The Role of the G20 in Promoting Green and Just Transitions

OECD DEVELOPMENT CENTRE

International Labour Organization

United Nations

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

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ILO ISBN: 9789220409503 (pdf Web)

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Background and context

Group of Twenty (G20) development ministers unanimously adopted the *G20 2023 Action Plan on Accelerating Progress on the SDGs* (henceforth "Action Plan") and G20 High Level Principles (HLPs) on Lifestyles for Sustainable Development (LiFE) in June 2023 under the Indian presidency. The new Action Plan, which builds on the *G20 Action Plan on the 2030 Agenda* (2016), recognises the unprecedented **urgency of the need for the G20 to take co-ordinated action and ensure policy coherence to expedite advancements in achieving the Sustainable Development Goals (SDGs)**. In Section 3 of the Action Plan, the G20 underlined its commitment to implementing "**sustainable, inclusive and just transitions globally, while leaving no one behind**" (G20 Development Ministerial, 2023[1]).

In this regard, the G20 encouraged international organisations to conduct studies to "analyse the gaps, opportunities and synergies in following an **integrated and collective approach to these transitions**" so as to promote improved institutional and policy frameworks across levels and ensure that "**global transition efforts will maximise synergies and minimise trade-offs** as we [the G20] make progress on internationally agreed agendas and the various transitions they entail" (G20 Development Ministerial, 2023[1]).

In accordance with this mandate, the International Labour Organization (ILO), the Organisation for Economic Co-operation and Development (OECD), the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Industrial Development Organization (UNIDO) have co-authored this report, leveraging their respective areas of expertise as **knowledge partners of the G20** Development Working Group.[1]

Global agendas on climate and sustainable development have been developed over time through parallel international processes. Guided by the **preamble of the Paris Agreement**, this report focuses on promoting **policy coherence**, at the domestic and international level, to **enhance co-operation** and enable an international architecture that is well suited for the implementation of **green and just transitions**. For the purposes of this report, **green and just transitions are understood as global and national efforts** towards achieving worldwide carbon neutrality by or around the mid-century globally, in an inclusive manner and adapted to each national context. This involves **active co-operation among all,** developed and developing countries, **ensuring that no one is left behind** and offering support to those in need, including least developed countries (LDCs) and small island developing states (SIDS) among others. It also involves revitalising multilateral co-operation and global partnerships for sustainable development. The report covers the strategic aspects of green and just transitions. It stresses the importance of ensuring climate resilience for all and of implementing green and just transition policies in a way that maximises positive economic and social gains while mitigating potential negative consequences. Beyond promoting policy coherence, the report focuses on fostering synergies in the G20's response to these transformative transitions.

Acknowledgements

Co-authors of this report are the International Labour Organization (ILO), the Organisation for Economic Co-operation and Development (OECD), the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Industrial Development Organization (UNIDO).

The contribution of the OECD Development Centre to this report was led and managed by Federico Bonaglia, Deputy Director of the OECD Development Centre. Co-ordination was led by Olivia Cuq, Policy Analyst at the Latin America and the Caribbean Unit, under the guidance of Director, Ragnheiður Elín Árnadóttir. ILO's contribution was led by Massimiliano La Marca, Senior Economist of the Multilateral Partnerships and Development Cooperation Department. The contribution from UNCTAD was led by Chantal Line Carpentier Head of Trade, Environment, Climate Change, and Sustainable Development of the Division on International Trade and Commodities. UNIDO's contribution was led by Giuseppe De Simone, Coordination Officer and G20 Focal Point of the Strategic Engagement and Coordination Division.

The report benefited from the research, drafting and fruitful collaboration among various authors across these organisations, including Valentina Bellesi (OECD), Adriana Caicedo (OECD), Nicola Cantore (UNIDO), Regina Casillas (OECD), Claudia Contreras (UNCTAD), Rita Da Costa (OECD), Assia Elgouacem (OECD), Jane Ellis (OECD), Samuel Elrington (OECD), Sofia Faurie (OECD), Andrea Garnero (OECD), Noemi Gietemann (OECD), Moustapha Kamal Gueye (ILO), Pankhury Harbansh (ILO), Marek Harsdorff (ILO), Sirini Jeudy-Hugo (OECD), Katia Karousakis (OECD), Anita King (OECD), Shashwat Koirala (OECD), Nicolina Lamhauge (OECD), Martina Lejtreger (OECD), Mette Lund (ILO), Alla Metelitsa (UNIDO), Sebastián Nieto Parra (OECD), Jolien Noels (OECD), Andrew Paterson (OECD), Ana Piccinni (OECD), Mikaela Rambali (OECD), Mohammed Saffar (OECD), Jens Sedemund (OECD), Ernesto Soria Morales (OECD), Liva Stokenberga (OECD), Stephanie Venuti (OECD), Natascha Weisert (UNIDO), Dimitra Xynou (OECD), Robert Youngman (OECD), and Ziga Zarnic (OECD).

Finally, many thanks go to the Publications and Communications Division of the OECD Development Centre, in particular Aida Buendia, Delphine Grandrieux, Elizabeth Nash and Henri-Bernard Solignac-Lecomte, for their steadfast patience and expedient work on the production of this report and associated materials. The authors also sincerely appreciate the editing undertaken by Mary Bortin.

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Executive summary

Unabated fossil fuel emissions have historically powered economic growth and development, at a huge cost to the environment and societies. The consequences have become increasingly evident, with significant enhancement in the stock of carbon accumulated in the atmosphere, historically from developed countries, and culminating in a climate and environmental emergency. This report focuses on climate change and the serious threats it poses to human lives and livelihoods, particularly for the poorest and most vulnerable and on the opportunities brought by green transitions. The lack of actions to mitigate and adapt to climate change will present further challenges to the global economy and society, impacting natural resources, employment, productivity, standards of living, food security, and levels of well-being. The adverse impacts of climate change disproportionately affect vulnerable countries and communities, most of which have contributed minimally to the stock accumulation, exacerbating existing inequalities. Nevertheless, green transitions could represent, with adequate co-operation, a strategic opportunity for developing economies.

The global community is at a critical juncture as it attempts to limit greenhouse gas (GHG) emissions in order to arrive at a sustainable Net Zero future, for a carbon-neutral and climate-resilient world. Under the United Nations Framework Convention on Climate Change, all countries have agreed to combat climate change on the basis of equity and in accordance with the principle of Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC). Such transformative transitions must occur at scale, reaching every country, while being executed in a way that is both just and inclusive. This entails an understanding of the starting conditions and challenges of each country, the domestic socio-economic impacts of climate change and the national and international policies needed to address them. Promisingly, momentum around green and just transitions is gathering pace, with international frameworks and summits increasingly incorporating this approach into policy discussions. Countries are beginning to embark on systemic changes, which if done with co-operation, cohesion and solidarity, have the prospect of benefiting all socio-economic groups, communities and countries.

However, properly maximising socioeconomic opportunities while addressing any negative social consequences of the transitions requires policy coherence among G20 members, developed and developing countries, the international community, and other stakeholders, notably the private sector. Conducive international policy frameworks and domestic enabling environments can help governments to better focus on strategic sectors, societal support and institutional co-ordination. These will, in turn, ensure policy coherence that advances green and just transitions while leaving no one behind. This report refers to policy coherence as the process of identifying and managing potential transboundary effects of policies. It is used as one dimension of the broader concept of Policy Coherence for Sustainable Development, aiming at minimising contradictions and building synergies between different policy areas. Such an approach is not conceived as a “one size fits all” but rather as a conducive perspective to help policy makers seize the opportunities of green transitions, while aligning economic and social with environmental priorities, fostered by multilateral co-operation and international partnerships.

This report begins by exploring the purpose of green and just transitions as the world community moves towards sustainable development. The first chapter stresses the importance of understanding the

objective, challenges and opportunities of green and just transitions and of ensuring policy coherence within and among governments and all relevant actors, across all population groups, sectors, territories, generations and genders. It provides an overview of the evolution of the objectives of “just transitions”, its utilisation in international forums and the intricacies of its components. The chapter considers the importance of understanding not only the challenges but also the opportunities presented by green and just transitions, focusing on the impacts of both climate change and climate-change policies.

The second chapter seeks to identify the opportunities and synergies involved in taking an integrated and co-ordinated approach to the green and just transitions. It stresses the importance of adopting a systemic approach in order to achieve policy coherence, at national and international levels, and considers what this implies for developing countries. The chapter proposes ways of promoting inclusive, sustainable and job-rich economies, and ensuring social equity. This involves redesigning policies on energy, industry, trade, agriculture and infrastructure, and creating new formal jobs and green skills. The chapter notes that the process of promoting green and just transitions can be managed and financed by building societal support and by strengthening co-ordination among institutions. It stresses the importance for green and just transitions of enhancing international policy coherence, co-operation, co-ordination and solidarity.

The final chapter of the report offers policy recommendations for the G20 and developing countries. A first set of recommendations focuses on how the G20 can advance green and just transitions coherently. A second set focuses on promoting green and just transitions through multilateral instruments.

1 Towards sustainable development: Exploring the challenges and opportunities of green and just transitions

Climate change presents a threat to sustainable development everywhere, and its adverse impacts on economies and societies are increasing, particularly for the poorest and most vulnerable. The urgency of addressing this – with concerted efforts to achieve net zero emissions and adapt to the mounting impacts of climate change – is made clear in the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC, 2023[2]). As the planet warms, the number and intensity of weather and climate-related disasters has increased by a factor of five over the last 50 years, causing more than 2 million deaths in total and USD 3.64 trillion in losses (United Nations, 2023[3]). Without immediate policy action, the effects of climate change will intensify and continue to affect the most vulnerable countries and the most exposed socio-economic groups disproportionately (OECD et al., 2022[4]), which in turn have the least capacity to adapt to the largest transformation our economies will see, spurred by twin decarbonisation and digital transitions.

The global transition towards carbon neutrality and climate resilience will require transformative changes that entail economic and social costs and opportunities. The phasing out of carbon-intensive and extractive industries will pose significant challenges, particularly for developing countries with limited economic diversification (Botta, 2018[5]). The impacts of the transitions will be highly heterogeneous, manifesting directly and indirectly across different socio-economic groups, countries and regions. As described in Chapter 2, this will result in major shifts in comparative advantage, production, employment, the nature of jobs and the skills needed by the workforce, among many other impacts (OECD, 2023[6]), providing all countries with a strategic opportunity to foster more inclusive models of development.

The international community is at a critical juncture for action. There is a need to embrace the structural transformation of economies and systems to prevent irreversible disruptions to the climate and well-being. Adopting green and just transition frameworks presents a unique opportunity for all countries to evaluate policies that impact multiple dimensions, addressing not only climate change and other environmental crises, but also social justice and inequality and other SDGs. In this report, green and just transitions are understood as the ongoing and upcoming transitions towards achieving carbon neutrality and Net Zero greenhouse gas (GHG) emissions by or around the mid-century, coupled with a focus on ensuring climate adaptation, resilience and inclusiveness for all, in line with country circumstances. This concept entails maximising the positive economic and social gains of adopting more sustainable models of development while minimising the potential negative impacts, such as job and income losses, increased poverty and inequality, among others (OECD, 2021[7]). In short, maximising synergies while minimising trade-offs with SDGs.

Green and just transitions are challenged by country-specific factors that should be considered, including economic structures, productive capacity, relative vulnerability to climate change, fiscal constraints, income and carbon inequality, informal employment and social aspects such as human rights, gender equality, the rights of indigenous peoples and the need for social and environmental safeguards. This underscores the complexity of navigating each transition and highlights the need for nuanced context-specific approaches. While most developing countries have different starting conditions and challenges, and thus strategies, many developed countries also face gaps in green policy implementation. By properly identifying these challenges and putting them at the centre of each green and just transition, all countries face a strategic opportunity to move forward their sustainable development agendas, encapsulated in the SDGs.

Green and just transitions: An evolving objective

The objective of achieving "just transitions" has emerged as a pivotal framework in international discourse on global challenges regarding sustainable development. As it evolved throughout the years, it was originally a response to concerns about the socio-economic implications of moving away from industries deemed environmentally unsustainable, particularly coal. At this time, the primary aim was to ensure that workers dependent on highly polluting sectors would not be left behind in the shift towards a greener economy. The broader objective of "*green and* just transitions", utilised throughout this report, conveys a holistic process towards the achievement of a net-zero- and 1.5-degrees scenario, with climate justice and green growth in a fair and inclusive manner for all countries and their societies – all communities, all workers, all social groups – so as to create development opportunities and leave no one behind. As there is no "one size fits all" approach to a single green and just transition, but rather country-specific contexts for each transition, the term "green and just transitions" is used in plural and should always prioritise the domestic particularities.

As it is an evolving objective, governments and the international community, including the G20, have cited just transition principles in a wide range of multilateral agreements during the past 30 years (Table 1.1). The International Trade Union Confederation (ITUC) played a pivotal role in pushing for the integration of just transition principles into international policy by bringing the concept into international debates, including COP15 (Copenhagen) in 2009. The notion of a just transition gained international significance in 2015 when it was included in the preamble of the Paris Agreement, which affirms "the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities" (UNFCCC, 2015[8]). The United Nations Framework Convention on Climate Change (UNFCCC) launched the work programme on just transition pathways at COP27 through draft decisions 1/CP.27 and 1/CMA.4 (UNFCCC, 2022[9]).

Table 1.1. Just transition key dimensions and timeline

1990s	A coalition of environmental justice organisations and labour unions in the United States of America forms the **Just Transition Alliance (JTA)** to address job losses related to new environmental regulations.
2000s	The need to combine climate action and a just transition gains recognition by trade unions. The ITUC brings the concept into international debates, including COP15 (Copenhagen) in 2009.
2010s	**2010**: The just transition concept is included in the **Cancún Agreement** at COP16, which recognises the possible adverse socio-economic impacts of measures taken to respond to climate change.
	2015: Adoption of the **ILO Guidelines Towards a Just Transition**, the **2030 Agenda**, and **Paris Agreement**.
	2018: The **Solidarity and Just Transition Declaration** (Silesia Declaration) is adopted at COP24 and signed by 53 countries.
	2019: The **Climate Action for Jobs Initiative** is launched at the UN Climate Action Summit; 49 nations commit to developing just transition strategies.
2021	**Just Transition Declaration** supports the conditions for climate action and decarbonisation in developing countries. The outcome document, known as the Glasgow Climate Pact, stresses human rights, gender equality, the rights of indigenous peoples and the need for social and environmental safeguards.

	The EU's **Just Transition Mechanism (JTM)** provides targeted support to help mobilise EUR 55 billion in the most affected regions over 2021-27 to alleviate the socio-economic impact of the transition.
	The **MDB Paris Alignment Working Group on Just Transition** commits to advancing five high-level principles that guide support for a gender-responsive just transition.
	At COP26, **Just Energy Transition Partnerships** aiming to accelerate decarbonisation are launched with South Africa, followed by Indonesia (2022), Viet Nam (2022) and Senegal (2023).
2022	The IPCC report includes a chapter on **Accelerating the Transition of Sustainable Development**, focusing on the just transition concept.
	COP27 (Sharm El Sheik) agrees to establish a new **fund for responding to loss and damages** for nations most vulnerable to and impacted by the effects of climate change. The **work programme on just transition pathways** is launched to achieve the goals set out in the Paris Agreement in a way that is just and equitable for all.
	The **G20 Sustainable Finance Working Group** sets out to define a Just Transition Framework.
2023	COP28 (Dubai) concludes with a decision to operationalise the Loss and Damage Fund and funding arrangements, and an agreement to transition away from fossil fuels, emphasising a swift and just transition with deep emissions cuts and increased finance. The **Global Stocktake** urges enhanced climate action aligned with the 1.5°C limit, emphasising a 43% reduction in emissions by 2030. The G20 adopts High Level Principles on LiFE and the New Delhi Leaders Declaration sets out a commitment towards implementing clean, sustainable, just, affordable and inclusive energy transitions.

Source: Authors' elaboration based on (UNRISD, 2018[10]; UN DESA, 2022[11]; Lee and Baumgartner, 2022[12]; G20, 2023[13]).

A more comprehensive understanding of the just transition goal becomes possible by exploring its application in diverse international frameworks, including: i) the 2030 Agenda for Sustainable Development; ii) climate change treaties; iii) ozone treaties; iv) biodiversity treaties; v) chemical treaties; and vi) land-related treaties (Table 1.2). Consistent across these agreements is the shared commitment to ensure that no one is left behind, particularly the world's most disadvantaged and vulnerable to climate change and those lacking basic needs. There is a collective emphasis on crafting policies, at all levels, that embody inclusivity, equity and active participation, with the overarching goal of safeguarding both people and planet.

Table 1.2. Utilisation of just transition principles in international frameworks

International frameworks	Use of "just transition"
2030 Agenda for Sustainable Development	The 2030 Agenda does not explicitly mention the term "just transition", yet its foundational principles encapsulate the essence of a just transition, including the commitment to "leave no one behind". It mentions the interlinkages between goals and the need for a holistic approach and policy coherence to ensure that progress in one area does not negatively impact another.
Climate change treaties	The socio-economic implications of the mitigation and adaptation measures at the core of the UN Framework Convention on Climate Change, and the need for a just transition, have been and remain high on the agenda of global climate talks. **Rio Conference** formalised the principle of Common but Differentiated Responsibilities between developed and developing economies (later emphasised in Kyoto and Paris). The **Kyoto Protocol** commits Parties to strive to minimise adverse economic social, and environmental impacts on other Parties, especially developing country Parties. The preamble of the **Paris Agreement** states the need to consider the imperatives of a just transition of the workforce; while **Article 2.1c** of the Agreement calls for "making finance flows consistent with a pathway towards low greenhouse gas (GHG) emissions and climate-resilient development". In 2018, the Polish COP24 presidency sponsored the **Solidarity and Just Transition Silesia Declaration**, and the United Kingdom COP26 presidency followed suit in 2021 with the **Supporting the Conditions for a Just Transition Internationally Declaration**. While these declarations are not legally binding, they set out a framework to make climate ambitions match social challenges.
Ozone treaties	The **Montreal Protocol on Substances that Deplete the Ozone Layer and its Amendments** does not explicitly refer to socio-economic issues or employment dimensions, but its implementation has implications for industries, workers and economies dependent on ozone depleting substances (ODS), or hydrofluorocarbons (HFCs) in the case of the **Kigali Amendment**. The Montreal Protocol established a Multilateral Fund (MLF) to assist developing countries to comply with ODS phase-out schedules. Through its projects, the MLF helps prevent economic disruptions and job losses in industries transitioning away from ODS and HFCs by ensuring that workers and industries can adapt to new technologies and alternative substances and practices.
Biodiversity treaties	The objectives of the **Convention on Biological Diversity** (CBD) are: conservation of biodiversity; sustainable use of its components; and fair and equitable sharing of benefits from genetic resources. While "just transition" is not stated, the equitable sharing of benefits and involvement of indigenous and local communities echo its ethos. The **Nagoya Protocol** under the CBD emphasises the fair and equitable sharing of benefits arising from the use

	of genetic resources. In 2022, the **Kunming-Montreal Global Biodiversity Framework** established new targets and goals for global biodiversity conservation and promoting sustainable development by 2030. The **2023 Agreement under the UN Convention on the Law of the Sea**, on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, recognises the importance of realising a just and equitable international economic order that considers the interests and needs of humankind as a whole and the special interests and needs of developing states. It calls for protecting the rights of indigenous peoples and local communities when acting for the conservation and sustainable use of marine biological diversity.
Chemical treaties	The **Stockholm Convention on Persistent Organic Pollutants** aims to eliminate or restrict the production and use of such pollutants and notes the need to ensure that workers in affected sectors are protected, retrained and reintegrated. The **Minamata Convention on Mercury** aims to protect human health and the environment from anthropogenic emissions and releases of mercury and calls for consideration of the welfare and future of workers in affected sectors. While neither of these instruments contains just transition provisions, the issues of capacity building and technology transfer are addressed through their financial mechanisms.
Land-related treaties	The **UN Convention to Combat Desertification** addresses desertification and land degradation, with an emphasis on sustainable land management. Its focus on local communities, especially when land initiatives lead to shifts in traditional occupations, aligns with just transition objectives.
Water treaties	The **Convention on the Protection and Use of Transboundary Watercourses and International Lakes** (UN Water Convention) is a unique legally binding instrument promoting the sustainable management of shared water resources, the implementation of the Sustainable Development Goals, the prevention of conflicts, and the promotion of peace and regional integration. The **United Nations Convention on the Law of the Non-Navigational uses of International Watercourses** (UN Watercourses Convention)—a flexible and overarching global legal framework that establishes basic standards and rules for co-operation between watercourse states on the use, management, and protection of international watercourses. Peace and just are the core objectives of both conventions.

Source: Authors' elaboration based on cited treaties.

New agreements and treaties could benefit from directly incorporating the specific language and framework of green and just transitions. Besides considering the common but differentiated responsibilities and respective capabilities, new treaties should also highlight differing national circumstances, ensuring a holistic but country-specific approach to environmental challenges. The integration of green and just transition principles in these international agreements and treaties and in various G20 or UN summits is often implicit rather than explicit, resulting in gaps and missed opportunities. Addressing these gaps will be integral for navigating the global shift towards achieving globally effective green and just transitions. These gaps include:

- **Lack of explicit language**: While many instruments acknowledge the principles aligned with green and just transitions, they might not use this term or provide a detailed roadmap. Without direct language, consistency and coherence, there is a risk of oversight or under-prioritisation.
- **Lack of or inconsistent metrics**: A harmonised approach for monitoring progress and evaluating (M&E) the impacts of green and just transitions on the environment and society is needed in order to catalyse evidence-based policy making and accelerate progress on the SDGs. M&E should measure and hold stakeholders accountable for meeting green and just transition goals, resulting in slow or uneven progress.
- **Varying levels of commitment**: Treaties entail different degrees of commitment from participating countries. While some have strong enforcement mechanisms, a considerable number, such as the Paris Agreement, depend on voluntary participation, complicating their implementation.
- **Limited Stakeholder Engagement**: The involvement of key stakeholders, such as marginalised communities and grassroots organisations, MSMEs and collectives, may be insufficient, leading to gaps in understanding diverse perspectives and needs.
- **Sector-specific focus**: Treaties that focus on specific sectors or challenges may not provide comprehensive pathways for holistic green and just transitions, and often lack explicit guidance and tools to help countries achieve policy coherence. This can lead to fragmented approaches.
- **Differing national contexts**: As national contexts, capacities and priorities vary significantly, there are variations in the implementation of principles set out under international treaties. The

assessment of gaps could help to align implementation, especially for developing countries. More specifically, achieving a green and just transition in developing countries depends on confronting the imbalances, asymmetries and scarcities of global climate actions.

- **Insufficient focus on reskilling**: International treaties often lack sufficient emphasis on protecting workers and new generations during green and just transitions, for example through reskilling and by providing workers and other actors with avenues for new job opportunities and with compensation schemes.
- **Insufficient focus on the non-working population:** International frameworks and treaties often lack sufficient emphasis on protecting the non-working population during green and just transitions, for example through social protection systems, as children, the elderly, or people with disabilities, illnesses or those temporarily unemployed can disproportionately be affected by negative impacts.

Adopting appropriate long-term planning for green and just transitions means placing a strong emphasis on policy coherence across time and among policies (OECD, 2023[14]), while accounting for differing country circumstances. In this light, it is imperative for national governments to ensure that green transitions are inclusive and to incorporate the key dimensions of green and just transitions in relevant international frameworks (see Table 1.2). At the same time, it is crucial to emphasise the need for inclusive international policies that can be conducive to just transitions in all countries, especially in cash-strapped least developed countries, small island developing states, and other developing countries.

As G20 members collectively endeavour to meet their climate commitments and transition to greener economies, ensuring that these transitions are green and just will be crucial for political stability, economic resilience and social cohesion (OECD, 2021[7]; OECD, 2023[15]). The G20 has an important leadership role to play in fostering harmonised approaches to ensure that diverse policies align to support the overarching sustainable development goals, including social equity. This could involve: promoting the integration of green and just transition relevant provisions in new trade agreements (while taking into consideration the potential transboundary effects on other climate agreements); setting more ambitious climate policies in Nationally Determined Contributions (NDCs) (Table 1.3); and promoting international treaties that could help to close gaps in international strategies, such as the international legally binding instrument on plastic pollution, including in the marine environment that is under negotiation (Box 1.1). Such leadership will strengthen the environmental, economic and social outcomes of the transitions, and accelerate progress towards achieving a sustainable and equitable future.

Table 1.3. The international commitments on climate change of G20 members

	Net Zero target year	Updated or second NDC	Mention of just transition in NDC
Argentina	2050	Yes	Yes
Australia	2050	Yes	No
Brazil	2060	Yes	No
Canada	2050	Yes	Yes
China	Before 2060	Yes	No
EU	2050	Yes	Yes
France	2050	Yes	Yes
Germany	2045	Yes	Yes
India	2070	Yes	No
Indonesia	2060	Yes	Yes
Italy	2050	Yes	Yes
Japan	2050	Yes	No
Republic of Korea	2050	Yes	No

Mexico	No target set	Yes	Yes
Russia	2060	No	No
Saudi Arabia	2060	Yes	No
South Africa	2050	Yes	Yes
Türkiye	2053	No	Yes
United Kingdom	2050	Yes	Yes
United States of America	2050	Yes	No

Note: NDC = Nationally Determined Contribution.
Source: Authors' elaboration based on (UNFCCC, 2023[16]; Climate Action Tracker, 2023[17]).

Box 1.1. Promoting green and just transitions in treaties to end plastic pollution

A resolution to end plastic pollution and forge an international legally binding agreement by 2024 was endorsed on 2 March 2022 at the UN Environmental Assembly (UNEA-5) (UNEP, 2022[18]). This presents a unique opportunity to co-ordinate and scale up policy efforts to combat plastic pollution.

Informal waste pickers play an important role in municipal waste collection, sorting and recycling in many developing countries (Schröder, 2020[19]). As countries seek to end plastic pollution, these groups are at risk of being further marginalised. The transformation of waste management linked to plastic pollution reduction thus presents opportunities to address the needs and support the jobs of marginalised populations that currently rely on the sector.

Source: (UNEP, 2022[18]; Schröder, 2020[19]).

Understanding the challenges and opportunities of green and just transitions

The adverse impacts of climate change disproportionately affect vulnerable people and communities, exacerbating existing inequalities. By understanding these differential impacts across socio-economic groups, regions and demographics, policy makers can tailor interventions to ensure equity and inclusivity and can proactively transform the challenges of climate change into opportunities. Similarly, the implementation of policies on climate change and the environment requires an awareness of how they might impact various stakeholders and how to avoid setbacks and gain social support for the necessary reforms in G20 member states and other countries. In this light, a comprehensive understanding of the challenges and opportunities of the distributional dimensions of green and just transitions is paramount.

The impacts of climate change are intensifying

Climate-related disasters, which are projected to increase in frequency and intensity under global warming, systematically cause human, environmental and economic losses. The number of climate-related disasters more than doubled in the last decade compared to the 1980s, with floods alone having increased by 134% since 2000 (UNDRR, 2020[20]; WMO, 2021[21]; Maes et al., 2022[22]). New projections indicate that, without substantial progress on adaptation, the world is likely to experience a 370% increase in heat-related deaths by mid-century (Romanello et al., 2023[23]). The foreseeable costs of continuing with business-as-usual warming scenarios could reach at least USD 1.266 trillion in the period 2025-2100. The cost of biodiversity and nature loss without policy action towards more sustainability has been estimated to be between

USD 90-225 billion by 2030 (World Bank, 2021[24]). Moreover, various unquantifiable costs keep deepening the count, such as land degradation, water scarcity, forced migration and livelihood losses (CPI, 2024[25]).

Climate change is playing an increasingly important role in the decline of biodiversity. Climate change has altered marine, terrestrial and freshwater ecosystems around the world. It has caused the loss of local species, increased diseases, and driven mass mortality of plants and animals, resulting in the first climate-driven extinctions. As sectors like agriculture, forestry, fisheries and aquaculture, natural resources and tourism rely on a stable climate, they are increasingly disrupted by climate and environmental change (ILO/OECD, 2022[26]). The agricultural sector faces an increasingly frequent risk of losses and harvest failures as a result of extreme weather events (UNFCCC, 2020[27]).

Prioritising national contexts is paramount as the impacts of climate change depend significantly on each country's and individual's climate vulnerability, including: geographic exposure; economic structure and productive capacity; sources of income; the capacity to respond, including adaptive and fiscal capacity; and the political institutions in place (ILO/OECD, 2022[26]). Climate change impacts can further increase inequality and poverty: climate-related hazards have direct adverse impacts on livelihoods, including lower or lost agricultural yields, on human health and food security, destruction of homes, and loss of income (World Bank, 2016[28]; Connolly-Boutin and Smit, 2016[29]; IPCC, 2023[2]). In terms of employment, low-income households tend to be more dependent on the primary sector, particularly in developing countries. The interlinkages between employment, natural ecosystems and the climate are becoming more apparent, with 1.2 billion jobs (40% of the global labour force) depending directly on a healthy environment (ILO, 2018[30]). Within the G20, 34% of jobs rely directly on ecosystem services, and hence on effective and sustainable management of the environment (ILO, 2018[31]).

By lowering labour productivity, uncontrolled climate change could reverse gains in economic growth and social progress made by G20 members and developing countries alike in past decades. Productivity losses are occurring due to the increasing frequency and intensity of environment-related hazards caused or exacerbated by human activity. Between 2000 and 2015, 23 million working-life years were lost annually at the global level as a result of such hazards (ILO, 2019[32]). Projections based on the rise in global temperatures exceeding 1.5°C suggest that 2.2% of total working hours will be lost to high temperatures by 2030 – equivalent to 80 million full-time jobs (ILO/OECD, 2022[26]). Damages produced by human-induced, or climate change-related disasters have a negative impact on the productive potential of countries. From 2008 to 2015, within the G20, the most affected countries were the People's Republic of China (hereafter "China"), Brazil and India, with annual losses of 8.7, 3.2 and 1.5 working-life years per person, respectively (ILO, 2019[32]). Likewise, global warming and temperature increases will make heat stress more common, reducing the total number of work hours in G20 countries by 1.9% by 2030, with a greater effect on agricultural workers and on workers in emerging countries (ILO, 2019[32]).

In agrifood systems, climate change disasters also affect livelihoods, food security and nutrition. They cause rural unemployment, a decline in income for farmers and agricultural workers, and reduce the availability of food in local markets (FAO, 2023[33]). Smallholder farmers, who play a significant role in food production globally, face the dual challenge of being on the front lines of climate change impacts and also at risk of being marginalised by the rapid shift towards green practices demanded by importers in developed countries. Moreover, the transition to green agricultural practices often involves initial costs and requires knowledge that smallholder farmers may not have. Without access to finance, technology and training, these farmers, many women, may find it difficult to adopt sustainable practices, further endangering their market access and economic stability (IFAD, 2016[34]).

Simultaneously, as agrifood systems need energy at every stage, implying the use of 30% of total energy, they also contribute to roughly one-third of total greenhouse gas emissions due to energy use (equivalent to about 1 billion tonnes of GHG) (FAO, 2022[35]). Policy coherence can prove strategic to ensure that green and just transition promotes a deep transformation of how and which food is produced, processed, traded and consumed, while providing sustainable energy access with fewer impacts.

Promoting green and just transitions that advance sustainable methods of production can bring strategic opportunities, particularly for food producing countries. The UN Decade on Ecosystem Restoration 2021-2030 provides a strategic opportunity to transform food, fibre and feed production systems to meet the needs of the 21st century, and to eradicate poverty, hunger and malnutrition through effective and innovative landscapes and seascape management. Restoring these ecosystems should contribute to a healthy and stable state, so that they are able to support human needs for sustainable food production and livelihoods (UN, 2024[36]).

Natural disasters and changing weather patterns are also exacerbating fiscal constraints, leading in some cases to increases in public debt or the abandonment of infrastructure and investment projects. Extreme weather events alone result in an average estimated annual increase in fiscal deficits of 0.3% of gross domestic product (GDP) for upper middle-income countries, 0.8% for lower middle-income countries and 0.9% for low-income countries (Alejos, 2021[37]). The cost of servicing the growing debt significantly undermines the ability of developing countries to react to further shocks and to fund the necessary public services and investments to build resilience to the impacts of climate change. More than 3.3 billion people live in countries that spend more on servicing their debt than on education and health together (UN, 2023[38]). According to the African Development Bank, annual adaptation costs in Africa will reach USD 50 billion per year by 2050 (AfDB, 2022[39]), while Africa historically contributed less than 3% of total emissions. The Global Centre on Adaptation estimates that some 52 million people, equivalent to 4% of the continent's population, were directly affected by drought and floods from 2020 to 2022 (GCA, 2022[40]). Promoting green and just transitions can help policy makers in developing countries advance the notion that far from implying a cost, investing in adaptation policies can represent long-term savings for countries particularly vulnerable to natural disasters. For every USD 1 invested in making infrastructure and economies more resilient, USD 4 is avoided in impact costs (OECD et al., 2022[4]).

International partners are key stakeholders to face the challenges of green and just transitions. Given the increasingly negative and unequal consequences of climate change, it is imperative to take measures to move towards green and just transitions in a co-ordinated and co-operative manner. This includes ensuring that those negatively affected, in particular those that contributed the least but are most vulnerable, receive appropriate support and that the costs of adaptation policies are shared fairly, as called for by the principle of common but differentiated responsibilities and respective capabilities. Social protection can help protect vulnerable groups and absorb economic pressures and environmental shocks, including harvest failures, soaring food prices, increased exposure to disease or loss of assets caused by floods and storms (UNFCCC, 2020[27]). This extends to policies at the international level to mobilise and distribute funds from developed to developing countries. Developing countries, SIDS and LDC which have contributed least to the causes of climate change and cumulative global GHG emissions, are disproportionately affected by their physical impacts.

Against this backdrop, international co-operation becomes particularly necessary: achieving global green and just transitions entails affording developing economies the necessary flexibility, as well as technological, financial and capacity support, to navigate through complex trade-offs and growing uncertainty. Most notably, climate talks have agreed on mobilising USD 100 billion a year for developing countries to take climate action, both to adapt to climate change and to cut emissions (UN, 2023[41]), a goal that has been met in 2022, two years later than the original 2020 target year (OECD, 2024[42]). Ambitious New Collective Quantified Goal to be reached before 2025 should reinforce this effort. Similarly, during COP28, a historic agreement was reached on the operationalisation of the Loss and Damage Fund and funding arrangements, with commitments exceeding USD 700 million (UNFCCC, 2023[43]), (for more on the international dimension, see Chapter 2). At the same time, governments must adjust within this international context and adopt a domestic approach, consistent with their country's circumstances, to address the different impacts of climate change within countries. Incorporating domestic approaches is particularly important to protect the low-income and vulnerable population groups that often live in areas

most at risk of hazards arising from climate change and have the least resources to deal with them (OECD, 2023[44]), (for more on the domestic dimension, see Chapter 2).

Social challenges and opportunities of climate change policies: The example of employment

Green and just transitions require a fundamental restructuring of economies and the labour markets, moving away from a carbon-based system to one that relies on clean, renewable and other low emission, circular sources of energy. Some industries will inevitably decline, some sectors will grow, while others will radically transform, amplified by the twin digital transition, ushering in new ways of producing, working, consuming and living (ILO, 2022[45]). Overall, the impacts of climate change policies on employment can be considered from four perspectives: i) new jobs will be created; ii) some jobs might be substituted by others; iii) certain jobs will be lost or eliminated without substitution; and iv) most jobs will be adjusted to the requirements of more sustainable practices (Figure 1.1).

Figure 1.1. Impacts of climate policies on employment

Job creation	• The expansion of low carbon intensive products, services and infrastructure will translate to labour demand across various sectors of the economy.
Job substitution	• Some existing jobs will be substituted as a result of shifts in the economy from less to more efficient, from high carbon to low carbon, and from more to less polluting technologies, processes and products.
Job elimination	• Certain jobs may be eliminated – either phased out or reduced in number – without direct replacement.
Job adjustment to the requirements of more sustainable practices	• Existing workers (such as plumbers, electricians, metal workers and construction workers) will have to adjust to more sustainable practices as workplace routines, skill sets, work methods and job profiles are greened.

Source: Authors' elaboration based on (UNFCCC, 2020[27]).

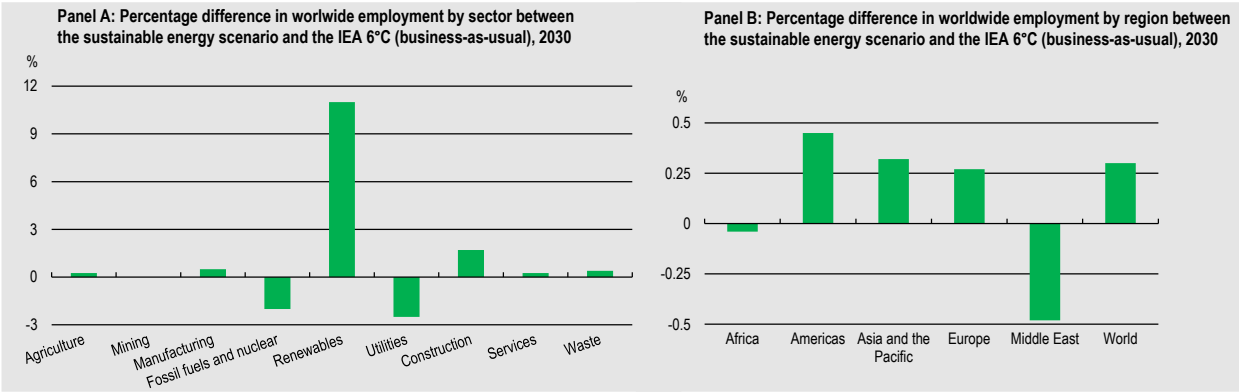
As workers move into different occupations, two types of economic sectors can be identified: the "green" sector and the "brown" sector. Green jobs can be defined here as those associated with less polluting and greener production processes and with environmentally preferable goods and services. Brown sectors, also called GHG-intensive sectors, can be categorised using the Climate Analysis Indicators Tool database on sectors that account for the most GHG emissions (Climate Watch, 2020[46]). These include: agriculture and land use; energy and heat production; extraction and production of fossil fuels plus construction; industrial processes; transportation; and waste management (OECD et al., 2022[4]).

The effects of climate mitigation policies on labour markets will be threefold. First, there will be considerable job elimination and substitution, especially in carbon-intensive brown sectors such as fossil fuel extractive activities, power generation and other energy intensive industries. Second, new work opportunities will emerge in green jobs, particularly in renewable energy, energy efficiency and extraction, and recycling of critical minerals. Third, the greening of the economy will lead to a shift in the skills required of workers, both in terms of new jobs created and in terms of those entering the job market or transitioning to another job that requires new skills. The aggregate net impact of these changes will depend on both the industrial structure of each country and the economic and social policies in place to soften the negative impact of

climate mitigation policies on firms and the labour market (OECD et al., 2022[4]). Estimates of impacts on net job creation vary. OECD analysis finds that the net effects will be relatively limited (OECD, 2023[6]). ILO estimates show that implementing the Paris Agreement could lead to the creation of an additional 103 million jobs by 2030, while 78 million jobs risk being lost in the process (ILO, 2022[47]). In net terms, the transitions to a green economy could add an estimated 25 million jobs to the global economy by 2030. Revamping curricula to actively train new generations of workers for green jobs and adjusting training policies in the different industries are needed to meet the skills and increased job demand associated with the green transition. Targeted, temporary support measures and safety nets will have to be considered for workers and households that are negatively affected by the transition.

Job creation and loss can be unevenly distributed across the world and geographically concentrated in specific regions and communities within countries. OECD analysis of the geography of green and polluting jobs highlights significant differences within countries, with large metropolitan areas currently accounting for most green jobs while less prosperous and often more remote regions tend to have higher shares of polluting jobs (OECD, 2023[48]). New employment opportunities, for example in the energy sector, may not always be created for the same workers and in the same locations where jobs are lost, and not at the same time, creating both geographic and sectoral disconnections (Figure 1.2).

Figure 1.2. Projected energy sustainability and employment in 2030



Source: (ILO, 2018[30]).

The energy sector is one of the most forcefully impacted industries in transitions towards Net Zero emissions, as decarbonisation entails a systemic transformation of the energy matrix (see Chapter 2). The energy sector employs 65 million people worldwide, accounting for approximately 2% of global employment (IEA, 2023[49]). Given the current centrality of fossil fuels to the global economy, energy transitions will result in sharp job losses in the oil and gas industry over the next five years (20% reduction by 2030, equivalent to 2.5 million jobs).

On the other hand, the transition towards cleaner sources of energy could create millions of new jobs in the broader renewable energy sector, especially in those countries with strategic resources such as hydrogen; geothermal; biofuel; biogas processing as well as carbon capture, usage and storage (CCUS) (IEA, 2023[49]; ILO, 2022[50]). Similar shifts are expected within and across a range of extractive, manufacturing and services sectors as a result of the commitments of countries and enterprises to tackle climate and environmental change. In a 2°C warming scenario compared to business as usual, employment is expected to increase by around 11% in renewables and 1.7% in construction (ILO, 2018[30]), while employment is expected to decrease in the fossil fuel, nuclear and utilities sectors. At the regional level, net job creation is expected in the Americas (0.45%), Asia-Pacific (0.32%) and Europe (0.27%), with net job losses in the Middle East (-0.48%) and Africa (-0.04%) (ILO, 2018[30]).

Transitioning towards new sustainable sectors presents opportunities as well as challenges. For example, developing the sustainable use of oceans can help both to limit temperature rise and to stimulate socio-economic development. The "blue economy" is estimated to be worth USD 1.3 trillion per year globally, providing millions of "blue job" opportunities (UNCTAD, 2023[51]). It is projected to double in size by 2030, reaching USD 3 trillion (OECD, 2016[52]). The blue economy is thus poised to play a pivotal role in advancing sustainable development. By creating better understanding of the blue economy through natural capital accounting and by establishing stronger partnerships with local businesses and communities, governments can develop policy responses that improve the environment while generating better outcomes for residents (OECD, 2024[53]).

Similarly, there are agrifood practices that could help on reducing loss of productivity and income during transition and at the same time adapt to climate change and reduce GHG emissions such as organic farming, biodynamic agriculture, sustainable intensification and regenerative agriculture, agroforestry, integrated farming system, precision agriculture, integrated nutrient management and integrated pest management. For instance, fostering sustainable bioenergy and bioproduct value chains within agrifood systems, besides supporting climate adaptation, can also stimulate employment growth, income diversification and easier access to green jobs, especially in rural regions (FAO Global Bioenergy Partnership, 2022[54]).

The green and just transitions have a strong gender dimension, including in the labour market. Women currently hold only 28% of green jobs (OECD, 2023[48]). Current investments in green jobs focus on male-dominated sectors such as STEM (science, technology, engineering and mathematics), construction and manufacturing. This situation risks creating barriers to women's integration in green transitions and could further entrench gender inequalities in the world (CARE, 2022[55]). Focused gender-responsive interventions will be imperative to ensure that green and just transitions help to address gender inequality and allow women to take full advantage of the multitude of opportunities arising from these transitions. At the same time, men account for the vast majority of workers in polluting jobs and thus face a higher risk of significant impacts (OECD, 2023[48]). Targeted educational, retraining and upskilling programmes need to take account of both gender and place-specific challenges, especially because limited geographic mobility leads most of the workers affected to focus on alternative job opportunities in their own community or region.

Social challenges and opportunities of climate change policies: The example of Income and Carbon inequality

Carbon tax schemes should be carefully designed so that they do not have a disproportionately negative impact on the most vulnerable. Price-based climate mitigation policies, such as carbon taxes, may raise energy costs and disproportionately affect vulnerable households in urban and rural communities and micro, small and medium-sized enterprises (MSMEs). These measures can be regressive, as these groups may be ill-equipped to draw on savings or cut back on energy expenditures (OECD, 2023[6]) and some countries have highlighted the external consequences of such initiatives. Policy coherence can help enhance a well-managed carbon pricing scheme, that retains revenues domestically, by sending price signals to the market to move towards greener technologies while protecting potentially affected households and firms from undue cost implications, given their constructions quality, family composition, income level and location (OECD, 2022[56]). Internationally, carbon pricing can collaborate to policy coherence by explaining cross-country differences in carbon prices, which are crucial for understanding international spillover effects and competitiveness concerns (IMF; OECD; UN; WB and WTO, 2024[57]). To compensate for welfare losses and avoid negative distributional effects, carbon taxation policies can and should be combined with additional public expenditure, enhanced delivery of public services and support through well-designed and targeted green subsidies and social protection systems that ensure equitable access for all. For this, support for fiscally strapped countries will be needed (Box 1.2) (for more on undesired effects in trade policies, see Chapter 2).

Box 1.2. Income and carbon inequality

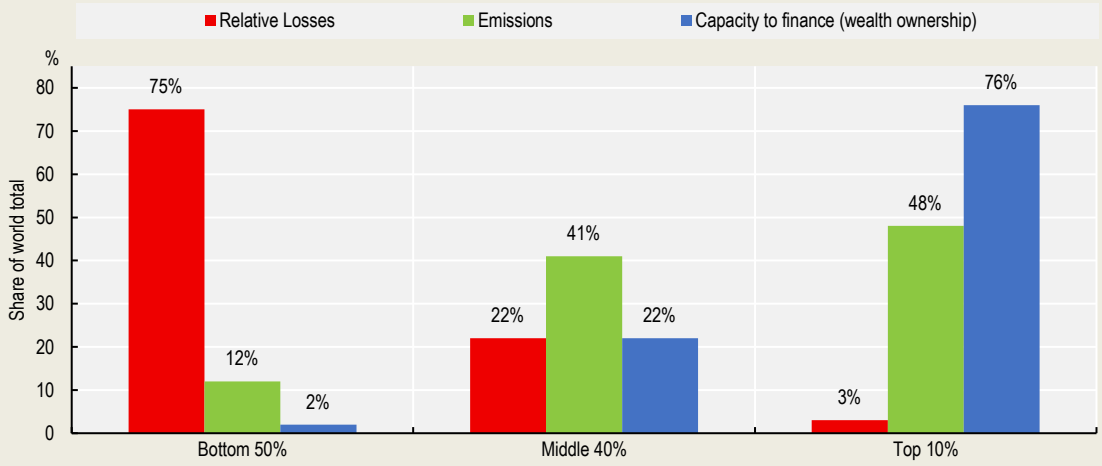
The scale of the energy transition required to get to Net Zero by 2050 is enormous, and the economic, social and employment impacts unknown. Globally, over 80% of total primary energy supply is still based on fossil fuels. Adding a carbon price could make the continued use of fossil fuels less attractive and thus help drive the shift to clean energy. But the higher cost of fossil fuel consumption will have severe social consequences similar to those caused by past energy transitions and energy crises. The volatility and sudden increase of energy and food prices have repeatedly triggered social unrest and had profound impacts on people at the individual level and on the labour market overall.

Energy is a major input for most economic activities and consumer goods. Through its impact on fertiliser production, agriculture processing, transport, cooking and heating, the cost of energy has a major effect on the price of food and other basic needs. As food, transport and housing account for a large share of household expenditures, a sudden increase in energy prices is felt across the world and the impacts are not evenly distributed. Although rich households consume more energy than poor households, energy expenditures represent a much smaller share of their income. Across all countries, energy price changes have the greatest effects on poorer households, which often spend more than half their income on food and energy. Thus, there is a high risk that the Net-Zero emission strategy will negatively impact inequality.

Across the developed and developing world, social unrest has been observed when fossil fuel subsidies are removed, reformed or carbon is taxed, and are not or not sufficiently cushioned, including through social protection systems. Although poor and lower middle-income households would benefit the most from climate action, given their vulnerability to climate change impacts, they may oppose policies that render energy supplies more expensive if no mitigating measures are offered. Fearful of social unrest and worsening inequality, governments often shy away from carbon pricing and energy subsidy reforms. Paradoxically, global energy and income inequality is a key factor hindering climate action and slowing the energy transition.

Mirroring the difference in energy inequality and energy consumption between low- and high-income households, the carbon inequality is equally stark. Within and across countries, the richest 10% of households are responsible for some 50% of global emissions, while the bottom half only contributes around 10%. At the same time, the capacity to finance and absorb increasing energy costs is close to zero among the poor, while three-quarters of the rich could shoulder the increase (see Figure 1.3).

Figure 1.3. Global climate inequality: Relative losses, emissions and capacity to finance



Source: (ILO, 2023[58]) based on (Chancel, Bothe and Voituriez, 2023[59]).

Energy transition policies should consider social equity and income distribution aspects, such as sharing the burden of a carbon price, with revenues recycled, potentially through a Just Transition Fund as set up by the EU, to finance climate-sensitive social protection programmes and systems, green skills development systems and labour transitioning efforts. Among the most successful policies are social protection programmes and systems that offer income support, enacted before the implementation of energy policies. Such measures protect the poor against an increase in the cost of basic needs and help different groups of the population transition, compared to energy subsidies, which tend to benefit rich households the most. Providing social protection gives governments room to take strong climate action.

Source: ILO 2023 based on Income Inequality Lab: Climate Inequality Report.

2 Working towards policy coherence in green and just transitions

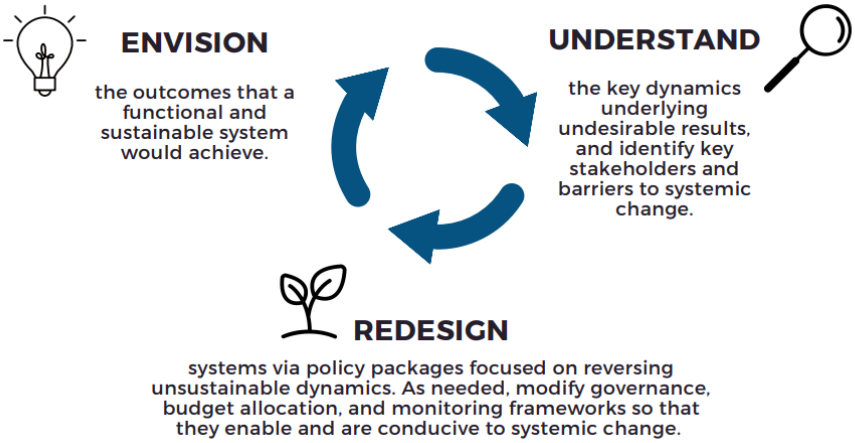
Advancing in an integrated manner the three dimensions of sustainable development – economic, social and environmental – requires identifying and managing complex trade-offs and synergies. This in turn requires ensuring policy coherence among virtually every domain of public policy, SDGs and multilateral co-operation as well as advancing international partnerships to provide global public goods, facilitate access to affordable financing and relevant clean technologies, and strengthen domestic productive and institutional capacities of developing countries. Given the distributional impacts of climate change policies across countries and different stakeholders, it is important to design and implement these policies coherently and to monitor their outcomes consistently in economic, societal and environmental terms. This is necessary to maximise the impact of green and just transitions and avoid any social backlash, particularly in developing countries, that may lead to the withdrawal or rejection of reforms.

Adopting a systemic approach for policy coherence in green and just transitions

Systemic approaches should span diverse socio-economic and population groups, territories and generations to ensure more robust and inclusive sustainable development outcomes. Integrated development planning that coherently incorporates interconnected policies will be key for developed and developing countries to align short and mid-term pressing needs with long-term objectives. This involves energy, climate, environmental, social, macro-economic, fiscal, labour, migratory, industrial, agriculture, infrastructure, transport and trade policies, among others. The capacities and resources to implement such approach may differ significantly across countries.

Interconnections exist across time and space, and impact aspects from trade to well-being. These linkages stretch from the economic domain to the realms of social, political, financial and environmental systems. For example, human well-being depends on both human and natural systems. Understanding the interactions between the natural and human systems – on a global, national and local scale – is essential to formulating effective and inclusive sustainable policies. A systems approach allows the incorporation of non-linearities, evolution, interlinkages, tipping points, emergence, trade-offs, synergies and other characteristics of the systems we inhabit (Hynes, Lees and Müller, 2020[60]). The OECD has developed a "systems innovation for Net Zero" process that can be a useful framework for policy makers in designing policies for the green and just transitions (Figure 2.1). This approach consists of three steps: i) envision the outcomes that a well-functioning system would achieve; ii) understand why the current system is not achieving such outcomes and how it could be redesigned to produce better results; and iii) identify policies to transform or redesign systems.

Figure 2.1. The systems innovation for Net Zero process for transformative climate action



Source: (OECD, 2022[61]).

The rest of this section will focus on the third point of the approach outlined above: how to identify policies and ensure their coherence in order to transform and redesign systems to become green and just. In this, policy coherence should be understood as the efforts to minimise trade-offs and build synergies between different policy areas and all members of society to achieve shared objectives. The efforts for policy coherence should always take into consideration the particularities of each country, as there is not a "one size fits all" solution. The OECD has developed a Recommendation on Policy Coherence for Sustainable Development that aims to address the interactions between economic, social and environmental dimensions of sustainable development, while mitigating any negative effects on the well-being of people here and now, elsewhere and later – one of the most difficult challenges to implementing the SDGs (OECD, 2019[62]). A key dimension of the recommendation is avoiding the negative spillover effects of various policies on the development prospects of developing countries (Box 2.1).

Box 2.1. OECD Recommendation on Policy Coherence for Sustainable Development

The Policy Coherence for Sustainable Development (PCSD) concept aims to help reduce the risk of trade-offs where progress in one SDG is made at the expense of another. It provides a framework for embedding sustainability considerations in each step of the policy process – planning, co-ordination and implementation, monitoring and reporting (OECD, 2023[63]).

The OECD Recommendation on Policy Coherence for Sustainable Development provides a framework to equip policy makers and key stakeholders with the necessary tools and institutional mechanisms to promote PCSD, address integrated economic, social and environmental goals, and accelerate progress towards the SDGs. It presents a set of eight principles, organised under three main pillars:

I. **Vision and leadership:**

1) Political commitment and leadership

2) Strategic long-term vision

3) Policy integration

II. Policy interactions:

4) Whole-of-government co-ordination

5) Subnational engagement

6) Stakeholder engagement

III. Impact:

7) Policy and financing impacts

8) Monitoring, reporting and evaluation.

Source: (OECD, 2019[62]).

Similarly, under an Action Framework proposed by the ILO, climate and environmental policies could be combined with the following dimensions to achieve green and just transitions: **1) What are the priorities for:** i) promoting inclusive, sustainable, job-rich economies; ii) ensuring social equity; and **2) How can these priorities be achieved through:** iii) managing the transitions; and iv) financing the change. Again, the aim of policy coherence among these elements is to advance green and just transitions while ensuring that none of these dimensions advance at the expense of another (ILO, 2023[58]).

What does policy coherence imply for developing countries?

In addition to challenges in mitigation, adaptation and transitioning to low-carbon economies, developing countries face financial and fiscal constraints, inadequate productive capacity and institutions, and limited access to affordable technologies, skills, knowledge and capabilities. These multi-dimensional challenges explain why climate-related projects need a whole-of-government approach. Consistency between climate policies and broader green and just transitions can offer development opportunities in terms of production transformation and diversification, food security and reduced vulnerability to extreme weather patterns, among others.

To succeed in their climate and development goals, most developing countries need international co-operation in tandem with effective and coherent domestic policies, as well as international and global systems that support their development trajectories.[2]

Many developing countries have joined the call to achieve Net Zero emissions by 2050, and many have incorporated decarbonisation and adaptation pathways in their NDCs, aiming for progressively lower carbon emissions. These countries include small island developing states, least developed countries and lower middle-income countries, which are more vulnerable to and disproportionally affected by climate change despite having contributed minimally to the stock of global emissions. At the same time, further efforts by major economies are needed, as emission levels of G20 countries are expected to rise by 10.6% by 2030 instead of being reduced by the 45% needed for the 2050 objective (Holz, 2023[64]).

Redesigning policies and building support for green and just transitions

The following sections will explore certain particularities of the main policy priorities that could: i) help countries to ensure coherence among the actions taken at a domestic level to advance green and just transitions; and ii) help international communities to ensure that actions taken at the domestic and international levels coincide and are conducive to globally effective green and just transitions. In order to address existing inequalities in responsibilities, exposure and ability to respond, developed countries

should take the lead and meet their commitments to provide technical and financial support, among others, to developing countries, taking into consideration the particularities of each national context.

Promoting inclusive, sustainable, job-rich economies and ensuring social equity

Redesigning growth, industrial and sectoral policies

Green and just transitions can be drivers for innovation and sustainable industrialisation in developing countries. National policies will have to be carefully designed to support a shift towards new models of green and just inclusive growth capable of meeting national targets of emissions reduction. Policy coherence will have a central role in helping these shifts allow producers of each country to comply with international environmental standards while mitigating negative impacts on local workers and the most vulnerable groups, according to the particularities of each domestic context. Prioritising coherence between productive policies and green and just transitions could help policy makers to support production transformation in a holistic way, with consideration of every sector and its workers. Fiscally constrained countries will need financing support and affordable access to relevant technologies in collaboration with the private sector in such transformations.

The energy sector is at the forefront of the necessary transitions from fossil fuel consumption to the utilisation of renewable sources. Yet the overarching challenge in the transition process lies in the need to decarbonise the entire production and consumption structure of economies, in a co-ordinated and coherent manner. Certain critical policy measures represent potential tipping points that could trigger a cascade of decarbonisation in sectors representing 70% of the world's GHG emissions (SYSTEMIQ, 2023[65]). Examples of such measures for developing countries include the decarbonisation of exporting sectors through industrial policies, the digital transformation and building renewable energy infrastructure and productive capacity and climate-smart agriculture.

Energy policies

To unlock opportunities from the momentum towards sustainable production and consumption in countries across the globe, policy coherence is needed to create synergies and mobilise greater investments, link industrial and innovation strategies to the green and just transitions and ensure that the standards that govern production and trade are conducive to shared gains. Currently, however, energy policies and investments exemplify policy incoherence.

Although there was record growth in renewable power capacity in 2022, fossil fuel subsidies reached historically high levels in the same year. Similarly, while global investments in energy transition technologies reached a record of USD 1.3 trillion in 2022, fossil fuel capital investments were almost double the amount received by renewable energy (IRENA, 2023[66]). Meanwhile, much of the growth in investment in renewables has been concentrated in G20 and developed countries and has focused only on selected technologies, indicating that there is space for a deconcentration of investment and for knowledge-sharing initiatives. For instance, more than 30 developing countries have not yet registered a single utility-sized international investment project in renewables (UNCTAD, 2023[67]).

The deployment of renewable energy sources, energy efficiency and technology is at the forefront of the energy transitions needed to achieve the shared goals of the Paris Agreement. In this regard, governments need to increase their efforts to ensure the right type of investment to support the right type of energy (IRENA, 2023[66]). However, in 2022, the fiscal cost of support to fossil fuel subsidies soared to a record USD 1.4 trillion as governments supported customers and business in light of the global increase in energy prices and many have tended to be poorly targeted (OECD, 2023[68]).

The world needs vast natural resources to achieve the transition towards clean energy. Six times more mineral inputs will be required for clean energy technologies in 2040 than today in order to reach Net Zero

globally by 2050 (IEA, 2021[69]). Developing countries are facing a strategic opportunity given their substantial reserves of the critical minerals required for the transition, which can build responsible and sustainable sources of energy, capitalising on value-added segments through international co-operation. Latin America and the Caribbean (LAC) and Africa are in a strategic position to supply key minerals for the energy transition. In 2017, 61% of global lithium reserves, 39% of global copper and 32% of global nickel and silver reserves were in LAC countries (OECD et al., 2022[4]). Africa, which holds 19% of the global mineral reserves needed for electric vehicles, stands to benefit from the green transition if the minerals can be processed locally. For instance, in 2022, the Democratic Republic of the Congo raised the unit price of cobalt from USD 5.8 per kilogramme at extraction to USD 16.2 per kilogramme after processing. This resulted in the country exporting USD 6 billion in processed cobalt last year, compared to USD 167 million in raw cobalt ores (UNCTAD, 2023[70]). Given the concentration in the availability and processing of the resources needed for the transition, the Secretary-General of the United Nations has created a Panel to elaborate a set of global and "common voluntary principles" for sustainable, responsible and reliable management of Critical Energy Transition Minerals in close collaboration with the United Nations inter-agency effort on Harnessing Critical Energy Transition Minerals for Sustainable Development. The Panel has developed a series of Guiding Principles and Actionable Recommendations to foster trust, justice, equity, and diversified supply chains, and to steer green investments across the critical energy transition minerals value chain (UN, 2024[71]).

As highlighted in the G20 New Delhi Leaders' Declaration, there is a need to support reliable, diversified, sustainable and responsible supply chains for energy transitions, including for critical minerals and materials beneficiated at source. International policy coherence and enhanced trust will be crucial to ensure that the development of critical minerals is undertaken in an environmentally and socially responsible manner that provides development opportunities and tangible benefits to local communities and does not result in pollution and other adverse social effects, including health impacts. Collective experience in many developing countries indicates that sustainable development objectives will be undermined by mining activities that lack effective mitigation of social and environmental risks and that do not adhere to principles of good mining sector governance. By making development strong, green and shared, the OECD Development Centre, through the Policy Dialogue on Natural Resource-based Development (PD-NR), helps policy makers in fossil-fuel producing and mineral-rich developing countries seize opportunities associated with the resources of the future, find effective solutions to transition away from fossil fuels, and engage in dialogue with key stakeholders to support and share in the benefits of the transition (Box 2.2).

Box 2.2. The Equitable Framework and Finance for Extractive-based Countries in Transition (EFFECT)

The Equitable Framework and Finance for Extractive-based Countries in Transition (EFFECT) was launched at the COP-27 Summit and is implemented in collaboration with the African Development Bank. EFFECT provides policy makers with a flexible policy toolbox to navigate through the transition and chart just, realistic and sustainable low-carbon pathways. It identifies ways of mitigating the transition's impacts on fossil fuel industries, workers, and poor households, and of preventing the risks of high-carbon lock-in and stranded assets. It accounts for short-term pressure to achieve energy security without compromising on climate objectives. It supports an equitable sharing of the transition's benefits and costs, both across and within countries. EFFECT is structured around three Pillars: i) **Pillar 1** provides guidance on how fossil fuel developing economies can **manage the risks of reliance on fossil fuels** and **reduce emissions from fossil fuel production**, processing, transportation and refining; ii) **Pillar 2** provides guidance on delivering an **equitable transition away from fossil fuels**, accounting for impacts on affected workers, communities, industries and regions; iii) **Pillar 3 articulates a vision for long-term systemic change and economy wide decarbonisation**, shaping a least cost pathway to net-zero through adoption of a circular economy and lifecycle approach to emissions reduction while enabling the achievement of sustainable development outcomes.

EFFECT implementation aims to support developing countries to chart sustainable long-term low emissions development trajectories, including by: i) decarbonising oil and gas production; ii) future proofing any new fossil infrastructure or exploring potential for repurposing; iii) ensuring that the use of fossil gas, wherever necessary for industrial or power development, enables rather than hinders the phase-in of cleaner technologies through system and project level flanking enabling measures. This includes assessing transition risks, modelling future demand for oil and gas, minimising stranded assets, avoid high carbon lock-in, and exploring green industrialisation pathways to reduce reliance on revenues from fossil fuels over time. The following EFFECT implementing tools are being designed to help policy makers strengthen capacity to plan for reduced reliance on fossil fuels over time and avoid high emissions growth pathways:

The **Gas Use Decision Tree Tool (GUDTT) & Scorecard** helps policy makers balance energy security, sustainability, and equity. Policy makers can use the GUDTT to strengthen capacity to plan for reducing reliance on fossil gas over time as cleaner technologies are phased-in and ensure that transitional gas projects achieve both development and climate objectives.

Guidance on **Methane Abatement in Developing Countries: Regulations, Incentives and Finance** intended to help oil and gas producing countries to create an enabling regulatory framework and mobilise the necessary financial resources to drive down methane emissions in the upstream oil and gas value chain, where deep emission cuts can be achieved with the greatest impact.

Lastly, a workstream on **Critical Minerals for a Just Transition** will look at the implications of "tripling renewable energy capacity globally by 2030", requiring expansion of mining in resource-rich developing countries. This work aims to improve governance and co-operation in the mining sector and along the value chain of critical raw materials, drive collective action to mitigate environmental and social adverse impacts, equitably share the benefits and costs of resource development, and ensure a resilient and sustainable supply of critical resources for clean energy manufacturing.

The Development Centre's work on critical minerals is intended to help mineral rich developing countries:

- **avoid the commodity trap and export-led growth** models and fully capitalise on the local development opportunities created by the increasing demand for critical energy transition minerals.
- foster **international policy coherence, co-ordination and co-operation** as well as **public-private stakeholder alignment and collaboration** for: 1) the collective identification of trade-offs and possible solutions, and 2) the collective assessment of opportunities for the localisation of segments of production along the life-cycle of mining projects and selected critical minerals value chains.
- to **restore trust and share benefits more equitably with local communities**, including indigenous peoples to speed up the permits and get the buy-in from local communities for the timely execution of mining projects.
- to **support exporter-importer partnerships to build more resilient, diversified and sustainable critical energy transition minerals value chains**.

Source: (OECD, 2022[72]) (OECD, forthcoming[73]).

The shift towards renewable energy presents opportunities for developing countries that could be further enhanced by policy coherence. Renewable energies involve manufactured goods that can be produced and used locally. For example, the solar value chain, in countries such as Chile that are natural-resource-based economies, encompasses high value-added activities, including the design, production and installation of sophisticated components and electronics (OECD/UN, 2018[74]). It is worth mentioning that ensuring sector resilience and encouraging investment in this kind of supply chain segment is imperative to address potential low returns and market fluctuations that may show up despite policy support (IEA, 2022[75]). The growing demand for critical minerals for renewables also creates the potential for developing countries to join new regional and global value chains (e.g. in the case of lithium and its use in battery production) and to reach a goal that has until now been only aspirational – access to affordable energy for all.

The drive to decarbonise hard-to-abate sectors such as steel and cement provides an additional source of potential demand. Developing countries rich in renewables, for example through the production of green hydrogen, could be instrumental in advancing global objectives for decarbonisation and industrialisation. According to the International Energy Agency (IEA), Africa has the potential to produce 5 000 megatons of hydrogen per year at less than USD 2 per kilogramme – equivalent to total global energy supply today (IEA, 2022[76]). Greater processing capacity can also help address concern about the potential concentration of supply of many raw materials critical for the green transition. In this regard, G20 Leaders during India's G20 Presidency highlighted the need to support the acceleration of production, utilisation, as well as the development of transparent and resilient global markets for hydrogen produced from zero and low emission technologies and its derivatives such as ammonia, by developing voluntary and mutually agreed harmonising standards as well as mutually recognised and inter-operable certification schemes.

Affordable electricity and clean cooking solutions have the potential to benefit urban and rural households while contributing to reversing biodiversity loss and furthering the preservation of forest resources. Millions of people across developing countries still lack access to affordable and clean energy. While the energy access gap has declined across the world, from 1.2 billion people in 2010 to 733 million in 2020, the number of people living without access to electricity – because they can no longer afford it – has increased by 90 million in Africa and Asia due to post-COVID economic downturns and rising prices (IEA, 2022[76]). At the average global pace of expansion, it would take low-income countries 260 years to reach the per capita electricity supply of high-income countries. At the current rate of expansion in low-income countries, this target will never be achieved.[3]

At the same time, demand for green products and processes alone does not guarantee a country's capability to manufacture the necessary amount and quality needed, nor does it ensure the ability to scale up provisions or properly integrate into global value chains. By 2030, annual investment in clean energy in emerging and developing economies alone needs to reach USD 1 trillion annually, seven times what it is today, to put the world on track to meet Net Zero emissions by 2050 (IEA, 2021[77]). Africa, for example, holds 60% of the world's best solar resources and is home to important commodities and minerals for renewables, yet it accounts for less than 1% of global production and trade in key renewable technologies (OECD, 2023[78]), and investment in renewable energy is stagnating or decreasing (UNCTAD, 2023[67]). Urgent support should be provided to developing countries, in particular LDCs, to enable them to attract significantly more investment for their transitions to clean energy. A conducive climate finance policy framework must go hand-in-hand with greater investment promotion in developing countries; in particular, multilateral development banks are called on to play a crucial catalytic role in unlocking green energy projects at the scale needed in the developing world, as most recently emphasised in the G20 Independent Expert Group on Strengthening Multilateral Development Banks.

At COP 28, parties noted that scaling up new and additional grant-based, highly concessional finance, and non-debt instruments remains critical to supporting developing countries, particularly as they transition in a just and equitable manner, and recognises that there is a positive connection between having sufficient fiscal space, and climate action and advancing on a pathway towards low emissions and climate-resilient development, building on existing institutions and mechanisms such as the Common Framework.

Policy coherence is also needed in the multilateral arena to reach consensus and implement joint efforts. In line with the UN Secretary-General's Climate Solidarity Pact and Acceleration Agenda and the New Delhi G20 Leaders Declaration's Green Development Pact for a Sustainable Future, international organisations, countries and the private sector should work together to: i) build trust, reliability, resilience and benefit-sharing in existing critical mineral supply chains; and ii) support producer countries in transforming their supply chains to harness opportunities to develop their productive, trade and regulatory capacities for long-term sustainable development. Policy coherence at the international level implies moving beyond intentions and into concrete co-operation. At the G20 summit in Bali in 2022, a Just Energy Transition Partnership for Indonesia was announced, with a funding commitment of USD 20 billion over three to five years, to be mobilised through public funding and the private sector. The G20 should conceive and guide the coherent implementation of policies to guarantee globally effective transitions. These efforts should include not only developing countries but also advanced economies, where the average citizen consumes more than 100 times more energy than citizens of some of the poorest countries.

Industrial and trade policies

Sustainable industrial policies are pivotal to transforming the production matrices of developing countries, fostering productive capacity and supporting the development of new economic sectors, while reducing GHG emissions and impacts on biodiversity and ecosystems. There has recently been a significant global increase in sustainable industrial policy, with G20 countries leading its implementation. This has the potential not only to catalyse economic growth, but also to direct growth towards greener, more inclusive and more resilient patterns (Juhász, Lane and Rodrik, 2023[79]). The surge in sustainable industrial policy has doubled over the past decade (UNIDO, 2023[80]). Governments across the G20 and beyond are increasingly using these new industrial policies to respond to a range of motivations, including driving competitiveness gains hinged on green transitions, reducing dependence on a foreign source of supply (e.g. semiconductor inputs), digitalisation, the challenge of quality jobs, as well as geopolitical imperatives. This new era targets the structural transformation of economies to pursue wider sustainability goals: not only innovation, productivity and growth but also just transitions and decent jobs, holistic approaches and multi-stakeholder collaborative implementation mechanisms (UNIDO, 2023[81]; UNIDO, 2023[82]; Mazzucato and Rodrik, 2023[83]). Effective industrial strategies should include the effective use of scarce domestic resources and avoid harmful and trade distorting subsidies. At the same time, the integration of

digital technologies in industrial production is becoming increasingly important. This involves understanding the role of data as a key component of the digital and green economy and developing policies that support the data value chain, from collection to analytics and applications. These developments call for the close alignment of industrial policy with national digital strategies, particularly in developing countries where governments can support firms that are latecomers to the digital revolution. In this regard, there is a need for coherent policies that foster digital innovation as well as green innovation, creating a balance between domestic and outward-oriented policies to encourage data-driven cultures and support domestic data economies (UNIDO, 2023[84]).

Strengthening the capacities of civil servants in sustainable industrial policy making is therefore essential to ensure proper design and implementation and to accelerate economic transformation, while meeting the socio-economic and environmental aspirations of developing countries. This calls for a strong focus on inclusive and sustainable industrial development as a core principle guiding industrial policies. Such a focus will help G20 countries to integrate the social, economic and environmental dimensions of sustainable development in industrial policies. It will strengthen the ability of G20 governments to alleviate poverty, create quality employment and achieve environmental sustainability, thereby contributing to the overall goal of fostering green and just transitions.

G20 governments should also help developing countries to strengthen their capacity to design policies that build strong industrial systems. This should be done through a multi-stakeholder approach aimed at developing an enabling environment for capital to flow in and reach new markets, and to help entrepreneurs, businesses, investment institutions and countries to mobilise investment at all stages in the process and to develop pro-business policies and legislation (UNIDO, 2022[85]).

Industrial policies are also deeply linked to trade. Promoting investment in green manufacturing should aim to strengthen the global competitiveness of domestic industries, with subsequent effects on employment while avoiding adverse spillover effects on trading partners. Some G20 countries are launching strategic industrial programmes to tackle climate change. Following approval of the European Green Deal in June 2021, the European Union introduced legally binding climate targets to reduce net GHG emissions by at least 55% by 2030 in its Fit for 55 package and adopted its Green Deal Industrial Plan (European Commission, 2023[86]). Similar measures have been adopted in the United States of America following enactment in 2022 of the Inflation Reduction Act, which seeks to improve US economic competitiveness, innovation and industrial productivity through the expansion of energy-related federal income tax credits and place-based policies to address transition issues (Guedel, 2023[87]). The act earmarks USD 369 billion to scale up domestic green industry and road infrastructure. This is attracting massive investments in battery and electric car manufacturing. These trade policy actions are leading to trade tensions. The G20 and multilateral institutions should encourage the alignment of policies to maximise synergies with other SDGs and minimise impacts on poorer countries and people (UNCTAD, forthcoming[88]).

To avoid the unintended consequences that domestic green transitions can have on trade and to ensure that every country can implement their own green and just transition, the G20 can advocate for a wider package of trade measures to ensure affordable access to low-carbon technologies for developing economies that are transitioning away from a fossil fuel-dependent economic model and those most at risk of climate crisis. This includes encouraging affordable green technology transfer globally, through technical and financial co-operation, for example by guaranteeing that bilateral and multilateral trade agreements are supportive of transfer initiatives, pre-negotiating price and access modalities by type of country, and by recognising the particular concerns and needs of LDCs. The G20 could explore strategies that align IPRs and trade measures with the capacity of developing countries to produce and export their own endogenous green technologies, thus establishing a sound and viable technological foundation. As sustainable industrial and trade policies can prove particularly challenging for developing countries with limited productive capacity and fiscal constraints, the G20 can play an important role in promoting social

standards, inclusive policies and fostering international dialogue and collaboration (see below on enhancing international policy coherence).

Infrastructure

Bridging the very large infrastructure investment gap in developing countries can support green and just transitions by expanding access to basic services and building resilience against extreme weather events. Developing countries are finding it difficult to finance infrastructure at the necessary scale, and they also lack bankable projects that global investors could finance, especially at subnational level (OECD/UCLG, 2022[89]). Failure to ensure that infrastructure is developed as sustainably as possible in developing economies would cause the world to overshoot its climate targets massively (IEA, 2021[77]).

To ensure policy coherence, the development of Nature-based Solutions (NbS) for infrastructure should be prioritised as much as possible. NbS use the features and complex system processes of nature – such as its ability to store carbon and regulate water flows – and provide cost-effective and resilient alternatives to build resilience for vulnerable countries such as SIDS and LDCs. Such solutions can be used to ensure sustainable marine and coastal management, addressing the issue of sea-level encroachment, and offering hazard protection via shoreline stabilisation as well as pollution and flood control.

Sustainable infrastructure projects face a significantly higher interest rate compared to developed countries, if they can access it at all. For example, to realise Africa's sustainable development objectives, an estimated annual investment of USD 68-108 billion will be required (OECD/ACET, 2022[90]). Financing from institutional investors and development banks, including national ones, could be instrumental in overcoming this investment gap. However, these large investors have been largely absent from multilateral initiatives to mobilise private capital. In addition, many development banks are experiencing undercapitalisation. These factors inhibit reaching the scale required for development finance to go "from billions to trillions" (Halland et al., 2021[91]).

Exploring options to transition-proof new infrastructure and repurpose existing fossil-fuel infrastructure can enable low-carbon re-use to mitigate risks of stranded assets and high-carbon lock-in, while accelerate the pace and reduce the capital expenditure needs of the transitions. For example, repurposing coal-fired power plants for generation of renewables could offer a cost-effective way to add green power to the grid. Gas pipelines can be built or repurposed to transport carbon dioxide (CO_2) or hydrogen fuel, and depleted oil and gas reservoirs can store sequestered CO_2 via Carbon Capture and Storage (CCS). Recent reports highlight mechanisms to prevent carbon lock-in, emphasising comprehensive transition finance definitions, standards and policy frameworks for sustainability-linked instruments, sunset clauses for use of fossil fuels, national sectoral emissions pathways as a guide for technology roadmaps, and flanking measures (OECD, 2023[92]).

Designing policies that create new formal jobs and green skills

Advancing green and just transitions requires the promotion of inclusive economies that provide decent jobs for all while staying within the resource limits of our planet. Ensuring equal access to quality employment opportunities for all, without discrimination, is key to achieving social equity. Policy coherence will be necessary to ensure the protection of those who risk falling behind in the transitions, with measures tailored to harness their potential. Global labour markets and migration, which are constantly evolving as technology advances and are an inevitable feature of the development process, will require continued monitoring and support to ensure sustainable development.

As noted in Chapter 1, the shift towards low-carbon development will bring about deep-reaching transformations of existing economic structures. This will create winners and losers – at least temporarily. A balance must be found in the social, economic and institutional trade-offs arising from the transitions, and this must be communicated effectively. Integrated planning, supported by coherent and inclusive

policies, will be key to smoothing the process. To support vulnerable groups and impacted sectors, this planning must take account of potential short-term challenges and costs. The impact on labour markets will be further impacted by other transitions, notably automation and artificial intelligence. Workers in jobs susceptible to automation often lack the skills needed to transition to green jobs, suggesting a more limited potential for green and just transitions to reinstate displaced labour caused by automation (OECD, 2023[93]).

Focusing narrowly on jobs and sectors that account for the highest share of GHG emissions, such as coal and oil, misses the complexity of the labour market impact of decarbonisation and its social implications including for persons and communities indirectly affected and dependent on these sectors. This puts the implementation and success of climate mitigation policies at risk.[4] Enhanced social dialogue among sectors will be necessary to generate innovative industrial policies and strategies that establish an enabling environment that can provide governments, employers, workers and the new generations with the necessary skills to transition into new sectors and occupations and ensure social protection systems to support people and their transitions. Such intersectoral dialogue will be imperative to ensure robust support mechanisms to guarantee that no-one is left behind in the transition process. Within sector dialogue can be facilitated by social and solidarity economy entities with a long experience in providing upskilling and capacity to their members so as to integrate the most marginalised segments of the population and give them a voice.

Policy coherence could help to mitigate the impact on workers and communities that are heavily reliant on carbon-intensive and extractive industries. Several measures such as linking transition pathways with active labour policies such as retraining, reskilling and integrating workers into “greener” sectors and social protection policies throughout, could be deployed. These just transition-aligned developmental strategies can help to achieve climate goals while improving social and economic outcomes (UNCTAD, 2022[94]). The ILO’s “Guidelines for a just transition towards environmentally sustainable economies and societies for all”, adopted in 2015, offer a policy framework and guidance on how to formulate, implement and promote just transitions throughout the policy making process (Box 2.3).

Policy coherence to ensure that green and just transitions are globally effective can also offer development opportunities and help to accelerate progress towards the SDGs. To achieve SDG 8 (Decent Work and Economic Growth), an estimated 600 million new jobs will need to be created by 2030 (ILO, 2022[95]). In lower-income countries, where agriculture plays an important role in the economy, as a source of employment and income, climate mitigation actions should primarily focus on ensuring sustainable productivity growth in agriculture, given that workers tend to be the most affected by rising temperatures. Positive externalities can be large as these actions can advance several SDGs on issues such as food security, gender equality (considering that over 60% of all working women in southern Asia and sub-Saharan Africa are employed in agriculture, and that they are often unpaid or poorly paid), biodiversity and adaptation (ILO, 2018[31]). However, if not properly planned, climate action can adversely impact progress made in achieving the SDGs. This in turn can prevent the social consensus needed for putting in place climate mitigation policies and can even lead to social unrest and political instability. Thus, developing countries will need to design policies carefully to capture co-benefits, including adaptation benefits, while minimising trade-offs between the climate imperative and the SDGs.

Box 2.3. Principles of the ILO Guidelines for a just transition

The ILO's "Guidelines for a just transition towards environmentally sustainable economies and societies for all" were unanimously adopted in November 2015 by its constituents – governments and workers' and employers' organisations. The guidelines lay out the following principles:

- Strong social consensus on the goal and pathways to sustainability is fundamental.
- Policies must respect, promote and realise rights at work.
- Policies should take account of the strong gender dimension of environmental challenges and opportunities. Specific gender policies should be considered to promote equitable outcomes.
- Policy coherence across economic, environmental, social, education, training and labour portfolios can generate an enabling environment for the transition.
- A just transition framework should anticipate impacts on employment, social protection for job losses and displacement, skills development and social dialogue, including the right to organise and bargain collectively.
- Policies and programmes need to be designed in line with the specific conditions of countries, including their level of development, economic sectors and types and sizes of enterprises.
- In implementing sustainable development strategies, it is important to foster international co-operation.

Source: (ILO, 2015[96]).

To ensure that green and just transitions are as smooth and inclusive as possible, countries should prioritise the strengthening of social protection systems, combined with active labour market policies and skills training, while promoting social dialogue. However, social protection coverage in developing countries is currently too low to minimise the job and income risks caused by environmental degradation and the green transitions. For instance, only 33% of the population in Southeast Asia have at least one area of social protection (UN ESCAP-ILO, 2021[97]). Stronger social protection initiatives – such as Brazil's Bolsa Familia, India's Mahatma Gandhi National Rural Employment Guarantee Scheme, Kenya's Hunger Safety Net, Mali's Adaptive Social Protection for Resilience or the World Food Programme's R4 Rural Resilience Initiative – have boosted resilience to climate impacts (Costella et al., 2021[98]; Kaur et al., 2019[99]; Solórzano and Cárdenes, 2019[100]).

A UN resolution on promoting the social and solidarity economy (SSE) recognises the role that SSE entities can play as local anchors in providing decent work opportunities; empowering women, including women in rural areas, youth, persons with disabilities and those in vulnerable situations; and recognising their role in building community and social cohesion and fostering diversity, solidarity and protection and respect for traditional knowledge and cultures, including among indigenous peoples and local communities. The resolution recognises that social dialogue and the protection of all labour rights contribute to the overall cohesion of societies and are crucial for a well-functioning and productive economy.[5] Close dialogue with indigenous peoples could prove particularly useful because even if they steward approximately 20% of the planet, this small share contains 80% of the world's remaining biodiversity. Indigenous peoples' knowledge and expertise on the use of natural resources could prove useful for traditional science to ensure effective long-term conservation of biodiversity (IISD, 2022[101]).

How to manage and finance the process of promoting green and just transitions

Building societal support and institutional co-ordination

Strong policy co-ordination across different levels and sectors of government will be required to achieve holistic green and just transitions. Establishing policy coherence as a target can help policy makers to: i) integrate the necessary policy dimensions for a green and just transition more effectively over the short, medium and long-term; ii) better understand the impacts, synergies and spillovers of sustainable policies; and iii) reconcile local, regional and national policy objectives with internationally agreed objectives.

To ensure that all necessary policies are considered when co-ordinating green and just transitions, it is imperative to establish effective and inclusive institutional and governance mechanisms (OECD, 2021[102]). The complexity of designing and implementing green and just transitions demands not only a co-ordinated centre of government (CoG) and effective ministries, but also the participation of public institutions. For example, climate policies, which are mostly driven by environment ministries, stand to gain from a broader perspective, such as SDG implementation. This approach not only enhances innovative governance but also strengthens decision-making institutions. Indeed, SDG implementation is led mostly by planning and finance ministries that have cross-sectoral decision-making bodies. Many are within or report to the office of the president or prime minister to ensure accountability and inclusivity. The Italian approach, notably featuring the incremental path to mainstream sustainability, provides valuable insights for policy makers aiming to align their respective policy cycle with sustainable development, in particular with broader SDGs (OECD, 2022[103]).

Policy coherence must also occur vertically, among the CoG, regional and local governments. According to the OECD Subnational Government Climate Finance Hub, subnational governments account for 63% of climate-significant public spending and 69% of climate-significant public investment in 33 OECD and EU countries (OECD/UCLG, 2022[89]). Better co-ordination across levels of government is key. Direct benefits include: i) avoiding policy and budget duplication and overlap; ii) responding to citizens' growing demands for better participation and service delivery; and iii) cost reductions and positive synergies, e.g. water governance determined by hydrological instead of administrative boundaries (OECD, 2014[104]).

Certain governmental tools can help to enforce policy coherence and the co-ordination of green and just transitions across ministries, subnational territories and governments, time and priorities. For example, National Development Plans (NDPs) and Nationally Determined Contributions (NDCs) can help to link short-term policies with longer-term objectives, support consistent implementation over time, provide comprehensive logic to evaluate policy spillovers and provide a multi-dimensional approach by setting cross-cutting objectives (Table 2.1).

Table 2.1. Governments can apply a range of tools to shape green and just transitions

	Roles of government at all levels in green and just transitions				
	As a leader	**As a regulator**	**As a consumer**	**As an investor**	**As a facilitator**
Tools and policies of government	Policy coherence for sustainable development; green and gender budgeting; awareness-raising campaigns; emission reduction targets for public activities; public investment in R&D and access to technology; open data and statistical development to anticipate future needs; support for MSMEs.	Sustainable labelling and standards; land use mapping and spatial planning for sustainable land management; binding GHG reduction targets; energy efficiency standards; due diligence standards for responsible business conduct.	Green supply chains and green public procurement through responsible business conduct due diligence.	Earmarked funding; pre-investment analysis with clear sustainability, gender and impact criteria; taxonomy for sustainable activities.	Reskilling and training; green and redistributive subsidies and incentives; feed-in tariffs; environmental taxes; social climate funds; multi-stakeholder dialogues and platforms.

Source: Authors' elaboration based on (OECD et al., 2022[4]).

The availability of skilled civil servants and updated data will be crucial for developing planning tools. Up to date, disaggregated environmental data is essential for setting baselines and targets and for measuring progress towards each goal. For example, more science-policy evidence is needed on how the sustainable use of biodiversity, including in carbon sequestration, could help advance SDGs and climate goals. The same is true for "blue" carbon, as mangroves, salt marshes and seagrass can absorb carbon up to 50% faster than forests on land and are increasingly recognised as an important nature-based solution, which represents a comparative advantage for developing countries. Further efforts are needed from the public and private sectors to develop models and data that illustrate these comparative advantages. The G20 can help to promote regional centres of excellence that could help fill these capacity gaps.

Building broad acceptance to invest in, develop and implement policies for green and just transitions may present challenges in many developing and emerging economies. In Latin America and the Caribbean, 68% of the population recognise climate change as a serious threat (OECD et al., 2022[4]). In other regions with high exposure to climate risks – Middle East-North Africa, Asia-Pacific and Africa – a 2019 assessment showed that less than half of the population recognised that climate change posed a very serious threat to their country in the next 20 years (33%, 41% and 47%, respectively) (Lloyd's Register Foundation, 2020[105]). Shifts of resources and priorities among economic sectors and political constituencies for purposes linked to the transitions may trigger a clash of interests among incumbents. Therefore, establishing mechanisms to reach consensus around common transition objectives will be fundamental (OECD et al., 2022[4]).

Inclusive processes for participation will be needed to broaden the consensus needed for green and just transitions and to strengthen new social contracts. When building inclusive and shared platforms for dialogue and establishing co-designed policy frameworks, governments will need to convene a broad range of stakeholders, including workers, youth, women and disadvantaged groups, as well as the public sector and businesses of all sizes. Attending to and understanding each particularity can better position policy makers to identify actions to support coalitions, realign incentives and amplify the contributions of non-state actors in advancing green and just transitions (Worker and Palmer, 2021[106]). By representing diverse perspectives, these efforts not only have the potential to promote policy coherence but also have the capacity to rally stakeholders around new social contracts centred on green and just transitions.

Trust in government is an essential element for incentivising stakeholders to commit to new agreements. To build trust across stakeholders, two essential elements are needed: transparency and active efforts to reduce inequalities. Transparency, rule of law and the clear resolution of environment-related legal issues at every stage of the policy-making cycle can incentivise the commitment of a full range of stakeholders to new policies (see (OECD, 2023[107]) and (OECD, 2022[108])). Clear efforts to reduce inequalities could transmit a positive message to vulnerable groups and encourage their participation in the decision-making process. As green and just transitions may involve significant trade-offs, the implementation of active social and labour policies, together with effective communication strategies, could strengthen the credibility of government action.

As businesses represent a significant share of overall economic activity and its subsequent environmental impact, the private sector is a key player in moving the green agenda forward. To ensure green and just transitions, businesses of all sizes and across all sectors need urgently to adopt climate change mitigation and adaptation plans. This includes small and medium-sized enterprises (SMEs), which account for about 40% of business-sector GHG emissions in Europe (OECD, 2023[109]) and up to 50% at the world level (International Trade Center, 2021[110]).

Nonetheless, evidence suggests that the integration of just transition considerations in business climate mitigation and adaptation actions remains mostly aspirational, with few firms demonstrating meaningful implementation beyond commitments. For example, only 3% of the 150 most carbon-polluting firms have just transition plans developed in consultation with key stakeholders (Climate Action 100+, 2023[111]), while only 6% of the world's 450 largest companies are able to demonstrate meaningful engagement with

workers impacted by the transitions (WBA, 2021[112]). This is due in part to the limited number of practical and authoritative standards available, and to a narrow interpretation of the concept, predominantly focused on state actors. Responsible business conduct (RBC) sets out that all businesses must address the negative impacts of their operations, supply chains and other business relationships while advancing green and just transitions and overall sustainable development where they operate (OECD et al., 2022[4]). Efforts need to be placed on engaging smaller businesses and ensuring that such standards and regulations are relevant and proportionate, given that they typically face greater challenges than larger firms in screening the regulatory environment and reporting on their operations (OECD, 2021[113]).

The *OECD Guidelines for Multinational Enterprises on Responsible Business Conduct* (henceforth "the OECD Guidelines") are the leading international standard outlining government expectations on what it means for businesses to behave responsibly. As such, they provide meaningful and practical guidelines on how the private sector can contribute to the green and just transitions through their climate action. The OECD Guidelines constitute the only international agreement asking businesses to align their GHG emissions and impacts on carbon sinks with internationally agreed temperature goals (since their update in 2023), while also considering the social impacts of such actions. They lay out the foundation for how businesses can contribute to green and just transitions towards greener and low-carbon industries (OECD, 2023[69]). RBC principles and standards embedded in the OECD Guidelines are operationalised through risk-based due diligence, a process by which companies can identify, prevent, mitigate and account for how they address actual and potential risks and impacts, on people and the planet, that are associated with their operations, products and services (OECD, 2023[114]; OECD, 2018[115]).

Co-ordinated institutions and policies can boost the financing of green and just transitions

Policy coherence can optimise the synergies between climate action, sustainable development and a more efficient allocation of financial resources. This is crucial given that the sum of all spending gaps to meet the different SDGs has increased from USD 2.35 trillion in 2015 to more than USD 4 trillion per year today as a result of underinvestment and additional needs. Climate and sustainable development finance needs could be reduced through coherent policies that take co-benefits and trade-offs into account. By connecting environmental, economic and social priorities, a multi-stakeholder coalition can be more readily established to garner stakeholder support and overcome vested interests, ultimately breaking deadlocks (see above).

The financing for green and just transitions will need to emerge from a collaborative endeavour involving the broadest array of stakeholders possible. Developing countries are projected to need around USD 2.4 trillion each year between 2026 and 2030 (OECD, 2023[116]). To close this investment and financing gap, developing countries will need to mobilise a range of financial sources across public, private, domestic and international finance. Bringing in international investors lowers the spread on debt finance by 8% on average in developing countries; adding in multinational development banks (MDBs) lowers it by 10%; and combining international, MDB and government stakes in public-private partnerships reduces the spread by 40% (UNCTAD, 2023[117]).

In a context marked by high levels of indebtedness, rising interest rates, reduced fiscal space and geopolitical uncertainty, the multiplication of investment sources and types, including in the form of grants and concessional financing, will be essential to broaden room for manoeuvre and finance the green and just transitions. In 2020, the average tax-to-GDP ratio was 16% in Africa, 19.1% in Asia-Pacific and 21.9% in LAC, well below the OECD average of 33.5% (OECD/ATAF/AUC, 2022[118]).

Policy coherence can help attract different sources of quality investment and catalyse available resources to advance green and just transitions. Delivering decarbonisation targets will require the correction of misaligned incentives; including the gradual phase-out of inefficient and often regressive subsidies for fossil fuel, agricultural support and reforming harmful fisheries subsidies; and the implementation of fair carbon pricing that retains revenues domestically and levels the playing field between emissions-intensive and greener technologies (OECD, 2022[119]; OECD, 2023[120]). Channelling some of the savings and new

revenue streams towards renewable energy or quality public services and stronger, better-targeted social protection systems can bridge existing inequalities while building public support for the green agenda (see above).

Policy makers will have to ensure policy coherence in reducing fossil-fuel dependence without causing price pressure on vulnerable households, which already spend more than half their income on food and energy (IRENA and ILO, 2022[121]) and MSMES. Although vulnerable households and MSMES would benefit the most from climate action, given their exposure to climate change impacts, they may oppose policies that render energy supplies more expensive if no mitigating measures are offered. A variety of tools, policies and institutions can help G20 members and developing countries achieve policy coherence between the sustainable transformation of productive models and inclusive development models. Even if some countries have been criticising the negative spillover effects of carbon pricing instruments, especially carbon taxes, they are becoming a more commonly accepted instrument to change behaviour towards climate-friendly consumption and production. Progressive carbon pricing schemes that retain revenues domestically can be designed to re-invest tax revenues in social protection systems and cash transfers that ensure income security for those negatively affected by rising energy prices and subsidy reform (Chancel, Bothe and Voituriez, 2023[122]; IRENA and ILO, 2022[121]; OECD, 2022[56]).

When raising additional revenues, policy makers should ensure that the new financing sources directly fund environmental priorities. Building and strengthening capacity and regulatory frameworks to harness the potential of innovative green finance tools – such as green, social, sustainability and sustainability linked (GSSS) bonds, debt-for-nature swaps, catastrophe bonds and natural disaster clauses – can be particularly useful for developing countries, including at the subnational level, and will require a reskilled civil servant work force (OECD, 2023[123]). To consolidate a capital markets-based approach to sustainable finance that contributes to increased private sector financing, governments should focus on facilitating the interoperability of standards and taxonomies across frameworks to certify GSSS bonds across regions and internationally. In 2022, emerging markets represented 16% of total issuance (USD 11.5 billion), with the Middle East and North Africa becoming the largest source of new green bonds (excluding China) (IFC/Amundi, 2023[124]). In LAC, GSSS bonds issuance in international markets between 2014 and 2021 reached an accumulated USD 73 billion, of which USD 31 billion came from green bonds (OECD et al., 2022[4]). Finally, by scaling up debt-for-nature swaps, catastrophe bonds and catastrophe clauses, policy makers will be able to ensure the coherence of policies dedicated to fiscal volatility, stabilising budgets and building up fiscal reserves to finance the transition (OECD et al., 2022[4]). The G20 has a key role to play in supporting developing countries in this area.

Multilateral, national and subnational development banks have a critical role to play in financing green and just transitions. Policy coherence between multilateral organisations, international forums such as the G20 and domestic policies, such as the effective design and implementation of sustainable finance alignment approaches, could ensure that development banks recapitalise and align their mandates in accordance with the SDGs and climate mitigation and adaptation and improve effectiveness and global interoperability (WB/IMF/OECD, 2023[125]). MDBs can enhance the deployment of targeted blended finance to de-risk low carbon and other green projects and deepen local capital markets and can enhance the enabling environment to scale up private investment in low-carbon projects. However, the use of de-risking elements should be considered, as the downgrading of LDCs by incorporating physical risks into the credit models of credit rating agencies and financial institutions discourages investment in their bonds. Private risk capital also has a large role to play, with green-tech start-ups emerging as an important stakeholder in developing critical technologies and solutions. Ensuring that small businesses can finance their green and just transitions requires engagement across a range of actors in the financial ecosystem, including public and private financial institutions, regulators, rating providers and providers of business development services. The OECD Platform on Financing SMEs for Sustainability, launched at COP26 and bringing together key stakeholders from the SME financing ecosystem, highlights the need to take SME considerations into account in regulatory and disclosure requirements, and calls for clear standards and enhanced

co-ordination at the international and national levels (OECD, 2021[126]). Meeting the call for an increase of USD 500 billion in annual MDB disbursements, as proposed by the UN SDG Stimulus and the G20 Independent Expert Group on Strengthening Multilateral Development Banks, will be key in ensuring MDBs can play the crucial mission outlined above. The G20 should continue to be a forum to co-ordinate action and promote policy coherence among MDB stakeholders, the private sector, regulators and policy makers. Such co-operation, combined with technical assistance, can improve the flow of climate and sustainable development finance to support countries in investment planning, project preparation and developing their capacity to exploit synergies and co-benefits, while putting in place measures and policies to address trade-offs. The G20 can bring forward the particular needs of least developed countries who are most vulnerable to climate change, highlighting their need for grant-based, non-debt-creating development finance instead of overreliance on financial-sector instruments or private-sector engagement. Similarly, the G20 should stress the need to align official development assistance (ODA) and private flows with national development priorities through clear agreements between donors and beneficiaries.

Enhancing international policy coherence for advancing green and just transitions

Efforts beyond the national level are required to address the challenges of achieving low-carbon development targets and navigating green and just transitions. Regional and multilateral co-operation is necessary to ensure policy coherence and the successful implementation of climate change mitigation and adaptation policies. To transition to a sustainable development model, developing countries need a strong convening power to enhance a unified voice in multilateral environmental agendas.

In an increasingly interdependent world, the actions and policies of countries can positively or negatively affect another country's ability to achieve the SDGs. These international spillovers can lead to scenarios where one country makes progress on its SDGs at the expense of another or misses out on potential positive synergies. Interdependence becomes even more crucial when considering that 97 SDG targets, or 57% of all 169 targets, entail transboundary elements (OECD, 2019[127]). Externalities, both positive and negative impacts, need to be understood, measured and managed in order to avoid situations where one country's achievements are counteracted or neutralised by transboundary policies implemented in third countries.

There is growing recognition that transition policies may not be fully effective if designed and implemented by countries in isolation. Based on emerging practices, and with technical support from multilateral co-operation, many countries are taking decisive action in their commitments to reduce emissions by developing their own climate policies. The G20 is well placed to review and address the international dimension of the transitions to minimise negative spillover of national actions, through macroeconomic and trade policies. The G20 could support better alignment and possible synergies in policy making and implementation by sharing experiences of transition trajectories, thus facilitating mutual learning. Some policy areas are discussed below. In doing so, the G20 can inform the UNFCCC process and rely on existing initiatives such as the OECD's Inclusive Forum on Carbon Mitigation Approaches (IFCMA), among others.

In this light, advancing green and just transitions requires an important degree of co-ordination at the international level, and mechanisms for accountability and reporting might prove especially useful to address policy incoherencies that may surface when the green policies of one country may unintentionally negatively impact other countries. Examples include the Inflation Reduction Act in the United States of America and the European Green Deal, which have international as well as domestic implications. US tax credits conditional upon the purchase of domestically produced goods not only encourage shifts in production patterns but also incentivise firms to relocate to the United States, potentially impacting trade dynamics within the country and raising concerns in developing countries about firms' capacity to meet new standards. New environmental regulations and standards in the EU Green Deal can become a barrier for companies wishing to maintain or gain access to the European market. Companies, many MSMEs with

limited capacity, will need to adapt quickly to these new international environmental standards and regulations. Among the most urgent of the EU measures are incorporating traceability mechanisms and adopting technologies that will allow assessment of the degree of deforestation embedded in commodities and their derived products (European Commission, 2023[128]). Such green regulations and standards will have important repercussions for the trade opportunities of other countries, depending on the capacities of firms to comply with the new norms.

Green transition measures will necessarily affect developing regions. Given LAC's concentration in exporting agricultural goods and raw materials to the European Union, the Green Deal policies will potentially have a large impact (OECD et al., 2022[4]). For example, some products will require proof they are deforestation-free, among other requirements. As such, producers will need to invest in new technologies, apply new due diligence processes and provide timely information requested by operators in Europe, something smaller producers will need support to meet.

Likewise, the EU Carbon Border Adjustment Mechanism (CBAM), the world's first ever tax on emissions of carbon-intensive imports aimed at mitigating carbon leakage, may have heterogenous impacts on developing countries. The CBAM, scheduled to be phased in from 2026 to 2034, could result in a decrease in exports from developing countries and regions. Concerns have been expressed about carbon leakage, where production and emissions may shift to countries with less stringent regulations, and about the vulnerability of LICs and LDCs who may be disproportionately affected, given their limited resources for compliance (UNCTAD, forthcoming[88]). Countries such as the UK have already announced their own carbon import tax by 2027 and Canada and Australia are considering its introduction. The design of border carbon adjustment measures has important implications for their impact, and there are a number of different challenges and opportunities for countries to consider in this respect (OECD, 2020[129]), ranging from enlarging domestic capacities to measure and report carbon intensity of products to an eventual move towards international interoperability through accurate and granular carbon intensity metrics (UNCTAD, forthcoming[88]; OECD, 2024[130]). A regular dialogue between countries implementing border adjustment measures and developing countries would help identify and address their unintended consequences.

Enhancing international policy coherence requires taking explicit proactive policy measures that identify and balance possible cross-border spillovers. It requires having a strategic vision to address areas of incoherence, putting in place mechanisms and spaces to debate and engage with stakeholders on these issues, as well as monitoring and follow-up tools (OECD, 2021[102]). International policy coherence also requires consideration of measures that promote co-operation with affected countries by fostering adaptation to new regulations and standards, building capacities and taking concrete steps towards low-carbon transitions in partner countries. More broadly, co-operation around these issues should be conducive to the sustainable production transformation or re-industrialisation of these countries.

It is crucial to consider the need, among partner countries, to cultivate the capacity to adhere to green and just transition new regulations, for example among vulnerable producers, MSMEs, small farmers and fisherfolks. This demands granular evidence and improved understanding of the highly diverse transition pathways across firms, sectors, places and stages of business development. Clear communication strategies and sufficiently long transition periods for compliance would also enhance international policy coherence in advancing green and just transitions. Given the climate urgency, transition periods have been narrowed and will inevitably create trade distortion for developing countries unless enhanced support is provided.

The 2015 Paris Climate Agreement provides the foundation for a mutually reinforcing framework of climate policies – including economic, social and environmental measures – aiming to hold the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels. This ambition has become a compass for global

action on climate change, underpinning government and business plans to significantly reduce greenhouse gas emissions. Paris signatories have pledged to reach Net Zero greenhouse gas emissions, many of them by 2050. For many developing countries, however, achieving such targets critically depends on access to substantial and concessional financial support, as suggested by the principle of CBDR-RC, as well as outlined by Article 9 of the Agreement.

Subsequent meetings of the annual UN conference on climate change (Conference of Parties, or COP) have reconfirmed the global commitment to combat the climate emergency. The Solidarity and Just Transition Silesia Declaration, adopted at COP24 in 2018, provides further directions on how to advance green and just transitions. At COP28, held in 2023, pivotal developments in climate finance underscored the ongoing global commitment to addressing climate change. The conference highlighted the escalating gap between the financial needs of developing countries, estimated at USD 5.8–5.9 trillion for the pre-2030 period, and the support actually provided for implementing their NDCs. Notably, the adaptation finance needs of developing countries are projected to reach USD 215-387 billion annually until 2030, with an additional requirement of USD 4.3 trillion per year for clean energy until 2030, increasing to USD 5 trillion annually until 2050 for achieving Net Zero emissions by 2050.

COP28 emphasised the critical importance of scaling up grant-based, highly concessional finance and non-debt instruments to facilitate green and just transitions. COP28 also recognised the urgency of scaling up adaptation finance, with a commitment to convene a high-level ministerial dialogue, and urged developed countries to report on doubling adaptation finance from 2019 levels by 2025. A dialogue on implementing global stocktake outcomes was established, further highlighting the commitment to collective efforts in tackling climate change (UNFCCC, 2023[131]). Nevertheless, countries have expressed their concerns around accessing funds. These concerns underscore the need for more transparency in the allocation and utilisation of international financial resources aimed at addressing climate-related challenges. A strategic role for the G20 is to keep promoting the scaling up of financial support and highlighting its impact on developing countries. The G20 should advocate for funds to prioritise the most vulnerable, especially LDCs and SIDS.

Finally, developing countries have long-standing experience with the social and solidarity economy and the creative economy, and are increasingly interested in the blue, green, circular and care economies. The transitions could be facilitated by sharing these experiences among developing countries, including through South-South and multilateral co-operation to strengthen institutions and expand sustainable value chains. Not just the trade and market access policies of G20 countries and advanced economies, but also South-South linkages have an important role to play in enabling and facilitating green and just transitions. The UN Global Accelerator on Jobs and Social Protection for Just Transitions and the UNCTAD South-South unit can help countries to better align policies and share lessons learnt to maximise the positive social impact of moving to a sustainable economy and society by creating decent employment and extending social protection simultaneously.

3 Policy recommendations for the G20 and developing countries

Moving green and just transitions forward in a globally effective and inclusive manner and ensuring that they promote all dimensions of sustainable development is an immense challenge. Addressing this enormous challenge of policy coherence demands co-ordinated action at the local, national and global levels. It requires fostering collaboration and solidarity among a diverse set of actors both within and across borders. Developed countries should lead the way and support developing economies in accelerating mitigation and adaptation towards more inclusive, resilient and sustainable systems. In addition to meeting the large financing needs associated with the climate and other SDGs agenda, green policies must be able to bring all interests on board so that the transitions are more inclusive, legitimate and lasting. Given the complex interconnections among economic, social and environmental considerations and among countries, policy coherence can help policy makers better understand the impacts and spillovers of synergies and trade-offs and ensure that the ultimate goal remains people-centred transitions that address systemic inequality and improve the lives of all.

Ensuring green and just transitions is important for all countries at all levels of development. It is also important for all socio-economic groups and sectors – by no means limited to the job market or energy supply – and in urban and rural areas alike. There is no “one size fits all” approach to a single green and just transition, but rather country-specific recipes for each transition. Policies and programmes need to be designed following country-specific conditions, including level of development, range of economic sectors, productive capacity, the type and size of enterprises, as well as institutional development and the capabilities of key stakeholders, including civil servants. Policy coherence throughout green and just transitions entails pursuing an integrated climate and development agenda that:

- is anchored in a new transformative development and economic model that links economic, environmental, social and institutional factors, while also achieving the 1.5C goal with the overarching objective of improving the well-being and lives of all population groups everywhere, in line with the SDG;
- is supported by a robust, inclusive, affordable and accessible international climate and development finance architecture that is of a sufficient scale to meet the challenges of ensuring just transitions at the domestic level by all;
- restores the intrinsic links between human welfare and ecosystems, thus breaking the vicious cycle of resource depletion, inefficiency, high carbon emissions, biodiversity loss, and waste and pollution;
- addresses and avoids exacerbating systemic inequalities or creating new ones within and across countries, and develops mechanisms to support and bring along those adversely affected;
- creates new socio-economic opportunities – such as quality jobs, improved public services and social protection systems, sustainable infrastructure development, new resilient productive capacities and business opportunities, new sources of affordable finance and safe, orderly and regular migration pathways – and recognises that the nature and pace of the transformation as well as development pathways will vary within and across countries;

- will differ and offer support according to countries' circumstances, development priorities, starting points, natural resource endowments, productive capacity, demographics, historical and current emissions and capabilities.

The G20 has an important role to play in promoting policy coherence among all of these principles towards green and just transitions. This is not only because the G20 accounts for approximately 75% of global GHGs, including from land use and forestry (Climate Watch, 2023[132]). It is also because, as an international platform, the G20 can: i) lead by example and promote an effective and inclusive international architecture; and ii) assess the global implications of its own policies, green standards and regulations, in terms of both challenges and opportunities for developing countries. It can also favour recognition of equivalence on how to measure each country's contribution, which requires ex ante co-ordination.

General recommendations for the G20 on advancing green and just transitions coherently

While multilateral treaties and agreements provide a framework for co-operation to address common challenges and spillover effects, actions on green and just transitions should be designed and implemented by each country, ensuring policy coherence among national policies, circumstances and priorities. Nonetheless, the G20 and other international forums can serve as intergovernmental spaces to share and promote the necessary efforts, accelerate knowledge of good practices and policies, and provide the co-ordination and solidarity needed to achieve global green and just transitions with national particularities. As such, and beyond the sector-specific recommendations included in Chapter 2:

1. The G20 should address systemic inequalities and promote the use of systemic approaches to help member and developing countries reprioritise climate actions coherently and in close co-ordination with social and economic policies. By making models and data available to assess synergies and trade-offs among the targets set by green and just transitions as part of the broader 2030 Agenda for sustainable development, policy makers can gain a deeper understanding of synergies between climate change policies and broader well-being and environmental and economic goals across the economy. With accelerated access to good practices and knowledge sharing, cross-country policies and a reskilled civil servant work force – for instance through regional centres of excellence – policy makers can strategically redesign policy packages with equity and efficiency objectives in sight, promoting investment in human capital and facilitating social capital investments, social protection, skills and education investments to ease the structural adjustment of local economies.
2. The G20 should invest in research and data collection to set advanced standards and indicators to help frame a multilateral understanding of the green and just dimensions of the transitions and to measure progress towards the achievement of targets, including at subnational level. These indicators could serve as references for development partners and developing countries to develop quality data, measure the impacts of green and just policies, and ensure their coherency. The measurements should include a wide range of targets and indicators, from natural capital and ecosystem accounting to the well-being of workers and communities, inequality and poverty, disaggregated by gender, indigenous peoples and youth, among others.
3. G20 members and developing countries should explicitly include green and just transition principles and policy coherence considerations in relevant commitments, planning tools and policies. This includes not only commitments such as NDCs, environmental frameworks such as National Adaptation Plans, National Biodiversity Strategies and action plans under the Convention on Biological Diversity, but also other crucial strategies such as National Development Plans and subnational and sectoral-level action plans, in fields such as trade. Centres of Government should

oversee high-level co-ordination mechanisms and align multi-department work plans with clear mandates and resources to ensure that the policies drafted and implemented are coherent with government environmental priorities and leave no one behind. Quality co-ordination should be ensured across levels of government.

4. The G20 should promote the meaningful involvement of all stakeholders, including workers, communities and representatives from the private sector, including MSMES and collectives (such as co-operative and self-help groups), in participatory decision-making processes related to climate and environmental policies and regulations, and the economic transformation. This could be done by establishing platforms along NDCs, VNRs and others for social and community dialogue among governments, employers, workers, co-operatives, entrepreneur groups and civil society to co-develop strategies for green and just transitions. Including advocates for gender equality, MSMEs, entrepreneurs and collectives in public consultations for environmental and climate policies could help involve women, youth and communities as co-creators, making them visible and heard and empowering them to design, manage and take ownership of their living environments, something already being done by social and solidarity economy actors (see (UNTFSSE, 2022[133])).
5. G20 members and developing countries should develop comprehensive training and educational programmes to equip civil servants and current and future workers, including entities from the social and solidarity economy (SSE) and informal-sector workers, with the skills necessary for policy design and green jobs and to help them transition to new quality employment opportunities. The G20 and developing countries should consider prioritising gender-sensitive and gender-responsive financing and investment opportunities, together with gender-balanced skilling and training programmes.
6. G20 members and developing countries should adopt a territorial approach to climate action and resilience, ensuring that national climate commitments cascade to subnational governments alongside the incentives and resources to deliver on them. Such an approach should seek to engage with and empower local partners to recognise the challenges and opportunities they face.
7. G20 members and developing countries should adopt policies that protect workers' rights and ensure decent work conditions in emerging green sectors, including with adequate protection of labour rights. Countries should strengthen social protection systems to provide safety nets for workers and communities adversely affected by the transition to greener and digital economies. Special attention should be given in developing countries to the formalisation of workers and their inclusion in the social protection system.
8. The G20 should ensure that energy transitions are just from a social and income distribution perspective and notably that the most vulnerable households and smaller firms are protected from the impact of energy price changes. Progressive taxation can allow to distribute the burden of a carbon price or energy reforms and revenues from carbon pricing can be used to finance climate-targeted social protection and labour transition programmes, as well as green skills development systems.

Recommendations on promoting green and just transitions through multilateral instruments

1. Rather than creating new arrangements or frameworks on green and just transitions, the G20 should work under the umbrella of existing multilateral treaties and with relevant international and regional organisations, such as the UNFCCC's Solidarity and Just Transition Declaration, ILO Guidelines Towards a Just Transition, Nagoya Protocol, the EU's Just Transition Platform and the

UN reform of the international architecture. This would ensure a consistent approach and the inclusion of developing countries while avoiding duplication of efforts. Following the example of the OECD's Inclusive Forum on Carbon Mitigation Approaches (IFCMA), the G20 can also act as a forum for its member countries, founded on an understanding of the distributional impacts of both climate change and climate-change policies. Finally, G20 members can collectively and individually take concrete steps such as: the adoption of sustainable consumption and production practices; facilitating affordable access to the technology necessary for green and just transitions; providing support for capacity building through trusted partners and establishing co-ordination mechanisms and international partnerships to support the transition in emerging and developing economies.

2. G20 members should considerably increase their pledges to the Green Climate Funds in its next replenishment and substantially contribute to the Global Biodiversity Fund and Loss and Damage. In doing so, G20 members should advocate within the governing bodies of these and other international financial institutions and development banks to augment, simplify and accelerate the allocation of resources from developed to developing countries in a transparent manner and to integrate components relating to green and just transitions in relevant funding proposals. Developing countries should enlarge their funding sources beyond these funds and request an acceleration of the review of how international organisations assess climate and sustainable development risk in a systemic way.
3. The G20 should advocate for the reform of the international development finance architecture, including drawing on calls from developing countries for more effective and recapitalised multilateral development banks and reform of the sovereign debt architecture. These efforts should include specific windows for climate adaptation, biodiversity and LDCs. As green and just transitions need to be mainstreamed into MDB reform efforts, G20 members should operationalise these demands through their shareholding of the MDBs. Innovative instruments to address high indebtedness that prevent public investments should also be addressed.
4. G20 members should prioritise swift and comprehensive implementation of the new UNFCCC work programme on just transition pathways, as established in decisions 1/CP.27 and 1/CMA.4, and in other deliberations, including the high-level ministerial roundtable on just transitions at COP28 and New Delhi Leaders Declaration. This will facilitate more robust and consistent dialogue surrounding the implementation of green and just transition pathways, encompassing aspects such as technology transfer, capacity building, transparency and data collection, among others.
5. This year and in the coming ones, G20 members, in line with their national circumstances, should demonstrate their leading role in implementing the outcome of the first Global Stocktake (GST1) of the Paris Agreement at COP28 by designing 1.5 aligned NDCs.
6. The G20 should advocate for the explicit integration of green and just transition provisions into new bilateral, regional and international treaties, such as the under negotiation international legally binding instrument on plastic pollution, including in the marine environment, to ensure a holistic approach to addressing the economic and social impacts of environmental measures. This should include language that underscores the importance of fairness, inclusivity, resilience, support for affected communities and countries, and the need to address the particularities of informal and precarious workers.
7. The G20 should start a process to update the trade system to ensure affordable access to low-carbon technologies and other technologies necessary for the transitions, as well as accelerating reform of the international investment agreements (IIAs) regime to expand policy space for climate action and to strengthen promotion and facilitation provisions.

8. The G20 should consider setting up regional centres of excellence to accelerate knowledge of good practices and policies in support of green and just transitions, as well as the upskilling of civil servants to design and implement necessary policies.

Notes

[1] For information purposes. Reflects the opinion of the four co-author institutions' secretariats and does not necessarily reflect the views of the G20 or these institutions member countries.

[2] For examples, see the UNCTAD Angola programme and its discussions at the SDG Summit as one High Impact Initiative: https://www.un.org/africarenewal/magazine/august-2023/unctads-high-impact-initiative-dialogue-be-held-during-un-general-assembly.

[3] Electricity production per capita is calculated using the electricity generation indicator from (OECD, 2023[134]) and population data from UN World Population Prospects (UN, 2023[41]). The world average growth rate for electricity production per capita is the mean 10-year growth rate across the 185 countries in the dataset. This growth rate is compounded annually from the low-income country group's 2019 value until it reaches a threshold set by the 2019 value for the high-income country group. The number of times the growth rate is compounded from its latest value is assumed to be the number of years necessary for low-income countries to reach the same level as the high-income group.

[4] Lowering carbon/GHG emissions involves changing methods of production and consumption across the economy. Such a change concerns particularly, *but not exclusively*, economic sectors that account for a high share of greenhouse gas emissions.

[5] "Promoting the Social and Solidarity Economy for Sustainable Development": (A/RES/77/281).https://documents-dds-ny.un.org/doc/UNDOC/GEN/N23/118/68/PDF/N2311868.pdf?OpenElement.

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The Role of the G20 in Promoting Green and Just Transitions

A green and just transition – i.e. concerted global and national efforts to achieve worldwide carbon neutrality by or around the mid-century globally, in an inclusive manner and adapted to each national context – requires an active co-operation of all countries, developed and developing. It also entails ensuring that no one is left behind, and offering support to those in need, including least developed countries (LDCs) and Small Island Developing States (SIDS). Guided by the preamble of the Paris Agreement, this report proposes ways for G20 and developing countries to enhance the coherence of their policies towards that vision, deepen their co-operation and render the international architecture better suited to the implementation of green and just transitions.