat. Clim. Chang. 11, 966–972. Available at: https://www.nature.com/articles/s41558-021-01168-6

2 IPCC (2022).Climate Change 2022: Impacts, Adaptation and Vulnerability. Available at: https://www.ipcc.ch/report/ar6/wg2/

3 ILO (2018). *Greening with jobs – World Employment and Social Outlook*. Available at: https://www.ilo.org/global/research/global-reports/weso/greening-with-jobs/lang--en/index.htm

Guidelines for Employment Diagnostics in Times of Continuous Change,[4] the present guidelines provide **ILO constituents and staff with direction and guidance on identifying the underlying trends, constraints, risks and opportunities related to the context-specific impacts of climate change and just transition pathways, and to provide them with guidance on identifying and/or informing policies for achieving productive employment for all.** The evidence and insights generated by implementing green employment diagnostics, on which these guidelines provide advice, will serve as the foundation for informed discussions with key government counterparts, such as ministries of labour. Furthermore, the findings of such diagnostics will facilitate dialogues between nodal agencies and other relevant government entities, including planning ministries, environmental/climate change ministries, and agencies involved in climate adaptation and mitigation planning. Additionally, tailored advice can be directed towards workers' and employers' organizations, to support their engagement in the transition towards green and sustainable employment practices, in line with the International Labour Conference's Resolution concerning a just transition towards environmentally sustainable economies and societies for all[5].

The objectives of a green employment diagnostic include the following:

- Understanding the key challenges climate change poses to ensuring equitable economic development and the creation of decent employment opportunities for all.
- Understanding how policy and market responses to climate change and other environmental pressures provide new opportunities for inclusive growth that generates decent jobs.
- Identifying policies that can help manage these risks and opportunities, and other potential constraints to implementing these policies, in the context of national employment policies.

These guidelines outline how to conduct a green employment diagnostic, and how the above objectives can be achieved. They include a proposed framework for green employment diagnostics, and various modules which set out the steps to be taken to conduct the diagnostic.

The structure of the guidelines is presented below, to provide the reader with a sense of what each chapter covers.

- **Chapter 2. Overview of the framework for green employment diagnostics.** This chapter is divided into two main sections which introduce key concepts relating to the development of green employment diagnostics and the analytical framework for deploying such a diagnostic.
- **Chapter 3. Step I: Country profiling to identify focus areas for investigation.** In this chapter, we focus on how to deploy the first step of the Green Employment Diagnostics for Just Transitions Framework: country profiling. This entails utilising easily accessible data to gain insights into a country's economic, labour market and poverty/inequality contexts, and the key climate events and associated risks the country experiences. This step also involves undertaking a rapid policy landscape analysis to identify the existing policies and strategies at the environment-employment-economy nexus. The aim of this step is to derive an overall narrative for the country under study, to help prioritise focus areas for further investigation in Step II.

4 ILO (2023). Guidelines for Employment Diagnostics in Times of Continuous Change. Available at: https://www.ilo.org/global/topics/employment-promotion/epaf/design-lab/WCMS_870941/lang--en/index.htm

5 ILC.111/Resolution V: Resolution concerning a just transition towards environmentally sustainable economies and societies for all (ilo.org)

- **Chapter 4. Step II: In-depth assessment by key implications.** This chapter is divided into three main sub-sections which relate to (respectively) the economic, labour market and poverty and inequality implications of the impacts of physical climate risks and transition risks and opportunities. This chapter focuses on how to deploy the second step within the Green Employment Diagnostics Framework to generate key insights into the existing challenges and implications across core pillars identified, using tailored questions, evidence sourcing and/or evidence generation, and reporting for policy considerations.
- **Chapter 5. Step III: Developing policy recommendations.** This chapter provides a detailed guide on how to identify gaps in current policies as regards addressing the challenges identified in Step 2, and offers strategies for improving policy. The ultimate objective of Step III is to offer users policy options, underpinned by the ILO's Guidelines for a Just Transition towards environmentally sustainable economies and societies for all[6]. These recommendations should also aim to assist constituents in giving effect to the ILC Resolution concerning a just transition towards environmentally sustainable economies and societies for all[7].
- **Chapter 6. Process: How to implement a green employment diagnostic.** This chapter provides a key step-by-step implementation procedure for conducting a green employment diagnostic, key considerations when doing so, and the timelines and resources required to effectively deploy the Green Employment Diagnostics for Just Transitions Framework.

Across the chapters, boxes are included that summarise the key insights that will be generated by applying each step of the diagnostics framework, to provide a quick reference for users.

6 https://www.ilo.org/wcmsp5/groups/public/@ed_emp/@emp_ent/documents/publication/wcms_432859.pdf

7 This refers, in particular, to points 21b and 21e: governments, in consultation with the most representative employers' and workers' organizations should "integrate measures into environmental and climate policies such as nationally determined contributions to the Paris Agreement and net-zero targets, and into coherent, integrated and comprehensive employment, social protection and industrial policies to advance a just transition" and "promote full, productive and freely chosen employment and decent work as a core objective of a just transition", https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---relconf/documents/meetingdocument/wcms_885375.pdf.

2

Overview of the Green Employment Diagnostics for Just Transitions Framework

▶ 2.1. Key concepts for green employment diagnostics

The core insight on which green employment diagnostics rests is that climate change (and policy responses to it) will have a significant impact on all economies, and that these impacts will affect the labour market, and may exacerbate poverty and inequality, if left unaddressed. Additionally, three *key considerations* ensure that the diagnostics are flexible, multi-layered, adaptable and applicable to the individual country context.

1. ***Different types of climate events create different types of risks*:** Accordingly, the framework ought to allow for the inclusion of multiple and differentiated types of climate events and risks, which, in turn, define the subsequent focus for analysis (e.g., risk from droughts is skewed towards the agriculture sector, as compared to other sectors).

2. ***Economies vary by type, extent of vulnerability and adaptive capacity*:** This necessitates that the framework ought to be sufficiently flexible to accommodate these differences. Key variabilities across developing countries include (among others) differences in employment parameters, low/medium/high levels of climate risk exposure and vulnerabilities, differences in macro-fiscal stabilities, and differences in adaptive capacities at the institutional and micro levels.

3. ***The key to informed decision-making lies at the sectoral level and how sectors can be affected by climate change*:** Consequently, there is a need for a focus on the key economic sectors impacted by climate change and linked policy responses. This enables the use of targeted interventions, informed by evidence, to ensure policy alignment and coherence with other sectors, facilitate monitoring and evaluation, and enhance stakeholder engagement. This not only ensures the applicability of the framework in the decision-making context, but also allows for assessing changes across sectors, which may also be aggregated to represent economy-wide sectoral impacts.

The green employment diagnostics complement existing employment diagnostic approaches developed by the ILO and aim to help countries understand and respond to the opportunities and threats posed by climate change, and policy responses to these. Green employment diagnostics are organised around four core pillars, three of which are already used in the existing *ILO Guidelines for Employment Diagnostics in Times of Continuous Change*. These core pillars act as levers, around which the assessment is undertaken.

1. **Climate change and environmental pillar:** This refers to the trends, frequency and severity of climate events, the impacts of climate change on the economy and labour market, as well as changes in the economy and labour market due to the transition to a low-carbon economy, including, for instance, the vulnerability of certain sectors and occupations to climate-related disruptions, and the emergence of new green industries and changing skills requirements. Understanding these dynamics helps in assessing the key risks faced by countries, their implications for sectors and workers, and the formulation of appropriate policies.

2. **Economic pillar:** This pillar considers how the identified climate change impacts and environmental challenges, as well as national and international policy and market responses to these challenges, affect the economy, both at the aggregate level and across key sectors.

3. **Labour market pillar:** This pillar focuses on the consequences for the labour market of the economic impacts. It considers employment and productivity across key sectors, as well as changes by gender, age, skills, occupation and location of the workforce. This also helps in identifying the changing skills requirement, and to what extent current policy settings are well-calibrated to address emerging challenges.

4. **Poverty and inequality pillar:** This pillar explores how people's welfare characteristics are impacted by the changes in the labour market. It focuses on poverty and inequality changes, and the extent to which government policy is well set up to address these.

Additionally, the diagnostics framework incorporates key determinants of climate change consequences that cut across the core pillars, to ensure a uniform structure of the diagnostics framework. These include the **physical impacts of climate change** (focused on climate risk characteristics), **transition impacts – risks** (based on national and global policy and market responses to climate change affecting an economy), and **transition impacts – opportunities** (focused on opportunities in the form of new job creation potential, new skills requirement, gains in sectors through shifts/ innovations, etc.

▶ 2.2. Analytical framework for green employment diagnostics

Relying on the above insights, green employment diagnostics follow a three-step approach, supported by an Excel-based toolkit which guides the operations of each step through identifying specific questions, required data points and data sources, as well as outlining appropriate methodologies. The crux of the analytical framework recognises that the most relevant (research) questions and issues will differ across countries according to their climate, economic and labour market and poverty/inequality contexts. This approach enables the generation of insights about the most pressing issues and context-specific needs for each country, which, in turn, may translate into targeted policy interventions.

Step I identifies the key climatic/environmental, economic, labour market and poverty/inequality contexts of a country, along with a rapid assessment of the existing policy landscape at the environment-economic-employment nexus, in order to develop a sound understanding of the country profile. This helps to prioritise the questions posed in Step II, in accordance with the key contextual characteristics of the country and the challenges/opportunities identified[8].

Step II dives deeper into the country's economic, labour market, and poverty and inequality dynamics, disaggregated by the physical impacts of climate change as well as the risks and opportunities embedded within transition impacts. This is done **through posing guiding questions**, which are tailored to the profile 'highlights' of the country. To complete this step, a combination of existing analytical and academic studies, country-specific data, expert interviews, consultations with social partners (including workers' groups, employers' groups and government entities), through focus group discussions and rapid surveys or primary data generation modules, is undertaken. Where country-specific data is unavailable or outdated, case studies from other similar contexts may be used for guidance.

Step III identifies policy options. It leverages information from Steps I and II to lay out where new or altered policy is needed and to identify the entry points for making these policy changes.

An overall outline of the analytical framework encompassing these three steps is shown in Figure 1 below. The key considerations and details of each step are described in the subsequent sections. **The core pillars are conceptually applied and presented in a different order and include different elements in each of the steps.** Specifically, ***Step I focuses on reviewing and understanding the key 'contexts'*** across the climate/environment, economic, labour market and poverty/inequality pillars for a

8 The interest may lie not so much in defining a unique profile for each country but rather the types of risks and impact pathways.

selected country. ***Step II focuses on the key 'implications'*** referring to the economic, labour market and poverty/inequality pillars and as per the identified (and most relevant) questions for the country based on insights from Step I. ***Step III revisits the insights from Steps I and II and identifies the key 'needs',*** as per the shortcomings in existing policies, in order to address the identified challenges/ opportunities, ***and provides options for developing policy recommendations*** across the core pillars

▶ **Figure 1. Outline of the Green Employment Diagnostics Framework**

Step I: Country Profiling

Motivation: Apprise understanding of country characteristics as per key contexts

Methodology: Review, collection/ compilation and analysis of secondary information

Modules

Climate/Environmental, Economic, Labour Market and Poverty/Inequality Contexts

Through checklist of indicators for each context

National Policy Landscape

Rapid assessment of existing policies at the Environment-employment-economic nexus

Context-specific Focus Areas

Synthesizing insights and developing overall narrative for prioritizing focus areas

Output: Country profile for key risks, constraints and issues for prioritizing questions for further exploration

Step II: In-depth Assessment

Motivation: In-depth assessments by key focus areas and sub-categories (through prioritized questions as per country characteristics derived in previous step)

Methodology: Review, collection/ compilation and analysis of secondary as well as primary information; social dialogues encompassing expert and other stakeholder consultations, rapid surveys

Modules

Economic Implications

- Physical impacts
  - By physical climate risks
  - By economy-wide and sectoral consequences
  - By domestic implications (region/hotspots)
- Transition impacts - Risks
  - By global commitments to reduce GHG emission
  - By national commitments to reduce GHG emissions
  - By national and international response to physical climate risks and reliance on natural resources
- Transition impacts - Opportunities
  - Unlocking gains as per adaptation/mitigation options

Labour Market Implications

- Physical impacts
  - By physical climate risks
- Transition impacts - Risks
  - By implications by aggregate, microeconomic and diversity characteristics
- Transition impacts - Opportunities
  - By implications based on scope and skill requirements

Poverty and Inequality Implications

- Physical impacts
  - By distributional characteristics
- Transition impacts - Risks
  - By distributional characteristics
- Transition impacts - Opportunities
  - By distributional characteristics

Output: Evidence informed insights towards key questions and documentation of key shortcomings/gaps/needs

Step III: Policy Recommendations

Motivation: identity potential policy level solutions to address needs as per insights from previous steps

Methodology: Review and analysis of generated insights, social dialogues and high-level stakeholder engagement

Modules

Identifying Policy Intervention Needs

Based on findings in Step II and mapping the needs against developed policy categories as well as the existing policies indentified in Step I.

Developing Policy Interventions

Developing and prioritizing applicable policy options based on financial feasibility and institutional delivery capacity

Final Set of Policy Recommendations

Based on key reflective questions and iterations

Output: Set of relevant policy recommendations

3

Step I: Country profiling to identify focus areas for investigation

Country profiling involves making use of readily available data to generate an understanding of the country's (economic, labour market and poverty/ inequality) context and the key climate events and associated risks it experiences. This step may also involve investigating the national policy framework in the context of climate adaptation and mitigation-related actions, sector-specific development priorities, employment promotion, skills and human capital development, social protection, and other dimensions of decent work. These preliminary insights, in terms of the country context and the existing policy ecosystem, provide the basis for prioritising the most pertinent sub-thematic areas (and questions related to them) to be investigated in Step II. The following figure highlights the flow of activities in Step I.

▶ **Figure 2. Flow of activities for country profiling**

Collecting and reporting key data/ information to understand the country context:

Table 1 sets out the quantitative and semi-quantitative data that can be collected, the reason for collecting it, and the key sources that may be used, in order to develop a nuanced understanding of the overall country context**.** The table should be read in conjunction with the accompanying Excel-based tool, which provides a template for recording the data for key indicators and the corresponding sources for data collection, reflecting the Rapid Situational Analysis framework of the employment-climate-environment nexus championed by ILO,[9] and other international best practices. This information can help to define the narrative in order to prioritise more in-depth research for related questions posed in Step II. It should be noted that the data collection exercise needs to be adapted to the country context – different indicators may be chosen, depending on the country's situation.

9 ILO (2020)' Rapid situational analysis of the employment-climate-environment nexus – Identifying just transition policies – Nigeria'. Available at:https://www.ilo.org/global/topics/green-jobs/publications/situational-analysis/WCMS_757097/lang--en/index.htm

▶ Table 1. Checklist of key indicators and data points for country profiling

SI	Key indicator	Why is it important?	Source (suggestive)
1. Climate/environmental context			
1.1	**Main climate hazards**	To understand which climate-induced events occur most frequently and which are most intense, to help develop a focused lens for assessing the said hazards.	https://climate-knowledgeportal.worldbank.org/country-profiles
1.2	**Extent of physical risks from climate change impacts [this is on a 0–10 scale for each element (where 10 is highest risk)]**	To distil and centralise the assessment prioritisation narrative on climate-driven physical risks. This encompasses three sub-thematic indicators: climate-driven hazard and exposure, vulnerability, and lack of coping capacity.	https://climatedata.imf.org/pages/fi-indicators
1.3	**GHG emissions, breakdown by sector and GHG emissions per capita**	To understand the scale of the challenge that the country might face in reducing emissions across different sectors, as well as international expectations for action.	https://ourworldindata.org/greenhouse-gas-emissions
1.4	**Degree of preparedness of country for a low-carbon transition**	To filter the key capacity constraints hindering progress, as well as the opportunities for a low-carbon transition.	https://climatedata.imf.org/pages/fi-indicators
1.5	**Forest area or green cover as a % of total land area**	Allows for a comprehensive understanding of the potential for green job creation within the forestry sector, as well as the broader linkages between forests and other sectors. It promotes sustainable economic development, identifies opportunities for climate resilience and adaptation, and helps guide policy and investment decisions towards a greener and more inclusive economy.	https://data.worldbank.org/indicator/AG.LND.FRST.ZS
1.6	**Deforestation rate**	To provide insights into the environmental and socio-economic impacts of deforestation. It helps prioritise questions related to employment opportunities in activities related to forest restoration, sustainable land management, and conservation.	https://www.globalforestwatch.org/dashboards/global
1.7	**Air Quality Index (AQI) – annual average over past three years**	To inform the prioritisation narrative regarding the health implications of air pollution, identifying green job creation opportunities, addressing climate change and environmental impacts, and promoting sustainable urban development.	https://www.iqair.com/in-en/world-most-polluted-countries
1.8	**Green production capabilities ranking**	To understand the scale of opportunities the country might have in regard to manufacturing goods needed in a low-carbon economy.	https://www.sciencedirect.com/science/article/pii/S0048733320300287
2. Economic context			
2.1	**Type of country income classification**	Based on levels of aggregate income, various factors, such as the country's level of development, natural resource availability, environmental challenges, and policy priorities, can be gauged and understanding of these can shape the specific considerations for a green employment diagnostic in the country.	https://blogs.worldbank.org/opendata/bank-group-country-classifications-income-level-fy24#:~:text=The%20World%20Bank%20Group%20assigns,of%20the%20previous%20calendar%20year.

SI	Key indicator	Why is it important?	Source (suggestive)
2.2	Country size in sq. km.	To enable the prioritisation of considerations and in-depth questions based on the scalability of interventions and related needs. It also complements the understanding of other key parameters, including the proportion of agricultural land and irrigated land relative to total area, the proportion of green cover, etc.	https://data.worldbank.org/indicator/AG.LND.TOTL.K2
2.3	Population size (millions)	To obtain insights into market potential, job creation potential, human capital availability, policy priorities, and socio-economic and environmental pressures.	https://data.worldbank.org/indicator/SP.POP.TOTL
2.4	Population density	To obtain additional insights into market potential, job creation potential, human capital availability, policy priorities, and socio-economic and environmental pressures.	https://data.worldbank.org/indicator/EN.POP.DNST
2.5	Gross domestic product (GDP) (current US dollars (USD)) and GDP per capita	To generate insights into the country's overall levels of development, investment attractiveness, etc. These insights will aid in understanding the nation's progress and identifying areas that require attention and improvement to achieve sustainable development.	https://data.worldbank.org/indicator/NY.GDP.MKTP.CD
2.6	GDP growth rate (annual %) and per capita GDP growth rate (annual %) for the past five years	To understand the trends and patterns in economic contributions, which can help in identifying national development priorities where green employment considerations can be mainstreamed.	https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG
2.7	Sectoral contributions (%) to GDP · Agriculture · Industries · Manufacturing · Services	Given the overarching goal of the diagnostics to generate insights at the sectoral level, this is a crucial metric for understanding the key sectors contributing to GDP, and, accordingly, can provide a sense of exposure to climate risks for each sector. Key economic sectors will be prioritised for more in-depth assessments.	https://wdi.worldbank.org/table/4.2
2.8	Latest debt sustainability analysis score (all debt and external debt)	To understand the extent to which the country has fiscal room for manoeuvre.	https://www.imf.org/en/publications/dsa https://www.imf.org/external/datamapper/GGXCNL_G01_GDP_PT@FM/DEU
3. Labour market context			
3.1	Total size of labour force	To understand aggregate market potential in a country.	https://ilostat.ilo.org/data/
3.2	Labour force participation rate disaggregated by age and gender	To understand aggregate market potential, disaggregated by gender and age, which is useful for undertaking a green employment diagnostic for the country and to ensure targeted approaches.	https://ilostat.ilo.org/data/
3.3	Youth unemployment rate	To understand aggregate market potential, with a focus on youth, which is useful for undertaking a green employment diagnostic for the country and to ensure targeted approaches.	https://ilostat.ilo.org/topics/youth/

SI	Key indicator	Why is it important?	Source (suggestive)
3.4	Employment distribution by key economic sectors	To identify sectors with potential for green job creation, assessing the need for reskilling and transition, aligning policies with green employment objectives, and understanding the socio-economic impacts of green job creation.	https://genderdata.worldbank.org/indicators/sl-empl-zs/
3.5	% of informal employment	This helps in providing insights for policy-makers seeking to design effective interventions that empower and support informal workers in transitioning to formal and sustainable employment in the green economy.	https://ilostat.ilo.org/topics/informality/
3.6	Employment by sex and status in employment	This is another critical indicator for assessing economic vulnerability, promoting social protection, fostering inclusive development, supporting entrepreneurship, and evaluating policy effectiveness.	ilostat.ilo.org/data
4. Poverty and inequality context			
4.1	Poverty rate (headcount ratio at national poverty lines % of population)	To prioritise key focus areas, based on the needs of economically vulnerable and marginalised populations, and to assess if green employment programmes can create sustainable livelihoods, reduce inequalities, and build economic resilience while advancing environmental sustainability goals.	https://data.worldbank.org/indicator/SI.POV.
4.2	% of population having access to modern cooking fuels	To understand the extent of support required for the transition to sustainable cooking practices, which will foster gender equality and social empowerment, and to identify job opportunities in relevant sectors encompassing sustainable biomass management, reforestation, and carbon offsetting projects.	https://www.iea.org/data-and-statistics/data-product/sdg7-database
4.3	% of population having access to electricity	To understand the extent of energy access, and the scope for promoting the renewable energy transition, for supporting energy efficiency and demand management, and for contributing to sustainable economic growth and poverty alleviation.	https://www.iea.org/data-and-statistics/data-product/sdg7-database
4.4	Gini index (as a measure of country's income inequality levels)	To generate insights into the distribution of income and wealth across different segments of the population. Understanding income inequality is essential for assessing the inclusiveness and social impact of green employment policies and initiatives.	https://data.worldbank.org/indicator/SI.POV.GINI

Reviewing and assessing the relevant national policy landscape:

To further inform the appraisal of the country context, an additional module is proposed that involves reviewing the existing national policy landscape at the nexus of environment-employment-economic dynamics. This may be undertaken by at first sourcing relevant policies/development strategies that are applicable to the country (e.g., the national employment policy, Nationally Determined Contributions (NDC), and World Bank Country Climate and Development Reports among others) and compiling information on the different national policies/strategies, and comparing these against key determinants of the diagnostics' policy-related needs. The idea is to assess whether the key determinants (or 'key words') are recognised in each of these policies/ strategies. If they are, different colour intensities should be used to indicate which key determinant receives stronger/weaker consideration within each policy/ strategy. This also facilitates the identification of the main gaps and entry points, which can be further explored in Step II and Step III. The following (indicative) Table 2 highlights this.

▶ Table 2. Policy landscape analysis table for a representative country (indicative)

Thematic consideration	Key policy determinants / key words	NEP	Medium-term development strategy	NDC	National strategies for SDGs	Economic recovery and growth Plan	Adaptation Plans and Strategies
Environment-employment-economic nexus	Mitigation strategies						
	Adaptation and resilience strategies						
	Green jobs / environment-employment						
	Risk reduction / disaster response						
	Social protection / sustainable social protection strategies /						
	Vulnerable populations / community-based protection						
	Sustainable/ resilient enterprises						
	Skill development / green skills / capacity building						
	Green employment projects/ programmes / climate resilience programmes / just transition						
	Social dialogue						

▶ Table 3. Signalling criteria and colour codes - illustrative

Signalling criteria / conditions applied	Corresponding colour	Corresponding inference / insight
Occurs between 0 and 25 times		Minimal inclusion and prevalence of thematic determinant in policy/ strategy, and requires major changes/ updates in the policy / strategy
Occurs between 26 and 100 times		Moderate inclusion and prevalence of thematic determinant in policy/ strategy, and requires some changes/ updates in the policy / strategy
Occurs 101 or more times		Significant inclusion and prevalence of thematic determinant in policy/ strategy, and requires limited changes/ updates in the policy / strategy, and can be leveraged further to inform the climate-employment nexus

Synthesising insights and developing the overall narrative for prioritising focus areas:

Once the above modules are completed and insights generated from them, an overall narrative should be developed for the country, to identify the focus areas for Step II. An indicative reporting template has been included in the Excel toolkit for ease of documentation and to identify the focus areas / key questions which warrant further investigation when moving from Step I to Step II.

▶ Summary of insights to be developed for the country profile

Officials conducting a green employment diagnostic for any country should conclude Step I with a clear understanding of the following (as relevant):

- What are the key drivers and characteristics of the climate change/environmental dynamics for the country? Accordingly, what should be the focus areas/key questions for further investigation in Step II?
- What are the key drivers and characteristics of the economic dynamics for the country? Accordingly, what should be the focus areas/key questions for further investigation in Step II?
- Which existing policies and strategies promote an enabling environment for addressing the impact of climate change and transition pathways on the labour market in the country?

Step II entails an in-depth assessment of the economic, labour market, and poverty and inequality implications within the profiled country. It builds upon the initial insights and prioritised focus areas identified in Step I to provide a more detailed assessment of key implications in these focus areas, looking across each of the core thematic pillars. As before, the analysis considers each of the physical risks of climate change, as well as the risks and opportunities associated with transitional impacts. This is accomplished by utilising the accompanying Excel-based tool, which presents a comprehensive set of questions, related sources of information and applications/case studies/methodologies. These questions encompass the material outlined in the section below and offer a detailed framework for assessing and addressing the relevant aspects.

The in-depth assessment involves a combination of country-specific data and research, expert interviews, social dialogue[10] (including discussions with workers' groups, employers' groups and government officials), and rapid surveys or primary data generation modules. In cases where country-specific data is unavailable or outdated, case studies and peer-reviewed academic research can serve as proxies to provide guidance based on similar questions addressed in the past.

It is important to note that this step provides a comprehensive examination that considers the diverse contexts in which countries operate. However, during the practical implementation in a specific country, the focus should be directed towards the elements that are most pertinent to that country, as identified in Step 1. This has been elaborated through the country case study on Mozambique.

This chapter is structured into three main sections, covering the economic implications (Section 4.1), labour market implications (Section 4.2), and the implications for poverty and inequality (Section 4.3) resulting from the physical risks associated with climate change, as well as the risks and opportunities arising from countries' transition pathways. Each section further breaks down into specific subcategories that provide valuable insights into the primary factors influencing the risks and opportunities. Within each sub-category, key considerations, questions, and relevant data sources are highlighted to facilitate the generation of insights.

10 The ILO employs various social dialogue techniques, including tripartite consultations, collective bargaining, labour legislation, conflict resolution, social dialogue committees, capacity building, research, promotion of labour standards, international framework agreements, policy advocacy, advisory services, and monitoring and reporting, to facilitate cooperation and address labour-related issues effectively.

4

Step II: In-depth assessment by key implications

▶ 4.1. Economic implications

This section explores how identified climate change impacts, and both national and international policy and market responses to these challenges, are expected to affect the economy, both at the aggregate level and across key sectors. Some of the key questions for analysis are presented below. The section should be read in conjunction with the accompanying Excel-based tool, which provides a comprehensive checklist of questions that can be tailored to the country-specific context.

4.1.1. Physical impacts and their effects on the economy

Physical climate impacts (risks and opportunities)

Key considerations: As a first step, the in-depth assessment aims to further investigate the key climate risks and opportunities facing the country, as synthesised in Step I. The key risks may include, but are not limited to, the following:

- Temperature-related: increases in average and extreme temperature events.
- Precipitation-related: change in average precipitation and increases in extreme precipitation events.
- Sea level: sea-level rise leading to saline intrusion and coastal flooding.
- Storm surges.
- Extreme events: an increase in the frequency and intensity of extreme events like floods, droughts, cyclones and landslides.
- Other chronic risks, like changing seasonal patterns, changing disease patterns and wildfires.

Some of the key questions which may be posed here, include, but are not limited to, the following:

- For each key climate risk, how will these affect the economy in the short/medium term (next five to 10 years), and in the longer term (beyond 10 years)?
- What are the transmission mechanisms through which this arises?
- Will changes in the physical climate bring any economic opportunities? In which sectors and activities? (For example, will some crops become more attractive than others for agriculture?).
- How do the physical risks and opportunities change with different emissions scenarios (this is especially relevant for the longer term)?
- How much uncertainty is there about these impacts?

Data sources and methodology/assessment reference: Evidence for the above will come primarily from sources like the Climate Risk Country Profiles developed by the World Bank[11] and the Asian Development Bank, as well as country National Communications submitted to the United Nations Framework Convention on Climate Change.

11 The World Bank (2021) Climate Risk Country Profiles. Available at: https://climateknowledgeportal.worldbank.org/country-profiles

Economy-wide and sectoral economic consequences

Key considerations and related questions: As a next step, the green employment diagnostic should consider the potential economic impacts of the identified physical risks of climate change, looking at how the aggregate economy and its different sectors are affected. Such an assessment will aid policymakers in recognising the economic significance of the physical impacts of climate change as a developmental risk. While undertaking such assessments, one should also consider how well-equipped or 'well-adapted' the country is, for responding to these economic and sectoral impacts.

Some of the key questions which may be posed here, include, but are not limited to, the following:

- What is the total expected damage to the economy (in monetary units)?
- Is there evidence that captures the wider macroeconomic impacts of the identified climate risks? (For example, what are the impacts on fiscal/ monetary/ trade flows?)
- How will the agriculture, forestry and fishing sector (similarly, infrastructure, services, manufacturing, construction, etc.) be affected by the physical impacts of climate change? Is this through changes in input costs, a reduction in productivity, asset damage, etc.?
- What are the possible knock-on implications that these sectors will have for other sectors of the economy?
- Are there differences across different actors within the same sector (e.g. international financial districts will experience very different impacts from the tourism sector, but both are part of the service sector)?
- How well-equipped or 'well-adapted' is the country for responding to these economic and sectoral impacts?

Data sources and methodology/assessment reference: Countries may have already undertaken their own macroeconomic assessments or those for individual sectors. These may be found in climate risk and vulnerability assessments, national adaptation plans, etc. Information on occupational profiles by sectors may be obtained from country Labour Force Surveys and census reports. Other possible sources of information are the following (among others):

- The IMF Working Paper on 'Long-Term Macroeconomic Effects of Climate Change: A Cross-Country Analysis' provides results from a robust methodology to undertake such assessments, based on a stochastic growth model where the aggregate economy, individual sectors and labour productivity are assessed by country-specific climate variables – defined as deviations of temperature and precipitation from their historical norms[12]. The results for countries covered as part of this (and any other similar) study can provide insights that can help in answering some of the questions highlighted above.
- Dell, Jones and Olken (2012) report results and evidence based on historical fluctuations in temperature within countries to identify its effects on aggregate economic outcomes.[13]
- The IMF dashboard[14] or the ND-GAIN[15] index provide the basis for sourcing evidence on how well-equipped or 'well-adapted' the country is for responding to these economic and sectoral impacts.

12 ILO (2019) 'Long-Term Macroeconomic Effects of Climate Change: A Cross-Country Analysis'. Available at: https://www.imf.org/en/Publications/WP/Issues/2019/10/11/Long-Term-Macroeconomic-Effects-of-Climate-Change-A-Cross-Country-Analysis-48691

13 AEA (2012) 'Temperature Shocks and Economic Growth: Evidence from the Last Half Century'. Available at: https://www.aeaweb.org/articles?id=10.1257/mac.4.3.66

14 IMF (no date) Climate Change Indicators Dashboard. Available at: https://climatedata.imf.org/

15 ND-GAIN Index. Available at: https://gain.nd.edu/our-work/country-index/

In some cases, the adaptive capacities reflect sustainable adaptation solutions. In other cases, they reflect capacities to put newer, more sustainable adaptations into place, and the extent to which the countries are prepared to leverage investments and convert them into adaptation actions.

- Evidence for understanding differential impacts between formal and informal workers in the sectors under consideration may need to be extrapolated from the ILO's 'Statistics on the Informal Economy'[16] or through primary data collection modules (e.g., rapid surveys targeting the two groups and/or focused group discussions).

Domestic implications by regions or hotspots

Key considerations and related questions: Different regions or locations within a country may have varying levels of vulnerability, resources, and potential for green employment opportunities. Differences in geographic characteristics and socio-economic compositions across regions in a country can also lead to differentiated impacts of climate change, as varying landscapes, infrastructure and economic activities may result in disparities in vulnerability, adaptive capacity, and resilience to the effects of climate change. By assessing these regional variations, policymakers can develop targeted strategies to address specific challenges and capitalise on regional strengths. For example, coastal regions may be more susceptible to the impacts of climate change, such as rising sea levels and increased frequency of extreme weather events. Therefore, green employment diagnostics can identify activities/sectors like coastal restoration and sustainable fisheries that can create jobs while enhancing climate resilience in those areas. Such an assessment considers the geographic locations with a country where these physical impacts and their associated sectoral economic impacts might be most pronounced.

Some of the key questions which may be posed here, include, but are not limited to, the following:

- Are there climate hotspots where the physical impacts are expected to be most pronounced?
- In what regions of the country are the most climate-sensitive sectors and activities concentrated?
- What are the potential economic and social consequences of sectoral climate change impacts on regional development and livelihoods?
- Are new opportunities generated by such regional differences (e.g., crops that may thrive in the changed climate in specific regions)?
- Are some economic activities more attractive in the new climate (e.g., outdoor activities at different times of the year)?

Data sources and methodology/ assessment reference: The primary source of such information would be country reports and studies already developed. Alternatively, data may need to be generated through consultations. Some sources of information (among others) are the following:

- Vulnerability and risk assessments: Sub-national-level vulnerability and risk assessments can help identify regions that are at higher risk of climate impacts. These assessments consider socio-economic factors, infrastructure resilience, ecological sensitivity, and community vulnerability to determine the potential severity and likelihood of climate-related risks.[17]
- Ecosystem mapping and analysis: Mapping and analysis of ecosystems can provide insights into regions with high biodiversity, ecological significance, and sensitivity to climate change. Based on

16 ILOSTAT 'Statistics on the Informal Economy'. Available at: https://ilostat.ilo.org/topics/informality/

17 For reference to undertake climate risk and vulnerability assessments: https://climate-adapt.eea.europa.eu/en/knowledge/tools/urban-ast/step-2-4/index_html

such existing documentation, areas with unique and fragile ecosystems may be identified as climate hotspots, requiring special attention in regard to conservation and adaptation measures.[18]

- Socio-economic and demographic analysis: Understanding the socio-economic characteristics and demographic patterns of different regions within a country can help identify vulnerable populations and areas that are prone to climate-related challenges. Reports which include factors such as poverty rates, access to basic services, employment patterns, and social vulnerability indices can inform the identification of climate hotspots.
- Stakeholder consultations: Engaging with local representatives of workers' and employers' organizations, communities, experts and stakeholders through consultations and participatory processes can provide valuable insights into region-specific climate challenges and priorities. Local knowledge and perspectives can complement scientific assessments and help identify climate hotspots based on lived experiences and on-the-ground observations.
- Integrated assessment frameworks: The IPCC Working Group II Assessment Reports[19] provide information on regional impacts and vulnerabilities. These reports identify regions that are particularly vulnerable to climate change effects, based on their geographic characteristics, socio-economic conditions and exposure to climate hazards. These reports make use of integrated assessment models that combine multiple indicators and methodologies, and so can provide a holistic understanding of climate hotspots. These frameworks consider both biophysical and socio-economic aspects, allowing for a comprehensive analysis of the interaction between climate change impacts, vulnerability and adaptive capacity.

4.1.2. Transition risks and their economic implications

This step looks at the economic implications of a national and global shift to a greater focus on GHG emissions reduction. A number of different studies have found that adopting low-emissions practices and promoting 'green growth' can have positive economic outcomes on a global scale.[20] However, it is important to acknowledge that certain sectors will inevitably be impacted by these changes, and these sectors may be of significant economic importance in some countries. There is therefore a need for countries to plan for the impacts of this transition. The Green Employment Diagnostics Framework breaks this down into three components:

- risks arising from global commitments to reduce GHG emissions;
- risks arising from national commitments to reduce GHG emissions; and
- risks arising from national and international responses to physical climate risks and reliance on natural resources.

We distinguish risks associated with emission reductions from responses to other environmental pressures, given the global attention on climate change, noting that many climate change mitigation measures also support addressing other environmental goals (e.g., protecting forests supports biodiversity). We also distinguish risks arising from global shifts from those arising from national commitments, as the former are out of the control of national policymakers.

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18 For reference on how to undertake such technical assessments: Smith, J., & Johnson, A. (2021). Ecosystem Mapping and Analysis Methodology. In: Environmental Impact Assessment Handbook (pp. 45-62). Environmental Research Institute.

19 IPCC (2022) 'Working Group II Assessment Report VI: Impacts, Adaptation and Vulnerability'. Available at: https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/#:~:text=the%20report%20Authors-,Report,55th%20Session%20of%20the%20IPCC.

20 The New Climate Economy c/o The World Resources Institute (2018) 'Unlocking the Inclusive Growth Story of the 21st Century – Accelerating Climate Action in Urgent Times'. Available at: https://newclimateeconomy.report/2018/

Risks arising from global commitments to reduce GHG emissions

Key considerations and related questions: There are at least three channels which need to be considered.

- *Declines in domestic and export demand for fossil fuels:* The Green Employment Diagnostics Framework encourages obtaining an understanding of the current economic importance of fossil fuel exports (measured as a percentage of exports), as well as identifying any existing national plans to increase these exports in future. This should ideally be complemented by an understanding of the cost-competitiveness of these fossil fuel exports (as globally high-cost production is much more vulnerable than globally low-cost production) and the feasibility of redirecting this production for national use, taking into account each country's climate commitments. It is important to recognise that most climate policy scenario analyses suggest the fall in global coal demand will be more rapid than the fall in oil or gas demand.
- *A decline in the demand for carbon-intensive exports:* Use relevant sectoral data to understand whether the exports of the country in question are more or less carbon-intensive than those exported by other countries. One example is considering the country's exposure to Carbon Border Adjustment Mechanisms (CBAMs). As of 2023, the EU's CBAM is particularly significant, with plans to implement a carbon border adjustment on imports of cement, fertilisers, iron and steel, aluminium, electricity, and hydrogen.
- *A decline in the demand for products associated with unsustainable practices:* In the case of deforestation, this typically includes cattle (beef and leather), cocoa, coffee, maize, palm oil, rubber, and soy. The diagnostic may also consider whether the country has taken any measures to reduce the risk of commodity production associated with deforestation. This consideration should be informed by the country context and may be applicable to a wider range of sectors that rely heavily on nature-based practices with implications for GHG emissions (e.g., agriculture).

Some of the key questions which may be posed here, include, but are not limited to, the following:

Declines in domestic and export demand for fossil fuels:

- What is the current economic importance of fossil fuel exports as a percentage of total exports?
- Are there any national plans to increase fossil fuel exports in the future?
- How cost-competitive are fossil fuel exports, considering the vulnerability of high-cost production?
- What is the feasibility of redirecting fossil fuel production for national use, considering the country's climate commitments?
- What is the projected decline in global demand for coal, oil, and gas, and how might this impact the country's fossil fuel exports?
- What is the overall intensity of GHG exports?

A decline in the demand for carbon-intensive exports:

- Which industries in the country are particularly carbon-intensive?
- Are the country's exports more or less carbon-intensive compared to other countries?
- What is the country's exposure to CBAMs, and particularly the EU's CBAM?

A decline in the demand for products associated with unsustainable practices:

- What is the economic importance of exports traditionally associated with deforestation, such as cattle, cocoa, coffee, maize, palm oil, rubber, and soy?
- Has the country implemented any measures to reduce the risk of commodity production being associated with deforestation?

Data sources and methodology/assessment references:

- Data on fossil fuel and other exports can be sourced from the United Nations Comtrade Database.[21]
- Interviews with key stakeholders (in ministries of energy/natural resources) will likely be needed to obtain much of the other information.
- The overall GHG intensity of exports can be obtained from the Organisation for Economic Co-operation and Development (OECD)[22] and other sources.
- National data can then be mapped back to understand what industries are particularly carbon-intensive in a country.
- Country-specific information on measures taken to mitigate deforestation risks in commodity production might need to be generated through rapid surveys or key informant interviews.

Risks associated with national commitments to reduce GHG emissions

Key considerations and related questions: This part of the step aims to identify how national commitments to reduce GHG emissions might influence different sectors.

Some of the key questions here include, but are not limited to, the following:

- Which sectors are expected to drive emissions reductions?
- How important are these sectors (as a percentage of GDP and as a percentage of the labour force, drawing on Step I)?
- How are these sectors expected to deliver emissions reductions?

Data sources and methodology/assessment references: It can be beneficial to differentiate between two approaches to emissions reductions: 'doing different things' and 'doing things differently'. The former involves changing activities, such as switching from coal to renewable energy sources, or protecting forests, so that the land is not used for agricultural production or other purposes. The latter, on the other hand, includes things such as implementing energy efficiency measures in industries and adopting alternative agricultural production techniques. Though these categorisations may oversimplify the complexities involved, they provide a useful framework for understanding different avenues of achieving emissions reductions. Information on national commitments can be taken from the country's NDC, potentially supplemented with information from national climate action plans and equivalent documents.

From an employment perspective (as highlighted later), sectors that are expected to deliver significant emissions reductions are usually labour intensive, and where there is a need to do different things, are likely to require more attention.

Risks arising from national and international responses to physical climate risks and reliance on natural resources

Key considerations and related questions: The approach to this step will need to vary by country but some of the key questions that ought to be posed include, but are not limited to, the following:

21 https://comtradeplus.un.org/

22 https://www.oecd.org/sti/ind/carbondioxideemissionsembodiedininternationaltrade.htm

- Are there any economically important sectors which are heavily reliant on inefficient water consumption, recognising that a policy to encourage water efficiency will likely be an important driver of increasing climate resilience?[23]
- Are there any economically important sectors with current practices that rely on the unsustainable exploitation of natural resources (e.g., fisheries)?

Data sources and methodology/assessment references: This information will mainly be found in national data and research, supplemented by interviews with relevant stakeholders.

4.1.3. Transition opportunities and their economic implications

This step considers how a country can harness the new economic opportunities arising from the transition to a greener economy. Regions with abundant renewable energy resources, such as solar or wind potential, can focus on developing renewable energy projects that not only reduce GHG emissions but also provide employment opportunities in the clean energy sector. By tailoring green employment initiatives to regional contexts and leveraging local resources and expertise, countries can maximise the positive impacts of their climate actions, promote equitable development across different regions, and ensure that the transition to a green economy benefits all.

Unlocking gains, as per the transition (adaptation and/or mitigation) options

Key considerations and related questions: The potential opportunities will vary depending on the country; some key opportunity areas to be considered are the following:

- minerals for electrification and low-carbon growth
- different types of renewable power (for both domestic use and export)
- green manufacturing (including green hydrogen)
- sustainable forest products
- ecosystem protection/restoration (and associated activities, like ecotourism)
- employment opportunities in energy efficiency (building retrofit)

Across each opportunity area, some of the key questions include, but are not limited to, the following:

- What is the potential scale of the opportunity in terms of market size, measured as potential output in a specific year multiplied by the price of the output?
- What are the key strengths of the country that can facilitate the exploitation of this opportunity, such as being a low-cost producer or having a strong skills base?
- What are the weaknesses or challenges that the country needs to address in order to fully capitalise on this opportunity, such as the presence and effectiveness of a policy framework, the existing investment environment, the political context, etc.?

23 This issue may also be considered above when considering physical climate risks. Strictly, the question here is focused on understanding sector exposure to policies that may be introduced to help manage physical climate risks (rather than exposure to physical climate risks themselves) but the user of the diagnostic tool should take a pragmatic approach that avoids repetition.

Data sources and methodology/assessment references:

The above questions being exploratory and subjective in nature, evidence/insights in these areas will largely need to come from engagement with national stakeholders through interviews and stakeholder workshops. In some cases, international comparative assessments can help better understand the relative position of the country. Relevant sources of information for the identification and applicability of transition opportunities in any country include the following, by select key opportunity areas (among others):

- *Minerals for electrification and low-carbon transition:* The applicability of this, and evidence on it, can be explored from the International Energy Agency's (IEA's) 'The Role of Critical Minerals in Clean Energy Transitions'[24] report and relevant mineral databases, and from estimates cited in the World Bank's 'Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition'[25] report, which shed light on how these minerals can fuel a just transition towards electrification and a low-carbon future, while also assessing the economic (and labour market) implications.

- *Renewable power:* Officials can check the potential of renewable power generation for the selected country, using insights from the *Assessing and Mapping Renewable Energy Resources*[26] study and data repositories from the renewable energy agencies cited. This exploration will not only reveal the potential for a just transition towards renewable energy sources but will also shed light on the economic implications of fostering a sustainable energy landscape.

- *Green manufacturing:* The potential for green manufacturing in the country can be explored by referring to the 'Economic Complexity and the Green Economy'[27] report and by exploring data from green manufacturing indexes and economic development agencies. The report constructs a new dataset of traded products with environmental benefits, develops a novel measure of green production capabilities across countries, demonstrates a method for mapping out new green export opportunities, and provides evidence-backed predictions on future green export growth across countries, to highlight key implications for green growth and green industrial policies. This endeavour will provide valuable insights into how green manufacturing can drive a just transition in the industrial sector, while considering its economic implications.

- *Sustainable forest products:* Opportunities in sustainable forestry may be investigated by referring to data from the 'Forest Products Annual Market Review',[28] including the respective statistical annexures which provide more comprehensive data and trade flows, which offer valuable market dynamics and insights into responsible forest management practices across geographies.

- *Ecosystem protection and restoration:* Valuable information can be obtained from the World Resources Institute's *Atlas of Forest and Landscape Restoration Opportunities*[29] and the *IUCN*

24 IEA (2021) 'The Role of Critical Minerals in Clean Energy Transitions'. Available at: https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions/mineral-requirements-for-clean-energy-transitions

25 World Bank. 'Minerals for Climate Action – The Mineral Intensity of the Clean Energy Transition'. Available at: https://pubdocs.worldbank.org/en/961711588875536384/Minerals-for-Climate-Action-The-Mineral-Intensity-of-the-Clean-Energy-Transition.pdf

26 World Bank and the Energy Sector Management Assistance Program (2021) Assessing and Mapping Renewable Energy Resources, Second Edition. Available at: https://openknowledge.worldbank.org/entities/publication/be60bd41-a706-5cc3-a879-8e71b5f4f2b9

27 Mealy, P., Teytelboym, A. (2022) 'Economic complexity and the green economy', Research Policy, Volume 51, Issue 8. Available at: https://doi.org/10.1016/j.respol.2020.103948

28 UNECE (2021-2022) The Forest Products Annual Market Review. Available at: https://unece.org/forests/annual-market-reviews

29 WRI (2014) Atlas of Forest and Landscape Restoration Opportunities (Interactive Map). Available at: https://www.wri.org/data/atlas-forest-and-landscape-restoration-opportunities

Restoration Barometer.[30] These resources can not only guide efforts to preserve biodiversity and restore ecosystems but also shed light on the economic implications of such actions, while promoting a just transition for both nature and society.

▶ Box 1. Summary of insights to be developed on economic implications

Officials deploying green employment diagnostics for any country should end this section with a clear understanding of the following (as relevant):

- The extent to which physical climate risks threaten future economic activity in the country, the sectors where these impacts are expected to be most pronounced (and most likely, in the short term), the geographic concentration of these risks, and the country's capacity to manage these risks.
- The key sectors where both i) international and/or ii) national climate action is likely to have implications, the importance of these sectors to economic activity and employment, and the nature of the change that is likely to be required within those sectors
- The key economic opportunities that growing interest in climate change action (and action related to addressing other environmental pressures) offer in that country, the potential scale of that opportunity, and the strengths and constraints associated with realising this potential.

▶ 4.2. Labour market implications

The purpose of this sub-section of the diagnostic is to explore how the above economic impacts are expected to affect labour markets, and the country's ability to ensure inclusive, gender-responsive and job-rich growth (with decent employment). It follows the same structure as the economic implications sub-section, assessing the impacts associated with physical risks first, then those associated with transition risks and finally those associated with transition opportunities.

4.2.1. Physical risks and their labour market implications

Physical risks

Key considerations and related questions: The physical risks from climate change can impact the labour market significantly. Events like floods, extreme temperatures, droughts, landslides, storms, and wildfires can disrupt economic activities, leading to job losses, worker displacement, and reduced productivity in vulnerable sectors. Damage to infrastructure, supply chain disruptions, and output reductions are key transmission mechanisms. Understanding these implications, including varying impacts under different emissions scenarios, is essential for developing informed policy and adaptation strategies to build a resilient and sustainable workforce.

Based on the key impacted sectors identified in the previous step, some of the key questions here include, but are not limited to, the following:

- Are there any available estimates or projections for the number of individuals who may be affected by these climate risks in the sector?

30 IUCN (2016) The Restoration Barometer – global restoration tracker. Available at: https://www.iucn.org/resources/conservation-tool/restoration-barometer

- What are the specific transmission mechanisms through which these physical risks impact the labour market, such as disruptions to infrastructure, supply chains, or agricultural productivity?
- Are the labour market impacts more likely to result from a decline in the number of jobs in the sector or a reduction in workers' productivity and earnings potential? Is the former more likely in the formal sector, and the latter more likely in the informal sector?
- Are there different impacts for formal and informal workers in the sectors under consideration?
- What are the characteristics of the affected workforce in terms of formal and informal employment, skills, occupational profile, gender, age, and prevalence of disadvantaged groups?
- What potential spillover effects could arise from changes in employment, such as rural workers seeking alternative employment in urban areas or migrating to other areas?
- How might other sectors that rely on inputs or outputs from the sectors that are heavily affected by physical climate risks be impacted?
- Have adaptation policies and measures been identified to address the labour market impacts in the sectors, as outlined in relevant adaptation planning documents such as National Adaptation Plans?
- If adaptation measures have been identified, are they being effectively implemented to mitigate the expected labour market impacts in the select sectors?
- If adaptation measures have been identified but not implemented, what are the key barriers, including technical, financial, and political economy constraints, hindering their implementation?

Data sources and methodology/assessment references:

- Countries' labour force surveys provide a sound evidence base regarding some of the key questions highlighted above.
- Evidence on the impacts on worker productivity may be derived from existing studies/ reports at the national and sectoral levels: for example, the World Bank's report and data on 'Global Productivity: Trends, Drivers, and Policies'.[31]
- Existing reports/studies can be leveraged to derive results from assessments to understand the spill over effects of the changes, based on characterising the change as a shock in demand for a product/ service then using an input-output (IO) or other macro model to understand these effects. However, for productivity shocks, the assessments will likely require a more sophisticated model: for example, simulation models and those developed by the ILO.[32]
- Sectoral stakeholder consultations and rapid surveys can provide additional information, as may be required.

31 World Bank (2021) 'Global Productivity: Trends, Drivers, and Policies'. Available at: https://www.worldbank.org/en/research/publication/global-productivity

32 ILO (2019) 'Working on a warmer planet: The impact of heat stress on labour productivity and decent work'. Available at: https://www.ilo.org/global/publications/books/WCMS_711919/lang--en/index.htm#:~:text=It%20is%20one%20of%20the,work%20at%20a%20slower%20pace.

4.2.2. Transition risks and their labour market implications

Implications by aggregate, microeconomic, and diversity characteristics

Key considerations and related questions: The labour market implications of sectors exposed to changes in international demand and sectors affected by domestic GHG emissions reductions are significant considerations in understanding the impacts of climate change. In sectors that are exposed to declines in international demand, the decline poses potential risks to employment. It is crucial to assess the number of people employed in these sectors and to estimate the potential job losses. Additionally, understanding the characteristics of the affected workforce in terms of public versus private sector, formal or informal employment, skills profiles, gender, age, and prevalence of other disadvantage groups is important for identifying vulnerabilities and designing targeted interventions. Moreover, analysing the spill over effects of declining demand on other sectors provides insights into the broader economic repercussions. Similarly, in sectors that are affected by domestic emissions reductions, there is a need to evaluate the labour market implications of the decarbonisation agenda and to assess if policies recognise and address these implications effectively. This involves examining the alignment of key policies with labour market considerations, such as potential structural unemployment risks and the availability of alternative employment opportunities. Understanding these labour market dynamics is essential for developing inclusive and resilient strategies to navigate the transition to a low-carbon economy.

Based on the key impacted sectors identified in the previous step, some of the key questions which may be posed on the transition risks on the labour market include, but are not limited to, the following:

- How many people are currently employed in these sectors, and what is the estimated number of jobs that may be threatened?[33]
- What are the characteristics of the workforce that is exposed to these risks in terms of public versus private sector, employee versus self-employed, formal or informal employment, skills/occupational profile, gender, age, and prevalence of other disadvantage groups?
- Is there any evidence to identify changes in worker productivity?
- What are the potential spillover effects of declining demand in these sectors on other sectors in the economy?
- How are domestic emissions reductions expected to impact these sectors, and what are the potential labour market implications?
- Have the potential labour market implications of the domestic decarbonisation agenda been recognised in key policies?
- Are the necessary policies and institutional arrangements in place to address the labour market implications?
- Will the domestic transition risks lead to an increase or decrease in labour input, and what is the magnitude of these changes?
- What human capital and skills changes may be required to implement these emissions reduction opportunities?
- Have policies been formulated to ensure the availability of the required skills?

33 Assuming that a macroeconomic model is not available, this could be done, for instance, by downscaling expected global changes in demand for key different carbon-intensive commodities in different climate scenarios to country production levels and assuming a linear relationship between production and employment.

Data sources and methodology/assessment references:

- Countries' Labour Force Surveys provide a sound evidence base for some of the key questions highlighted above and, in particular, for understanding the potential impacts of changes in international demand for employment in key sectors of the economy, and the characteristics of those who might be affected.
- The possible spill over effects of changes in international demand for carbon-intensive products relative to changes in demand from other sectors can be identified from studies which have modelled this using a basic I-O analysis, tracing how a decline in demand for the commodity/sector in question might affect output elsewhere in the economy. The outputs of I-O models should be used cautiously, considering variations in input data quality and availability, as these models provide insights and estimations rather than precise predictors of real-world outcomes. Further triangulation techniques are warranted, requiring comprehensive desk research, expert judgement, and interviews.
- Using interviews and consultations, one should also consider the extent to which the government is proactively planning for potential decreases in the demand for key exports (i.e., through reinvesting resource rents), and whether these plans are proceeding effectively.
- The analysis above can then be repeated for those sectors affected by domestic emissions reductions where the emissions reductions will be delivered through 'doing different things' (and hence where there is the greatest risk for structural unemployment). The policy assessment should focus on whether the potential labour market implications of the domestic decarbonisation agenda have been recognised in key policies, and if these policies are being implemented. This can be achieved through interviews and stakeholder engagement.

4.2.3. Transition opportunities and their labour market implications

Implications based on scope and skills requirements

Key considerations and related questions: As the next step, there is a need to assess how transition pathways may lead to opportunities in sectors such as renewable energy, energy efficiency, circular economy, and sustainable infrastructure, and how these may affect labour demand. There is also a need to identify which sectors are expected to experience job growth and the types of skills and qualifications that will be in demand.

This step also proceeds sector by sector. For each of the sectoral opportunities identified under 'Transition opportunities and their economic implications' (Section 4.1.3), the following key questions can be explored in further research:

- How many direct jobs may be expected to be in demand in terms of new sectoral opportunities?
- What is the possible or likely occupational and gender profile that can be expected if the transition opportunities are successfully realised?
- Where are the potential or likely geographic locations of these jobs? Are they concentrated in certain regions? If so, to what extent are these regions in proximity to existing areas of high unemployment and any potential job losses associated with transition or physical risks outlined in previous sections?
- What are the skills needs associated with realising these transition opportunities? Do sufficient numbers of people possess these skills in the country in question?
- To what extent is policy currently in place to address any skills gaps?

- Based on international experience, what is the risk that the jobs created may not meet the criteria of being 'decent' according to the ILO guidelines?

Data sources and methodology/assessment references:

- The easiest way to assess the scale of the job opportunities that might be expected is likely to be through making use of existing sources regarding the labour intensity of these activities, including, for example, on grid scale renewable energy,[34] on sub-utility scale renewable energy,[35] on ecosystem protection and restoration, as well as previous jobs multipliers estimates by the ILO,[36] country statistics on energy-efficient manufacturing, and renewable energy production data from country studies/reports.

- ILO's green job assessment reports[37] provide another sound evidence base since these analyse the potential for job creation and transformation in the context of sustainable and environmentally friendly economic activities. These reports provide valuable insights into the productivity gains and skills requirements associated with green jobs, offering policymakers and stakeholders the necessary data to develop effective strategies for ensuring a more sustainable and skilled workforce. Using analysis of I-O tables, the possible spillover effects from these direct jobs (i.e. indirect and induced jobs) can be derived. Where the jobs are associated with industries that are not yet reflected in national accounts data, various proxies or case studies based on the composite activities may be possible. In 2013, the 19th International Conference of Labour Statisticians adopted the first international statistical standards to support measurement of green jobs in official statistics. Country studies leveraging this framework provide another source of evidence on the demand for green jobs at the national level.[38]

- Stakeholder consultations, particularly interviews with industry experts and government officials, are likely to be the most promising way of identifying the key (new/ green) skills required and to understand the strength of existing policies to bridge the skills gap.

34 https://www.google.com/url?q=https://www.glasgow.gov.uk/glasgowgreendeal&sa=D&source=-docs&ust=1687195020908672&usg=AOvVaw1ekSTpn8GBa7iSVNAeiYgh

35 https://www.google.com/url?q=https://www.rockefellerfoundation.org/wp-content/uploads/2021/09/Transforming-a-Billion-Lives-The-Job-Creation-Potential-from-a-Green-Power-Transition-in-the-Energy-Poor-World.pdf&sa=D&source=-docs&ust=1687195093354376&usg=AOvVaw2SM7qcrbLskw5NoYFZxmXj

36 https://www.ilo.org/employment/units/emp-invest/rural-urban-job-creation/WCMS_757823/lang--en/index.htm

37 ILO. Green Jobs Assessment Reports. Available at: https://www.ilo.org/global/topics/green-jobs/publications/assessments/lang--en/index.htm

38 ILO. Guidelines Concerning a Statistical Definition of Employment in the Environmental Sector. 19th International Conference of Labour Statisticians, Geneva.

▶ Box 2. Summary of insights to be developed on labour market implications

Officials deploying green employment diagnostics for any country should end this section with a clear understanding of the following (as relevant):

- How vulnerability to physical climate risks in key sectors could affect employment and productivity in these sectors (and over what timescale), the way in which these impacts may be experienced by different parts of the labour force, and the extent to which government policy is able to manage these risks
- The scale of the potential impact of transition risks on employment opportunities in the country (and over what timescale), the way in which these impacts may be experienced by different parts of the labour force, and the extent to which government policy is positioned to respond to these risks.
- The scale of the potential opportunity for new jobs to be created by transition opportunities, the likely profile of these jobs (including the risk of them not being 'decent' jobs), the extent to which there is a match between the people and locations that may lose jobs because of transition and physical risks, and where these new jobs may be established, and the extent to which government policy is helping to address any skills gaps associated with realising these opportunities.

▶ 4.3. Poverty and inequality implications

This sub-section explores the distributional implications of the (sectoral) economic and labour market impacts explored in the previous two pillars, with a particular focus on how the poorest and most vulnerable in society might be affected. It also explores the possibility that the impacts will aggravate or, by contrast, ameliorate existing inequalities.

4.3.1. Physical risks and their poverty and inequality implications

Physical risks – distributional impact

Key considerations and related questions: The physical risks of climate change can exacerbate poverty and inequality by disproportionately impacting vulnerable populations who have limited resources to cope with and recover from these risks, further widening the socio-economic gap and hindering inclusive development efforts. In order to better understand these risks, the following key questions may be explored:

- To what extent are the reductions in nominal income and/or employment associated with the realisation of physical climate risks disproportionately experienced by individuals at the lowest end of the income distribution?
- How might impacts on welfare that are not directly related to nominal income and employment be disproportionately affected by climate change? This might include potential increases in the prices of goods and services that are disproportionately consumed by the poorest and most vulnerable, or the reduced availability of critical goods and services provided by ecosystems.

- What are the potential distributional implications of climate change for assets, considering the damage or destruction of the built environment and its impact on different socio-economic groups?
- How well-positioned are existing social protection systems to address the challenges posed by physical climate risks, both in terms of chronic stresses and their ability to respond effectively to acute events?

Data sources and methodology/assessment references:

- Consumption estimates to derive reductions in nominal income and/or employment associated with the realisation of physical climate risks may need to be generated through primary surveys at the household level, using a statistically representative sampling technique as appropriate. Alternatively, utilising studies that look at how climate impacts might affect yields/agricultural productivity or labour productivity, and then inferring what this might mean for income levels, assuming income links to productivity, is another sound approach for generating evidence on reductions in nominal income.
- Additionally, country case studies that employ the World Bank's methodologies, including the Poverty and Social Impact Analysis (PSIA)[39] and the Social Resilience and Climate Change modules[40], may be leveraged to source evidence. These methodologies offer comprehensive frameworks for assessing the poverty and inequality implications of climate change. PSIA incorporates climate change scenarios into existing poverty assessments, allowing for the identification of vulnerable groups and potential impacts on their well-being, including changes in agricultural productivity, natural resource availability, and access to services. The Social Resilience and Climate Change modules focus on understanding the social dimensions of climate change and evaluating the effectiveness of adaptation and resilience-building measures. Through the examination of differential impacts on socio-economic factors, such as gender, age, and geographic location, these studies provide valuable insights into poverty and inequality dynamics that are exacerbated by climate change.

4.3.2. Transition risks and their poverty and inequality implications

Transition risks – distributional impact

Key considerations and related questions: Some of the key questions which may be posed here, include, but are not limited to, the following:

- To what extent are the reductions in (nominal) income and/or employment resulting from transition risks disproportionately affecting individuals at the lower ends of the income distribution or those who are otherwise disadvantaged?
- How are policies supporting emissions reductions associated with changes in the prices of goods and services, and are these changes progressive or regressive? Additionally, to the extent that it is relevant, what is the impact of carbon pricing in different contexts, and does it contribute to progressive or regressive outcomes?
- Are social protection systems and other policy mechanisms adequately equipped to address the challenges posed by transitions? Can they effectively target individuals who are at risk of job losses due to transition risks? Furthermore, are there compensation mechanisms in place to mitigate possible regressive impacts of mitigation policies, and how well-targeted are these compensation measures?

39 World Bank (2009). Poverty and Social Impact Analysis (PSIA) : Reviewing the Link with In-Country Policy and Planning Processes. Available at: https://openknowledge.worldbank.org/entities/publication/2b13e695-0240-5b5c-8645-377dc15c2cd1

40 World Bank (2011). Social Resilience and Climate Change: Operational Toolkit. Available at:https://documents.worldbank.org/curated/en/936481468330923987/pdf/658860WP00PUBL0lkit0FINAL200PUBLIC0.pdf

Data sources and methodology/assessment references: Information will primarily come from Labour Force Survey data, Demographic and Health Surveys, stakeholder consultations and rapid surveys (at the household and institutional levels), tailored to generate insights in this area.

4.3.3. Transition opportunities and their poverty and inequality implications

Transition opportunities – distributional impact

Key considerations and related questions: Some of the key questions which may be posed here, include, but are not limited to, the following:

- How do the occupational and geographic profiles of the new jobs created by climate change mitigation-related opportunities provide employment opportunities for individuals at the lowest end of the income distribution?
- Do these opportunities lead to an increase in consumption patterns?
- Has the government identified the risks associated with the potential lack of 'decent' jobs in the context of climate-related opportunities, and what steps are being taken to safeguard the poorest section of the society?

▶ Box 3. Summary of insights to be developed on poverty/inequality implications

Officials deploying green employment diagnostics for any country should end this section with a clear understanding of the following (as relevant):

- The potential disproportionate impact of climate change impacts, transition risks, and opportunities on the income and employment of those at the lowest ends of the income distribution or who are otherwise disadvantaged.
- Potential changes in the prices of goods and services resulting from policies supporting emissions reductions, and whether these changes are progressive or regressive in nature, particularly in relation to their impact on the poorest and most vulnerable populations.
- The effectiveness of social protection systems and other policy mechanisms in addressing the challenges associated with climate change-related transitions, such as targeted support for individuals who are at risk of job loss and compensation measures to mitigate the regressive impacts of mitigation policies.
- The relationship between the occupational and geographic profiles of new jobs created by climate-related opportunities and their potential to provide employment opportunities for individuals at the lowest end of the income distribution.
- The risk that new jobs associated with climate-related opportunities may not meet 'decent work' standards, and the extent to which this risk disproportionately affects the poorest and most vulnerable populations.
- The government's awareness of the risks associated with the lack of 'decent' jobs in the context of climate-related opportunities, understanding of adequacy and access to social protection and the measures being taken to address such risks and to ensure equitable outcomes.

5

Step III: Developing policy recommendations

Policy options that take account of the challenges of climate change and the impacts of transitions can address vulnerabilities, promote decent employment and sustainable development, foster social equity, enhance technology transfer and capacity building, attract international support, and provide access to clean energy. Implementing such policies enables countries to effectively respond to climate challenges while achieving their development objectives in a fair and inclusive manner.

The overarching goal for Step III is to guide users towards policy options and implementation guidelines that ensure a just and resilient climate transition in the context of jobs and labour markets. The key entry points for effective policy-level interventions will be based on the in-depth investigations and findings from Step II. There exist economically rational choices to address specific challenges and opportunities through effective policy design and implementation; however, it is imperative not to be overly prescriptive. Numerous other constraints in local policymaking remain unknown, such as political feasibility, implementation capacity, and political preferences. Moreover, how policies are derived and implemented is just as important as the policies themselves since the 'justice' aspect of the low-carbon transition is not automatic and necessitates the intentional inclusion of different voices throughout the process, to achieve the intended outcome.

Step III of the green employment diagnostic highlights a three-pronged approach to building on existing policies and fill in gaps where they exist. The overall approach aims to be consistent with the **ILO Just Transition Guidelines**.[41] The modules included in Step III are as follows:

- Identification of policy-level intervention needs based on the findings from Step II and mapping the needs against developed policy categories, as well as the existing policies identified in Step I.
- Developing the timeframe for policy interventions to address the gaps in existing policies and to cater to the challenges synthesised in the previous step, and to prioritise the most relevant policy interventions based on financial feasibility and institutional delivery capacity.
- Prioritising key policy interventions further, based on addressing reflective questions, to inform the final selection.

Underpinning these three modules, there is a need for countries to continue to establish the fundamentals for low-carbon, climate-resilient development in a way that explicitly embeds a employment and labour market perspective into their climate strategy and policy. This recognises that countries should pursue development pathways that take account of the importance of climate change (and the global policy response to it) as a critical factor shaping country opportunities and threats. This is most obvious in relation to physical climate risks: countries should embed an understanding of these risks into all elements of development planning and policy. This will help to significantly reduce the threat that climate change poses, including to those who are currently part of the labour force, as well as those who will enter the labour force in future years. It also means that countries should advance commitments in their existing NDC and uphold the principle that efforts should ratchet up over time, while harnessing the international support available to support these goals. Countries should also make sure that the economic and fiscal consequences of these changes are well understood and planned for. However, it is important that within the context of their (scaled-up) climate policy and strategy, countries consciously factor in the interactions between climate change and the labour force. This might be achieved, for example, by embedding the principle of a just transition into key climate strategy documents, such as NDC and climate action plans, and/or by mandating that climate policy impact assessments take into account the impacts on workers and the poor and vulnerable. The rest of this section focuses on specific policy actions that can be considered in this context of climate strategy and action that explicitly embed a labour and labour market perspective.

41 ILO (2015) *Guidelines for a just transition towards environmentally sustainable economies and societies for all*. Available at: https://www.ilo.org/wcmsp5/groups/public/@ed_emp/@emp_ent/documents/publication/wcms_432859.pdf

▶ Module i

As a starting point for Step III, it is critical to take stock of which policies are already in place/being planned, how, and the extent to which they address the issues identified by the diagnosis (in Step II); and their expected impact.

This can be achieved through the following:

- **Identifying policy-level intervention needs** based on the insights derived from the in-depth analysis in Step II. These needs may be grouped into **key policy categories** (for e.g., enhancing social protection; labour market integration; labour-oriented adaptation; reskilling and training; job creation; and economic diversification and strengthening, among others) based on the country's contexts and nature of the identified needs, which will differ for each country.
- **Identifying existing national policies which support these needs**, based on the baseline insights derived from Step I (the policy landscape assessment).
- **Assessing the gaps in these policies**, to be filled in or built on, for the formulation of relevant policies.

An effective way to identify gaps in existing policies to address the categorised challenges is to conduct a workshop with relevant stakeholders from the government, workers' groups and employers' groups. The workshop would assess the developed policy categories based on two key criteria:

- **The importance of policy to future development:** During the workshop, participants, including policymakers, social partners and ILO officials, would collectively score each category based on its importance to the country's future development. This scoring can be done using a 1–n ranking system, where 1 indicates low importance and n signifies highest importance (where 'n' represents the total number of policy categories to be developed). The workshop would also provide the scope to iterate, validate and refine these scores, incorporating stakeholder perspectives and insights as required.
- **Strength of existing policies:** Evaluating the strength of existing policies is a more challenging task. However, the workshop can still utilise a similar ranking system to score each policy. The scoring can be categorised as follows: low scores – for policies where there is no significant policy ambition in place; mid-scores – where policies exist but face implementation challenges due to technical or financing constraints; and high scores – where policies are in place and are effectively functioning as intended.

After the scoring process, the focus would be on the categories where policy importance receives high scores, but the current policy strength is weak (i.e., low or mid scores). These identified categories would become the focus areas for policy development and improvement, enabling stakeholders to concentrate efforts on enhancing policies in critical sectors.

By involving various stakeholders in the workshop and combining international expertise with national perspectives, this approach ensures that the identification of policy gaps is inclusive, transparent and tailored to the country's unique context. This collaborative effort will foster the alignment of policy priorities with future development objectives, facilitating a targeted and impactful approach to addressing challenges in social protection and structural unemployment.

Officials deploying green employment diagnostics should refer to the reporting template provided in the Excel toolkit, which enables mapping the identified intervention needs based on the insights derived from Step II, mapping the corresponding policies which exist to support these needs, and recording the scores generated through stakeholder engagement to identify focus areas for developing policy recommendations.

▶ Table 4. Reporting template for identification of policy-level intervention needs – illustrative

Policy categories (to be developed as per country's context and insights derived from Step II of the diagnostics)	Key findings and intervention needs	What are the existing policies to support these?	Identifying focus areas for policy recommendations		Specific gaps/ shortcomings in existing policies
			Ranking: Importance of policy to future development	Score: Strength of existing policies	
1. Social protection	Mapping insights derived from Step II by each policy category	Mapping identified policies from Step I for each intervention need	Ranking each policy category from 1 to n	Scoring each policy as low, mid or high	Documenting key shortcomings in selected policy focus areas
2. Labour market integration					
3. Labour-oriented adaptation					
4. Reskilling and training					
5. Job creation					
6. Economic diversification and strengthening					

▶ Module ii

The key policy categories capture the critical areas that would need attention in the context of climate change impacts on, and the transition of, country economies. Given the complexity and differences across countries, their relative importance will differ across countries. **Post the identification of the policy intervention needs by the key categories, module ii focuses on developing the options to fill the gaps.** The policy options need to be carefully crafted, drawing from a wealth of case studies and extensive consultations with policymakers and various government stakeholders. This comprehensive approach ensures that the resulting policies are well-informed, practical, and responsive to the unique needs of the context. To ensure structured and continuous progress of implementation, it is also essential to include the policy options' implementation timeframes. Below are some suggested policy options. These are not exhaustive, and the final set of policy options should align with the specific contextual needs of the country.

1. **Social protection:** Climate change impacts, coupled with the impacts of transitioning to a low-carbon economy, will have direct and indirect impacts on the labour market. Many workers will find themselves in jobs that may be threatened by the low-carbon transition, and some may be too old to transition to new labour opportunities or undertake upskilling and training. In other cases, climate-related shocks may leave people out of work for either a short or long period of time. In both cases, providing protection for these workers will be critical. Some potential options for policy recommendations in this category include the following:

   - **Social protection for structural unemployment:** This refers to measures and programmes that provide financial and non-financial support to individuals who are facing long-term unemployment due to fundamental shifts in the economy, or other structural changes. For countries where a large percentage of jobs will be at risk, strengthening social protection policies and programmes will be

of critical importance. In this case, the **ILO's *Social Protection Floor Diagnostic Toolkit 42*** should be referred to. This helps countries to assess the adequacy and effectiveness of their social protection systems in regard to providing income security, access to essential services, and social support to vulnerable populations. It assists in identifying opportunities for strengthening social protection coverage and expanding social security programmes.

- **Shock-responsive social protection:** This is another important policy option, which offers immediate support and assistance to vulnerable populations who are the most affected by shocks, helping them to cope with the consequences and to recover more rapidly. The shock-responsive social protection measures in Mozambique after Cyclone Idai were crucial in providing immediate relief and support to vulnerable communities affected by the climate change-induced disaster.[43] Conditional cash transfers, combined with vocational training or productive investment grants, have helped households exposed to weather variability smooth their consumption and diversify their economic activities in Nicaragua.[44] By analysing successful case studies and leveraging standard frameworks, guidelines and available country reports, including Post Disaster Needs Assessments (PDNA)[45] for countries, ILO officials can design effective and context-specific policy options that address the unique challenges of responding to shocks and crises while safeguarding vulnerable populations[46].

- **Anticipatory climate financing**: In this approach, social protection is put in place in anticipation of climate change impact, so it can respond swiftly. Such policy options may be developed based on stakeholder consultations and reviews of the existing climate finance landscape in countries

  This category of policy response is likely to be particularly relevant if:

  - climate impacts are expected to lead to large numbers of people finding themselves extremely vulnerable (as identified through the 'Physical impacts' section of the labour market implications pillar in Step II of the diagnostic framework)
  - there are risks of large-scale structural employment shocks from national or global mitigation policy efforts (as identified through the 'Transition impact – risks' section of the labour market implications pillar in Step II of the diagnostic framework).

2. **Labour-oriented adaptation:** A labour-oriented approach to adaptation can improve worker productivity and labour supply, as well as worker well-being. This **directly relates to the ILO's work on employment intensive and public works programmes (EIIP)** which aims to further enhance the employment outcomes of public investments in infrastructure and environmental works (including

42 ILO Social Protection Floor. Available at: https://www.ilo.org/secsoc/areas-of-work/policy-development-and-applied-research/social-protection-floor/lang--en/index.htm

43 International Policy Centre for Inclusive Growth (IPC-IG) and WFP Mozambique (2022) 'Adaptive social protection in Mozambique: Improvements in emergency response'. Available at: https://ipcig.org/sites/default/files/pub/en/OP512_Adaptive_social_protection_in_Mozambique.pdf

44 Macours, K., Premand, P., and Vakis, R. (2022) 'Transfers, Diversification and Household Risk Strategies: Can Productive Safety Nets Help Households Manage Climatic Variability?', *The Economic Journal, Royal Economic Society*, vol. 132(647), pages 2438–2470.

45 UNDP (2015). Post Disaster Needs Assessment. Available at: https://www.undp.org/publications/post-disaster-needs-assessment

46 In addition to the ILO's resources, The World Bank's Social Protection and Labour Global Practice, UNICEF, and the Shock-responsive Social Protection Systems study led by Oxford Policy Management offer valuable resources such as case studies, toolkits, and policy papers on shock-responsive social protection. These resources provide country-specific insights and policy recommendations. Leveraging these resources can help identify relevant policy options tailored to each country's needs.

nature-based solutions) and thereby support groups of society in vulnerable situations.[47] Adopting cooling technology is a good example. The adoption, primarily by firms/organisations, depends on the costs and benefits, comparing the gains in output and productivity with the cost of investment (though the firm's social responsibility and concerns about its reputation may also play a role). Government subsidies can help where a shift in behaviour is desirable but held back, for instance, by high initial cost of early adoption, while cost is expected to fall substantially over time, possibly helped by large demand. The scarce evidence suggests that adaptation is less likely for low-skilled labour, which is where subsidies may be most beneficial. Policy options may vary by the nature of climate change impacts – specifically, the physical risks induced by climate change. For example, to ensure adaptation policies can be optimised to the extent needed to mitigate the impacts of heat stress on labour productivity, ***ILO's heat stress report48*** and ***existing studies like that conducted by the UK Foreign, Commonwealth and Development Office (FCDO) and Vivid Economics provide a useful reference to consider when selecting policy options.***[49] To ensure countries pursue development pathways that acknowledge the importance of climate change (and the global policy response to it) as a critical factor shaping country opportunities and threats, international taxonomies and key principles (e.g. the World Bank's ***Adaptation Principles***), provide a sound basis for consideration and deployment.[50]

This category of policy response is likely to be particularly relevant if:

- the physical impacts of climate change are expected to lead to large numbers of people finding themselves extremely vulnerable (as identified through the 'Physical impacts' section of the labour market implications pillar in Step II of the diagnostic framework).

3. **Labour market integration:** This involves creating opportunities for, and removing barriers to, individuals finding suitable and productive employment in light of sectoral shifts in employment (displacement), job quality/working conditions and productivity or possible labour market inclusion (disadvantaged groups). For example. increasing labour mobility across the economy will facilitate the reallocation of labour across sectors and places. Integration with wider labour markets can facilitate climate-induced migration within a country, regionally, and internationally. There is no specific universal source that provides case studies and guidelines on developing labour market integration policies. The ***ILO offers a range of publications and reports related to the role of employment services51 and active labour market programmes52, including labour market integration,*** which can be leveraged, along with adequate stakeholder consultations, to develop relevant policy options applicable to a country's context. Active labour market policies (ALMP) and employment services play an important role in cushioning income losses, protecting existing jobs and facilitating employment and promoting labour market attachment.

This category of policy response is likely to be particularly relevant if:

47 ILO (2020). Employment Intensive Investment Programme Guidance. Available at: https://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_743537.pdf

48 ILO (2019). Working on a Warmer Planet: The impact of heat stress on labour productivity and decent work. Available at: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_711919.pdf

49 FCDO and Vivid Economics (2017) 'Impacts of higher temperatures on labour productivity and value for money'. Available at: https://www.vivideconomics.com/casestudy/impacts-of-higher-temperatures-on-labour-productivity-and-value-for-money/

50 World Bank (2020) 'The Adaptation Principles: 6 Ways to Build Resilience to Climate Change'. Available at: https://www.worldbank.org/en/news/feature/2020/11/17/the-adaptation-principles-6-ways-to-build-resilience-to-climate-change

51 ILO (2023). Public employment services and active labour market policies for transitions: Responses to mega trends and crise. Available at: https://www.ilo.org/emppolicy/pubs/WCMS_888350/lang--en/index.htm

52 ILO (2023). The role of active labour market policies for a just transition. Available at: https://www.ilo.org/global/topics/green-jobs/publications/just-transition-pb/WCMS_886544/lang--en/index.htm

- a country experiences significant structural unemployment, either because of the low-carbon transition or because climate impacts render some jobs so unproductive that people seek alternative employment (e.g., rural–urban migration due to agriculture productivity falling), as identified through the 'Transition impacts – risks' section of the labour market implications pillar in Step II of the diagnostic framework).

4. **Reskilling and training:** New market opportunities will arise in the transition towards a low-carbon economy. Furthermore, existing markets may need to introduce new technologies. Thus, reskilling and training will be critical for existing workers who are affected, as well as for entrants into the labour market. The ***ILO's 'Skills for Green Jobs: A Global View'***[53] is a report that focuses on the importance of skills development in promoting green jobs and supporting the transition to a greener and more sustainable economy. The report provides policy recommendations and strategies for policymakers and stakeholders to enhance skills development for green jobs and to promote a just transition to a sustainable economy. It also includes case studies from different countries that showcase successful initiatives and best practices in promoting green skills development and green job creation.

   This will be relevant for:

   - benefitting from the economic opportunities that might arise from the global low-carbon transition (as identified through the 'Transition impact – opportunities' section of the labour market implications pillar in Step II of the diagnostic framework) or where domestic mitigation efforts require doing different things (or doing things differently but where people do not have the skills to do them differently at present).

5. **Job creation:** Policy options, which aim to foster the creation of green jobs while ensuring a just and inclusive transition to a low-carbon and environmentally sustainable economy, should be prioritized, thereby promoting both economic growth and social equity. ***ILO's 'Skills for Green Jobs: A Global View'*** provides insights into the demand for green skills and the role of skills development in promoting green jobs. Another ***ILO report on 'Green Jobs: Towards Decent Work in a Sustainable, Low-Carbon World'*** explores the concept of green jobs and provides policy recommendations for their creation. Similarly, ***ILO's Guide for a Just Transition towards Environmentally Sustainable Economies and Societies for All***[54] ***and Guidelines for Shaping Employment Policies that Support a Green Recovery and a Just Transition***[55] offers the primary reference framework for policymakers to develop just transition policies which promoting green job creation. Many countries have their own guidelines and case studies on policies for creating green jobs. Officials deploying green employment diagnostics must also coordinate with government ministries responsible for environment, labour and economic development, to identify relevant publications.

   This will be relevant for:

   - benefitting from new market opportunities which will arise from the transition towards

53 ILO (2021) 'Skills for Green Jobs: A Global View'. Available at: https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_159585.pdf

54 ILO (2015) *Guidelines for a just transition towards environmentally sustainable economies and societies for all*. Available at: https://www.ilo.org/global/topics/green-jobs/publications/WCMS_432859/lang--en/index.htm

55 ILO (2022). Guidelines for shaping employment policies that support a green recovery and a just transition. Available at:https://www.ilo.org/employment/Whatwedo/Publications/WCMS_854548/lang--en/index.htm

a low-carbon economy and, with this, the new jobs which will be created (as identified through the 'Transition impact – opportunities' section of the labour market implications pillar in Step II of the diagnostic framework).

6. **Economic diversification and strengthening:** The impacts of climate change and the just transition will require certain industries to pivot towards low-carbon growth avenues. Furthermore, new market opportunities will arise that need to be capitalised on for growth. For countries to emphasise economic diversification, particularly based on selecting new products, perhaps closely related to existing industries (especially given the broad-based structural changes that (some) countries are likely to require), ***the World Bank's discussion on 'Diversification and cooperation in a decarbonizing world'56*** provides a sound basis for exploration and creation of relevant policy options.

   This will be relevant for:

   - specific economic activities that are identified as being at high risk from physical climate risks (e.g., countries that are heavily dependent on beach tourism that are subject to significant SLR), as identified through the 'Physical impact' section of the economic implications pillar in Step II of the diagnostic framework
   - managing the transition risks identified, especially those arising from international action (as identified through the 'Transition impact – risks' section of the economic implications pillar in Step II of the diagnostic framework).

The developed policy options, along with the timeframe for implementation, can be reported as per the template provided in the Excel toolkit. An indicative list of potential policy options is provided in the Annexure.

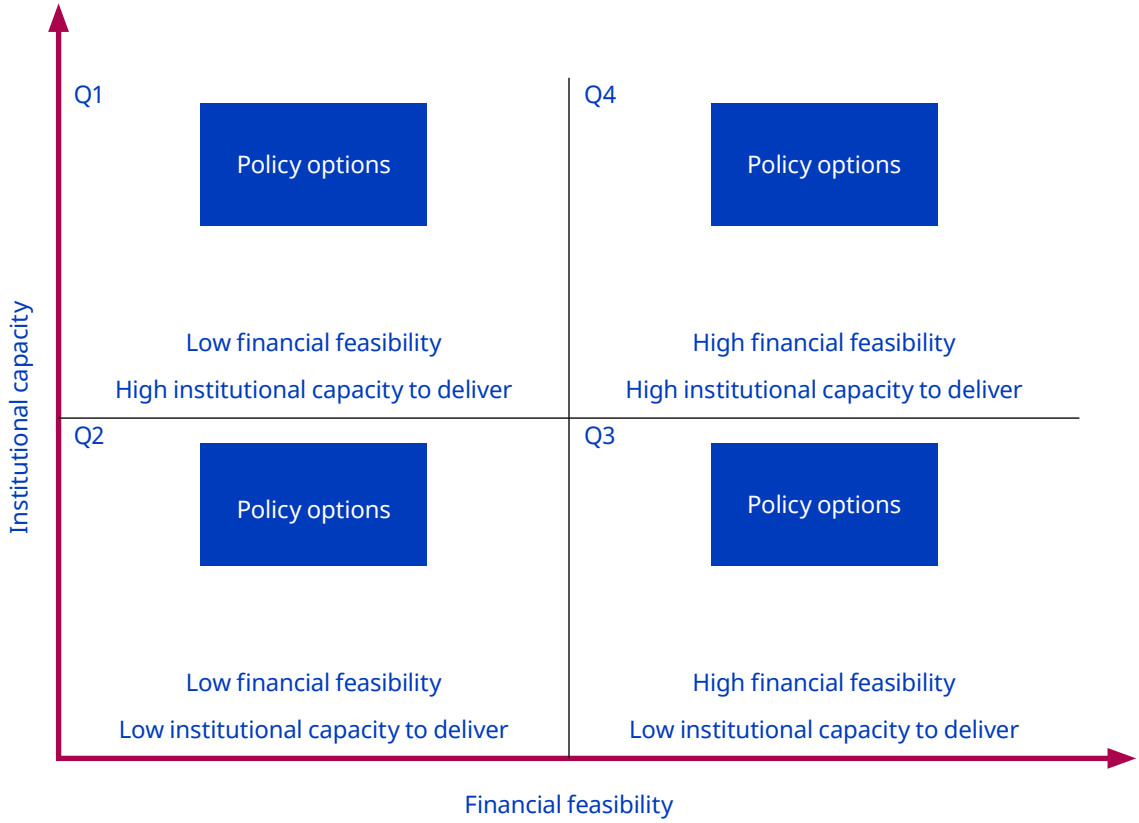
▶ Table 5. Reporting template for developing policy options/ interventions – illustrative

Policy category	Identified needs	Proposed policy option	Timeframe for implementation and key targets
Category #1	Listed needs against each category, as identified in the previous module	Listed policy options developed for each need against each category	Target years for implementation of the policy options
Category #2			
Category #n			

The policy categories, and the interventions under them, will require financing, coordination support and buy-in from key institutions that have functional responsibility for their implementation. Government budgets alone will be insufficient to finance the creation of new industries to scale (research and development, technological innovation, reskilling and training of workers etc.), as well as the capital needed to upgrade other industries. The transition towards a low-carbon economy, coupled with adapting to the impacts of climate change, requires an integrated approach with support from different actors (private, public, national and international) to enable a just transition that is inclusive and that provides decent jobs for all, and this should be reflected in financial/investment strategies and associated enabling policies.

56 The World Bank (2020) 'Diversification and cooperation in a decarbonizing world: Climate strategies for fossil-fuel dependent countries'. Available at: https://blogs.worldbank.org/climatechange/diversification-and-cooperation-decarbonizing-world-climate-strategies-fossil-fuel

▶ Figure 3. Matrix to assess both the financial feasibility and institutional capacity to implement the proposed policy interventions – illustrative



- All policy options falling in quadrant Q4 should be prioritized.
- Policy options falling in quadrants Q1 and Q3 should be prioritized conditionally depending on contextual importance and needs.
- Policy options falling in quadrant Q2 should be de-prioritized owing to low financial feasibility and low institutional capacity to implement.

In order to prioritise which policy interventions need to be considered for implementation, it is recommended that insights be gained from desk-based research, stakeholder consultations and social dialogue to develop a four-quadrant matrix to assess both the financial feasibility and institutional capacity to implement the proposed policy interventions. This can be accomplished by drawing on valuable insights and cost-effectiveness lessons from the successful implementation of similar efforts in other countries. Additionally, officials can consider employing a Delphi survey method or conducting stakeholder workshops to gather scores and feedback on various options from key stakeholders. Analysing the information gathered, each policy intervention can be strategically positioned within the matrix, based on its potential viability, as illustrated below. The matrix offers a clear visual representation, enabling policymakers to identify and prioritise financially feasible policy interventions that align with the country's institutional capabilities.

▶ Module iii

As an optional module towards the selection of policy recommendations, an additional layer of prioritisation is proposed, involving reflective questions. These are posed to inform the prioritised selection of policy options in the previous step and to validate the feasibility of each option across governance, operational capacity and expected outcomes. The reflective questions should be tailored according the country's context and applicable policy options thereof. These questions include, among others, the following:

Governance:

- What specific entry points within existing policy frameworks, such as the national employment policies (NEP), national development contributions (NDC), medium-term development strategies, economic recovery and growth plans, and Sustainable Development Goals (SDGs) strategies, among others, can help to integrate and implement the prioritized policy options effectively?
- Is there a mechanism to coordinate across policy areas?
- What are the policy levers that would be used for the prioritised options (legislative, administrative, regulatory or other)?
- Are there any governance-related support gaps which may need to be addressed to ensure more effective implementation of the prioritised policy options?
- What are the monitoring and evaluation mechanisms which need to be in place for effective implementation of the prioritised policy options?

Operational:

- Is there sufficient operational capacity to implement the policy options? (in terms of financial, human and technical resources as well as in light of existing mechanisms, for e.g. action plans, dedicated functional agencies, leadership capabilities, etc.)
- Will incentives, lobbying or increased political will be needed to make this policy more palatable and implementable?

Outcomes:

- Who will the policy options target as beneficiaries?
- What are the expected outcomes and impacts? What might be the unintended positive and negative impacts of the policy?
- What are the possible trade-offs for adopting/implementing this policy?

The questions at this stage can be tailored as per the requirements in different countries and based on the contextual nuances of the policy options selected and strengths and/or weaknesses across the same. Once the above modules are completed, the policy interventions can be prioritised, and a finalised set of recommendations can be provided, in accordance with the reporting framework provided in the Excel toolkit.

Effective policymaking involves navigating complex decisions and trade-offs, considering multiple objectives, stakeholders and constraints. For instance, implementing stricter environmen-

tal regulations to combat pollution may lead to increased costs for businesses or potential job losses, illustrating the trade-offs involved in pursuing environmental sustainability while considering economic impacts. Similarly, a country facing high levels of debt may find it challenging to implement large-scale climate or employment-related programmes financed by government borrowing, demonstrating the need to balance fiscal stability with the pursuit of climate and employment goals. Officials deploying green employment diagnostics need to carefully analyse economic, social and environmental factors, along with long-term goals, considering various factors such as economic impacts, social consequences, environmental sustainability, and macro-fiscal stability, to strike a balance between competing interests and to optimise outcomes for the greater good of society.

▶ Box 4. Summary of insights towards developing policy recommendations

Officials deploying green employment diagnostics for any country should conclude Step III with informed policy recommendations, which reflect the following:

- An understanding of the extent to which existing policies and strategies address the identified climate-induced challenges in the labour market and incorporate the ILO principles of Just Transition, and what the current gaps are within these policies and strategies.
- A list of policy interventions, identified through research, stock-taking and social dialogues, to bridge existing gaps and which, in turn, can further help address the identified climate-induced impacts on the labour market and cascading impacts on people's welfare.
- Prioritised policy options, informed by social dialogue, multiple stakeholder perspectives, financial feasibility and institutional capacity to implement the policy options.
- An understanding of the need for additional investigation to ensure more informed policy design and implementation, as a means of achieving progressive mainstreaming of green and decent employment considerations in the national policy landscape.

6

Process: How to implement a green employment diagnostic

The three-step approach to green employment diagnostics places stakeholder engagement at the heart of the process. **It involves participatory processes and social dialogue involving constituents (government entities, including, among others, the ministry of labour, planning ministries, climate/ environment change ministries, and workers' and employers' organisations), along with development partners (United Nations, multilaterals, bilaterals), academics, think tanks and NGOs, where relevant.** Such processes ensure that relevant information is embedded in policy responses linked to employment and climate change, while accessing different views that have a bearing on the analysis.

Considering the comprehensive nature of the diagnostics, careful consideration of feasibility is imperative during implementation. The scope of the study should be demand driven and as part of the country's policy advancement processes, tailored to the available resources and timeline, prioritising context-specific and relevant focus areas for each country under study. While the study's conclusions will remain objective and evidence-based, the consultative process during the analysis will enrich the insights and foster ownership among stakeholders who can take action based on the study findings. It is also suggested to engage social partners (representatives of workers' and employers' organizations) in consultations to apprise the exact outputs expected from the diagnostics. Various factors will influence the exact implementation of green employment diagnostics in each country, but some (key) common steps when conducting a green employment diagnostics should include the following:

- **Establish a task team:** Conducting green employment diagnostics demands careful planning and allocation of resources. The composition of the task team may vary based on available time and resources. For optimal outcomes, it is advisable to form a task team early in the process, composed of international and/or national labour market and employment specialists and development and climate change economists. This task team would typically comprise two to four officials/experts who will be responsible for the analytical work and will consult with a broader range of stakeholders during the process.

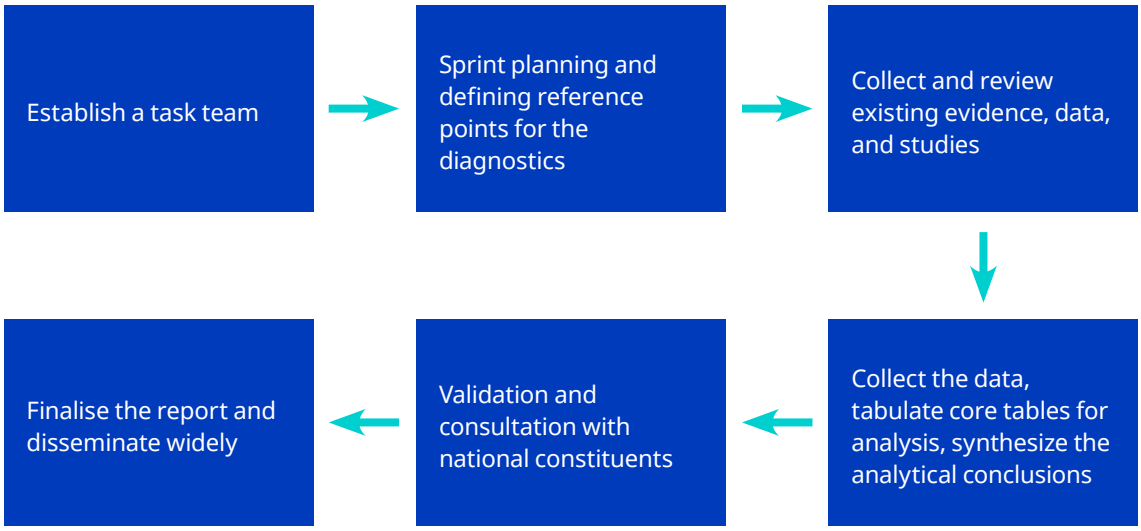
- **Sprint planning and defining reference points for the diagnostic:** Conducting a green employment diagnostic typically takes two to three months, allowing for meaningful policy discussions with partners, contingent on available resources. Step I may take one to two weeks, Step II around three to five weeks, and Step III, focusing on policy formulation and recommendations, approximately three to four weeks. Developing need-based sprint plans/ blueprints/work schedules is important to deliver the study in an efficient manner. To ensure accurate and contextually relevant findings, it is crucial to include time-based reference points in the diagnostic. The evolution of climate-induced risks and data availability may vary across different country studies, impacting the definition of time-based reference points. Recognising the time lag between the peak of a climate-related shock and its employment impact, along with varying recovery rates among different groups, and defining the period of analysis, is a critical aspect of the process.

- **Collect and review existing evidence, data and studies:** The analytical work should not start from scratch but should be based on existing studies and secondary information from available data repositories. Prior to commencing the analysis, it is crucial to identify and review various data sources, national policies, development and climate action plans, as well as recent diagnostics and climate impact assessments related to the country, encompassing different sectors, employment, and the labour market. For most countries, a wealth of studies exist that can serve as a critical foundation, providing essential context and a baseline for conducting the green employment diagnostic. Engaging in discussions with key partners further aids in setting the scene for the analysis. In instances where significant information asymmetries or data unavailability arise, it is necessary to plan and implement

primary data generation techniques, such as rapid surveys, focus group discussions and key informant interviews, among others, to address the gaps.

- **Collect the data, tabulate core tables for analysis, and synthesise the analytical conclusions:** The Excel toolkit provides checklists and reporting templates to be used to collect and compile statistics and tabulate core tables across all three steps, during the period of analysis. These checklists and templates may be adjusted according to the context, data and main areas of interest. Some of the templates provided may be aspirational for countries with limited data availability but provide a sense of direction with regard to the type of information that is needed. What does the data tell you? Is it in line with the information from previous studies and from partners? What are the inferences which can be drawn through the data collected? While the secondary analysis is likely to be complex, distilling the main messages and trends will be helpful to get the message across and to facilitate drawing actionable policy conclusions. Using both quantitative and qualitative sources of data will help to deepen the understanding of the national context.
- **Validation and consultation with national constituents: In addition to the need-based consultations during the data collection and analysis phases,** presentation and discussion of the main findings and conclusions at a meeting with constituents will be important for validating the results. Preferably, this could take the form of a joint analytical workshop. Here, the conclusions can be discussed in light of the government strategies, informing policy priorities and validating other relevant frameworks that have a bearing on the policy actions that lie ahead.
- **Finalise the report and disseminate it widely:** After validation and consultation, the finalised report can be disseminated widely to all stakeholders and interested parties. Making sure the analysis is available to decision-makers and development actors, as well as the general public, will contribute to transparency, mutual learning, and knowledge generation.

▶ Figure 4. Process for conducting a green employment diagnostic



▶ Annexure

Policy options by each policy category – *indicative*

Policy categories	Proposed policy options	Interventions informing the policy options - indicative Timeframe for implementation and key targets		
Social protection	Job Retention and Public Employment Programmes	Provide temporary job retention programs to support businesses in green sectors or those transitioning to greener practices. This can help prevent layoffs and maintain employment levels during the transition period.	Enhance social protection systems to ensure that workers in vulnerable sectors have access to adequate support during the transition. This can include extending unemployment benefits, providing retraining allowances, and improving job placement services.	Provide long-term support for communities heavily reliant on industries undergoing a transition. This can involve community development initiatives, investment in sustainable infrastructure, and job creation programs that align with the local context and needs.
Reskilling and training	Skills Development and Training Programmes	Establish short-term training programs focused on developing skills relevant to the green economy. These programs can quickly equip workers with the necessary knowledge and expertise for jobs in renewable energy, energy auditing, waste management, and other green sectors.	Strengthen education and training systems to align them with the needs of the green economy. This includes updating curricula, expanding vocational training programs, and collaborating with industry to ensure that workers have the necessary skills for green jobs.	Embed sustainability and green skills training into the education system from early childhood to higher education. This ensures that future generations are equipped with the knowledge and skills needed for green jobs and sustainable practices.
Job creation	Support for Small and Medium-sized Enterprises (SMEs) and targeted tax incentives and subsidies for the private sector	Provide targeted financial assistance, grants, and capacity-building programs to help SMEs adopt environmentally friendly practices and technologies. This can support job retention and stimulate the growth of sustainable businesses. Implement targeted fiscal measures, including investment tax credits, payroll tax reductions, and training subsidies, to encourage private sector job creation while addressing specific employment challenges.	Foster an enabling environment for green entrepreneurship and start-ups through access to finance, business incubation programs, and supportive regulatory frameworks. This can encourage the emergence of new businesses that contribute to the green economy and job creation.	Establish comprehensive lifelong learning programs that enable workers to continually update their skills and adapt to changing job requirements in the green economy. This can include subsidies for professional development courses, mentoring programs, and career transition support.

Policy categories	Proposed policy options	Interventions informing the policy options - indicative Timeframe for implementation and key targets		
Economic diversification and strengthening	Support for Renewable Energy and Energy Efficiency Projects	Increase incentives and financial support for renewable energy projects and energy efficiency initiatives. This will stimulate job creation in industries such as solar and wind power, energy retrofitting, and green construction.	Develop sector-specific transition plans and roadmaps that outline the steps and timeline for transitioning to a green economy. These plans should incorporate measures to protect existing jobs, create new employment opportunities, and ensure a fair and equitable transition for workers and communities affected by the changes.	Establish standardized green skills certification programs and standards to ensure the quality and consistency of skills acquired in the green economy. This enhances employability, facilitates job mobility, and enables workers to demonstrate their qualifications to potential employers.
Economic diversification and strengthening	Green Infrastructure Investments	Accelerate public investments in green infrastructure projects, such as renewable energy installations, sustainable transportation systems, and smart grids. These investments create immediate job opportunities in construction, manufacturing, and maintenance.	Increase funding for research and development of green technologies, products, and services. This can stimulate innovation and the growth of new industries, creating job opportunities in emerging sectors such as renewable energy, sustainable transportation, and circular economy.	Encourage the creation of green jobs through targeted investment and incentives. Promote the growth of green industries, including renewable energy, sustainable agriculture, green construction, and clean technologies. Economic diversification strategies can help transition regions heavily dependent on fossil fuels or carbon-intensive industries to new green sectors.
Economic diversification and strengthening	Green Public Procurement	Introduce green public procurement policies that prioritize the purchase of environmentally friendly products and services. This creates demand for green goods and services, stimulating job growth in industries aligned with the green economy.	Implement industrial policies that promote the growth of green industries and businesses. This can include targeted incentives, tax breaks, and grants for companies engaged in sustainable practices, renewable energy production, and green manufacturing. Such policies encourage job creation and facilitate the transition of traditional industries to greener alternatives.	Promote the transition to a circular economy that minimizes waste, maximizes resource efficiency, and encourages sustainable consumption patterns. This shift can create new job opportunities in recycling, remanufacturing, and sustainable product design.
Economic diversification and strengthening	Sector-specific Support	Identify sectors that are particularly vulnerable to job losses during the transition and provide tailored support to protect employment. This can involve targeted subsidies, grants, or retraining programs for workers in industries such as fossil fuel extraction, heavy manufacturing, or traditional agriculture.	Expand and enforce green public procurement policies that prioritize the purchase of environmentally sustainable products and services. This increases demand for green goods and services, driving market growth and job creation in green industries.	Increase funding for research and development in green technologies, innovation, and sustainable practices. This supports the emergence of new industries, drives technological advancements, and creates high-skilled jobs in areas such as renewable energy, energy storage, and sustainable transportation.

Policy categories	Proposed policy options	Interventions informing the policy options - indicative Timeframe for implementation and key targets		
Economic diversification and strengthening	Green Innovation and Research Funding	Increase funding for research and development of green technologies and innovation. This can support the emergence of new industries and job opportunities in areas such as clean energy, circular economy, and sustainable agriculture.	Focus on regional development and diversification strategies that promote sustainable industries and job creation. This can involve targeted investments in regions heavily reliant on fossil fuels or carbon-intensive sectors, aiming to support the transition and create new economic opportunities.	Strengthen social dialogue platforms and mechanisms to ensure meaningful participation of workers, trade unions, and community representatives in decision-making processes related to the green transition. This ensures that their perspectives are considered and that policies are designed to protect their interests.
Economic diversification and strengthening	Monitoring and Evaluation	Establish mechanisms to monitor the impact of policies on job protection and regularly evaluate their effectiveness. This allows for adjustments and improvements to be made based on real-time data and feedback.	Establish dedicated funds to support workers and communities affected by the transition. These funds can provide financial assistance for retraining, job placement programs, and community development initiatives that promote sustainable economic activities.	Allocate public investment and use fiscal policies to promote green sectors and technologies. This can include green infrastructure projects, research and development funding, and tax incentives for sustainable businesses. Redirecting public resources toward the green economy stimulates job growth and private sector investment.
Labour-oriented adaptation	Government Subsidies for Cooling Technology Adoption	To encourage firms and organizations to adopt cooling technology and enhance labour-oriented adaptation, government subsidies can play a crucial role in offsetting the high initial costs of early adoption, making it financially viable for businesses to invest in.	Implement campaigns to raise awareness about energy-efficient cooling technologies and the benefits of subsidies to drive adoption; Provide grants and incentives for the development of innovative, energy-efficient cooling solutions to accelerate technology advancement.	Enforce energy efficiency standards and labeling schemes to guide consumers towards sustainable cooling choices; Gradually phase out environmentally harmful cooling technologies and support the transition to greener options.
Labour market integration	Infrastructure development and connectivity	Invest in infrastructure development, particularly road networks and transportation systems This is crucial to facilitate labour market integration. Improved connectivity between regions and sectors will enable easier labour mobility, allowing workers to access job opportunities in different areas.	Prioritize investment in green infrastructure projects that not only improve connectivity but also create sustainable job opportunities aligned with the findings from green employment diagnostics.	Develop long-term green transport and mobility strategies that reduce emissions, create employment opportunities, and enhance accessibility to sustainable jobs.

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