



International  
Labour  
Organization

## ► Green jobs, green economy, just transition and related concepts:

A review of definitions developed  
through intergovernmental processes  
and international organizations







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## ► Abbreviations

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<b>CA4JI</b>	Climate Action for Jobs Initiative
<b>DWA</b>	Decent work agenda
<b>DWI</b>	Decent work indicators
<b>EEA</b>	European Economic Area
<b>EGSS</b>	Environmental goods and services sector
<b>EP</b>	European Parliament
<b>EU</b>	European Union
<b>GAIN</b>	Green Jobs Assessment Institutions Network
<b>GJM</b>	Green Jobs Module
<b>ICLS</b>	International Conference of Labour Statisticians
<b>ILC</b>	International Labour Conference
<b>ILO</b>	International Labour Organization
<b>ILO GJP</b>	ILO Green Jobs Programme
<b>ILO PAP-JT</b>	ILO Priority Action Programme on Just transitions towards environmentally sustainable economies and societies
<b>IOE</b>	International Organisation of Employers
<b>ISIC</b>	International Standard Industrial Classification of All Economic Activities
<b>ITC-ILO</b>	International Training Centre of the International Labour Organization
<b>ITUC</b>	International Trade Union Confederation
<b>IUCN</b>	International Union for Conservation of Nature
<b>MSMEs</b>	Micro, small and medium enterprises
<b>NAP</b>	National Adaptation Plans
<b>NDC</b>	Nationally Determined Contributions
<b>Nbs</b>	Nature-based Solutions
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>PAGE</b>	United Nations Partnership for Action on Green Economy
<b>Rio+20</b>	United Nations Conference on Sustainable Development
<b>SDGs</b>	Sustainable Development Goals
<b>SEEA</b>	System of Environmental Economic Accounting
<b>SNA</b>	System of National Accounts
<b>TME</b>	Tripartite meeting of experts
<b>UN</b>	United Nations
<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>UNECE</b>	United Nations Economic Commission for Europe
<b>UNEP</b>	United Nations Environment Programme
<b>WESO</b>	World Employment and Social Outlook



## ► 1. Introduction

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The issues of climate change and environmental degradation have become increasingly prominent in international policy debates given their implications for economic and social development and well-being. The green economy is considered a viable means to respond to various crises that have emerged globally in recent years, including climate, nature, pollution, food, financial, social and economic upheaval (ILO 2013a). If well managed, the transition to a green economy has the potential to provide opportunities for job creation and sustainable economic growth through targeted policies and investments and to serve as a model for achieving sustainable development (ILO 2013b). Recent policy debates have focused on promoting a just transition to a green economy which involves a new set of approaches and policy options to generate optimal environmental and social outcomes – including opportunities for decent work – while minimizing and addressing the social impacts that arise from the transformation (ILO 2013b).

The increasing urgency of sustainable development that considers both environmental and decent work concerns has yielded some important milestones in recent years in the form of groundbreaking international reports, policy guidelines and statistical standards, all of which have shed light on emerging “green” concepts and definitions. Because a shared understanding of these terms is critical to advancing sustainable development policies and programmes, this paper reviews these terms and suggests refinements that incorporate these milestones. The concepts and definitions discussed here include the green and blue economies, green growth, greening, shades of green, circular economy, Nature-based Solutions and a just transition.

The concept of the *green economy* as an important pathway to sustainable development was first discussed in an international forum during the United Nations Conference on Sustainable Development (Rio+20 Conference) held in Rio de Janeiro in June 2012. The outcome document of the conference, *The Future We Want*, encouraged countries to implement *green economy* policies in the context of sustainable development and poverty eradication, in order to drive sustained, inclusive and equitable economic growth and job creation, particularly for women, youth and poor people (United Nations 2012a). The outcome document highlights the importance of promoting decent work for all.

A year later, the International Labour Conference, in *Sustainable Development, Decent Work and Green Jobs* (ILO 2013b), acknowledged that the environment and social development must no longer be treated as separate pillars of sustainable development, but rather as closely interrelated dimensions. The report noted that an integrated approach towards environmental sustainability can be a significant avenue for development, with more and better jobs, social inclusion and poverty reduction. It observed that the shift to an environmentally sustainable economy has given rise to *green jobs*, a new type of job which plays a vital role in *greening enterprises and economies*. It also recognized that defining and measuring green jobs is essential to understanding the interrelationship between environmental sustainability and labour markets, including job quantity and quality. Green jobs are seen to be both an important

part of the employment gains linked to a more environmentally sustainable economy and a critical factor for making the green transition technically feasible and economically viable. Without skilled and motivated workers in new *green growth* sectors and in key occupations across the economy, the investments made, and the technology deployed will not generate the expected benefits for sustainable development.

In 2015, the International Labour Organization's adoption of the *Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies for All* (ILO 2015) aimed at enabling governments, workers and employers around the globe to leverage the process of structural change towards a greener, carbon-neutral economy, create green jobs at a large-scale and promote social protection.<sup>1</sup> The guidelines are both a policy framework and a practical tool to help countries at all levels of development manage the transition to carbon-neutral and resilient economies and can also help them achieve their Nationally Determined Contributions (NDC), National Adaptation Plans (NAP) and the 2030 Sustainable Development Goals (SDGs). It's worth highlighting that the Paris Agreement on Climate Change noted "a just transition of the workforce and creation of decent work and quality jobs in accordance with nationally defined development priorities" as an important consideration for climate action (UNFCCC 2016).

Making progress towards a sustainable future requires that policymakers, social partners and civil society at large understand the challenges and opportunities, investments and costs of a just transition based on sound evidence. This is essential since different greening policy scenarios can be expected to lead to different outcomes, yielding business opportunities and green job opportunities in some economic sectors while destroying businesses and leading to layoffs in others. A clear understanding of the concepts and definitions must therefore underpin policy

goals and strategies as well as support policy and programme implementation and monitoring.

Policy concepts related to just transition, green economy and green jobs are intended to support and further clarify the notion of sustainable development. Such concepts and definitions allow the possibility of a range of political perspectives in relation to economic growth, environmental sustainability and human well-being. They are not necessarily mutually exclusive and take into consideration differences in country contexts and levels of development. The concepts and definitions covered in this paper focus on those developed through intergovernmental processes and by international organizations rather than an academic perspective.

Two main types of international concept definitions are used in this paper: policy concept definitions and statistical concept definitions. *International policy concept definitions* serve to provide support to countries in developing national policy frameworks, strategies, and action plans. For example, UN policy frameworks such as the ILO Just Transition Guidelines help to support country strategic planning and implementation to achieve environmentally sustainable and socially just outcomes with decent work. International policy guidelines are best served by providing clear and unambiguous definitions for terms and concepts used. The existence of multiple definitions for a given policy concept may at times be necessary and should be clarified for stakeholders to avoid confusion and allow optimal application; this is the case for example with the policy concept of "green jobs".

*International statistical concept definitions* are intended to help support the measurement, assessment and monitoring of relevant country-level policies and programmes. International statistical concept definitions are adopted by UN statistical standard-setting bodies (like the International Conference of Labour

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1 The Just Transition Guidelines were drafted by a tripartite meeting of experts mandated by the ILO Governing Body and convened from 5 to 9 October 2015. Eight of the experts were nominated by the Governments of Brazil, Indonesia, Germany, Kenya, Mauritius, Turkey, South Africa and the United States, while the Employers' and the Workers' Group in the ILO appointed another eight for each of the two groups. The meeting was chaired by an independent Chairperson, Minister Esther Byer Suckoo (Barbados); Vice-Chairpersons were Ms Vanessa Phala (employer expert from South Africa) and Mr Kjeld Jakobsen (worker expert from Brazil).

Statisticians) as part of adopted international statistical standards, including Resolutions and Guidelines.<sup>2</sup> These standards usually relate to concepts, definitions, classifications, and other methodological procedures which are agreed as representing “best practice” in the respective areas. Adoption of standard concept definitions by national statistics producers supports achieving internationally comparable labour statistics as well as data comparability within a country over time. *Operational statistical concept definitions* support the implementation of international statistical concept definitions adopted by international statistical standard-setting bodies.

This paper seeks to present the concept definitions of green jobs, green economy, just transition and related concepts. It provides insights on key elements of the concept definitions and, in the case of the green jobs definitions presented, discusses commonalities and differences. The paper is divided into the following sections: (1) Introduction, (2) Policy definitions of green jobs, (3) Statistical definition of green jobs and related definitions, (4) Green economy and other related concept definitions, and (5) The just transition concept.

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2 For more information, see: <https://ilostat.ilo.org/about/standards/>.

## ► 2. Policy definitions of green jobs

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This section presents two policy concept definitions of green jobs which draw exclusively from UN sources. The policy concept definitions presented are those developed by (1) the International Labour Organization (ILO) and the United Nations Environment Programme (UNEP) and (2) the ILO Green Jobs Programme. Key guiding elements of each definition are discussed, as well as important similarities and differences between the two concept definitions.

### 2.1 ILO–UNEP policy definition of green jobs

In 2008, the ILO and UNEP published a report entitled *Green Jobs: Towards Decent Work in a Sustainable, Low-carbon World* (ILO and UNEP 2008). The first comprehensive report on the emergence of a “green economy” and its impact on the world of work in the twenty-first century, it was commissioned and funded by UNEP (as part of its Green Jobs Initiative), the ILO, the International Organization of Employers (IOE) and the International Trade Union Confederation (ITUC). The report recognized the importance of evidence-based climate change adaptation and mitigation actions for creating green jobs. It also argued for payment for environmental services and improved natural resource management, highlighting that such payments to repair and protect the natural environment can be an important driver for generating green jobs.

The report is structured around the topics of definitions and policies; employment impacts of shifting to a sustainable, low-carbon economy as well as the outlook for green jobs. It presents a series of estimates and projections of green jobs around the world as well as case study and circumstantial evidence of green jobs growth and potential while also noting the many remaining

data gaps. The report section covering concept definitions is a rich source not only for the policy definition of green jobs, but also for related concepts. Thus, the first UN policy concept definition of green jobs is presented as follows:

*We define green jobs as positions in agriculture, manufacturing, construction, installation, and maintenance, as well as scientific and technical, administrative, and service-related activities, that contribute substantially to preserving or restoring environmental quality. Specifically, but not exclusively, this includes jobs that help to protect and restore ecosystems and biodiversity; reduce energy, materials, and water consumption through high-efficiency and avoidance strategies; de-carbonize the economy; and minimize or altogether avoid generation of all forms of waste and pollution. But green jobs, as we argue below, also need to be good jobs that meet longstanding demands and goals of the labor movement, i.e., adequate wages, safe working conditions, and worker rights, including the right to organize labor unions. (ILO and UNEP 2008, pp. 35–36)*

#### 2.1.1 Discussion regarding the ILO–UNEP policy definition of green jobs

The defining characteristic of green jobs in this policy definition is that they *contribute substantially to preserving or restoring environmental quality*. This offers valuable policy scope and directional guidance for understanding and applying the concept. In addition, the definition provides a sectoral scope that defines green jobs, highlighting specific types of productive activities. Moreover, the definition acknowledges green jobs must be “good jobs”, that is, jobs with adequate wages, safe working conditions, and worker rights. These attributes of “good jobs” align with

the characteristics of decent work as defined by the ILO.<sup>3</sup>

While the ILO–UNEP concept definition of green jobs is based on a review of best practices and available evidence for policy needs, some elements call for further discussion considering developments since the publication of the report. First, the term “positions” is used in this definition, presumably intended as an equivalent of the concept of “jobs”. Since the term “jobs” is a defining element of the concept of green jobs, it is essential to understand this concept. A job is defined as “a set of tasks and duties performed, or meant to be performed, by one person for a single economic unit”. It is worth noting that the term job is used in reference to employment, that is, “work performed for others in exchange for pay or profit” (2013c). *It may be preferable to use the more specific term of “job” to define the concept of green jobs since this concept benefits from an international standard definition for all to understand and apply.*

Second, the scope of economic activities in the ILO–UNEP policy concept definition is limited to selected industries, specifically: agriculture, manufacturing, construction, installation and maintenance, as well as scientific and technical, administrative, and service-related activities that contribute substantially to preserving or restoring environmental quality. The inclusion of these selected broad sectors leaves open to interpretation how to define various sub-sectoral productive activities that contribute substantially to preserving or restoring environmental quality. A notable omission from the listed sectors, for example, is the energy sector, responsible for the vast majority of the planet’s greenhouse gas emissions. The ILO–UNEP report does in fact highlight the energy sector (which should be considered part of the “service-related activities” in the concept definition) as well as various specific subsectors to be considered for the purposes of guiding green job policies, as summarized in the following table. It should be noted that the sectors highlighted in the report

are for illustration purposes only and are not deemed exhaustive.

The inclusion of “installation activities” in the concept definition is reflected in the construction/building sector, and could include, for example, electrical, plumbing, heat, and air-conditioning installation among other installation activities. The installation of wind turbines and solar panels could be included here.

The items listed in **table 1**, which are drawn from the ILO–UNEP report, were not intended to be an exhaustive list. Maintenance activities which are highlighted in the concept definition can refer to such activities as the maintenance of renewable energy installations. Scientific and technical activities in the context of green jobs include productive activities related to scientific research and development (R&D), architectural and engineering activities, technical testing and analysis, when such activities contribute substantially to preserving or restoring environmental quality.

Additional activities that could be included as service-related activities include, for example, activities related to sewerage, waste collection, treatment, and disposal activities; materials recovery; remediation activities and other waste management services; and wholesale of waste and scrap and other products.

Government regulation and enforcement activities related to the production of environmental goods and services, including labour inspections of such activities, could be considered within the scope of the concept definition under administrative services.

Certain sectors and productive activities are not covered in the ILO–UNEP report and are potentially environmentally sensitive topics that nonetheless warrant discussion. Such is the case for mining and quarrying activities. Putting aside the issue of mining of non-renewable energy sources, and recognizing the enormous potential of the circular economy for extracting precious

3 The ILO defines decent work as “productive work for women and men in conditions of freedom, equity, security and human dignity”. For more information, see the [ILO website on Decent Work](#).

► **Table 1. Industry sectors highlighted by ILO–UNEP regarding green job progress and future potential**

SECTOR	SUBSECTORS
AGRICULTURE	Small-scale sustainable farming
	Organic farming
	Environmental services
FORESTRY	Reforestation/ afforestation
	Agroforestry
	Sustainable forestry management
CONSTRUCTION/BUILDING	Green buildings
	Retrofitting
	Lighting
	Efficient equipment and appliances
INDUSTRY	Steel (secondary steel production based on scrap)
	Aluminum (recycling aluminum scrap)
	Cement (energy efficiency improvements; use alternative, recycled content)
	Pulp and paper (recycling paper)
	Recycling (all forms, including electronics and composting)
ENERGY	Renewables
	Carbon capture and sequestration (CCS)
TRANSPORTATION	Fuel-efficient cars
	Mass transit
	Rail
	Aviation

Source: Adapted from ILO–UNEP 2008, Table III.2-1. *Green Job Progress To-Date and Future Potential*.

metals and other mining products, policymakers should consider how to best manage and regulate mining and quarrying activities and associated employment to ensure that the best possible resource management and environmental protection practices and working conditions are implemented, generating mining products (such as lithium for producing electric car batteries) for the future green economy and promoting decent work opportunities in the sector.

There are advantages and limitations to having the sectoral scope of the concept definition clearly demarcated as established in the ILO–UNEP policy definition of green jobs. On the one hand, highlighting key sectors helps users focus on the sectors of key importance for addressing green jobs policies. On the other, the issues outlined above serve to inform some of the limitations of being too prescriptive in defining the sectoral scope associated with green jobs.

## 2.2 ILO Green Jobs Programme policy definition of green jobs

The ILO Green Jobs Programme (GJP) was established in 2009 to demonstrate ILO's commitment to act on climate change and to promote resource efficient and low-carbon societies while supporting the Decent Work Agenda. Decent work is a cornerstone for effective policies to green economies for achieving sustainable development. This implies that efforts to reduce adverse environmental impact must lead to socially just outcomes with employment opportunities for all.

The ILO GJP has assisted and supported countries by sharing relevant ILO expertise and tools in dedicated areas of work. The programme's services have included: (1) *Knowledge creation* through global, regional and sectoral studies, flagship reports and guidelines on the linkages between labour and environmental issues; (2) *Advocacy* by building partnerships, such as the Partnership for Action on Green Economy (PAGE) and engaging in dialogues and key negotiation processes for increased international policy coherence;<sup>4</sup> (3) *Capacity building* by providing stakeholders with opportunities to learn about key green jobs concepts, approaches, tools and best practices;<sup>5</sup> (4) *Diagnostics and prioritization* by identifying economic sectors with high potential for green job creation through national [green jobs assessments](#); (5) *Pilot projects* in which tools for sectoral and thematic approaches are developed and tested such as green entrepreneurship, the greening of enterprises and local development of infrastructure for adaptation to climate change; (6) *Policy advice* for the formulation and implementation of effective national or sectoral policies that create green jobs, foster social inclusion and improve sustainability; and (7) *Knowledge sharing* so that others can learn from best practices and country experiences.

The ILO GJP has served as the secretariat for the multistakeholder [UN Climate Action for Jobs Initiative](#) launched by the UN Secretary-General in 2019 during the United Nations Climate Action Summit. During the Summit, 46 countries committed to place jobs at the heart of ambitious climate action and to promote a just transition. The 2020–2030 initiative brings together governments, workers' and employers' organizations, international institutions, academia and civil society to deliver concrete actions on climate action with decent jobs and social justice, support countries in a just transition founded on broad-based support and facilitate an inclusive recovery from COVID-19.

The ILO GJP integrated approach is depicted in [figure 1](#).

For the purposes of its programme services delivery, the ILO GJP developed a working policy definition of green jobs, which appears on its website, that incorporates key elements of the ILO–UNEP definition, with some important differences, as follows:

*Green jobs are decent jobs that contribute to preserve or restore the environment, be they in traditional sectors such as manufacturing and construction, or in new, emerging green sectors such as renewable energy and energy efficiency.*

*Green jobs help:*

- a) *Improve energy and raw materials efficiency*
- b) *Limit greenhouse gas emissions*
- c) *Minimize waste and pollution*
- d) *Protect and restore ecosystems*
- e) *Support adaptation to the effects of climate change*

4 The ILO contributed actively to the [Paris Climate Change Conference in December 2015](#).

5 [Training programmes](#) are offered in collaboration with ITC-ILO's [Green Jobs Learning Cluster](#) at international, regional and national level, and aim to provide stakeholders with the necessary knowledge to engage efficiently in strategy design for green jobs creation.

► Figure 1. ILO Green Jobs Programme integrated approach



Source: ILO.

*At the enterprise level, green jobs can produce goods or provide services that benefit the environment, for example green buildings or clean transportation. However, these green outputs (products and services) are not always based on green production processes and technologies. Therefore, green jobs can also be distinguished by their contribution to more environmentally friendly processes. For example, green jobs can reduce water consumption or improve recycling systems.*

*Yet, green jobs defined through production processes do not necessarily produce environmental goods or services. (ILO 2016)*

It is worth noting that in 2023, a restructuring of the ILO resulted in the ILO Green Jobs Programme being integrated into the ILO Priority Action Programme on Just transitions towards environmentally sustainable economies and societies (ILO PAP-JT).<sup>6</sup> The ILO PAP-JT and the broader ILO will continue to apply the same policy

6 This Priority Action Programme (ILO PAP-JT) will promote consistent progress in the area of just transition through integrated technical support to constituents, capacity development, resource mobilization and partnerships, with a horizon of a four-year implementation period. <sup>s</sup>The Priority Action Programme aims at achieving the following results: (i) yield a strengthened capacity of governments and social partners to advance social justice and decent work through the design and implementation of coherent national policies for a just transition, and (ii) promote social justice and decent work in a coherent and effective way within the multilateral system, including UN agencies, IFIs and multigovernmental groupings such as the G20, to achieve a just transition.

definition of green jobs as previously applied by the ILO Green Jobs Programme. In the section below, this concept definition is referred to as the ILO GJP definition in order to maintain links with its origins.

### 2.3 Similarities and differences between the ILO GJP and ILO-UNEP policy concept definitions of green jobs

There are important similarities between the ILO GJP and the ILO-UNEP policy concept definitions of green jobs. First, they are both concerned with contributing to preserving or restoring the environment (ILO GJP) or environmental quality (ILO-UNEP), with the ILO-UNEP concept definition providing the qualifying term of *contributing substantially* towards environmental quality. Moreover, the ILO GJP concept definition acknowledges that green jobs are decent jobs, aligning with the ILO-UNEP definition that recognizes green jobs must have adequate wages, safe working conditions and worker rights, and the 19th ICLS concept definition of green jobs (the latter to be discussed in the next section).

There are also key differences between these policy concept definitions, including sectoral-related differences. The manner in which the sectors are presented and their scope differs between the two definitions. The highlighted sectors in the ILO GJP definition are given as examples rather than as defining sectors. The language concerning the selected sectors in the ILO-UNEP definition appears prescriptive even though this was likely not the intention given the broader sectoral coverage in the report.<sup>7</sup> Manufacturing and construction are mentioned in the ILO GJP definition as *examples of a traditional sector*, whereas agriculture is not explicitly mentioned. Yet, the agricultural, fishing and forestry sector continues to be important today for work opportunities and has

great potential for the creation of green jobs. All three goods-producing sectors (agriculture, construction and manufacturing) appear as key sectors in the ILO-UNEP concept definition. The green sectors of renewable energy and energy efficiency which are highlighted in the ILO GJP concept definition are not specifically mentioned in the ILO-UNEP definition, although the energy sector is highlighted as an important sector for green jobs elsewhere in the ILO-UNEP report. The ILO GJP definition includes the focus on *new, emerging green sectors* which can be expected to change over time; no similar reference appears in the ILO-UNEP concept definition. Defining what constitutes a new and emerging green sector is critical for using the ILO GJP definition.

Another important difference between the ILO GJP and ILO-UNEP concept definitions regards establishing how and to what degree green jobs contribute to preserving or restoring the environment. Recall that in the ILO-UNEP definition green jobs include protecting and restoring ecosystems and biodiversity; reducing energy, materials, and water consumption through high-efficiency and avoidance strategies; de-carbonizing the economy; and minimizing or altogether avoiding the generation of all forms of waste and pollution. The ILO GJP concept definition explicitly mentions “protect and restore ecosystems” but doesn’t explicitly mention biodiversity. Rather than proposing to “*reduce energy, materials and water consumption through high-efficiency and avoidance strategies*” as indicated in the ILO-UNEP definition, the ILO GJP definition offers a narrower scope, “*improve energy and raw materials efficiency*”. The language of “de-carbonize the economy” used in the ILO-UNEP definition is transformed in the ILO GJP definition by the language, “limit greenhouse gas emissions”. The ILO-UNEP focus of “*minimize or altogether avoid generation of all forms of waste and pollution*” is limited to “minimize waste and pollution” in the ILO GJP definition. These differences indicate that the ILO GJP uses more muted language as regards how and to what degree green jobs contribute

7 An example of language from the 2008 ILO-UNEP definition noted above: “We define green jobs as positions in agriculture, manufacturing, construction, installation, and maintenance, as well as scientific and technical, administrative, and service-related activities....”

► **Table 2. Key differences between ILO-UNEP and ILO Green Jobs Programme policy definitions**

ILO-UNEP	ILO Green Jobs Programme
Proposes explicit sectors for inclusion: ► Agriculture, manufacturing, construction, installation, and maintenance, as well as scientific and technical, administrative, and service-related activities	Proposes examples of sectors for inclusion: ► Traditional sectors such as manufacturing, construction ► New, emerging green sectors such as renewable energy and energy efficiency
Protect and restore ecosystems and biodiversity	Protect and restore ecosystems
Reduce energy, materials, and water consumption through high-efficiency and avoidance strategies	Improve energy and raw materials efficiency
De-carbonize the economy	Limit greenhouse gas emissions
Minimize or altogether avoid generation of all forms of waste and pollution	Minimize waste and pollution

Source: Author.

to preserving or restoring the environment as compared with the ILO-UNEP concept definition. The differences between the two policy concept definitions in terms of sectoral scope and in how green jobs contribute to environmental quality are presented in [table 2](#).

The final paragraph in the ILO GJP concept definition brings to light the important dual nature of green jobs, namely that they produce goods and services that benefit the environment and are characterized by their contribution to more environmentally friendly processes or technologies. Some green jobs may involve both characteristics (for example, jobs that produce renewable energy using environmentally

friendly processes and technologies) or just one of the characteristics (such as jobs that produce renewable energy in an environmentally unfriendly manner).

This dual characteristic of green jobs is not included in the ILO-UNEP concept definition, reflecting the fact that it was published in 2008, well before the adoption of the 19th ICLS statistical standard concept definition of green jobs in 2013. Indeed, this dual aspect of green jobs presented in the ILO GJP policy concept definition aligns very closely with the 19th ICLS statistical standard definition of green jobs discussed in the next section.

## ► 3. Statistical definition of green jobs and related definitions

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First convened in 1923, the International Conference of Labour Statisticians (ICLS) is the recognized international standard-setting body on labour statistics. The ICLS meets every five years to establish such standards and participants include experts from governments, mostly from ministries of labour and national statistical offices, as well as from employers' and workers' organizations. Regional and international organizations and other interest groups attend as observers. The ICLS makes recommendations on selected topics of labour statistics in the form of resolutions and guidelines, which are then approved by the Governing Body of the ILO before becoming part of the set of international standards on labour statistics. These standards usually relate to concepts, definitions, classifications, and other methodological procedures which are agreed as representing "best practice" in the respective areas. When used by national producers, these will increase the likelihood of having internationally comparable labour statistics as well as comparability across time within a country.

### 3.1 The 19th ICLS Guidelines concerning a statistical definition of employment in the environmental sector (2013): Overview and key concepts

In 2013, the 19th International Conference of Labour Statisticians adopted the first international statistical standards to support measurement of green jobs in official statistics. The *Guidelines concerning a Statistical Definition of Employment in the Environmental Sector* (ILO 2013d) represent the first internationally agreed conceptual framework for understanding the concepts and

definitions associated with employment in the environmental sector and green jobs as well as the data collection programme and methods recommended at the national level.<sup>8</sup>

The objective of the 19th ICLS Guidelines is to facilitate the development of a comprehensive system of statistics on employment in the environmental sector to provide an adequate statistical base for different data users. Such statistics are needed for monitoring the transition towards a green economy and monitoring green jobs levels and trends. They can help support the planning, design, and evaluation of aligned environmental and labour market policies, including impacts on the number of people employed in the environmental sector and their skill levels. Moreover, they facilitate assessing the extent to which the economy is responding to various public policies and initiatives. In addition, they support the analysis of the economic and social situation of particular groups of workers in the environmental sector such as women, rural and urban populations, youth, and the elderly. The guidelines can help support the development and implementation of decent work and green jobs policy strategies and plans, aligning with SDG and Just Transition frameworks.

It's worth noting that the 19th ICLS Guidelines cover separate concept definitions related to employment in the environmental sector and decent work. This enables the production of datasets that can provide separate statistics on both employment in the environmental sector and decent work. The key concepts defined in the 19th ICLS Guidelines include: environmental activities, the environmental sector, environmental goods and services, employment in the environmental sector, employment in production of environmental output, employment in environmental processes, green jobs, green

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8 For background information that was discussed during the 19th ICLS session on this topic, see ILO 2013a.

work and other related concepts. These concepts are discussed in the following sections.

## 3.2 Statistical concepts related to the production of environmental goods and services

### 3.2.1 Environmental activities

According to the Central Framework of the System of Environmental Economic Accounting (SEEA) (United Nations 2012b), environmental activities are economic activities whose primary purpose is to reduce or eliminate pressures on the environment or to make more efficient

use of natural resources. Environmental activities are grouped into two broad types: (1) environmental protection activities and (2) resource management activities. *Environmental protection activities* are those activities whose primary purpose is the prevention, reduction and elimination of pollution and other forms of degradation of the environment. *Resource management activities* are those activities whose primary purpose is the preservation and maintenance of the stock of natural resources and hence safeguarding against depletion. Activities in agriculture, fisheries and forestry can be considered as environmental if environmentally sustainable technologies and practices are used. The UN SEEA has established a classification of environmental activities according to the two broad categories of environmental activities as presented in **table 3** below.

► **Table 3. Classification of environmental activities: overview of groups and classes**

Group	Classes
I: Environmental protection (EP)	1 Protection of ambient air and climate
	2 Wastewater management
	3 Waste management
	4 Protection and remediation of soil, groundwater and surface water
	5 Noise and vibration abatement (excluding workplace protection)
	6 Protection of biodiversity and landscapes
	7 Protection against radiation (excluding external safety)
	8 Research and development for environmental protection
	9 Other environmental protection activities
II: Resource management (RM)	10 Management of mineral and energy resources
	11 Management of timber resources
	12 Management of aquatic resources
	13 Management of other biological resources (excluding timber and aquatic resources)
	14 Management of water resources
	15 Research and development activities for resource management
	16 Other resource management activities

Source: UN System of Environmental Economic Accounts (SEEA).

### 3.2.2 Environmental sector

The *environmental sector* consists of all economic units that carry out environmental activities. It's worth noting that the environmental sector concept used in the 19th ICLS Guidelines corresponds to the concept of environmental goods and services sector (EGSS) in the SEEA.

### 3.2.3 Environmental goods and services

Economic units in the environmental sector produce, design, and manufacture at least some goods and services. *Environmental goods and services* are produced for the purpose of environmental protection or resource management. According to the SEEA, there are four types of environmental goods and services: (1) environmental specific services, (2) environmental sole-purpose products, (3) adapted goods, and (4) environmental technologies (end-of-pipe and integrated technologies). Environmental goods and services can be produced by economic units for consumption by others or for own use.

## 3.3 Statistical concepts of employment in the environmental sector, green jobs and related concepts

### 3.3.1 19th ICLS statistical standard definition of employment in the environmental sector

According to the 19th ICLS Guidelines, employment in the environmental sector is defined as:

*Persons employed in the environmental sector comprise all persons who, during a set reference period were employed<sup>9</sup> in the*

*production of environmental goods and services. In addition to persons involved in the production of environmental goods and services, this includes workers whose duties involve making their economic unit's production processes more environmentally friendly or make more efficient use of natural resources. (ILO 2013d, paragraph 11)*

The concept of employment in the environmental sector consists of two groups: (1) employment in production of environmental outputs and (2) employment in environmental processes. These concepts are defined in the 19th ICLS Guidelines as follows:

*Employment in production of environmental outputs is defined as employment in the production of environmental goods and services for consumption outside the producing unit. It may exist in specialist or in non-specialist economic units.*

*Employment in environmental processes is defined as employment in the production of environmental goods and services for consumption within the producing unit. It may exist in specialist economic units and in economic units that are not environmental in nature (i.e. non-specialist or own-account producers). These are jobs in which workers' duties include production of environmental goods and services for use within the economic unit, but also the use of methods, procedures, practices, or technologies that make their economic unit's production processes more environmentally sustainable. This includes methods, procedures, practices, or technologies that, for example reduce or eliminate pollution, reduce consumption of water and energy, minimize waste, or protect and restore ecosystems. This type of employment also includes jobs in which workers are employed to research, develop, maintain, or use technologies and practices to reduce the environmental impact of their economic unit, or to train the unit's workers or contractors in these technologies and practices. (ILO 2013d, paragraph 12)*

<sup>9</sup> According to the 19th International Conference of Labour Statisticians Resolution I, adopted in 2013, *employment* is defined as "work performed for others in exchange for pay or profit". See ILO 2013c, paragraph 7b.

It's worth noting that the two categories comprising employment in the environmental sector are not mutually exclusive. While some jobs may engage in the production of environmental goods and services for the market *or* producing environmental goods and services for use within the economic unit, other jobs may engage in *both* the production of environmental goods and services and carrying out duties that include making their economic unit's production processes more environmentally sustainable. The concept of employment in the environmental sector and the two subcategories which comprise it are key components of the statistical definition of green jobs, which represents the base foundation for the measurement of green jobs.

### 3.3.2 19th ICLS statistical standard definition of green jobs

According to the 19th ICLS Guidelines, green jobs<sup>10</sup> is defined as follows:

*The term 'green jobs' refers to a subset of employment in the environmental sector that meets the requirements of decent work (i.e., adequate wages, safe conditions, workers' rights, social dialogue and social protection). The decent work dimension of jobs in the environmental sector may be measured according to relevant indicators selected from the ILO manual on Decent Work Indicators. (ILO 2013d, paragraph 13)*

### 3.3.3 Related statistical concepts defined by the 19th ICLS Guidelines

There are three additional statistical concepts related to employment and decent work presented in the 19th ICLS Guidelines: (1) Employment in the non-environmental sector created thanks to greening, (2) Employment in low carbon economic units and energy-efficient enterprises, and (3) Green work. The definitions for each of these concepts are presented below:

*Employment in the non-environmental sector created thanks to greening: This refers to employment in economic units that supply goods and services to the environmental sector. Such employment may be estimated using input-output tables and environmental expenditure data.*

*Employment in low carbon economic units and energy efficient enterprises: This refers to employment in units that have low carbon emissions (e.g., employment in green buildings) and to employment in enterprises that are more energy efficient than most of the enterprises within the same economic activity.*

*"Green work": This refers to all work<sup>11</sup> involved in production of environmental goods and services. It includes employment, voluntary work and own-use production work to produce environmental goods and services (ILO 2013d, paragraph 15).*

10 According to the 19th International Conference of Labour Statisticians Resolution I, adopted in 2013, *a job* is defined as "a set of tasks and duties performed, or meant to be performed, by one person for a single economic unit. The term *job* is used in reference to employment." See ILO 2013c, paragraph 12b.

11 According to the 19th International Conference of Labour Statisticians Resolution I, adopted in 2013, the concept of *work* "comprises any activity performed by persons of any sex and age to produce goods or to provide services for use by others or for own use." The forms of work framework identifies five forms of work which are distinguished by the intended destination of the production (for own final use; or for use by others, i.e., other economic units) and the nature of the transaction (i.e., monetary or non-monetary transactions, and transfers). The five forms of work include: (a) own-use production work comprising production of goods and services for own final use; (b) employment work comprising work performed for others in exchange for pay or profit; (c) unpaid trainee work comprising work performed for others without pay to acquire workplace experience or skills; (d) volunteer work comprising non-compulsory work performed for others without pay; and (e) other work activities. See ILO 2013c, paragraphs 6-7.

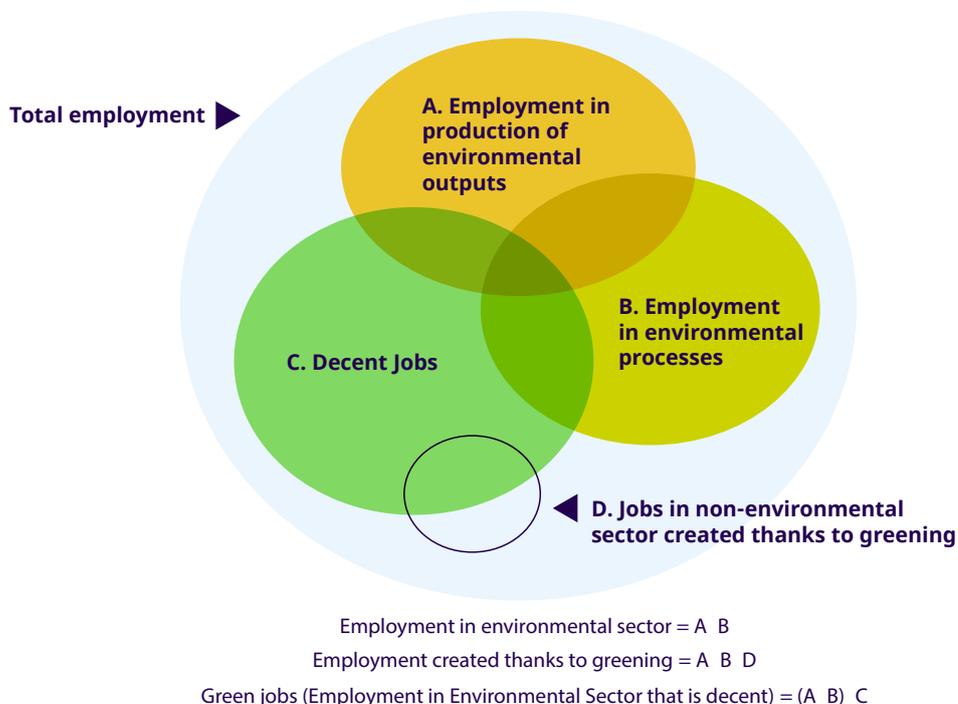
### 3.4 19th ICLS Guidelines: Schematic relationships between total employment, employment in the environmental sector and decent work

A useful visual depiction of the main employment-related concepts presented in the 19th ICLS Guidelines is shown in **figure 2** below. The concept of “employment in the environmental sector” is depicted by the union of circles A and B. Circle A represents the concept of “employment in the production of environmental outputs” while circle B represents “employment in environmental processes”. The intersection between “decent jobs” (shown as circle C) and “employment in the environmental sector” (union of circles A and B), defines the scope of “green jobs”. Note that both concepts fall within the scope of “employment” (outermost circle), that is, work carried out for others in exchange for pay or profit.

“Employment in the non-environmental sector created thanks to greening” is depicted by circle D which partly includes “decent jobs”. “Employment created thanks to greening” is represented by the union of circles A, B and D. Note that some but not all of such employment is defined as “decent jobs”.

The concept of “employment in low carbon economic units and energy efficient enterprises” is not specifically depicted in figure 2, although its scope would be fully included as it is a part of employment. The concept of “green work” is similarly not shown, in large part because the scope of the concept of “work” is broader than that of “employment”, that is, the concept of “work” covers not only employment but also other forms of work, such as volunteers, unpaid apprentices or own-use production work. (For more details, see footnote 11.)

► **Figure 2. The 19th ICLS Guidelines: Schematic relationships between total employment, employment in the environmental sector and decent work**



Source: ILO.

### 3.5 Discussion regarding 19th ICLS Guidelines concept definitions of employment in the environmental sector and green jobs

The set of statistical definitions adopted in the 19th ICLS Guidelines brings together concepts from the areas of environmental-economic statistics, labour statistics and decent work measurement. This provides a framework that is coherent and aligned in two areas of statistical standards, that is, the SEEA-System of National Accounts and the labour statistics standards adopted by the International Conference of Labour Statisticians.<sup>12</sup>

The statistical definitions of employment in the environmental sector and green jobs benefit from the classifications in the SEEA framework related to environmental goods and services activities. As noted above, the SEEA classification of environmental activities includes two broad groups: (1) environmental protection activities and (2) resource management activities. This classification of activities is complemented by two groups of activities in the environmental sector identified in the 19<sup>th</sup> ICLS guidelines that serve to define the scope of the concept of employment in the environmental sector: (1) activities that relate to the production of goods and services for consumption outside of the producing establishment (output concept) and (2) activities that relate to the use of those activities inside the production unit (process concept).

The two classifications can be combined, yielding four different types of activities in which an employed person's economic unit engaged in the environmental sector could be classified: (1) those that use technology in the economic unit's own production process to protect the environment from pollution (Environmental protection – Process activities); (2) those involving

the production of technology or services for environmental protection consumed outside the producing economic unit (Environmental protection – Output activities); (3) those using technology in a process that improves the economic unit's own resource management (Resource management – Process activities) and (4) those producing products or services that improve resource management which are consumed outside the producing economic unit (Resource management – Output activities).<sup>13</sup> Thus, employment in the environmental sector and green jobs can be associated with different combinations of productive activities viewed from the environmental-economic perspective and the environmental-employment perspective, supporting the construction of different indicators for an array of research and policy purposes.

It should be noted that these SEEA and ICLS classifications cut across different industry sectors. Thus, unlike the policy concepts of green jobs discussed previously in this paper that are defined by specific sectors (ILO-UNEP concept) or for which key sectors are suggested as examples of traditional or new and emerging green sectors (ILO GJP concept), the 19th ICLS statistical concept of green jobs is not defined by sectoral boundaries or even guided by selected examples of green sectors in which green jobs may be performed. The statistical concept definition recognizes that in principle green jobs could be carried out in nearly all sectors in a given economy while being limited in scope to productive activities in the two classifications. Nonetheless, for purposes of statistical measurement, an operational statistical definition is best formulated using specific productive activity examples which in some cases may only be performed in specific sectors, for example, producing outputs in the renewable energy sector.

The concept of employment in the environmental sector and the two subcategories which comprise it (employment in the production of environmental

12 For more in-depth information on information provided in this section, see [ILO GAIN Training Guidebook: How to Measure and Model Social and Employment Outcomes of Climate and Sustainable Development Policies](#). Of particular interest is Module 2: Assessment tools: Inventories and surveys as sources of data on employment in the environmental sector and green jobs.

13 [ILO GAIN Training Guidebook](#), p. 63.

outputs and employment in environmental processes) represent essential components of the 19th ICLS statistical concept definition and of the ILO GJP policy concept definition of green jobs. This aspect is not included in the 2008 ILO–UNEP definition which was established prior to the adoption of the 2013 19th ICLS Guidelines.

The inclusion of the decent jobs dimension in the 19th ICLS statistical concept definition of green jobs aligns with the policy concept definitions of green jobs discussed previously. A key difference is that the statistical concept definition provides specific guidance on where to seek such information, indicating that this may be measured according to relevant indicators selected from the ILO manual on decent work indicators ([ILO 2013e](#)). The manual presents a set of statistical and legal framework indicators which are structured according to the Decent Work Measurement Framework (ILO 2013e, p. 12). The statistical decent work indicators are quantitative indicators derived from official national data sources and should be used in the statistical measurement of green jobs. More specifically, indicators whose reference scope refers to employment or subgroups (such as employees) are to be used. For the concept of green work, a broader reference scope that includes forms of work other than employment (such as volunteers, unpaid apprentices, or own-use production work) should be targeted in the construction of decent work indicators. Additional methodological work is still required to support the measurement of green work and development of related indicators.

The ICLS statistical concept definition of green jobs thus provides useful guidance to support measurement of green jobs for better data comparability and coherence. Actual implementation of the definition requires an operational definition that can be used in a statistical survey such as a dedicated green jobs module in a labour force survey. An operational statistical definition provides concrete criteria and boundaries to help implement the international statistical standard definition, as described in the next section.

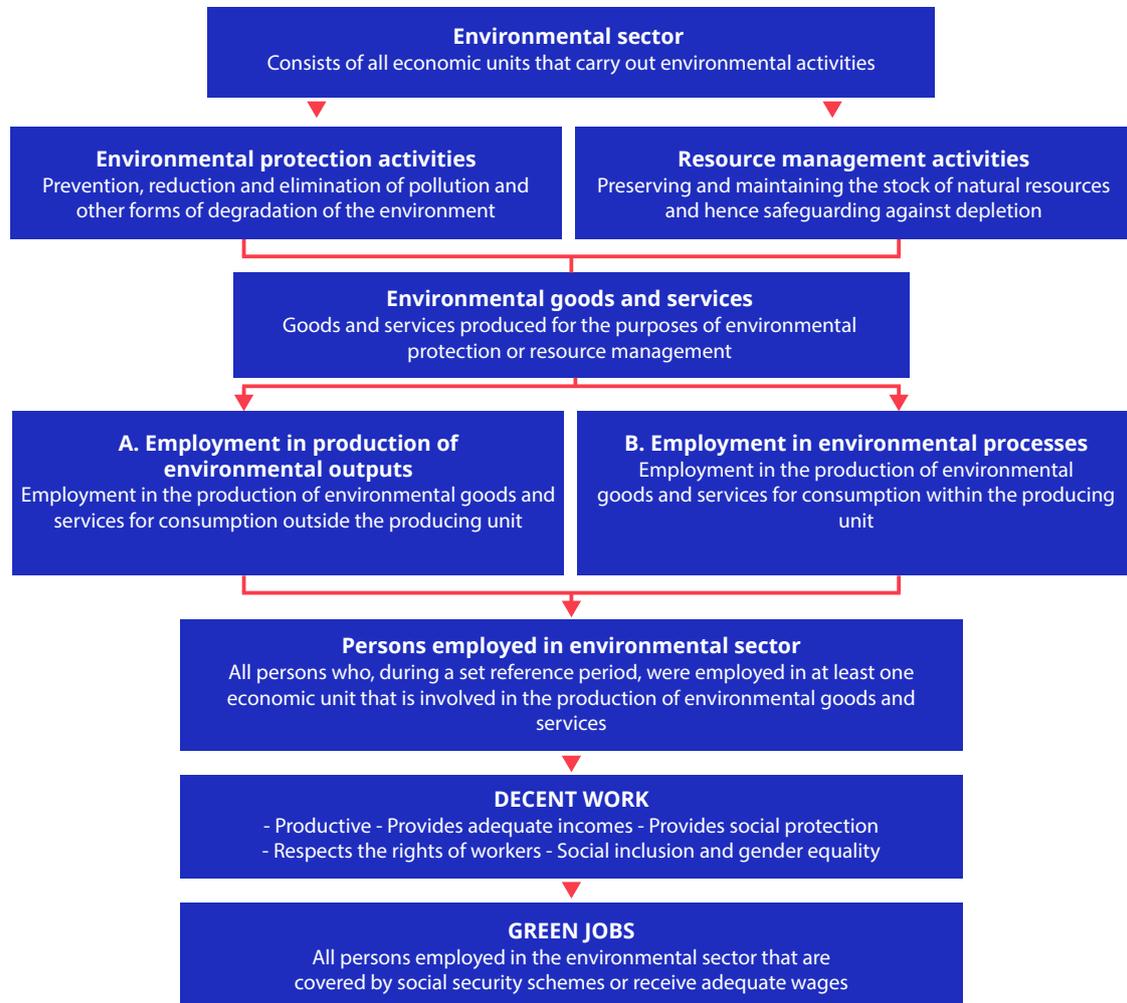
### 3.6 ILO pilot survey programme on measuring green jobs and operational statistical definition of green jobs

The ILO developed and tested a methodology for collecting statistics on a set of variables concerning employment in the environmental sector and green jobs. Specifically, the ILO carried out pilot surveys in Albania (ILO 2014) and Mongolia (ILO 2017) to test the practical application of the concepts and definitions presented in the 19th ICLS Guidelines using the ILO data collection methodology. The objective was to collect statistics on a set of variables related to the number of green jobs in each country and their characteristics. The methodology consisted of pilot testing a special module of questions linked to the labour force survey and another linked to the establishment survey on employment and earnings. The testing allowed for a better understanding of good practices and limitations associated with the methodology, provided lessons learned and informed making recommendations for the future. The approach to identify employment in the environmental sector and green jobs in the household-based pilot surveys is presented in [figure 3](#).

The identification of green jobs follows a logical approach in line with the 19th ICLS guidelines. It begins with identifying the key economic industries in which environmental activities take place in a given economy,<sup>14</sup> then, within these industries, seeks to define the scope of the environmental sector through further identification of the component environmental protection activities and resource management activities. These activities are linked to the environmental goods and services produced. This helps define the environmental activity scope, which is then used to separately identify the two types of employment in the environmental sector: (1) the number of persons employed in a given reference period in the production of environmental outputs and (2) persons employed

14 This can be done by using a national or regional standard industry classification system that permits correspondence with the International Standard Industrial Classification of All Economic Activities (ISIC).

► **Figure 3. Schema used in ILO pilot survey programme to identify employment in the environmental sector and green jobs (household-based survey)**



Source: ILO.

in the production of environmental processes who work for pay or profit.

Finally, green jobs are identified using a small set of decent work indicators to narrow the scope to persons employed in green jobs. As noted in the schema, the operational definition in the pilot survey programme used two decent work indicators to operationalize the measurement of green jobs, namely: (1) employed persons covered by social security schemes and (2) employed

persons who receive adequate wages. The ILO pilot survey methodology used the **operational definition of green jobs** as follows:

*Green jobs are all persons employed in the environmental sector that are covered by social security schemes or received adequate wages.*

It's important to understand how this operational definition was applied in the ILO Green Jobs Module (GJM) of the ILO labour force survey

pilot testing programme.<sup>15</sup> First, to identify “all persons employed in the environmental sector”, the GJM used a questionnaire that consisted of two parts. In the first part, respondents were asked if they were involved during the previous month in any of a specified set of categories environmental goods and services intended for consumption outside their work site. The broad set of categories listed included: (1) Energy from renewable sources, (2) Energy efficient goods and services, (3) Reduction and removal of pollution and greenhouse gas emissions, (4) Recycling and reuse of waste, (5) Environmental protection and natural resources conservation, (6) Environmental compliance, education and training, and public awareness and (7) Other. Information was also sought regarding what percentage of respondents’ working time was spent in producing the environmental goods and services.

In the second part of the GJM, respondents were asked if they used any of a selected set of environmental technologies and practices (that is, environmental processes) at their worksite in order to reduce the environmental impact of the establishment, or to train the establishment’s workers in the technologies and practices. The broad set of environmental technologies and practices included categories similar to those in the first part, with some differences: (1) Energy from renewable sources (2) Energy efficiency (3) Reduction and removal of pollution and greenhouse gas emission (4) Recovery, reuse and recycling of resources and/or substitution of natural resources (5) Environmental protection and natural resources conservation (6) Research, planning, maintenance and control of technologies and (7) Other. Respondents were also asked what percentage of their working time was spent developing, maintaining, using or installing such technologies and practices.

The GJM thus provided a specified set of categories of environmental goods and services associated with key environmental sector activities and also a set of environmental technologies and practices that could help with precise measurement of the concept of employment in the environmental sector. The GJM included specific examples for each category to provide clarity. Thus, for example, environmental outputs associated with energy from renewable sources in the module include products and services that generate electricity, heat or fuel from non-fossil renewable sources and/or from waste (for example, production of electric power from wind, solar, biomass, solid waste, hydroelectric or nuclear sources, etc.). Such outputs also include manufacturing of wind turbine equipment, solar heating equipment, photovoltaic energy equipment and biomass-fired industrial boilers. The examples provided for the category of environmental technologies and practices (such as environmental processes) in the module include the generation of electricity, heat or fuel from renewable sources for use within the establishment (electric power production from wind, solar, biomass, solid waste, hydroelectric or nuclear sources, etc.)<sup>16</sup>

Once having identified the employment in the environmental sector using the GJM in combination with the main labour force survey which helps identify labour force status (including employment), the next step was to identify green jobs using the operational criteria for decent jobs given in the operational definition used in the pilot country of Mongolia: “Green jobs are all persons employed in the environmental sector that are *covered by social security schemes or received adequate wages.*”

The two decent work indicator criteria (social security scheme coverage and adequate wages) were used separately to measure green jobs in the operational definition. The criterion of

15 The ILO pilot survey questionnaires are included in the [GAIN Training Guidebook](#). The Green Jobs Module was developed to align with the System of Environmental and Economic Accounting (SEEA) Framework, particularly as regards the environmental goods and services sector. It benefitted from the use of existing national official statistics practices in the measurement of green jobs.

16 The categories and specific examples used in a particular country for measurement will depend on whether the activities exist and any other considerations.

“adequate wages” was defined as earnings above the two thirds of median earnings. As anticipated, using different individual decent work indicators to measure green jobs resulted in different outcomes. Thus, for example in the Mongolia pilot survey conducted as part of the labour force survey (in which the number of green jobs was determined only for paid employees during the second quarter 2016), green jobs as a percentage of total employment was 9.9 per cent when using the criterion of “coverage by social security schemes”. When using “adequate wages”, green jobs as a percentage of total employment was 17.4 per cent.

The pilot testing programme revealed that the ILO data collection methodology offers a sound, feasible means to measure green jobs based on the 19th ICLS Guidelines. While much was learned in the programme to improve the methodology, testing should continue to support further refining the methodology and provide operational guidance to countries on statistical measurement of green jobs.

One key issue to note is that the selection of the decent work indicator(s) for measuring green jobs needs to consider the relevance of selected decent work indicators across different countries. For example, in countries whose populations benefit from universal social security schemes,

the indicator “employed persons covered by social security schemes” may not be very relevant. For cross-country comparisons, it would be useful to use decent work indicator(s) that can be applied across a range of countries. The issue of how to apply such indicators in country contexts where the indicator(s) can only be applied to employees but where nonetheless a large share of the employed are independent workers should be considered further.<sup>17</sup>

Among the key lessons learned from the testing programme, survey officials engaged in conducting the testing indicated that the concepts and definitions of environmental goods, services and processes should be more clearly illustrated or elaborated by examples. For example, it was suggested that images and video recordings of various environmentally friendly technologies, activities, services, and equipment could be used for training of enumerators conducting the green job survey.

Such statistical methods testing and further development of the international statistical guidance on measuring employment in the environmental sector and green jobs will be essential for providing the needed statistical data and indicators to support countries in progressing towards a just transition to environmentally sustainable economies and societies for all.

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17 An example of a decent work indicator that could be considered for measuring green jobs in a given country is the informal employment rate. This indicator uses total employment (instead of employees) as the reference population and can be measured across different countries.

## ► 4. Green economy and other related concept definitions

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In this section, six policy concept definitions which relate to green jobs and the broader agenda of just transition are presented and discussed. These include: (1) Green economy and blue economy (2) Green growth, (3) Greening, (4) Shades of green, (5) Circular economy and (6) Nature-based Solutions (NbS). In the case of circular economy, a “dual-purpose” proposed headline working definition for both policy and measurement purposes is currently under development by the OECD and UNECE.

### 4.1 Green economy and blue economy

The concepts of “green economy” and “blue economy” are essential to understanding decent work in the environmental sector. In 2011, UNEP established the first definition of a green economy by a UN agency as follows:

*A green economy is an economy that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive. In a green economy, growth in income and employment should be driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services. These investments need to be catalysed and supported by targeted public expenditure, policy reforms and regulation changes. The development path should maintain, enhance and, where*

*necessary, rebuild natural capital as a critical economic asset and as a source of public benefits, especially for poor people whose livelihoods and security depend on nature.* (UNEP 2011)

According to UNEP, the concept of blue economy is a marine and coastal analogue to the green economy. The blue economy supports specific measures to broaden the definition of ocean resources – to acknowledge the fundamental, life-supporting benefits and services that are provided by marine and coastal ecosystems. The blue economy is understood to be part of the green economy but has its own specificities and areas of policy interest, including those of concern for “blue jobs” which can be understood as a subset of green jobs, aligning with the definition of blue economy.

While other concept definitions of the green economy exist,<sup>18</sup> the similarities of what characterizes a green economy outweigh the differences across the different definitions. As discussed previously for the green jobs policy concept definitions, a key aspect of the green economy in different concept definitions is the preservation or restoration of the environment. Most studies also seek to identify green economy products and services that meet one of several criteria for a green economy. For products and services, most of these definitions include environmentally friendly and enhancing products and services; renewable energy products and services; clean transportation and fuels; and “green” buildings (buildings that are energy and water efficient, reducing waste and pollution, etc.). Some definitions also cite the processes by which products and services are produced, such as energy-efficient manufacturing, distribution and construction and the use of high-efficiency

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18 For example, the United Nations Conference on Trade and Development (UNCTAD) defines green economy as “an economy that results in improved human well-being and reduced inequalities, while not exposing future generations to significant environmental risks and ecological scarcities” (UNCTAD 2011). This definition presents slight differences from the UNEP definition of green economy presented above.

strategies to reduce energy, materials and water consumption (ILO 2013a).

There has been considerable policy interest in the economic sectors or activities that comprise the green economy. Linking the green economy concept with the SEEA Framework, the concept of the environmental sector (as highlighted in the 19th ICLS Guidelines mentioned previously) or, more specifically, the environmental goods and services sector (EGSS) is widely considered to represent the economic activity scope of the green economy. The SEEA Classification of Environmental Activities (which includes environmental protection and resource management activities) cuts across different economic industry groups. Moreover, the ISIC which is used to classify industry groups is currently not adequate as a classification tool to help identify industries in the green economy since many (perhaps most) environmental activities are parts of divisions or classes containing other activities. Thus, for example, in the ISIC (Revision 4) classification, coal and solar electricity-producing establishments are grouped together since both produce electricity.<sup>19</sup>

Of particular importance for the world of work in the UNEP concept definition of green economy is the emphasis on an economy that *results in improved human well-being and social equity*, while at the same time significantly reducing environmental risks and ecological scarcities. The scope of a green economy is thus increasingly seen as going beyond the creation of environmental goods, services and jobs since it also includes the broader dimensions of energy and resource efficiency, poverty eradication, social equity and human well-being (ILO 2013a). Indeed, since the adoption of the SDGs, decent work and social justice are central to sustainable development and many approaches have these added dimensions when defining the scope of the green economy.

## 4.2 Green growth

According to the Organisation for Economic Co-operation and Development (OECD), the concept of green growth is defined as follows:

*Green growth means fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies.* (OECD 2011)

The OECD (2011) further explains that green growth involves:

- ▶ *Enhancing productivity* by creating incentives for greater efficiency in the use of natural resources, reducing waste and energy consumption, unlocking opportunities for innovation and value creation, and allocating resources to the highest value use.
- ▶ *Boosting investor confidence* through greater predictability in how governments deal with major environmental issues.
- ▶ *Opening up new markets* by stimulating demand for green goods, services and technologies.
- ▶ *Contributing to fiscal consolidation* by mobilizing revenues through green taxes and through the elimination of environmentally harmful subsidies. These measures can also help to generate or free up resources for anti-poverty programmes in such areas as water supply and sanitation, or other pro-poor investments.
- ▶ *Reducing risks of negative shocks to growth* due to resource bottlenecks, as well as damaging and potentially irreversible environmental impacts.

Green growth requires catalysing investment and innovation which will support sustained growth and generate new economic opportunities. The concept is intended as a practical and flexible approach for achieving measurable progress

<sup>19</sup> The International Standard Industrial Classification of All Economic Activities (ISIC) process is underway, and such considerations are being discussed in the updating of the classification.

across the economic and environmental pillars while taking fully into account the social consequences of greening the growth dynamic of economies.

### 4.3 Greening

The concept of greening is used in reference to strategies, policy interventions, actions or targets used to transform economies, enterprises and workplaces that can be characterized as environmentally sustainable, supporting social and environmental goals. According to the 19th ICLS room document which formed the basis for discussion on the statistical concept definition of green jobs, the concept of “greening the economy” refers to:

*...a strategy under consideration by countries to enhance the quality of life of their citizens and to pursue sustainable development goals. The transformation of traditional economies into green economies is based on making investments in technologies, systems and infrastructures that enhance productive economic activities while optimizing natural resource utilization and minimizing environmental impacts. The objective is to foster investments supporting social and environmental goals that would act as drivers for, instead of barriers to, sustainable economic growth. (ILO 2013a)*

The concept of greening the workplace was acknowledged in the 2008 ILO–UNEP report on green jobs:

*... employers and unions are beginning to work together in the greening process, building on a long tradition of collaborating on occupational safety and health. Companies and trade unions have worked together to establish and implement workplace targets for efficiency and waste minimization. Together, they hope to contribute to the creation of a new workplace culture that will ensure reduction of greenhouse gases in production and the life cycle of products as well as make substantial changes to personal and community consumption patterns of workers. (ILO and UNEP 2008, p. 286)*

The concept of greening was used throughout the ILO report, World Employment and Social Outlook 2018: Greening with Jobs (ILO 2018). Among the different intervention entry points highlighted to support “greening with jobs”, the report argued that the legal framework can provide incentives for “greening the economy”, while social dialogue can be effective in “greening the workplace”, engaging government actors and social partners to ensure environmental and decent work objectives are met.

As regards the legal framework, the report indicated that legal standards can promote progress towards decent work during and beyond the transition to environmental sustainability. Because of their universal relevance for workers, workplaces and the various sectors, international labour standards provide a social pillar for the green economy and can help to ensure that emerging sectors offer decent working conditions. In addition, ILO standards on occupational safety and health contribute to the preservation of the environment. The Indigenous and Tribal Peoples Convention, 1989 (No. 169), which requires environmental impact assessments to be carried out in relation to development activities that may affect that population, the Prevention of Major Industrial Accidents Convention, 1993 (No. 174), and the Employment and Decent Work for Peace and Resilience Recommendation, 2017 (No. 205), among others, address environmental issues directly.

### 4.4 Shades of green

The “shades of green” concept was first presented in the ILO–UNEP 2008 green jobs report. It refers to:

*...the different degrees to which technologies, products, businesses, and business practices can be said to be green, ranging from reactive and remedial measures on the one hand to proactive measures on the other. (ILO and UNEP 2008, p. 41)*

**Table 4** gives an indication of this graduation from more limited to more transformative approaches

for selected segments of the economy. For any given segment of the economy, items at the top of the list of pro-environment measures represent the lighter shades-of-green measures, whereas those at the bottom represent the more proactive, darker shades-of-green measures. Thus, for example, in transport, more fuel-efficient vehicles

is a considered a reactive, remedial measure whereas biking, walking and changes in land-use policies and settlement is a more transformative approach. It could be beneficial to develop this concept further to support a more refined a policy analysis related to green jobs.

► **Table 4. Shades of green: pro-environmental measures in major segments of the economy**

Segment of the economy	Pro-environment measures
Energy supply	Integrated gasification/ carbon sequestration
	Co-generation (combined heat and power)
	Renewables (wind, solar, biofuels, geothermal, small-scale hydro); fuel cells
Transport	More fuel-efficient vehicles
	Hybrid-electric, electric, and fuel-cell vehicles
	Car sharing
	Public transit
	Non-motorized transport (biking, walking), and changes in land-use policies and settlement
Manufacturing	Pollution control (scrubbers and other tailpipe technologies)
	Energy and materials efficiency
	Clean production techniques (toxics avoidance)
	Cradle-to-cradle (closed-loop systems)
Buildings	Lighting, energy-efficient appliances and office equipment
	Solar heating/cooling, solar panels
	Retrofitting
	Green buildings (energy-efficient windows, insulation, building materials, HVAC)
Materials management	Passive-solar houses, zero-emissions buildings
	Recycling
	Extended producer responsibility/ product take-back and remanufacturing
	De-materialization
Retail	Durability and reparability of products
	Promotion of efficient products/ eco-labels
	Store locations closer to residential areas
	Minimization of shipping distances (from origin of products to store location)
Agriculture	New service economy (selling services, not products)
	Soil conservation
	Water efficiency
	Organic growing methods
Forestry	Reducing farm-to-market distance
	Reforestation and afforestation projects
	Agroforestry
	Sustainable forestry management and certification schemes
	Halting deforestation

Source: ILO and UNEP 2008, p. 42.

## 4.5 Circular economy

There has been increasing policy interest in the circular economy and different concept definitions exist which nonetheless share common elements. The circular economy is recognized as a model for sustainability in resource use and consumption. *World Employment and Social Outlook 2018: Greening with Jobs* (ILO 2018) notes that nearly 6 million jobs can be created worldwide by 2030 by moving away from an extract-manufacture-use-discard model and embracing the recycling, reuse, remanufacture, rental and longer durability of goods. The report suggests that supporting the circular economy means a reallocation from the mining and manufacturing sectors to waste management (recycling) and services (repair, rent).

In this section, policy concept definitions of “circular economy” are presented from: (1) Ellen MacArthur Foundation, (2) *World Employment and Social Outlook 2018: Greening with Jobs*, and (3) the European Parliament. Also presented is a headline working definition of circular economy for both policy and statistical measurement purposes, which is currently under development by OECD and UNECE.

According to the Ellen MacArthur Foundation, the circular economy is defined as:

*...a system that looks beyond the current take-make-waste industrial model, and aims to redefine growth, focusing on positive society-wide benefits. It entails gradually decoupling economic activity from the consumption of finite resources and designing waste out of the system. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital. It is based on three principles: (1) Design out waste and pollution, (2) Keep products and materials in use and (3) Regenerate natural systems.* (Ellen MacArthur Foundation, n.d.)

*World Employment and Social Outlook 2018: Greening with Jobs* recognizes the above definition of circular economy and adds new elements, noting that:

*The circular economy...is based on the principle of produce-use-service-reuse. One*

*of its tenets is to reduce the extraction of raw materials and to rely instead on reuse, repair and recycling. In a circular economy, products are designed to have longer lives and to be repaired, reused or recycled. Through changes to the incentive structure for enterprises to produce more durable goods and goods that serve as inputs into other production streams when they are no longer usable, the circular economy keeps products, components and materials at a high level of utility and value (Ellen MacArthur Foundation, 2013). In view of the interlinkages in the manufacturing sector and the fact that inputs are recycled, employment changes are warranted in extractive and waste management industries. A circular economy also results in changes in the services sector, as repair and rental services gain in importance over the replacement and ownership of goods (Wijkman and Skånberg, 2016). (ILO 2018, p. 51)*

The European Parliament has defined the circular economy, as follows:

*The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible. In this way, the life cycle of products is extended. In practice, it implies reducing waste to a minimum. When a product reaches the end of its life, its materials are kept within the economy wherever possible. These can be productively used again and again, thereby creating further value. This is a departure from the traditional, linear economic model, which is based on a take-make-consume-throw away pattern. This model relies on large quantities of cheap, easily accessible materials and energy. Also part of this model is planned obsolescence, when a product has been designed to have a limited lifespan to encourage consumers to buy it again. The European Parliament has called for measures to tackle this practice.” (EP 2023)*

Finally, the Organisation for Economic Co-operation and Development (OECD) and United Nations Economic Commission for Europe (UNECE) have joined forces to draft joint guidelines for measuring the circular economy that includes a proposed working definition of circular

economy (OECD, UNECE and Statistics Finland 2022). The work of these agencies has been proceeding in parallel (over 2021–22), ensuring complementary expertise and synergies. It involves three interrelated work packages that include: (1) the conceptual monitoring framework, (2) statistical measurement framework, and (3) circular economy indicators (developed by UNEP).

Under the agreed principles, there will be a hierarchy of definitions to include a simple headline “definition” that, while pointing at the key purposes of a circular economy, is general enough to *serve both policy needs and measurement needs*. This will be accompanied with short explanations and references to underlying mechanisms and strategies. It will be adapted as appropriate to specific needs including country needs, specific sectors or materials and is to be expanded with details needed to guide statistical measurement. The proposal is to be complemented with a glossary of terms and definitions.

The proposed headline working definition is inspired by existing definitions (in particular, from OECD, European Union (EU)/European Economic Area (EEA), and UNECE) and is building on discussion outcomes. The draft proposed headline working definition is as follows. (As this proposed definition is still a draft, the alternative wording is shown in italics and between brackets.)

A circular economy is an economy where:

- ▶ the value of materials in the economy [*for the economy and society*] is maximized and maintained for as long as possible;<sup>20</sup>

- ▶ the input of materials and their consumption is minimized;<sup>21</sup>

- ▶ the generation of waste is minimized [*prevented*] [*waste is prevented from being generated*] and negative environmental impacts reduced throughout the life-cycle of materials.<sup>22</sup>

## 4.6 Nature-based Solutions

When the term “Nature-based Solutions” (NbS) was introduced during the late 2000s, it represented an important paradigm shift in the relationship between humans and nature, from one in which people were mainly beneficiaries of nature’s benefits to one in which people could take a more active role in protecting, managing or restoring natural ecosystems (Cohen-Shacham et al. 2016). NbS offered an important means of addressing various environmental and societal challenges, including climate change adaptation and mitigation, life quality improvement, and protection of biodiversity and ecosystems and used knowledge about ecosystems to find innovative solutions that support nature, society and the economy (Faivre et al. 2018). In 2016, the International Union for Conservation of Nature’s (IUCN) World Conservation Congress adopted a resolution which defined NbS as follows:

*Nature-based Solutions are defined as “actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.”* (IUCN, 2016)

20 “Materials” are understood to include natural resources and the materials and products derived therefrom (materials at all points throughout their life cycles). The “value of materials in the economy” is understood here to encompass the value for society as a whole taking into account economic efficiency, environmental effectiveness and social equity. Maintaining the value for as long as possible links to circularity mechanisms.

21 Minimizing the input of materials and their consumption contains a quantitative and a qualitative dimension. This links to the preservation of natural assets, to resource efficiency, to environmental quality.

22 By referring to the life cycle of materials, (i) waste prevention at all stages of the life cycle is reflected and (ii) all associated environmental impacts are reflected, including the generation of pollutants (residuals), impacts on climate, biodiversity, natural capital stocks, etc.

IUCN led the development of a Global Standard for NbS, laying the foundation for an operational framework for designing, verifying, improving and scaling up NbS (IUCN 2020). The Global Standard framework has eight criteria considered good practice for NbS implementation. (ILO, UNEP and IUCN 2022).

Since the NbS concept was first introduced, various international policy, science, and financial organizations – including, for example, the World Bank, the European Commission, the Nature Conservancy, the IUCN, and the ILO – have used and further developed the concept for research, innovation or investment purposes, supporting the creation of jobs and economic growth (Cohen-Shacham et al. 2016, Nesshöver et al. 2017, ILO and WWF 2020).

In March 2022, the UN Environment Assembly (UNEA) adopted a resolution that defines NbS as:

*...actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems, which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services and resilience and biodiversity benefits.*  
(UNEP 2022, para. 7)

The UNEA concept definition builds on the one developed by IUCN and adopted at the World Conservation Congress in 2016. Understanding about what the concept definition means in practice is still evolving (ILO, UNEP and IUCN 2022).

## ► 5. The just transition concept

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### 5.1 Background

The just transition concept was first presented in the 2008 ILO–UNEP report, *Green Jobs: Towards Decent Work in a Sustainable, Low-carbon World*, as a framework to address the social dimension of the transition to a sustainable, low-carbon economy. The report acknowledged that the transition would involve a social process of interactions and negotiations, incorporating technological innovations, shifts in business and investment strategies, as well as a new set of policies. It suggested the transition would also involve businesses, workers, communities, and movements. Importantly, the report noted that a just transition will produce new green jobs and the greening of some existing jobs but will also result in job losses and jeopardized livelihoods in certain regions, communities, industries, and economic sectors (ILO and UNEP 2008, p. 277).

The 2008 ILO–UNEP report noted that while major economic transitions in the past have led to significant social and economic progress for society, these transitions have not often been fair and just. The lessons of this history are guiding those who are seeking to ensure that the next great economic transition – the transition to a green and sustainable economy – will be fair and just for all. The report notes that the story of a just transition will reflect political choices:

*It is a transition that will be assisted by market forces to some extent, but other market forces will push against the needed changes. The scope of the transition will be global and it will need to proceed at a pace that's more or less unprecedented in economic and social history. In just two or three decades, the entire global economy will need to be well on the road to a low-carbon and sustainable future. Markets cannot drive the transition, and neither can they be relied upon to deal with the problems that the transition will inevitably create. Thus, the effort to expedite a Just Transition to a green and sustainable economy will also involve a new set of approaches*

*and policy options. The need to green our economy presents an opportunity to make the right policy decisions, but there is nothing intrinsically fair or just about either the process of becoming green or the end result – this must be pursued politically within the overall paradigm of sustainable development whereby the social dimension is fully and equitably integrated into the economic and environmental dimensions. (ILO and UNEP 2008, p. 278)*

The 2013 ILC report *Sustainable Development, Decent Work and Green Jobs* (ILO 2013b) acknowledged that environment and social development must no longer be treated as separate pillars of sustainable development, but rather as closely interrelated dimensions. It noted that an integrated approach towards environmental sustainability can be a significant avenue for development, with more and better jobs, social inclusion and poverty reduction. The report suggested that the shift to an environmentally sustainable economy has given rise to green jobs, highlighting the important potential of greening of enterprises and economies jointly with social justice outcomes. It also highlighted a growing number of national policy statements had called for decent work and a *just transition* to low-carbon economies to be a central goal as well as driver for sustainable development. These included the Rio+20 outcome document and the Cancun Agreements on climate change. Importantly, during its 102nd Session in 2013, the International Labour Conference adopted a resolution and a set of conclusions concerning sustainable development, decent work and green jobs, putting forward a policy framework for a just transition.

In follow up, the ILO convened a tripartite meeting of experts (TME) to draft just transition guidelines, which were adopted by the ILO Governing Body in 2015. Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies for All (ILO 2015) (hereafter, the Just Transition Guidelines) seek to enable governments, workers and employers

around the globe to leverage the process of structural change towards a greener, carbon-neutral economy, create green jobs at a large-scale and promote social protection. They serve as both a policy framework and a practical tool to help countries at all levels of development manage the transition to carbon-neutral economies and can also help them achieve their Nationally Determined Contributions (NDC), National Adaptation Plans (NAP) and the 2030 SDGs. It's worth noting that the Paris Agreement on climate change, also adopted in 2015, noted "a just transition of the workforce and creation of decent work and quality jobs in accordance with nationally defined development priorities" as an important consideration for climate action (UNFCCC 2015).

## 5.2 Definition of the just transition concept and key elements

In 2023, the International Labour Office prepared a report that presented the first international definition of the just transition concept with a view to clarifying its meaning and promoting its implementation in the context of the ILO Just Transition Guidelines:

*A just transition means promoting a green economy in a way that is as fair and inclusive as possible to everyone concerned – workers, enterprises and communities – by creating decent work opportunities and leaving no one behind. A just transition involves maximizing the social and economic opportunities of climate and environmental action, while minimizing and carefully managing any challenges, including through effective social dialogue and stakeholder engagement and respect for the fundamental principles and rights at work. (ILO 2023, p. 12)*

Aligning with this concept definition, the Just Transition Guidelines are intended as a

coherent, evidence-based framework and tool to support countries as they transition towards environmentally sustainable economies and societies for all. They provide information regarding background and scope, a shared vision, opportunities and challenges, guiding principles, as well as a set of key policy areas and institutional arrangements for a just transition for all.

With the intention of providing a deeper understanding the just transition concept, the focus in this section is on key elements of the vision, guiding principles and nine policy areas outlined in the Just Transition Guidelines.

### 5.2.1 Vision and guiding principles

The just transition vision recognizes that the four pillars of the Decent Work Agenda (DWA) promoting decent work for all – social dialogue, social protection, rights at work and employment – are at the heart of policies for strong, sustainable and inclusive development.<sup>23</sup> It acknowledges the fundamental goal of sustainable development, that is, that the needs of the present generation should be met without compromising the ability of future generations to meet their own needs. The economic, social and environmental dimensions of sustainable are recognized as interrelated, of equal importance and must therefore be jointly addressed. The vision notes that there is no "one size fits all" in implementing just transition across countries, as national circumstances and priorities need to be considered to achieve sustainable development.

A just transition needs to be well managed and contribute to the goals of decent work for all, social inclusion and the eradication of poverty while also promoting environmental sustainability. Economies must be productive to meet the needs of the world's growing population and societies must be inclusive, providing opportunities for decent work for all, reducing inequalities and effectively eliminating poverty.

23 The text on the vision and guiding principles shared in this section is summarized directly from the ILO Just Transition Guidelines.

The greening of economies, enterprises and jobs is highlighted in the context of sustainable development and poverty eradication. It has the potential to be a new engine of growth, both in advanced and developing economies, and a net generator of decent, green jobs. Managed well, the greening of economies will enhance our ability to manage natural resources sustainably, increase energy efficiency and reduce waste, while also addressing inequalities and enhancing resilience. The greening of jobs and the promotion of green jobs, both in traditional and emerging sectors, will foster a competitive, low-carbon, environmentally sustainable economy and patterns of sustainable consumption and production, and contribute to the fight against climate change. Moreover, greening all enterprises and jobs by introducing more energy and resource efficient practices, avoiding pollution and managing natural resources sustainably leads to innovation, enhances resilience and generates savings which drive new investment and employment.

Governments, employers and workers are seen as agents of change, who are able to develop new ways of working that safeguard the environment for present and future generations, eradicate poverty and promote social justice by fostering sustainable enterprises and creating decent work for all. The principle of common but differentiated responsibilities as set out in the Rio Declaration on Environment and Development (1992) is recognized.

The guiding principles in the Just Transition Guidelines are intended to reinforce the vision. The principles note for example that social dialogue has to be an integral part of the institutional framework for policymaking and implementation at all levels. Policies must respect, promote and realize fundamental principles and rights at work. Policies and programmes need to consider the strong gender dimension of many environmental challenges and opportunities, and specific gender policies should be considered to promote equitable outcomes. Coherent policies across the economic, environmental, social,

education/training and labour portfolios need to provide an enabling environment for enterprises, workers, investors and consumers to help drive the just transition. The set of coherent policies also need to provide a just transition framework for all to promote the creation of more decent jobs, including for example: anticipating impacts on employment, adequate and sustainable social protection for job losses and displacement, skills development and social dialogue, including the right to organize and bargain collectively.

### 5.2.2 Policy coherence and policy areas for a just transition for all

The greening of economies in the context of sustainable development and poverty eradication will require a country-specific mix of macroeconomic, industrial, sectoral and labour policies that create an enabling environment for sustainable enterprises to prosper and create decent work opportunities by mobilizing and directing public and private investment towards environmentally sustainable activities.<sup>24</sup> The aim should be to generate decent jobs all along the supply chain, in dynamic, high value-added sectors that stimulate the upgrading of jobs and skills, as well as job creation and improved productivity in more labour-intensive industries that offer employment opportunities on a wide scale.

The challenge cuts across several domains, so there is a need for mainstreaming sustainable development across all areas and for cooperation and coordination between employment authorities and their counterparts in various fields, including finance, planning, environment, energy, transport, health, and economic and social development. Institutional arrangements must be adapted to ensure the participation of all stakeholders at the international, national, regional, sectoral and local levels in the building of an appropriate policy framework. Internal

24 The text shared in this section on policy coherence and policy areas for a just transition for all draws closely from text in the UNFCCC 2020 technical paper, "[Just Transition of the Workforce, and the Creation of Decent Work and Quality Jobs](#)".

coherence should be sought among institutions at the national level as well as within international institutions at the regional and global levels for the effective integration of the three dimensions of sustainable development.

The Just Transition Guidelines cover *nine policy areas* to address environmental, economic and social sustainability simultaneously. These policy areas were established based on tripartite consensus during the 2013 International Labour Conference which considered evidence and lessons learned from country-level policies and sectoral strategies geared towards environmental sustainability, greening enterprises, social inclusion and the promotion of green jobs as follows:

- I. Macroeconomic and growth policies
- II. Industrial and sectoral policies
- III. Enterprise policies
- IV. Skills development
- V. Occupational safety and health
- VI. Social protection
- VII. Active labour market policies
- VIII. Rights
- IX. Social dialogue and tripartism

### Macroeconomic and growth policies

Macroeconomic and growth policies should promote sustainable production and consumption patterns, and place full and productive employment and decent work for all at the centre of economic and social policies. Targeted fiscal policy measures, market-based instruments, public procurement, and investment policies can create frameworks for enterprises and investors to adopt or promote more innovative economic practices, based on the sustainable use of resources, leading to better access to economic opportunities and more inclusive labour markets. These policies can have adverse income distribution effects, in particular

in relation to energy poverty, which should be considered in their design. In view of these points, country concentration results should ideally be based on summary measures rather than discrete or semi-discrete measures. In this way, it is possible to obtain a clearer picture of the peaks and shifts in country concentration over time.

Appropriate laws, regulations and other policies aimed at environmental improvements that lead to resource and energy efficiencies and the prevention of environmental and social degradation can align private incentives with public policy objectives and can be cost effective in the long term. Legislative and regulatory certainty and the rule of law are needed to promote environmental and social sustainability, while stimulating innovation and investments in human, social and environmental capital. These are the prerequisites for long-term competitiveness and economic prosperity, social cohesion, quality employment and better environmental protection.

### Industrial and sectoral policies

The greening of economies is a global challenge, but many environmental problems are sectoral, and the search for solutions and the adoption of policies starts at the sectoral level. Numerous countries have used industrial policy to support the shift to the greening of their economies. Industrial and sector-related policies, and when appropriate, public-private partnerships and public-public partnerships, are effective in complementing macroeconomic policies, in helping to improve both the environmental and the employment performance of existing businesses, and in stimulating growth in green products and services. Efforts need to focus on key sectors that are most relevant for environmental sustainability and job creation in the national economy, such as agriculture, water management and sanitation, forestry, fisheries, energy, resource-intensive industries, recycling, waste management, buildings and transport. Targeted measures will be needed to formalize substandard, informal jobs in environment-related sectors, such as recycling and waste management, to transform them into decent jobs.

Sectors often have specific governance instruments and institutions. Because of these shared features, employers and workers engage in collective bargaining and other forms of social dialogue at the sectoral level, all of which present opportunities to pursue economic, environmental and social objectives in an effective way.

### Enterprise policies

Governments should foster the greening of jobs through regulatory and non-regulatory frameworks that support environmental and social sustainability while stimulating innovation and encouraging investments both at home and abroad. Special attention is needed to ensure that such frameworks provide an enabling environment and assist micro, small and medium sized enterprises (MSMEs), including cooperatives and entrepreneurs, in making the transition. Industries with high LQ are typically (but not always) export-oriented industries. These are important because they bring money into the region, rather than simply circulating money that is already in the region.

Most jobs are created by micro, small and medium enterprises (MSMEs), yet little information on making operations more resource efficient and environmentally responsible is specifically targeted to MSMEs. Providing such information in a format that is easily accessible at this level would greatly strengthen employers' capacity to enhance environmental and labour performance. Regulatory systems should have enforcement capacity and be structured to provide advice to business on how compliance can be achieved.

### Skills development

There should be strong interaction between the world of work and the world of education and training. The greening of the economy should focus on skills development in order to succeed. Solid technical and vocational education and training systems need to involve industry and trade unions. Access to training helps workers to develop the skills needed to transition to new

types of jobs or to work with new materials, processes and technologies in their existing jobs. Measures to develop skills that support entrepreneurship, resilience, innovation in enterprises (including MSMEs), and their transition to sustainable practices are critical factors for success.

Education and training for green jobs presupposes an approach based on comprehensive lifelong learning. National skills development and employment policies linked to broader development plans need to incorporate education for environmental awareness with coherent skills strategies to prepare workers, in particular young people, for the future sustainable world of work. Education and training systems should be designed to meet the needs of youth, women, vulnerable workers and workers in rural areas, enabling them to contribute to and benefit from economic diversification and rural economic empowerment. Equally, training programmes need to target displaced workers and those who lost jobs because of greening to ensure their swift re-entry into the labour market.

### Occupational safety and health

Many economic activities related to environmental sustainability present health and safety risks related to minerals, chemicals and pesticides, among other things. Ensuring that all jobs, including green jobs, are decent, safe and healthy is a key aspect of improving job quality. Switching from fossil fuels to renewables, for instance, entails changes in the occupational safety and health situation. Occupational safety and health standards and training must be an essential component of all skills training. Practical prevention measures should be adopted at the enterprise level, based on risk assessment and the principles of elimination and control of hazards. Policies and programmes under national systems for occupational safety and health should be continuously improved in the light of the new challenges to ensure that green jobs are safe. Adequate capacity of the labour inspectorate is essential to ensure compliance.

### **Social protection**

Sound, comprehensive and sustainable social protection schemes are an integral part of a strategy for transition towards a sustainable development pattern, built on principles of decent work, social justice and social inclusion. They should provide workers displaced by technological change or those affected by natural disasters with income support as well as access to health care and basic services during the transition, and thereby reduce inequality.

Targeted assistance to groups, regions and occupations affected by the transition is essential. For example, public and private employment programmes can have large multiplier effects by combining employment generation, income support and conservation of natural assets. It is integral that social protection policies be coordinated with vocational training and active labour market policies to ensure the social dimension of a sustainable economy.

### **Active labour market policies**

In many ways the transition to a green economy will pose challenges similar to those of earlier transitions caused by technological revolutions, globalization and rapid changes in world markets. Active labour market policies can help enterprises and workers, including unemployed workers, meet these challenges. The anticipation of changing labour market demands, through sound labour market information and data collection systems, as well as social dialogue, is essential to helping governments, employers, workers, and education and training systems identify the skills needed currently and in the future, and to take appropriate measures to provide timely training. Employment services are important for brokering workforce transition to greener occupations and

improving the match between labour demand and supply.

### **Rights**

International labour standards offer a robust framework for addressing the challenges to the world of work associated with the greening of the economy and, more broadly, with the transition towards sustainable development and poverty eradication. Several international labour standards are important in this regard, including those covering freedom of association and the right to collective bargaining; prohibition of forced labour, child labour and non-discrimination; social dialogue; tripartite consultation; minimum wage; labour administration and inspection; employment policy; human resource development; occupational safety and health; and social security. The Just Transition Guidelines includes an Annex that offers a set of international labour standards and resolutions that may be relevant to a just transition framework and implementation. These include Conventions on fundamental principles and rights at work, Governance conventions, other technical Conventions, Recommendations and Resolutions adopted by the International Labour Conference.

### **Social dialogue and tripartism**

Mechanisms of social dialogue, including tripartism and collective bargaining, serve as effective tools for the design of policies at all levels. Social dialogue can contribute to just transition by building on the commitment of workers and employers to joint action. The ILO Just Transition Guidelines include detailed recommendations for governments and social partners for all these policy areas.

## ► 6. Conclusions

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The selected definitions presented in this paper – concerning green jobs, green economy, just transition and related concepts – represent the efforts of various intergovernmental processes and international organizations to provide a standardized and widely accepted understanding of these concepts.

The definitions are intended to provide essential guidance to countries and organizations as they develop and implement policy frameworks, strategies, and action plans towards environmentally sustainable economies and societies. In the case of green jobs, two types of UN concept definitions have been presented, namely, policy concept definitions and statistical measurement concept definitions. The paper

demonstrates how the different concepts complement one another, highlighting some key characteristics and differences. For certain concepts, it is possible to merge policy concept definitions and statistical measurement definitions.

It is important for users of these concept definitions to be aware of the scope and nuances of each, including, for example, sectoral limitations. Some of the concept definitions presented in the paper are likely to be developed further and be complemented by new guidance informed by country practices, reflecting new insights and priorities in the process of addressing the multiple climate and environmental challenges of our times.

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