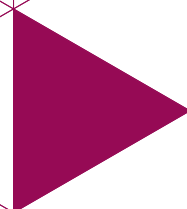
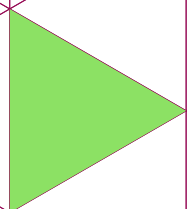
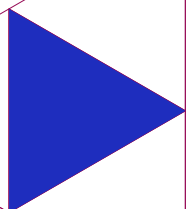
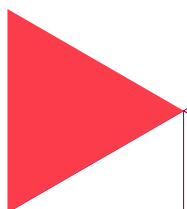




International
Labour
Organization

► Transformative change and SDG 8

The critical role of collective capabilities
and societal learning



▶ **Transformative change and SDG 8**

The critical role of collective capabilities
and societal learning

Copyright © International Labour Organization 2023
First published 2023



This is an open access work distributed under the Creative Commons Attribution 4.0 International License (<https://creativecommons.org/licenses/by/4.0/>). Users can reuse, share, adapt and build upon the original work, as detailed in the License. The ILO must be clearly credited as the owner of the original work. The use of the emblem of the ILO is not permitted in connection with users' work.

Attribution – The work must be cited as follows: *Transformative change and SDG 8: The critical role of collective capabilities and societal learning*, Geneva: International Labour Office, 2023.

Translations – In case of a translation of this work, the following disclaimer must be added along with the attribution: *This translation was not created by the International Labour Organization (ILO) and should not be considered an official ILO translation. The ILO is not responsible for the content or accuracy of this translation.*

Adaptations – In case of an adaptation of this work, the following disclaimer must be added along with the attribution: *This is an adaptation of an original work by the International Labour Organization (ILO). Responsibility for the views and opinions expressed in the adaptation rests solely with the author or authors of the adaptation and are not endorsed by the ILO.*

This CC license does not apply to non-ILO copyright materials included in this publication. If the material is attributed to a third party, the user of such material is solely responsible for clearing the rights with the right holder.

Any dispute arising under this license that cannot be settled amicably shall be referred to arbitration in accordance with the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL). The parties shall be bound by any arbitration award rendered as a result of such arbitration as the final adjudication of such a dispute.

All queries on rights and licensing should be addressed to the ILO Publishing Unit (Rights and Licensing), 1211 Geneva 22, Switzerland, or by email to rights@ilo.org.

ISBN 978-92-2-039007-8 (print)
ISBN 978-92-2-039008-5 (pdf web)
<https://doi.org/10.54394/HKDP3268>

The designations employed in ILO publications, which are in conformity with United Nations practice, and the presentation of material therein do not imply the expression of any opinion whatsoever on the part of the ILO concerning the legal status of any country, area or territory or of its authorities, or concerning the delimitation of its frontiers.

The responsibility for opinions expressed in signed articles, studies and other contributions rests solely with their authors, and publication does not constitute an endorsement by the ILO of the opinions expressed in them.

Reference to names of firms and commercial products and processes does not imply their endorsement by the ILO, and any failure to mention a particular firm, commercial product or process is not a sign of disapproval.

Information on ILO publications and digital products can be found at: www.ilo.org/publns.

Executive summary

SDG 8 integrates the economic, social and environmental dimensions of sustainable development. To achieve inclusive and sustainable economic growth for full employment and decent work, an integrated process is needed to drive balanced progress across these three dimensions. In its 2019 report *Time to Act for SDG 8: Integrating Decent Work, Sustained Growth and Environmental Integrity* the ILO described a broad policy approach to this challenge which encouraged countries to pursue interrelated strategies that feed a cumulative dynamic process - a positive SDG 8 “policy spiral.”

This report builds on that previous work by analysing in Chapter 1 the prospects for countries to achieve the economic, social and environmental aspects of SDG 8 by 2030 based on their performance between 2010 and 2022. The report traces the disappointing state of global prospects for achieving SDG 8 and identifies certain patterns and imbalances in these prospects across countries and the three dimensions. The report then elaborates in Chapter 2 on the policy framework presented in 2019 by seeking to explain more fully the dynamics of the transformative change envisioned by SDG 8, in particular by exploring the underappreciated role of the “collective capabilities” of societies in enabling and shaping such change. Finally, Chapter 3 distils a number of principles and policy recommendations for integrated learning and transformation strategies—an epistemic approach—to mobilizing investment, technological change and innovation and structural transformation in the economy.

The prospects of achieving SDG 8 by 2030

Progress on SDG 8 has been lagging, despite decades-long efforts to advance the productive transformation of economies on a socially inclusive and environmentally sustainable basis, including through the promotion of science, technology and innovation (STI).¹ Actions to meet the SDGs are not yet advancing at the speed or scale required, and, as with other SDGs, progress on SDG 8 has been weak across most of its dimensions and indicators and across much of the world.

What is more, the outlook for future progress is not encouraging, given the multiple crises affecting the world. Economic growth is far from the levels envisioned in the SDG targets, and unemployment rates, informality and decent work deficits remain high in many parts of the world. By applying the integrated measurement instrument for SDG 8 developed by the ILO to clusters of similarly performing countries at different levels of GDP per capita, this analysis provides a clearer picture of the nature of the challenges humanity is facing in achieving balanced progress across the economic, social and environmental dimensions of sustainable development.

It finds that major differences exist among and within these country groups with respect to both the level and pattern of prospects, identifying eleven distinct patterns or types of balances and imbalances. These patterns of imbalances reveal that past performance on economic indicators are a necessary but not sufficient condition for improving prospects on social inclusion and decent work, and that the average prospects in the environmental dimension seem to be completely unrelated to the prospects in the economic and social dimensions. Based on this finding this report concludes that societies, institutions, value systems and political choices need to be taken into account in explaining these different levels and patterns of balances and imbalances. It also concludes that, even though the COVID-19 pandemic caused major labour market disruptions, the pandemic is not the main reason for the poor prospects of achieving the SDG 8 targets.

¹ See the [Global SDG Indicators Data Platform](#).

Collective capabilities of societies enable and shape transformative change

The inability of so many countries to make adequate progress on the path to SDG 8 suggests that there is a need to examine more closely the challenges they face in implementing the Goal. The slow progress of countries to create dynamic transformative processes and to harness STI for SDG 8 can in some part be ascribed to a lack of the coordinated international assistance that had been envisaged when the SDGs were adopted. However, it also suggests a fundamental weakness in the prevailing models of economic growth and development that limits their power to pursue policies that enhance the dynamics of complex transformation processes.

Drawing on insights and evidence from across the social sciences, this report presents a framework for understanding the importance of societies' collective capabilities in explaining effective implementation processes for SDG 8. Societies are the agents of transformative change, and the way they cultivate different collective capabilities shape the options available for investment, technological change, innovation and structural transformation in the economy. Capabilities also enable societies to shape the dynamics of change processes and to establish a consensus on the common purpose of transformative changes.

It is critical to note that collective capabilities, which reside at the level of societies, are fundamentally different from the skills of individuals. Collective capabilities exist in teams, social groups and communities, and they reside in different forms such as relationships, networks, structures, institutions, routines or culture.

To explain how collective capabilities evolve, this report takes an epistemic approach, arguing that collective capabilities are created in a societal learning process. Learning at the collective level is understood as a process of transforming socially shared bodies of knowledge and beliefs which implies enhancing the society's technological knowledge base, changing the rules of institutions and adapting cultural knowledge and value systems.

Policy recommendations to boost collective capabilities

A major challenge for policymakers is to develop productive transformation strategies that recognise the important role of collective capabilities in enabling and shaping transformative change. This entails applying policies at three distinct layers. Firstly, at the level of the economy, policymakers need to formulate industrial, trade, investment, technology and innovation policies to harness STI and shape transformative change for SDG 8, while understanding the existing collective capabilities in the society, which define the feasible options for transformative change. This requires a comprehensive strategy to pursue multiple development objectives, to coordinate and align the multiple dimensions of transformative change and to embrace local, national and international societies to ensure that no one is left behind. Partnerships and social dialogue represent important collective capabilities in implementing such strategies.

Secondly, policymakers need to pro-actively promote collective capabilities by transforming and enhancing the socially shared bodies of knowledge and beliefs. This requires policy makers to develop comprehensive learning strategies to 1) cultivate endogenous processes of creating new useful knowledge and technologies; 2) promote learning which facilitates transition of the local communities into the formal economy (learning to formalize); 3) develop capabilities for catching up on industrial development and advanced technologies; 4) support learning for a just transformation into environmentally sustainable economies; and 5) build collective agency and creativity to accelerate innovation processes. Recognising the value of epistemic diversity and applying the principle of epistemic justice are critical for the success of such learning strategies. Effective learning strategies must integrate technology and trade policies, industrial and sectoral policies as well as education and training policies, while policies to integrate migrant workers and to tap into the network of the diaspora community complement the learning process.

Finally, international cooperation and the multilateral system in particular could do far more to mobilize international solidarity in support of progress at the country level on SDG 8. The International Labour Conference (ILO 2023f) recognized the importance of social justice, and the need for a fair distribution of the burdens and benefits arising from transformative change to be shared by all, with changes required across the value systems, norms, institutions, technologies, production structures and consumption behaviour of societies. Indeed, the ILC concluded in its General Discussion on a Just Transition that: “Just transition reflects a common global purpose that entails responsibilities for everyone, including governments, employers and workers”.

Social justice also requires societies to take responsibility for the well-being of future generations. Social justice between generations is intrinsic to sustainability, which is defined as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations 1987). Ensuring social justice between current and future generations involves protecting the essence of both humanity and nature, and this requires all communities – the research community, political decision-makers, managers, entrepreneurs, employers’ organizations, trade unions and workers – to act responsibly for the common good of future generations.

► Contents

Executive summary	III
Acknowledgements.....	IX
Chapter 1.	
The prospects of achieving Sustainable Development Goal 8 by 2030	1
1.1. Latest trends of indicators representing the SDG 8 targets	2
1.2. Prospects of achieving sustained, sustainable and inclusive development	5
1.2.1. Global prospects of achieving SDG 8 by 2030	6
1.2.2. Patterns of prospects for SDG 8 within and across country income groups	7
1.2.3. Progress towards achieving SDG 8	12
1.2.4. The impact of the COVID-19 crisis on prospects of achieving SDG 8 by 2030	13
Chapter 2.	
Collective capabilities shaping transformative change for progress in SDG 8	17
2.1. Dimensions of transformative change and collective capabilities	19
2.1.1. Structural transformation for productivity, jobs and development	19
2.1.2. A high-performing process of transformation	30
2.1.3. A common purpose of transformative change	33
2.2. The evolution of collective capabilities: An epistemic approach	36
2.2.1. The building blocks of dynamic capabilities	36
2.2.2. Complementary and interconnected nature of knowledge base and capabilities	38
2.2.3. Co-evolution for high capabilities	40
2.2.4. Path-dependencies and shifts in trajectories	40
2.2.5. Epistemic diversity, epistemic justice and societal learning	41
Chapter 3.	
Conclusion and policy recommendations	45
3.1. Enabling transformative change by boosting collective capabilities	47
3.2. Specific policy recommendations	48
3.2.1. Integrate collective capabilities into policy frameworks and transformative change strategies	49
3.2.2. Implement comprehensive learning strategies to boost collective capabilities for balanced patterns of progress	49
3.2.3. Recognize epistemic diversity to cultivate endogenous learning and sustained development	50
3.2.4. Promote an epistemic justice approach to cultivating societal learning in order to transform the informal economy	51
3.2.5. Promote technology policies to build dynamic capabilities enabling “green” and sustainable solutions for SDG 8	51
3.2.6. Design industrial and sectoral policies to provide opportunities for learning to catch up	52

3.2.7. Frame a human-centred and transformative education strategy to build collective capabilities for harnessing STI	53
3.2.8. Harness migration and the diaspora to tap into external knowledge networks for accelerated societal learning	54
3.3. Advancing social justice as the compass and common purpose for transformative change at local, national and global levels	54
References	57
Appendices	63

List of figures

1.1 Global prospects of achieving SDG 8 by 2030 across 23 indicators	7
1.2. Imbalances of average prospects for SDG 8 across three dimensions, by country cluster group ..	10
1.3. Expected average progress in the dimensions of SDG 8 by country cluster between 2022 and 2030	12
1.4. Relationship of progress in the social and environmental dimensions with the economic dimension, world and country income groups	13
1.5. Impact of COVID-19 crisis on prospects of achieving SDG 8, world and country income groups ...	14
2.1. Collective capabilities, transformative change and progress in SDG 8	18
2.2. Occupational structures by country clusters	23
2.3. Typology of educational attainment structures	24
2.4. Evolution of product clusters and diversification paths in Viet Nam	26
2.5. The evolution of occupational shares, Viet Nam, 2001–2020	27
2.6. The evolution of economic complexity in South America and South East Asia	28
2.7. Change in productivity and employment, South East Asia and South America, 2005–2019	29
2.8. Relationships between average scores in achievement of the dimensions of SDG 8	32
2.9. Building collective capabilities through societal learning: Evolution of epistemic systems	37
3.1. Policy framework for building collective capabilities: An integrated, comprehensive and dynamic learning strategy	48
C.1. Prospects of achieving SDG 8 by 2030 across 23 indicators, low-income countries	70
C.2. Prospects of achieving SDG 8 by 2030 across 23 indicators, lower-middle-income countries	71
C.3. Prospects of achieving SDG 8 by 2030 across 23 indicators, upper-middle-income countries	72
C.4. Prospects of achieving SDG 8 by 2030 across 23 indicators, high-income countries	73

List of tables

1.1. Patterns of average prospects in dimensions by clustered country groups	8
A.1. List of indicators, thresholds for ranking achievement and rationale for ranking scale used	64
B.1. List of countries by country cluster group	69

Acknowledgements

The report *Transformative change and SDG 8: The critical role of collective capabilities and societal learning* was prepared by the Research Department of the International Labour Organization. The work was carried out under the responsibility of Richard Samans, Director of the Research Department of the ILO. We would like to thank him for his guidance and support.

Irmgard Nübler initiated and lead the research, coordinated the report and authored chapters 2 and 3. Stefan Kühn was responsible for data analysis and authored chapter 1.

The Research Department wishes to acknowledge the substantive advice and feedback provided throughout the consultation and review process by Katja Hujo (UNRISD) and Piergiuseppe Fortunato (UNCTAD), as well as by ILO colleagues Rishab Dhir, Dorothea Hoehtker, Christoph Ernst, Oliver Liang, Catherine Saget and Dorothea Schmidt-Klau. We are also grateful to James Howard, Special Adviser to the Director-General of the ILO, for valuable comments and suggestions.

In addition, we would like to thank a number of experts from academia, research institutes and other United Nations organizations for their input during the discussions at the hybrid meetings and workshops that were held: Iain Begg (London School of Economics), Sarah Cook (University of Nottingham, Ningbo China), Giovanni Dosi (Scuola Superiore Sant'Anna, Pisa), Clovis Freire Junior (UNCTAD), Jayati Ghosh (University of Massachusetts Amherst, USA), Kamala Sankaran (University of Delhi, India), Dorothea Kleine (University of Sheffield, UK), Glenda Kruss (Human Sciences Research Council, Cape Town), Clapperton Chakanetsa Mavhunga (MIT, Cambridge, USA), Ljubica Nedelkoska (Central European University, Vienna), Frank Neffke (Complexity Science Hub, Vienna), Robert Skidelsky (House of Lords, UK), Smita Srinivas (Open University, UK), Il-Haam Petersen (Human Sciences Research Council, Cape Town), Padmashree Gehl Sampath (Harvard University, Cambridge, USA), and members of the Analytical Work Stream of the United Nations Inter-Agency Task Team on STI for the SDGs led by Richard Alexander Roehrl (UNDESA).

Several other colleagues from across ILO departments and the regional and country offices also provided comments and suggestions, including: Samuel Asfaha, Christina Behrendt, Janine Berg, Mario Berrios, Juan Chacaltana, Marva Corley-Coulibaly, Ekkehard Ernst, Sajid Ghani, Pawel Gmyrek, Nikita Grabher-Meyer, Tite Habiyakare, Grayson Koyi, Alessandro Ippolito Neira, Andrea Marinucci, Uma Rani, Nikolai Rogovsky, Camilla Roman, Niall O'Higgins, Caroline O'Reilly, Sabrina de Gobbi, Kirsten-Maria Schapira, Wolfgang Schiefer, Ken Chamuva Shawa, Martin Ostermeier, Ritash Sarna, Jürgen Schwettmann, Theodor Sparreboom, Michael Watt and Felix Weidenkaff.

Valuable research support was provided by Miguel Sanchez Martinez, Karolin Nübler, Laura Nübler, Michael Nübler and Arno Ratzinger.

The report was supported by an ILO research project on Assessing social capabilities for new technologies, innovation and job creation in South Africa funded by the Government of Flanders.

Our thanks also go to Judy Rafferty (ILO Research Department) and our colleagues in the ILO Publications Production Unit for their administrative and production-related support.

1. The prospects of achieving Sustainable Development Goal 8 by 2030

Sustainable Development Goal (SDG) 8 exhorts the international community to “[p]romote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”. Ten targets identify the achievements needed to advance towards SDG 8. For each of those targets, a varying number of indicators have been defined to measure progress. The ILO is the custodian of 8 out of the 16 indicators of SDG 8. There are significant differences among countries in terms of the values of the indicators, and thus in the measured progress towards SDG 8 (ILO 2019). The first section of this chapter builds upon the detailed analysis of progress in the various targets and indicators of SDG 8 presented in the 2019 report and provides a brief update on the latest trends, including the impact of the COVID-19 crisis.

SDG 8 is unique among the 17 SDGs in the sense that it is the only Goal that incorporates and brings together social, economic and environmental dimensions of sustainable development. It calls for social inclusiveness and decent work, and for sustained economic growth to accumulate wealth and prosperity, as well as the decoupling of economic growth from environmental degradation. SDG 8 is therefore interlinked with many other SDGs, which implies that the achievement of SDG 8 depends on progress made in the other Goals. SDG 8 will succeed only if all of the Goals are achieved concurrently. On this point, Jeffrey Sachs notes that “success in any of these three categories (or subcategories within them) will almost surely depend on success of all three” (Sachs 2012). This is reflected in the framework of the 2030 Agenda for Sustainable Development, which calls for balanced patterns of progress in these three dimensions (Hirai 2022).

The ILO has therefore developed an integrated measurement instrument for SDG 8 that includes targets and indicators from other economic, social and environmental Goals, and thus allows measurement of progress and prospects in each of the three dimensions (ILO 2019). The second section of this chapter builds upon that work and presents a new analysis of the prospects for achieving the targets of SDG 8 in these dimensions. Those prospects depend on the distance from those targets and the rate of progress towards them. The section also analyses patterns of prospects and of imbalances in prospects across the three dimensions of SDG 8 in different country groups. In addition, the rates of progress towards the targets are presented. This chapter demonstrates significant differences across country groups not only in terms of prospects of reaching the targets of SDG 8, but also of imbalances in prospects across the dimensions of SDG 8.

Global prospects of reaching SDG 8 are bleak – a trend that was already in the making prior to the COVID-19 pandemic. The global poor are almost as far from reaching the targets of SDG 8 as they were at the beginning of the process. The unequal prospects of reaching SDG 8 across countries and imbalances across the three dimensions are an important part of the problem. Chapter 2 of this report explores the dynamics of the transformative change envisioned by SDG 8, examining in particular the “collective capabilities” of societies in enabling and shaping such change.

► 1.1. Latest trends of indicators representing the SDG 8 targets

Progress towards SDG 8 remains sluggish in a challenging environment. The COVID-19 pandemic, with its major impact on the economy and labour markets, massively unsettled the rate of progress. Furthermore, it has left its marks by disrupting some promising pre-crisis trends and constricting fiscal space due to increased debt levels. High inflation and the cost-of-living crisis, uncertain monetary policy paths, trade tensions and increasing risks of debt distress – all exacerbated by geopolitical tensions – have added to the challenges. And while the global economy is projected to avoid a recession (IMF 2023), economic growth is far from the levels envisioned in the SDG targets.

Data collection efforts need to be intensified to improve measurement of progress towards all of the targets of SDG 8 using all of the agreed indicators. While global time series estimates exist for some of the headline indicators, only a snapshot of the latest available data across a limited set of countries can be presented for other indicators. The following overview provides a snapshot of the latest available data relating to the indicators of the SDG 8 targets¹.

- **Target 8.1. Sustain per capita economic growth with a target of at least 7 per cent per year in least developed countries:** Global real GDP declined sharply by 4.1 per cent in 2020 amidst the COVID-19 pandemic, following an average rate of annual expansion of 2 per cent in the years 2014–2019 (IMF 2023). Despite a rebound, with growth exceeding pre-crisis rates in 2021, low projected growth implies that a gap of around 3 per cent with respect to the pre-crisis trend will remain over the coming years. Real GDP growth of least developed countries is expected to exceed 5 per cent in 2024 and 2025, much higher than the 3.9 per cent that was achieved on average in the years 2014–2019, but still below the target of 7 per cent.
- **Target 8.2. Enhance productivity through diversification, technological upgrading and innovation, and a focus on high-value added and labour-intensive sectors:** While growth in output per worker has been declining over decades in high-income countries, there are now signs that this slowdown is also spreading to middle-income countries (ILO 2023b). This will reduce the pace of convergence in productivity growth. The situation is particularly dire for low-income countries, where labour productivity is 18 times lower than in high-income countries. Worse still, there has been no convergence in labour productivity growth over the past three decades between low- and high-income countries (ILO 2023b). Low productivity growth also limits the scope for widespread and sustained real income increases.

¹ While measurement in this report is based on indicators, it aims to evaluate targets. Therefore, the target numbers are used during the data presentation, even though the underlying indicators are used. All data that is not referenced specifically comes from ILOSTAT or from the SDG database of the United Nations.

- **Target 8.3. Promote decent job creation, entrepreneurship, and the formalization and growth of micro-, small and medium-sized enterprises:** Globally, 8 in 10 enterprises operate in the informal economy and around 2 billion workers were in informal employment in 2022, which amounts to 58.0 per cent of the employed. The incidence of informality declined slowly prior to the COVID-19 pandemic, from 60.2 per cent in 2010 to 57.8 per cent in 2019. As growth rates were stronger in informal employment than in formal employment during the recovery from the pandemic in 2021, the incidence of informal employment has slightly increased compared to the pre-crisis situation. On average, informality rates are higher in countries with lower GDP per capita. Given that the slower recovery in these countries was mainly driven by informal jobs, labour income in many developing economies remains below the pre-pandemic level and is now being further threatened by soaring inflation.
- **Target 8.4. Improve global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation:** Domestic material consumption shows a steady upward trend. Latest data however are from 2019. Global domestic material consumption per capita stood at 12.3 tonnes in 2019. The consumption per capita has been rather stable since 2013 but a growing population means that overall consumption is increasing. A related indicator is 9.4.1 which points in a similar direction: Global CO₂ emissions per unit of GDP stood at 0.27 kg per US\$ (in purchasing power parity) in 2019, down from 0.33 in 2010. Since global GDP expanded faster than the reduction in the CO₂ intensity of GDP, global CO₂ emissions have continued to increase since 2010. A much higher rate of decline is required to achieve emissions targets.
- **Target 8.5. Achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value:** The latest trends for indicator 8.5.1, which is needed to evaluate equal pay for work of equal value are not available. Nevertheless, the median hourly gender pay gap across 102 countries, in the respective latest year available, is approximately 14 per cent. However, this pay gap does not account for differences in characteristics such as education, occupation or work experience. The global unemployment rate, which relates to indicator 8.5.2, is projected to decline to 5.3 per cent in 2023. The world has experienced a declining trend of unemployment since 2009 and, while unemployment rose massively in 2020, the pre-crisis trend has recovered (ILO 2023a). At the regional level, unemployment rates differ widely. In 2023, the global jobs gap, which is broader than unemployment and captures all workers who want jobs, is projected to stand at 453 million people (or 11.7 per cent), more than double the level of unemployment (ILO 2023a).²
- **Target 8.6. Reduce substantially the proportion of youth not in employment, education or training:** Globally, nearly one in four (23.5 per cent) young people were not in education, employment or training (NEET) in 2022. Although this is a slight decrease since 2020, it remains above the 2015 baseline of 22.2 per cent and hence far away from the target to “substantially reduce” it. Young women are twice as likely as young men to be NEET. NEET rates are also much higher in some subregions, in particular North Africa and South Asia (ILO 2023b). Young people aged 15 to 24 face much higher unemployment rates than adults (ILO 2022).

² Globally, there is only a small difference in unemployment rates between men and women, but significant regional and country variations. The large gender gap in labour force participation rates reflects the fact that it is more difficult for women to access the labour market.

- **Target 8.7. Eradicate forced labour, modern slavery, human trafficking and all forms of child labour:** The latest estimates indicate that the number of children in child labour stood at 160 million worldwide at the beginning of 2020. This translates to almost one in ten of all children worldwide. Sub-Saharan Africa has by far the highest prevalence of child labour worldwide, with almost one in four children working in child labour. While the long-term global trend is decreasing, global progress against child labour has stalled since 2016. The latest global estimates indicate that 50 million people were living in modern slavery in 2021. Of these people, 28 million were in forced labour and 22 million were trapped in forced marriage. Unfortunately, the number of people in modern slavery has risen significantly in the last five years. In 2021, 10 million more people were in modern slavery compared to 2016 global estimates (ILO 2022c).
- **Target 8.8. Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, particularly women migrants and those in precarious employment:** Between 2000 and 2016 the global rates of total deaths attributable to exposure to occupational risk factors decreased from 39.9 to 34.3 deaths per 100,000 working age population. Similarly, the global rates of total disability-adjusted life years attributable to exposure to occupational risk factors decreased from 1,878 to 1,636 per 100,000 working age population. This shows a substantial reduction in the total work-related burden of disease per head of population over the 16-year period (WHO and ILO 2021). The global average for SDG indicator 8.8.2 on national compliance with fundamental labour rights (freedom of association and collective bargaining) in 2021 stood at 4.48, showing little change from 4.46 in 2020. While globally there has been progress under SDG indicator 8.8.2 since 2015, the country level scores in several countries indicate continued worsening. From 2020 to 2021, in 18 per cent of countries, compliance with freedom of association and the effective recognition of the right to collective bargaining worsened by an average of 0.53 points compared with 10 per cent of countries in which compliance improved by an average of 0.28 points (while it remained unchanged for other countries). For the period from 2015 and 2021, the situation in 43 per cent of countries has worsened by 0.55 points and in 35 per cent improved by 0.51 points. The number of international migrant workers has been continuously growing, reaching 169 million in 2019, while protection issues remain among the most urgent policy challenges.
- **Target 8.9. Promote sustainable tourism that creates jobs:** In 2021, the tourism share in global GDP stood at 2.5 per cent, much lower than the 4.2 per cent in 2019 and only showed a slight improvement in 2020. In 2022, however, tourism saw a major recovery, closing a significant part of the gap back towards pre-crisis levels.³ In this respect, it is important to tap into the potential of the tourism sector as a major driver of economic growth, enterprise development and job creation, particularly for women and youth.
- **Target 8.10. Enhance access to financial services for all:** In 2021, 76 per cent of adults globally had an account at a bank or a regulated financial institution, which is an increase from 62 per cent of adults in 2014. Payment of wages into bank accounts is an important driver of financial inclusion.

³ The travel and tourism sector contributed 7.6 per cent to global GDP in 2022. This is a solid recovery following the slump of the COVID-19 pandemic. Nevertheless, the contribution remains below the 10.4 per cent that was achieved in 2019 (WTTC 2023).

► 1.2. Prospects of achieving sustained, sustainable and inclusive development

SDG 8 is multidimensional in that it incorporates economic, social and environmental dimensions of sustainable development. The interdependence among these dimensions means that sustainable development is only possible by advancing along all three dimensions (ILO 2019a). Imbalanced progress will ultimately hold back countries not only in the neglected dimensions but in all of them. The ILO has therefore developed a measurement instrument to evaluate the prospects for achieving targets in these three dimensions of SDG 8 in a balanced or imbalanced manner (ILO 2019a). The instrument uses indicators from SDG 8 but also from other SDGs when those provide added value (Box 1.1).⁴ Data gaps limit the choice of indicators and data collection needs to be strengthened to obtain a more precise measurement of the prospects of achieving the SDG targets.

The analysis of the prospects of achieving SDG 8 shows where countries are expected to stand in 2030 with respect to the targets if current trends are to continue. To that end, indicators are evaluated on a scale of 1 to 5 based on the distance of their extrapolated performance in 2030 from the SDG targets. The extrapolation is based on the determination of the average annual change in an indicator over the period 2010–2022 and further extrapolation of that change until 2030. The scheme to classify those indicators into categories 1 to 5, with 1 implying the lowest and 5 the highest degree of prospects, is largely taken from the previous report on SDG 8 (ILO 2019a)⁵ but with some adaptations, including the nomenclature (appendix A). Setting all indicators on a common scale enables a direct comparison of prospects among the indicators and overarching economic, social and environmental dimensions, thereby revealing imbalances among these dimensions of SDG 8.

► Box 1.1. The dimensions of SDG 8, and associated SDG and non-SDG indicators used to assess achievement

Economic development

- Extrapolated income grouping (World Bank classification) of GDP per capita, with additional highest category at US\$35,000 (constant 2017 US\$, purchasing power parity adjusted) (indicator 8.1.1)
- Labour productivity growth (8.2.1)
- Unemployment rate (8.5.2)
- Percentage of adults with an account at a financial institution (8.10.2)
- Research and development expenditure as a percentage of GDP (9.5.1)
- Percentage of the population with access to electricity (7.1.1)
- Economic complexity (non-SDG indicator)

Social inclusion and decent work

- Labour income share (10.4.1)
- Percentage of youth not in education, employment or training (8.6.1)
- Working poverty rate (living on less than US\$1.90 per day per person) (1.1.1)
- Social protection coverage (1.3.1)

4 Newly available data mean that it is possible to use the hourly gender pay gap directly (indicator 8.5.1).

5 The scheme is described in detail in the Annex of the report mentioned.

- ▶ Informal employment as a share of total employment (8.3.1)
- ▶ Share of female managers among all managers (5.5.2)
- ▶ Ratio of women's hourly labour income to men's (8.5.1)
- ▶ Completion rate of upper primary education (4.1.2)
- ▶ Percentage of children aged 5 to 14 years engaged in child labour (8.7.1)
- ▶ Rate of fatal occupation injury (8.8.1)

Environmental integrity

- ▶ Domestic material consumption per capita (8.4.2)
- ▶ Carbon dioxide emissions per unit of GDP (9.4.1)
- ▶ Percentage point change in forest area as a share of total land area (related to 15.1.1)
- ▶ Proportion of protected terrestrial key biodiversity areas (15.1.2)
- ▶ Proportion of protected freshwater key biodiversity areas (15.1.2)
- ▶ Natural resource rent as a share of GDP (non-SDG indicator)

1.2.1. Global prospects of achieving SDG 8 by 2030

Global prospects for SDG 8 are highly imbalanced across its targets (figure 1.1). Overall, the environmental and social dimensions are extrapolated to be further from their targets by 2030 than the economic dimension. Imbalances also exist among the various indicators within each dimension, with some areas displaying significantly lower prospects than others. Prospects for achieving SDG 8 are estimated to be moderate or good on only 8 of 23 indicators based on the 2010 to 2022 trend. In other words, the world is well off track on nearly two thirds of these SDG 8 indicators of progress.

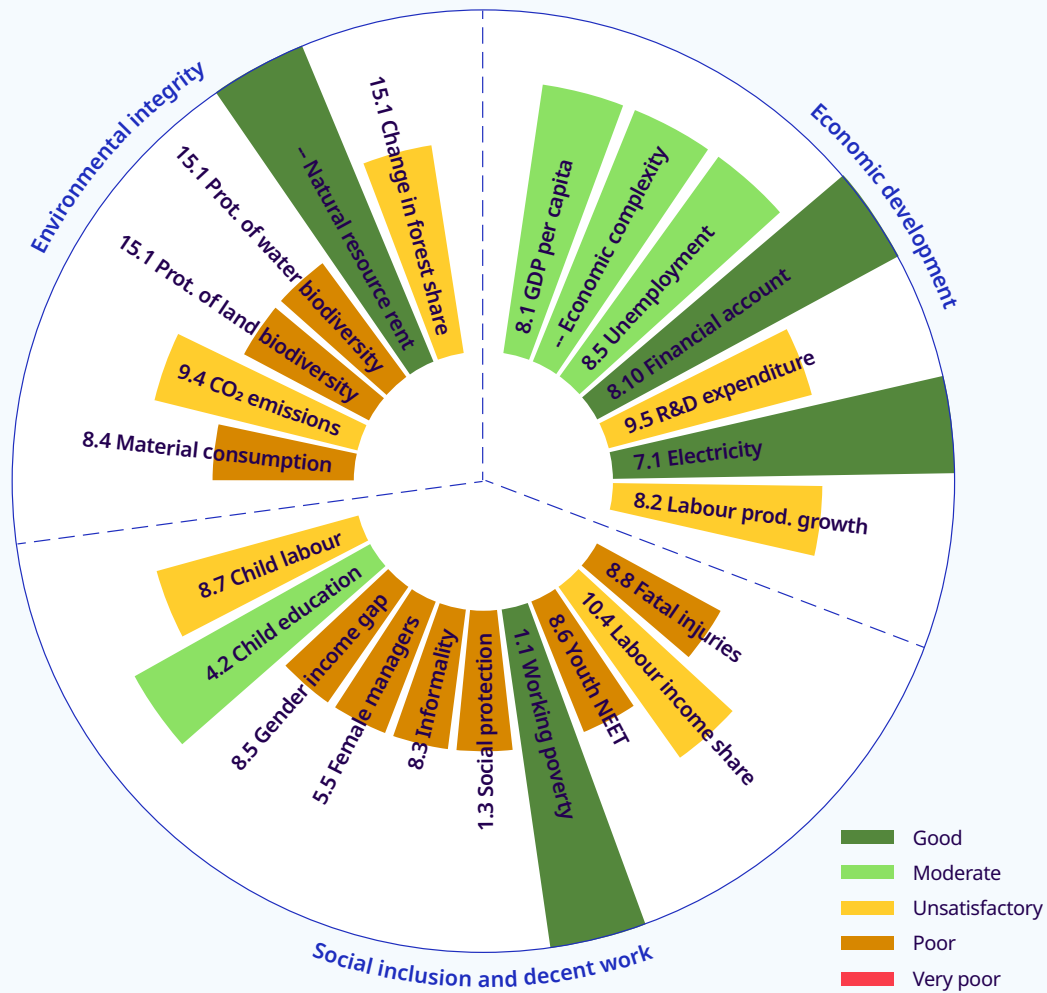
Prospects for only four indicators are evaluated as “good” assuming recent rates of progress can be maintained. Providing access to financial accounts and electricity, as well as the pace of reduction of working poverty (which uses an absolute international poverty line of US\$1.90 as a threshold) are bright lights of success. The challenge is to maintain the rate of progress of the past decade until 2030, which is a huge task in the case of working poverty (ILO 2023b)⁶ and electricity.⁷ Furthermore, escaping extreme poverty is the absolute minimum objective – advancing decent work requires much more progress in all dimensions. Only a small part of the global population lives in countries where natural resource rents make up a significant part of GDP, meaning that, globally, this indicator also scores as good.

Improving upon the nine indicators scoring only “poor” requires fundamental economic and social transformation. Gender gaps are deeply entrenched in societies' norms and values (ILO 2017 and 2019b). Youth NEET rates also exhibit large gender gaps (ILO 2022). Environmental protection needs to be actively pursued, with much greater advances required to decouple economic growth from environmental degradation. Achieving universal social protection requires the extension of coverage to so far unprotected people, including those in the informal economy, contributing to their transition to the formal economy, as well as increased and sustainable public financing.

⁶ The number of workers living in extreme poverty – meaning on less than US\$1.90 per person in purchasing power parity terms – has been rising in low-income countries (ILO 2023b), meaning that working poverty will not be eliminated. The decline in global working poverty rates will slow down with every middle-income country that approaches very low rates of working poverty.

⁷ Global preliminary estimates suggest that the number of people without access to electricity changed little between 2019 and 2021, and it even increased in Sub-Saharan Africa (IEA 2022).

► Figure 1.1. Global prospects of achieving SDG 8 by 2030 across 23 indicators



Note: The figure shows global weighted averages of the 23 indicators, recast into the scales 1 to 5. Most indicators have been averaged using population weights, except for unemployment (labour force), Youth NEET (population aged 15 to 24), labour productivity, informality, working poverty and gender income gap (employment), child labour (population aged 0 to 14), and female managers (total employment of managers). Countries with missing data for a certain indicator are ignored in the construction of the average, which is equivalent to assuming the global average of that indicator for the countries with missing data.
Source: ILO calculations.

1.2.2. Patterns of prospects for SDG 8 within and across country income groups

Major differences in prospects for SDG 8 exist between country groups, both in terms of levels and patterns of imbalances. By shifting the analysis to appropriate country groups, it is possible to investigate the level and (im)balance of those prospects for these groups (table 1.1). Regional aggregates provide a more differentiated picture but would still fail to do justice to the variety of country experiences. Additionally, significant differences can exist among countries of similar income levels that

belong to the same country income group, and analysing those differences can also provide important conclusions for policies. For this reason, within each level of income grouping,⁸ countries are clustered into distinct groups with clearly different levels and patterns of prospects for SDG 8. Such clustering is based on a statistical approach, aimed at maximizing the dissimilarity among clustered groups in the three averaged dimensions (appendix B).⁹ By grouping countries into clusters based on similarity, both levels and patterns of prospects can be seen across all indicators. Selecting the number of country clusters is a trade-off between clarity of exposition and sufficient recognition of the heterogeneity among countries.¹⁰ Creating two groups for low-income countries and three for each of the other income groups allows for an interesting but concise narrative (table 1.1). Table 1.1 and figure 1.2¹¹ contain analyses of average prospects to achieve economic, social and environmental targets, and regional dominance, by country cluster group.

► **Table 1.1. Patterns of average prospects in dimensions by clustered country groups**

Country cluster group	Country income group	Economic development	Social inclusion and decent work	Environmental integrity	Number of countries	Dominant region
1	Low-income countries	Very poor	Very poor	Poor	9	Africa (67%)
2	Low-income countries	Poor	Very poor	Moderate	19	Africa (95%)
3	Lower-middle-income countries	Very poor	Poor	Unsatisfactory	7	Africa (86%)
4	Lower-middle-income countries	Unsatisfactory	Poor	Moderate	14	Africa (64%)
5	Lower-middle-income countries	Moderate	Unsatisfactory	Unsatisfactory	31	Asia and the Pacific (55%)
6	Upper-middle-income countries	Unsatisfactory	Unsatisfactory	Unsatisfactory	17	Americas (47%)
7	Upper-middle-income countries	Moderate	Moderate	Moderate	14	Americas (50%)
8	Upper-middle-income countries	Good	Moderate	Poor	17	Europe and Central Asia (47%)
9	High-income countries	Moderate	Unsatisfactory	Poor	7	Arab States (86%)
10	High-income countries	Good	Moderate	Poor	18	Americas (44%)
11	High-income countries	Good	Good	Moderate	31	Europe and Central Asia (90%)

Note: Criteria “very poor” to “good” are based on the unweighted averages of each dimension for the respective country group. “Very poor” implies an average lower than 1.8, “poor” an average between 1.8 and 2.6, “unsatisfactory” an average between 2.6 and 3.3, “moderate” between 3.3 and 4.0, and “good” above 4.0. The dominant region is the one that constitutes the plurality of countries in the group among all the regions. The countries forming the cluster groups are listed in table B.1.

8 The report uses the World Bank income grouping: low-, lower-middle-, upper-middle- and high-income countries.

9 For each dimension, the simple average of the indicators on the scale 1–5 is computed. The averages of the dimension can therefore take fractional values in the range 1 to 5. Missing indicators are ignored when computing the average, which is equivalent to assuming them to be equal to the average of the non-missing indicators. For two countries, no indicators are available in the environmental dimension. In those cases, the global mean of the dimension is assumed.

10 A global aggregate allows for a very clear exposition but misses all of the heterogeneity among countries. At the other end, presenting each country as its own group would fully capture the heterogeneity but we would not be able to see the forest for the trees.

11 The figure presents visually the average scores that have been coded into categories in table 1.1.

In sum, global progress towards SDG 8 is well off track even when evaluated at this more disaggregated level. Ten of these eleven clusters of countries are projected to miss a large majority of the 23 targets. The one cluster whose prospects are estimated to be moderate or good in most of them, cluster 11, is nevertheless likely to fall short in over a quarter of countries.¹²

Some of the country clusters are strongly dominated by a single region, while others are constituted by multiple regions (table 1.1). Clusters 1 to 4, all characterized by poor or very poor prospects in terms of social inclusion and decent work, are dominated by African countries. Cluster 6, dominated by Latin American countries, could be characterized as being in the middle-income trap. That is, they have achieved upper-middle-income status but, based on past trends, their measured prospects for higher economic development are not good.

Around a third of lower-middle-income countries, and all low-income countries, are in country cluster groups whose prospects for achieving targets in the economic dimension are poor or very poor (table 1.1). Nevertheless, there are 62 non-high-income countries in clusters with a moderate or good average expected prospect of economic development.¹³ Country cluster groups scoring lower in the economic dimension also tend to score lower in the social dimension, while no such pattern can be observed with regards to the environmental dimension.¹⁴

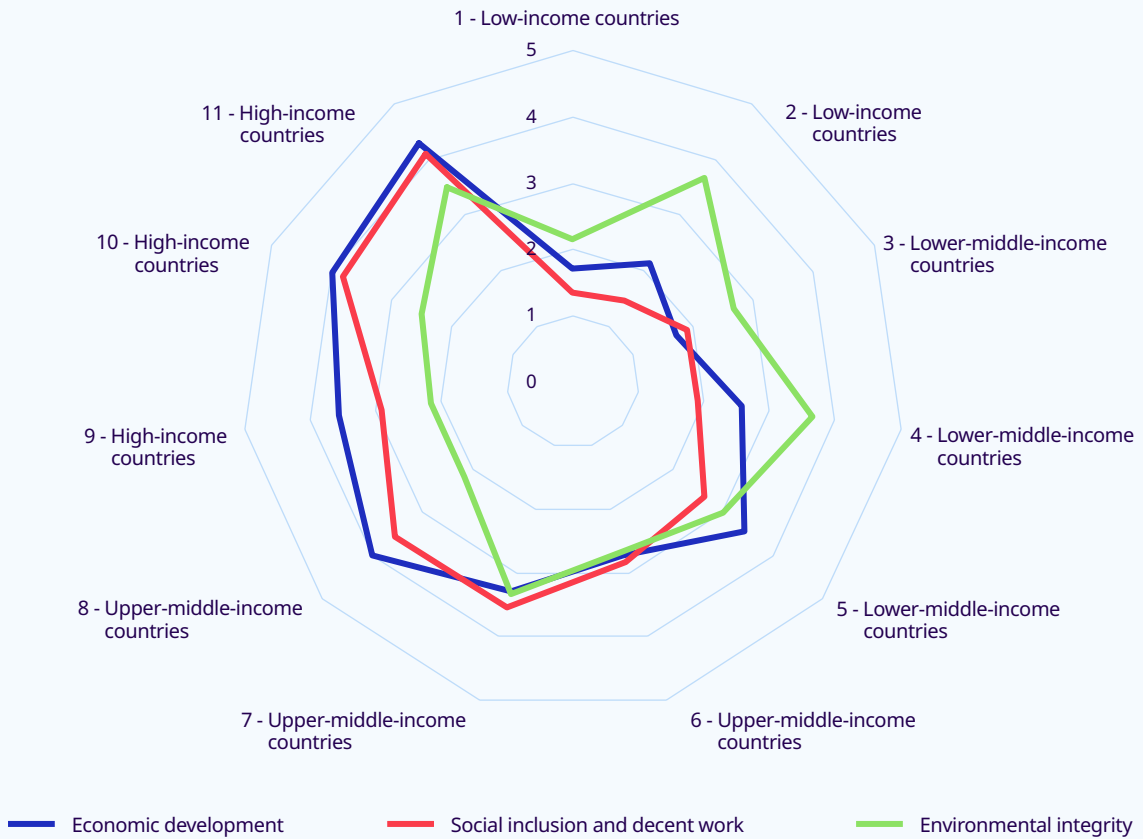
The social dimension scores lower than the economic dimension in all but three of the country cluster groups (figure 1.2). Across countries, the average score in social inclusion and decent work ranges from 1.7 to 4.2 for the 29 countries with an average score in economic development between 3.4 and 3.6. Mainstream economic theory does not have a social dimension, and the history of industrialization and development shows that economic growth itself does not lead automatically to social progress. The latter is the result of political will and collective agency to harness economic progress for social objectives. The ILO embodied this will when its founders, in 1919, defined social justice as the ILO's overarching constitutional objective. Ever since, the ILO's instruments and international labour standards to improve the conditions of workers and promote decent work have been based on the conviction stated in the Preamble of the ILO's Constitution, that "[c]onditions of labour involving such injustice, hardship and privation to large numbers of people can produce unrest so great that the peace and harmony of the world are imperilled".

12 See appendix C for a detailed breakdown of prospects by indicator and cluster.

13 High-income countries all score moderate or good in the economic dimension. GDP per capita has a good score in construction, and access to financial accounts and to electricity also generally score good in those countries.

14 The correlation in average scores in the economic and social dimensions across the 11 country groups is 0.92. The correlation with the average score of the environmental dimension is close to zero for both the economic and the social dimensions.

► **Figure 1.2. Imbalances of average prospects for SDG 8 across three dimensions, by country cluster group**



Notes: The figure shows the average score in each dimension of prospects of achieving SDG 8 by 2030 for each of the country cluster groups. Scores for the underlying indicators are derived by applying the scale in table A.1 to the simple average of each indicator.

Insufficient decoupling of economic growth from environmental degradation is strongly reflected in the results. Four out of six of the country clusters with a moderate or good score for economic development score at best unsatisfactory in the environmental dimension, highlighting major imbalances in the development path. Yet, all country income groups have one country cluster that manages to achieve a moderate level of environmental integrity, showing that further environmental integrity is possible. However, the reasons for the moderate score in the environmental dimension differ. For example, poor levels of economic activities rather than a conscientious effort to decouple could be the reason for the absence of environmental degradation in low-income countries.

Low-income countries in cluster 1 display dire prospects in all dimensions of SDG 8.¹⁵ The only indicator to score at least “moderate” is material consumption per capita. However, this is also a consequence of the low prospects for economic development. The poor score for natural resource rent, along with the poor score for GDP per capita, suggests that this country group contains some relatively resource-rich countries that fail to translate the revenues earned from such activities into progress towards SDG 8 in all dimensions. In addition, some of the countries are experiencing armed conflicts.

Low-income countries in cluster 2 display highly unbalanced prospects for SDG 8, with fairly moderate prospects for environmental integrity but very poor prospects for social inclusion and decent work. The very poor scores for access to electricity and economic complexity, along with very poor scores for the majority of the social indicators, show the structural deficits that persist and need to be tackled to improve prospects for SDG 8. Unemployment shows a moderate score to a large extent also because the absence of social protection systems pushes people into subsistence activities, mainly agriculture, to make some kind of living.

Lower-middle-income countries experience differing prospects for SDG 8, with countries in cluster 3 unable to sustain a virtuous cycle of economic and social transformation, and strongly imbalanced prospects in favour of the economy in countries in cluster 5. Many social indicators are at a poor or very poor level across all three country clusters of lower-middle-income countries, the situation in cluster 3 being particularly dire. Country clusters 4 and 5 are quite similar, with cluster 4 showing higher prospects in terms of environmental and social indicators but lower prospects regarding economic indicators. Lower-middle-income countries present, on average, at least unsatisfactory prospects for environmental indicators. In particular, the contribution of natural resource rent to GDP is very low, reducing the exploitation of the environment.

Country cluster 6 of upper-middle-income countries lacks significant prospects in terms of economic and social indicators. Labour productivity growth is very poor, economic complexity and research and development expenditures are poor, and there is high unemployment and very high youth NEET rates. The cluster includes a number of oil exporters.

Country clusters 7 and 8 achieve similarly moderate prospects in terms of social indicators but differ with regards to economic and environmental prospects. While country group 7 shows balanced progress across the three dimensions, country group 8 shows moderate economic prospects but scores poor in the environmental dimension.

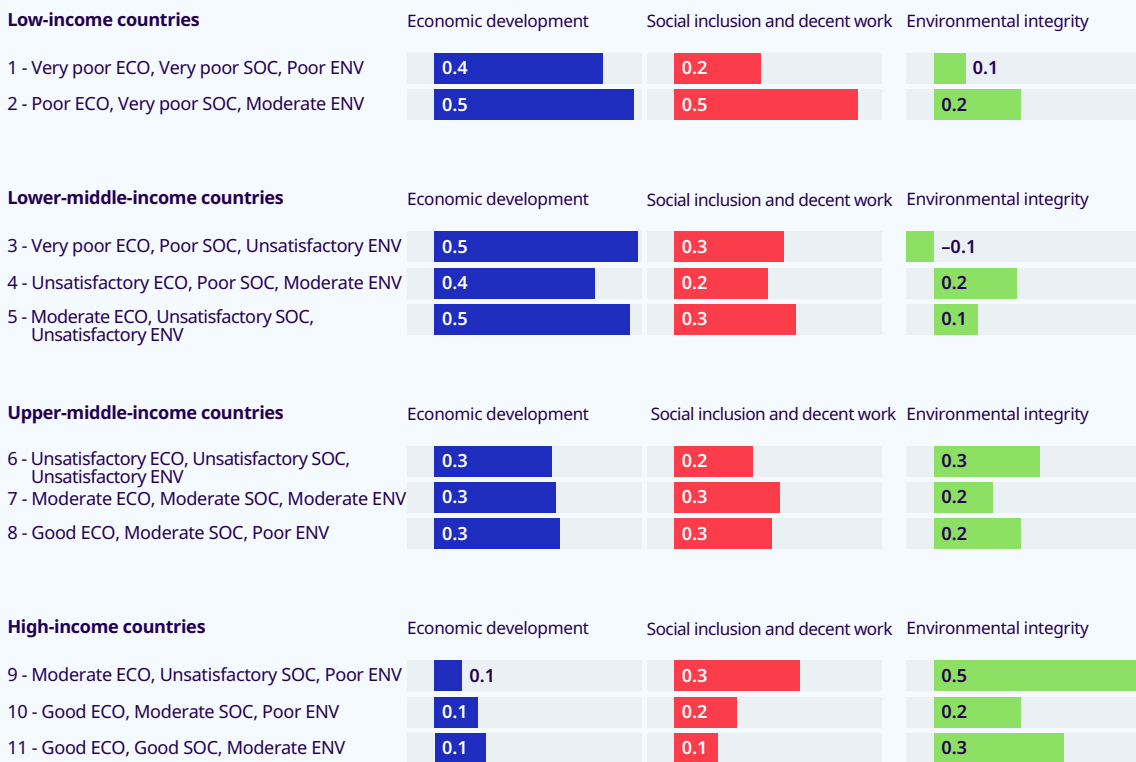
High-income countries show varying prospects for social and environmental dimensions but they generally score at least moderate in the economic dimension. Gender equality is a deficit in all high-income countries, and cluster 9 – constituting mainly countries from the Gulf Cooperation Council of the Arab States – has additional shortcomings in social protection coverage, NEET, informality and the labour income share. While material consumption is high, countries in clusters 10 and 11 have started to reduce CO₂ consumption per unit of GDP. Importantly, though, many firms in high-income countries attempt to meet emission targets not only through technological innovation, but also through outsourcing of CO₂ emissions to countries without such targets (Dai, 2021). Furthermore, countries in cluster 10, which includes many non-European high-income countries, tend to score significantly worse in the environmental dimension than the mostly European countries of cluster 11. Country cluster 9 is strongly imbalanced towards economic targets and also reveals deficits with quite poor economic complexity and very poor labour productivity growth.

¹⁵ The figures with the indicators for the various country cluster groups are presented in appendix C.

1.2.3. Progress towards achieving SDG 8

Although low-income and many lower-middle-income countries show that the highest rates of progress globally are in the economic and social dimensions, these advances are still insufficient to ensure good prospects of achieving the targets of SDG 8 (figure 1.3). Progress is represented by the rate of change of the indicators of SDG 8, driven by the transformation that countries undergo in order to approach the SDG targets. High-income countries are expected to have the smallest improvement in the economic dimension, given the scale defined in this report. This is partially due to them already being at the highest level of prospects for a number of indicators, so that no further improvement in the score is possible.¹⁶ Countries with a higher rate of progress will come closer to the targets than countries at the same initial level but with slower progress.

► Figure 1.3. Expected average progress in the dimensions of SDG 8 by country cluster between 2022 and 2030



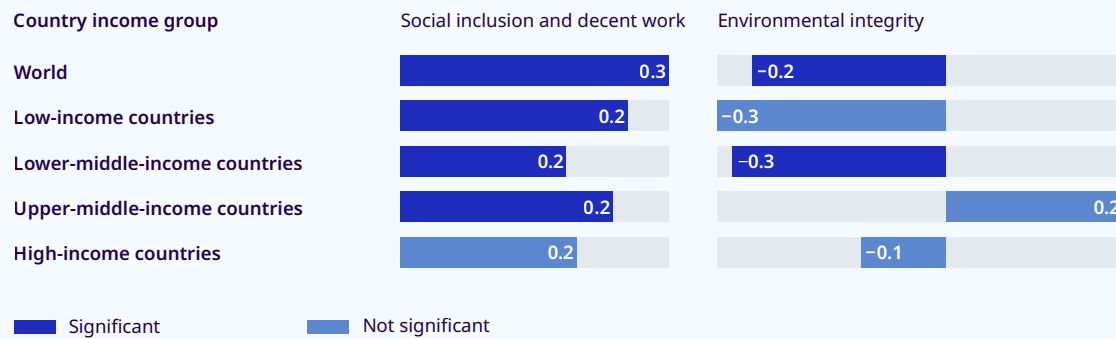
Note: Figure 1.3 shows the implied change in average score in the dimensions of SDG 8 between the indicator values of 2022 (or the latest available) and the extrapolated value in 2030, for those indicators where such an extrapolation is possible. Excluded indicators are labour productivity growth, social protection coverage, gender income gap and child labour. A fractional change in a score does not necessarily imply a change in a score of an indicator, but it could if the underlying indicator is close to a threshold. Bars of different lengths can show the same values due to rounding off.

16 For example, a country that is already above the threshold of US\$35,000 (purchasing power parity) in GDP per capita in 2022 will show zero improvements in the score of the indicator despite having positive per-capita growth. This does not mean that those countries are not progressing further – they do so beyond the targets set by the SDGs.

Globally, progress in the economic dimension is associated with progress in the dimension of social inclusion and decent work, but with retrogression in the dimension of environmental integrity.

However, the relationship between the economic and the social dimensions tends to be significant only for low- and middle-income countries, while for high-income countries it is not significant (figure 1.4). Furthermore, the estimated coefficient of the relationship between the economic and social dimensions is rather small (around 0.3). This implies that progress towards SDG 8 needs to be pursued actively in all three dimensions, and that a focus on a single dimension will likely lead to significant progress only in that dimension.

► **Figure 1.4. Relationship of progress in the social and environmental dimensions with the economic dimension, world and country income groups**



Note: Lightly shaded bars indicate that the coefficient is not statistically significant. The figure shows the estimated coefficient of the relationship between average progress towards SDG 8 in the economic dimension and the social or environmental dimension. The coefficients are derived using ordinary least squares and all country data. Positive estimated intercepts (not shown) imply that environmental integrity could increase at the same time as economic development increases, but the higher the economic progress, the smaller the increase will be.

1.2.4. The impact of the COVID-19 crisis on prospects of achieving SDG 8 by 2030

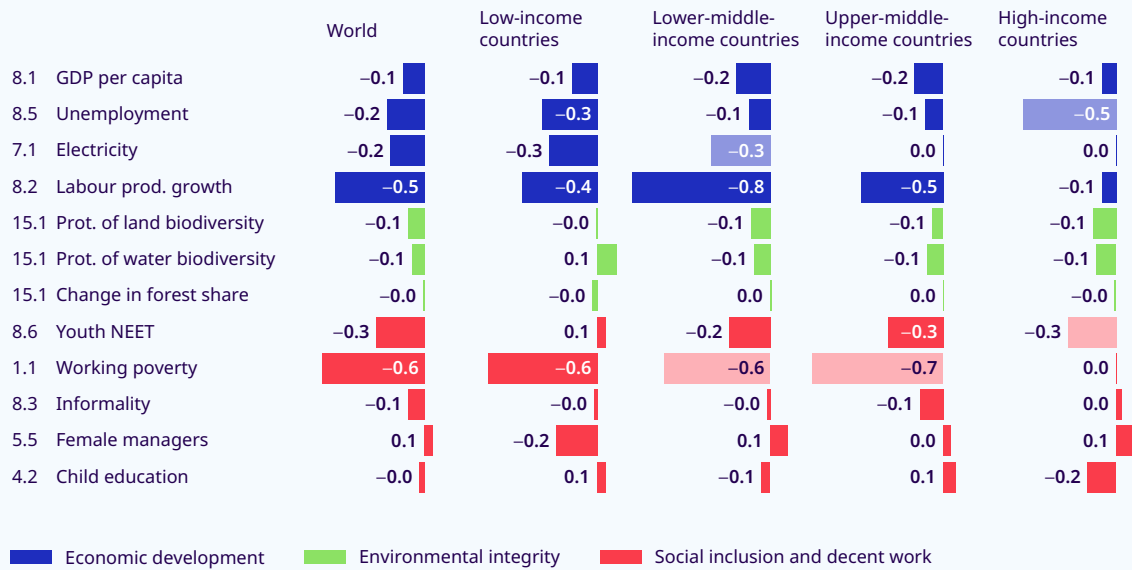
The COVID-19 pandemic, along with other environmental, economic and geopolitical crises occurring since, have deteriorated the prospects of reaching the targets of SDG 8 across most indicators. However, the setback is small relative to the major gaps in the prospects for most indicators, meaning that the crises are not decisive for the failure to achieve SDG 8 at the current rate of progress.¹⁷ Working poverty is the indicator most impacted, with the crisis breaking years of a declining trend (figure 1.5). Labour productivity growth has also been heavily affected. For many of the indicators, the impact of the COVID-19 crisis has only been marginal compared to the massive gaps in prospects of reaching the targets of SDG 8 that existed before the crisis. The crisis revealed the importance of social protection and many countries responded by expanding social protection measures (ILO 2021b).¹⁸

¹⁷ The analysis compares the pre-2019 trends with those up to 2022. The effect of individual crises cannot be identified separately.

¹⁸ Lack of available data means that the impact of the COVID-19 pandemic is not represented in figure 1.2.

However, many of those measures were temporary. Accelerated and sustained efforts and mobilization of domestic resources are needed in strengthening social protection systems and other policy measures for SDG 8 to achieve meaningful progress by 2030.

► **Figure 1.5. Impact of COVID-19 crisis on prospects of achieving SDG 8, world and country income groups**



Note: Figure 1.5 shows the implied fractional change in the prospect scores of the indicators of SDG 8 when evaluating progress in 2022 compared with 2018. A negative score is obtained when the rate of progress is lower over the period 2010–2022 than the period 2010–2018, meaning that the extrapolated value of the indicator in 2030 is now further away from the target than what would have been extrapolated in 2018, the latest year analysed in the previous report on SDG 8 (ILO 2019a). For example, the gap to target for youth NEET increases by 1.3 percentage points, which is 27 per cent (rounded to 0.3) of the percentage point range of 5 between the values for the scores of 2 (25 per cent) and 3 (20 per cent). A change in the fractional score does not necessarily imply a change in the score, as the implied extrapolated value might still fall within the same score for prospects. Only indicators with sufficient availability of time-series data are shown. Opaque fill, as shown for target 8.5., high-income countries, means that the indicator is extrapolated to nevertheless achieve the SDG target by 2030, though at a later date.

Low-income countries have shown the least resilience to the COVID-19 crisis in terms of prospects of reaching SDG 8. This country income group has been set back in areas where prospects were already lacking. While the declining trend in working poverty has slowed down similarly across low- and middle-income countries, the rate of progress remains sufficiently high in middle-income countries to likely reach the working poverty target by 2030 – but not so in low-income countries. The slowdown in labour productivity growth also hits low-income countries particularly hard, as that country income group faces huge productivity gaps with respect to high-income countries and has failed to achieve notable convergence over the past decades (ILO 2023b).

2. Collective capabilities shaping transformative change for progress in SDG 8

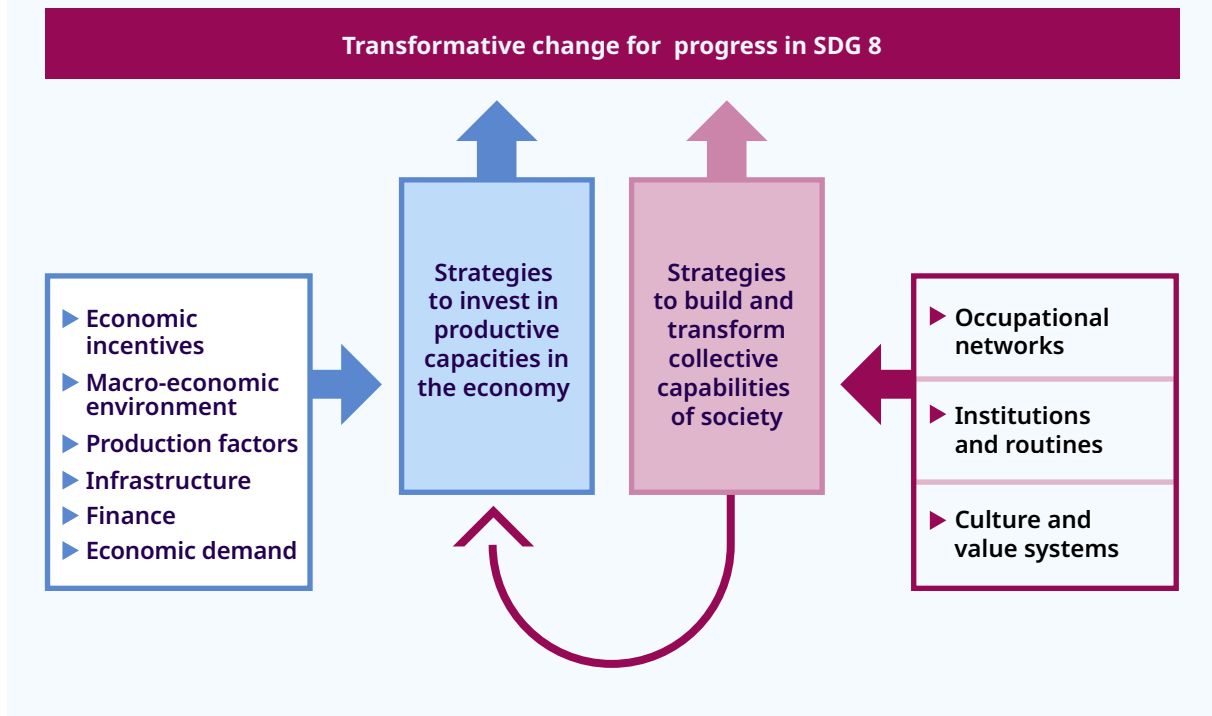
The 2030 Agenda recognizes the need for transformative change to achieve rapid progress in the SDGs. Transformative change implies a profound shift that goes beyond incremental improvements or modifications. It means doing things differently – not just a little more or less of something we are already doing. It involves lasting and significant changes in structures, behaviours and paradigms, at the individual, organizational, societal and global levels. Achieving SDG 8 requires mobilizing the forces that enable and drive transformative changes for sustained and inclusive economic growth, particularly in the least developed countries, but also in middle-income and emerging countries. This is necessary to raise income levels, generate decent jobs and improve well-being for all citizens.

Development economists who deal explicitly with transformative processes explore the complexity and dynamics of such processes. They recognize the central role of societies, and their networks, institutions, cultures, ideologies and aspirations in shaping economic transformation (Acemoglu and Robinson 2014; Keun and Pyka 2021; Mokyr 2002; 2016; Myrdal 1974; Schumpeter 2011; Veblen 1898). However, mainstream economic growth theories largely overlook these societal considerations. This report argues that this is why they have faced challenges in explaining and promoting transformative change and integrated progress of the nature envisioned by SDG 8, leading the United Nations and others to explore new “Beyond GDP” concepts and metrics (United Nations 2022).

Figure 2.1 illustrates the shift in thinking that is required in this respect. The emphasis of mainstream growth theories on investment in productive capacity and encouragement of technology transfer from developed to developing economies needs to be complemented with an expanded appreciation of the cultivation of collective capabilities and societal learning for sustained, inclusive and sustainable economic growth for productive jobs, decent work and full employment. Such thinking should build on the dynamic framework introduced by the ILO in 2019, which explains progress towards SDG 8 as a circular cumulative process of economic and social transformation, with a society's capabilities shaping its economic transformation.

The left side of the figure explains transformative changes as a sustained process of investment which is shaped by economic factors such as incentives to invest, access to finance, or macro-economic and demand conditions. These variables are the focus of mainstream economic models explaining innovation, technological change, economic growth and catching up of developing countries. The right side of figure 2.1. addresses the role of societies and their collective capabilities in shaping transformative change in economies. Economies are embedded in societies, and therefore societal conditions and the capabilities of a society play an important role in determining the nature of change the economy is able to implement.

► Figure 2.1. Collective capabilities, transformative change and progress in SDG 8



Progress towards SDG 8 is fundamentally driven by different dimensions of capabilities that each play a key role in enabling and shaping transformative change (see figure 2.1). These capabilities are discussed under different names in the economic development literature. They are called social capabilities, organizational, dynamic, innovation or technological capabilities to capture the different roles these capabilities play in a process of change, they may be called productive capabilities when focusing on the structural dimension, and human capabilities (Sen 1989) when focusing on the purpose dimension of change (Nübler 2014).¹⁹

The common property of these different concepts is the collective nature of capabilities. Collective capabilities enable social groups to innovate, develop new products and adopt new technologies; generate rapid and effective change processes; and to establish consensus on goals and aspirations for the common good. They therefore exist at the levels of social groups such as the team of an enterprise, a local community, workers' or employers' associations, professional networks or societies, and they reside in relationships, networks, structures, consensus, cooperation, or interactions. The concept of collective capabilities is thus fundamentally different from the concept of skills, both at the individual or aggregate levels, and only collective capabilities, not individual capabilities have the potential to transform economies.

¹⁹ Nübler (2011 and 2014) provides an overview of the different strands of the literature on capabilities, which distinguishes between capabilities at the levels of the economy, organizations, geographical region or specific sectors of the economy. Andreoni, Chang and Estevez (2021) review the collective and productive dimensions of the human capability approach of A. Sen. Notable recent studies discussing capabilities for transformative change in a developing country context are Andreoni, Mondliwa and Roberts (2022) on industrial development in South Africa; the UNCTAD Technology and Innovation Report 2023; and the UNIDO Industrial Development Report 2021.

In particular, three distinct “carriers” and types of capabilities can be distinguished, as depicted in figure 2.1. These are: society’s occupational networks, its institutions and routines, and its culture and value systems. These capabilities shape the options for changes in the three dimensions of transformative change discussed above.

While mainstream economics neglects capabilities of societies, a growing consensus recognizes that

“... capabilities clearly matter. If someone is not doing something that we as a society value, it might be because they can’t, not because they don’t want to. This weakness in economics has far-reaching implications for our understanding of economic growth and development, which is fundamentally about the social accumulation of productive capabilities” (Hausmann 2020).

The following section discusses the nature of the capabilities that create options for different dimensions of transformative change. The second section of this chapter provides an epistemic approach to explain the evolution of collective capabilities as a societal learning process.

► 2.1. Dimensions of transformative change and collective capabilities

Transformative change is described by three distinct dimensions: structural change, the process in time and the purpose of change. These dimensions are equally relevant for achieving progress in SDG 8. Societies require different types of dynamic capabilities to enable and shape these three distinct dimensions of change. While this section looks at these three dimensions of change and relevant dynamic capabilities separately, it should be kept in mind that they are complementary in accelerating progress in SDG 8.

2.1.1. Structural transformation for productivity, jobs and development

Structural change is widely discussed as a key driver of productivity growth, job creation and economic development. A structure may be defined as an arrangement and organization of interrelated elements in a system.

Relevance of structural change for SDG 8

What a country produces matters, and some production structures contribute more than others to improvements in productivity, wages, employment, decent work and opportunities for learning. Therefore, structural changes are considered important elements of strategies to promote SDG 8 targets. Empirical studies identify three distinct patterns of changes in economic structures: sectoral transformation, diversification into new or higher quality products and changes in complexity. First, following the Industrial Revolution, most European countries entered a process of sectoral transformation, with the share of manufacturing and the industrial sector increasing in GDP and total employment, while the share of agriculture declined. Manufacturing has been identified as the “leading sector” in the process of productive transformation. It is characterized by economies of scale, strong backward and forward linkages, and widespread opportunities for technological progress, knowledge spillover and the creation of better jobs through direct income-induced and indirect linkage effects (Lavopa and Szirmai 2014). With the rise of the knowledge economy in industrialized countries, the share of the service sector in total employment and output also increased. Asian catching up countries followed this pattern.

For low-income countries, economists provide mixed evidence. While some identify manufacturing as the sector with the highest potential for productivity and employment growth, others find a high potential for advanced services as a “leading sector” in economic development. Empirical evidence from many low-income countries, however, shows that workers shift from low-skilled agriculture to low-skilled service sector jobs in the informal economy, while the modern formal industrial sector fails to absorb workers from the traditional sector, as predicted by Lewis (1954).

Second, diversification into higher quality or new products has been identified as the most notable pattern of productive transformation in middle-income countries, allowing countries to move to upper-middle-income ranks. Diversification may be incremental when similar products are developed that use similar sets of resources and can thus be easily combined into a new product. Diversification may therefore be path-dependent and generate product clusters. It may also be reflected in jumps into specific industries, catalysing broader economic transformation. Diversification leads to more diverse jobs and employment patterns, export structures and fiscal structures. It also contributes to greater resilience against shocks (Usman and Landry 2021).

Third, increasing complexity of production and export structures is the consequence of enterprises’ continuous quest for higher productivity and competitiveness. Automation and fragmentation of the production process increases productivity and destroys jobs, while diversification into more complex activities with high demand elasticities generates both productivity and new jobs (Astorga, Cimoli and Porcile 2014). Where new technologies destroy jobs in existing activities, new jobs with new and more complex occupational profiles always emerge. New jobs are created, for example, in the knowledge, technology-producing and related service sectors, which generate sophisticated, often hybrid, occupations. Automation enhances job complexity, particularly at the machine/human interface, through mobile robots, smart machines and artificial intelligence. At the same time, the new jobs in the platform economy require significantly fewer skills (ILO 2021a and 2018).

Productive jobs and full employment are key targets of SDG 8. Generating patterns of structural change to achieve these targets are major challenges in all countries.

Collective capabilities to shape structural transformation: Occupational networks

Societies need to build collective capabilities that enable enterprises to develop new economic activities and technologies, and the economy to transform production and export structures to achieve SDG 8 targets. Collective capabilities to shape patterns of structural change for progress towards SDG 8 are embodied in the occupational network of the labour force, which refers to the sets of different occupations existing in a country, and the relations between these occupations. Hence, the particular mix, diversity, density, complexity and relatedness of occupations are carriers of capabilities for structural change.

Enterprises produce products that require different sets of complementary tasks to be performed, and each of these tasks requires a set of skills. Occupations emerge because products and tasks are too complex to be mastered by one person. Consequently, individual workers specialize in particular sets of skills, which we call occupations, and then enterprises form teams to combine their different skills sets, or occupations, to produce a good or service. Box 2.1 provides definitions and concepts related to occupations, tasks and jobs. Enterprises develop new goods and services by identifying new possible combinations of existing skills within the occupational network, establish links to other networks, or enrich the knowledge base through group learning and collaborative learning (Becker and Murphy 1992).

► Box 2.1. Occupations, tasks and jobs

The [International Standard Classification of Occupations \(ISCO-08\)](#) defines a job as a “set of tasks and duties carried out, or meant to be carried out, by one person for a particular employer, including self employment”. An occupation is defined as a set of jobs whose main tasks and duties are characterized by a high degree of similarity. This definition enables a job to be described by the scope, nature and diversity of tasks, properties that determine the complexity of jobs. At the one-digit level, ISCO-08 distinguishes between nine occupational categories and four skills levels, associating each category with different skills levels (SL). Skill is defined as the ability to carry out the tasks and duties of a given job. For the purposes of ISCO-08, two dimensions of skill are used to arrange occupations into groups: skill level and skill specialization.

The collective capabilities of a society differ significantly between countries, to the extent that their occupational networks differ. They are not determined by individuals' particular skills or whether they match with labour market needs, but by the occupational structure in a country.

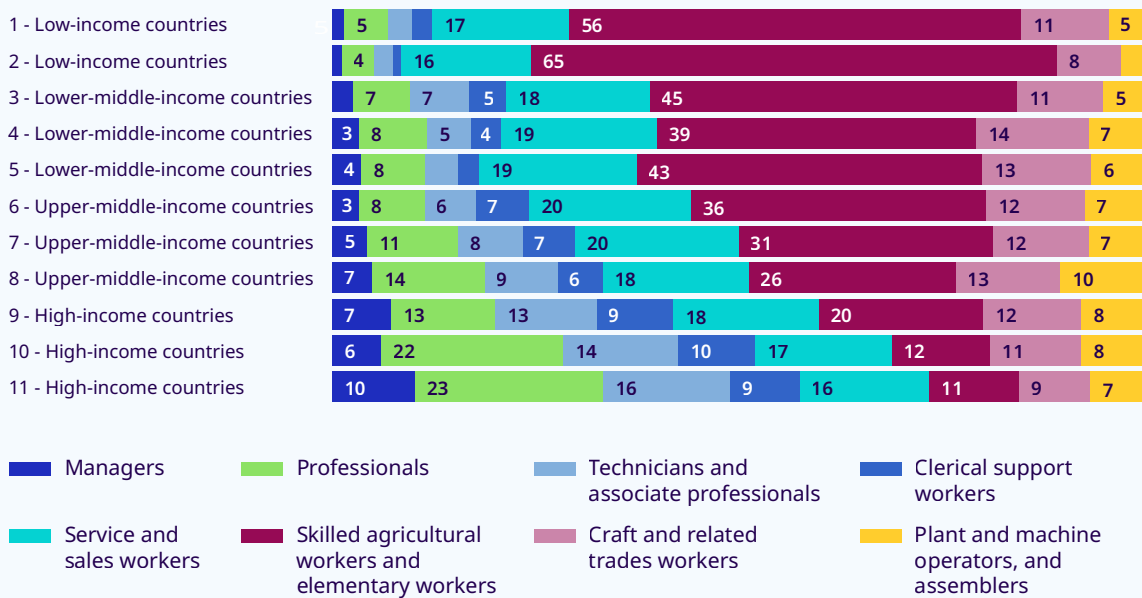
Figure 2.2 shows the specific occupational structure for each of the 11 country clusters discussed in chapter 1 of this report. The graph supports the general observation that, as income levels increase, the share of employment in the skills-intensive occupational categories – professionals (SL4), technicians and associate professionals (SL3), clerical support workers (SL2) and managers (SL3 and SL4) – also increases,²⁰ while the share of elementary (SL1) and skilled agricultural workers (SL2) plummets. Most importantly, this figure also shows significant differences in occupational structures between country cluster groups within the four country income groups. For example, within the high-income group, the occupational pattern of country cluster 9 differs considerably from country clusters 10 and 11, in particular in the share of professionals, skilled agricultural workers and elementary workers. Societies develop particular occupational structures and networks as the economy develops; in turn, these determine the future options for sectoral change, diversification and change in economic complexity.

The relationships between occupational structures, patterns of change in economic structures, and the patterns of imbalances in economic, social and environmental achievements require further analysis, in particular by exploring these interactions at more detailed levels, such as the three- and four-digit levels of occupational structures. This analysis would deepen our understanding of the options for diversification embodied in occupational structures, as occupational structures carry dynamic capabilities for diversification.

The capability perspective has three implications. Firstly, products for which the occupational network does not provide all the relevant skills cannot be produced. In other words, these products are not part of the options set. Second, even when the occupational or skills network provides capabilities and options, it may not be enough to be translated into innovation. Varying innovation literature discusses the role of the entrepreneurial State, cost structures, incentives and institutions for translating capabilities into innovations (Mazzucato and Perez 2022, UNCTAD 2023, UNIDO 2021). Third, while the density, diversity and complexity of the occupational network shape the capabilities to develop new products, the nature of products produced will in turn influence the tasks that workers perform, and thus, the nature of occupations and the occupational network will transform, and so will the collective capabilities. This creates path-dependent patterns of diversification. Lastly, diversification paths differ significantly between regions with some demonstrating significantly higher dynamics than neighbouring regions. History matters in this process because it takes time to build up regional specific occupational networks in the local labour force in distinct industries (Neffke, Henning and Boschma 2011).

20 ISCO-08 distinguishes between four skills levels and maps major occupational groups to these skills levels.

► **Figure 2.2. Occupational structures by country clusters**



Note: The figure shows unweighted averages within each country cluster group of the shares of employment in each occupation. Occupations are classified according to the International Standard Classification of Occupations (ISCO), one-digit level. It distinguishes between three skills levels (SL): SL(1) elementary occupations; SL (2) clerical support workers, skilled agricultural workers, service and sales workers, craft and related trades, and plant and machine operators and assemblers; SL (3 and 4) technicians and associate professionals, and managers and professionals.
Source: ILO modelled estimates, November 2022.

Various methodologies to assess capabilities for structural change

The concept of capabilities for structural change and diversification has gained significant attention among researchers during the past decade, mainly as a result of the renewed debate on industrial policies, and the development of new tools for network analysis and presentation. Several approaches were developed with the aim of better understanding the nature of capabilities and the options they create. Some of these approaches are discussed below, but it should be noted that more country studies are needed to fine-tune these approaches.

Educational attainment structures

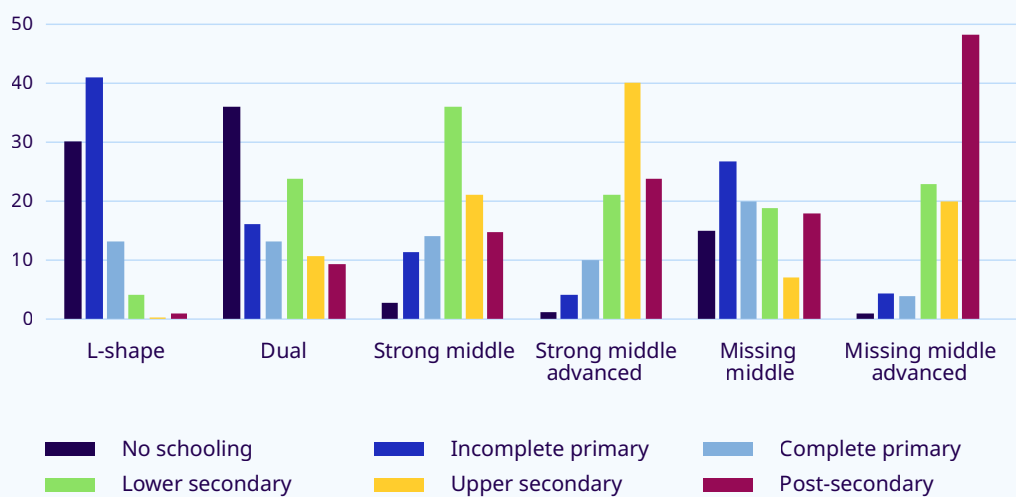
The educational attainment structure is applied to understand a country's capabilities to transform economic structures. One interesting finding shows that the educational attainment structures existing in the labour force are reflected in the share of manufacturing in their economies, a sector which many developing and developed countries aim to promote to enhance productivity and good jobs (Nübler 2013 and 2018). Traditionally, the educational achievement of the labour force is measured by average years of schooling. This measure, however, hides important information about the nature of the knowledge and skills the labour force has acquired.

Following UNESCO standards, the educational categories in most countries are classified as: no schooling, incomplete primary education, complete primary, lower secondary, upper secondary and higher education. Data sets from individual countries allow for the calculation of the share of the labour force that has graduated from each of these different categories. By sorting the different educational

categories from the lowest to the highest category, and comparing them across countries, several patterns of educational attainment structures emerge. Figure 2.3 presents a typology of educational attainment structures. While the L-shape and the dual educational attainment structures are found only in poor countries, the strong middle and the missing middle formations are found largely in middle-income countries, and the advanced versions of the strong middle and the missing middle shapes dominate in developed countries.

These different educational attainment structures can be used as a proxy for the occupational structure and the complexity and mix of skills in the labour force. A strong middle educational attainment structure (a bell shaped curve) indicates a large share of the labour force that has graduated from lower- and upper-secondary education, and low shares in both primary and post-secondary education. Such an educational attainment structure is expected to lead to an occupational structure in the labour force with high shares of medium-skilled occupations, but less shares in the high-skilled occupations. These strong middle educational attainment structures are found in particular in countries which also demonstrate a larger share of manufacturing in GDP when compared to countries with missing middle educational attainment structures. These latter structures show a relatively high share of graduates from lower-secondary education, a very low share of graduates from upper-secondary education but a much higher share of graduates from post-secondary and university education. This seems to reflect a very unequal distribution of access to education beyond compulsory schooling. This missing middle educational attainment structure provides opportunities to develop a smaller industrial base, though it may provide wider options to develop activities in the skilled service sector, which may arise with the diffusion of frontier technologies such as artificial intelligence (Nübler 2018). This analysis also has an interesting regional component. For middle-income countries, we find the strong middle educational attainment structures mostly in Asian countries, while the missing middle educational attainment structures are mainly in Latin American countries. For high-income countries, strong middle educational attainment structures dominate in Germanic-speaking and Scandinavian countries, while missing middle educational attainment structures dominate in the English- and Romance-speaking countries. These regional differences, however, may be a reflection of cultures and value systems that belong to similar linguistic population groups.

► Figure 2.3. Typology of educational attainment structures



Relatedness of products, enterprises and industries

The product space, a network presentation of all products traded in the global market, calculates relatedness of products by the number of countries which export two products in tandem (Hausmann and Hidalgo 2011). The first panel in figure 2.4 shows the product space for all traded goods. Related products are grouped into product clusters. When a country produces a good that is located near the centre of the product space, where clusters are dense, many other related products can also be produced with given technologies. But this is different at the periphery. Goods located at the periphery are relatively unrelated, product clusters have few products, and many show limited complexity, such as agricultural products and extractive industries with limited opportunities to diversify (Hidalgo et al. 2007). The dots in colour show the export products with revealed comparative advantage >1 .²¹ The size of the bubble indicates the share of this product in world export markets.

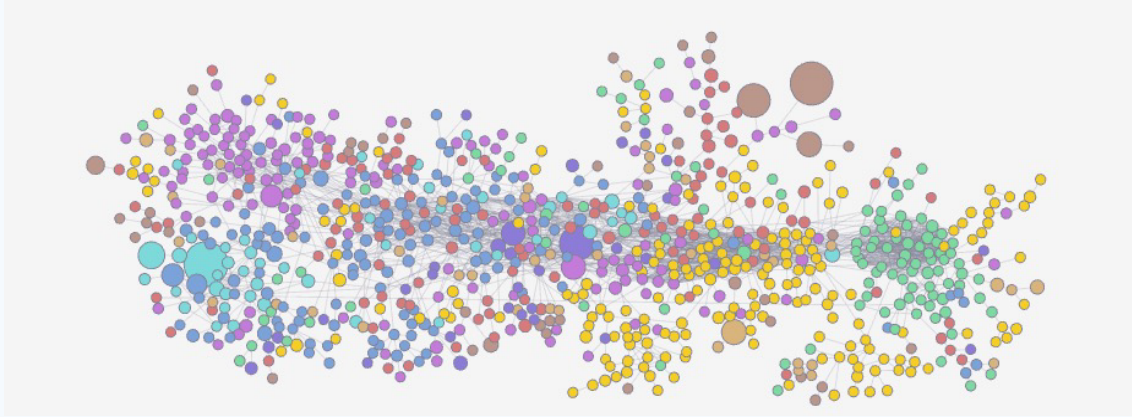
Panel 2 and panel 3 in figure 2.4 show how Viet Nam has navigated through the product space between the years 2000 and 2020. The gross export value increased from US\$16.9 billion in 2000 to US\$331 billion in 2020, with the electronics sector demonstrating exponential growth, in addition to growth in the textile and machinery cluster. Comparing the two export baskets, Viet Nam had entered few industrial product clusters in 2000, while the main export products were still mineral and agricultural products. Only 20 years later, the country exports most products in the textile cluster, and it has expanded the export basket into those products in the electronics cluster whose share in world trade was increasing rapidly which contributed to the export boom. Machinery products developed in the centre of the cluster, and these products are closely related to the products in the electronics sector.

This navigating pattern indicates the evolution of specific capabilities, and by analysing the change in occupational structures in the labour force, it is possible to identify the feasible products that may also be produced in the country. While it is rather easy to diversify within dense product clusters such as textiles, jumping into the electronics cluster requires significant effort. Viet Nam evidently was able to develop some of those critical occupations which enabled enterprises to diversify into all these products, and these capabilities enabled the country to integrate into value chains, and attract multinational enterprises (ILO 2023). A recent ILO study (2022b) shows the rapid job creation in the electronics industry in Viet Nam, which rose from 2.8 per cent of all manufacturing jobs in 2010 to 7.3 per cent in 2021 (ILO 2022b). Compared to the manufacturing sector as a whole and nationally, average income of workers in the electronics industry in Viet Nam is higher and there is a higher percentage of participation in the national social protection scheme.

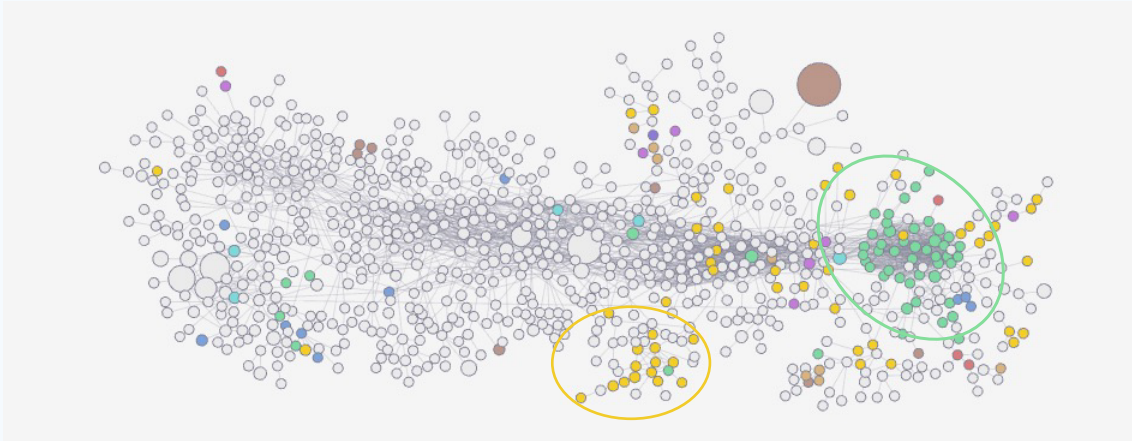
²¹ Revealed comparative advantage is >1 if the share of a product in the country's export basket is larger than the share of this product in the global export basket.

► Figure 2.4. Evolution of product clusters and diversification paths in Viet Nam

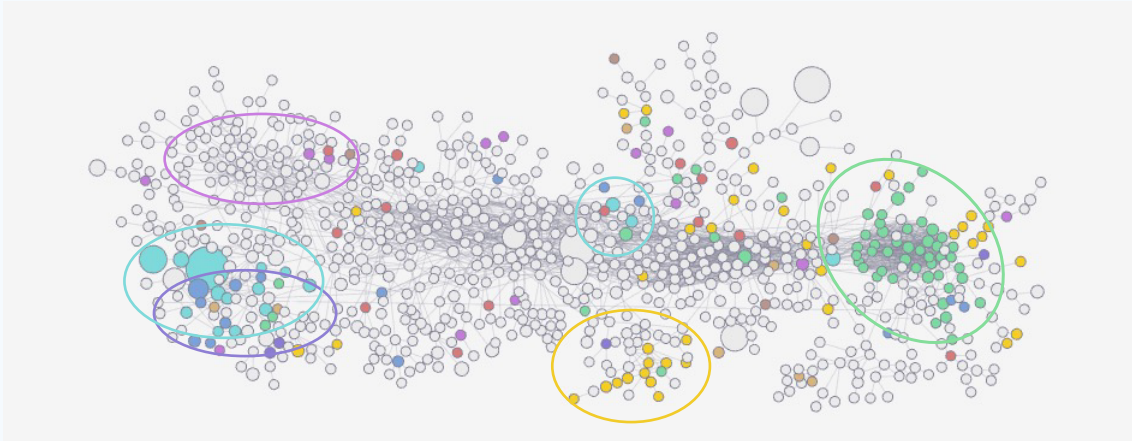
Product space map of the world



2000



2020

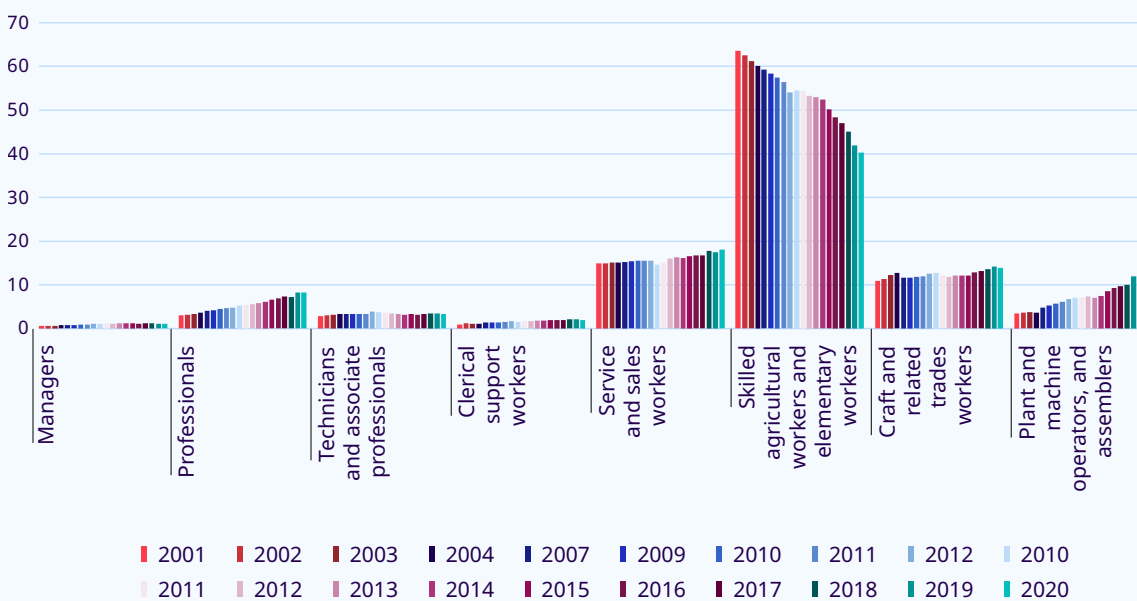


- | | | | | |
|---|---|---|---|---|
| ■ Textile | ■ Agriculture | ■ Stone | ■ Minerals | ■ Metals |
| ■ Chemicals | ■ Vehicles | ■ Machinery | ■ Electronics | ■ Other |

Source: The Growth Lab at Harvard University, 2019, "International Trade Data (HS, 92)", <https://doi.org/10.7910/DVN/T4CHWJ>, Harvard Dataverse, <https://atlas.cid.harvard.edu/explore/network?country=239&queryLevel=location&year=/>.

The rapid and sustained transformative change in Viet Nam is enabled by a significant change in the occupational structure. As Viet Nam innovated, diversified and developed new industries, it learned to innovate and transform, and diversified into high and medium skills occupations,²² which in turn, enhances capabilities and further options for diversification. Figure 2.5 shows changes, in Viet Nam, in the shares of the occupational categories at the one-digit levels during the past two decades. The share of professionals (classified as high skilled) almost tripled, and the share of plant and machine operators and assemblers (classified as medium skilled) increased from 3 to more than 13 per cent, while the share of low skilled occupations in employment decreased from 64 to 40 per cent.

► Figure 2.5. The evolution of occupational shares, Viet Nam, 2001–2020



Note: Figures for 2005–2008 are not available and have been extrapolated using a simple time trend on data for the remaining years. Source: Share of ISCO-08 occupations at the one-digit level (ILOSTAT).

Economic complexity

Lastly, the Harvard University Economic Complexity Observatory developed an economic complexity index to provide a metric for measuring the sophistication of a country’s production structure.²³ Economic complexity, which is highly predictive of future patterns of growth and development, corresponds to an enhanced capacity to produce and export a diverse range of sophisticated (high-productivity) products. A comparison of the evolution of the values of the economic complexity index in South American and South East Asian countries reveals that these regions selected two different strategies to transform their economies with enormous implications for the development of dynamic capabilities. The economic complexity index in South American countries decreased as a result of the deindustrialization and “reprimization” that occurred with the structural shift from manufacturing to extractive industries owing to changing macroeconomic conditions in the 1990s, and the specific patterns

22 According to the ISCO-08 skills classification at the one-digit level (ILOSTAT).

23 The website of the [Economic Complexity Observatory](https://www.economiccomplexityobservatory.org/) provides detailed information on the concept of economic complexity, and the methodology and formula of the economic complexity index.

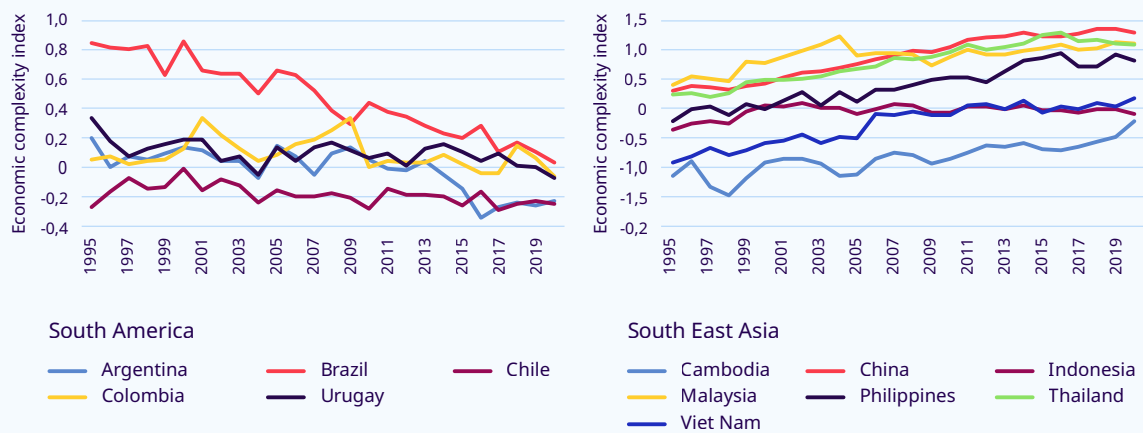
of integration into global value chains. Meanwhile, the rapid rise in global demand for natural resources, due in particular to a shift in global manufacturing towards China, relegated Latin America to suppliers of commodities. With the decline in manufacturing in Latin America came the dismantling of associated educational and vocational training structures. The data show, for example, highly unequal opportunities in accessing higher education, which has a negative impact particularly on rural and indigenous students, and students of African descent, and on learning opportunities and outcomes in those regions (UNESCO, UNICEF and ECLAC 2022).

In contrast, South East Asian countries have integrated into global value chains with manufacturing intermediates as a response to China's increasing demand for intermediate products. The strong middle educational attainment structure in South East Asian countries has provided the capabilities to enter such activities, and the labour force in these industries has acquired new sets of technical skills, which is expected to contribute to an enrichment of the skills network and thus the region's capabilities.

The different nature of the capabilities that evolved in South America and South East Asia as a consequence of different patterns of structural change is reflected in their "readiness" for taking advantage of emerging windows of opportunities for leapfrogging. Windows of opportunities can emerge from changes in the prevailing techno-economic paradigm, market demand or government regulations and policies (Lee and Malerba 2017). Countries with the right set of capabilities can take advantage of these opportunities to leapfrog into a new technology or industry, enabling catch-up and changes in technological and market leadership among countries (Perez et al. 1988).

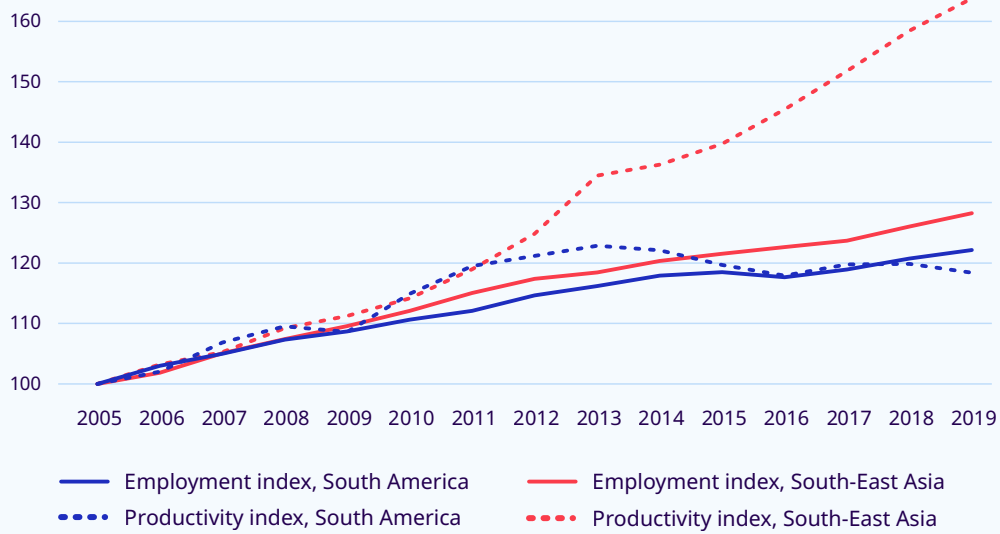
The rapid rise in global demand for electronic goods (smart phones, computers and robots) since the 1990s has opened up windows of opportunity for middle-income countries. However, while South East Asia attracted a large part of this market share, South America was unable to develop a significant electronics industry. This demonstrates, first, an increasingly complex circular cumulative process, whereby capabilities shape the options for diversification and, in turn, the new industries provide learning opportunities to enhance the skills network and capabilities. Second, although the dynamic capabilities of a society determine the options for structural transformation, countries have choices and are influenced by, inter alia, incentive structures, values and preferences. Third, capabilities also determine the resilience of countries to the degree that they are not destroyed during crises but can quickly recover. South East Asia and China have, for example, demonstrated resilience in the face of recent shocks.

► Figure 2.6. The evolution of economic complexity in South America and South East Asia



These different patterns of transformative change are also reflected in the productivity and employment trends in these two regions. Figure 2.7. shows that productivity growth (defined in terms of output per hour) was substantially higher in South East Asia as a whole compared to South America, while employment growth was also slightly higher in the former region. Performance of South East Asia relative to South America was stronger due to both the extensive (via more employment) and intensive (via higher output per hour worked) margins.²⁴

► **Figure 2.7. Change in productivity and employment, South East Asia and South America, 2005-2019**



Note: The data are presented in index numbers (2005=100). Productivity here is defined as output per hour in each region, calculated as the weighted average output per hour where the weights are given by each region's countries share of total hours worked per year. Total employment per year is the simple sum of employment across the countries in each region.
Source: ILOSTAT.

²⁴ See WESO Trends (2023c), chapter 3 for an in-depth discussion of productivity growth stagnation, including a concise regional analysis.

2.1.2. A high-performing process of transformation

While the structural dimension of transformative change influences productivity, the quantity and nature of jobs, and the level and patterns of employment, the process dimension shifts attention to the implementation in time.

Relevance for SDG 8

Transformative processes for SDG 8 are complex. Many stakeholders are involved, all performing different tasks. The distinct activities of enterprises, research institutes, governments, employers' organizations, trade unions and social communities need to be sequenced, coordinated, aligned and monitored. The challenge lies in generating high-performing processes of transformation in economies and societies, and virtuous circles so that progress in one system causes positive feedback and changes in the other one (ILO 2019).

Moreover, given the urgency to make progress in SDG 8, it is essential to accelerate the process of technological change and innovation and generate "productivity explosions through increasing returns, synergies, innovation and rapid diversification" (Cimoli, Dosi and Stiglitz 2009; Perez 2010). The 2030 Agenda has therefore established the Technology Facilitation Mechanism to support harnessing science, technology and innovation, and make use of the huge stock of knowledge existing in the world to decouple economic growth from environmental damages while creating jobs and decent work. This requires investment in environmentally friendly or green technologies and activities to protect climate, biodiversity and oceans (Mazzucato and Perez 2022; Lema, Fu and Rabellotti 2021). While such emerging green and blue techno-economic paradigms were discussed mainly in relation to developed countries, they may open up windows of opportunities for developing countries to move into new trajectories distinct from those followed by the advanced economies. These new trajectories involve different innovation and development orientations, providing opportunities for emerging countries to leapfrog and develop technological leadership in these new green industries (Lema, Fu and Rabellotti 2021).

While new knowledge and technologies may provide solutions for SDG 8, it is also essential that all stakeholders trust each other, share information, collaborate and are willing to apply technologies. In many cases, users are hesitating, as they are not able to validate data and information, or verify properties of technologies and products. For example, consumers cannot verify whether fruits were produced organically (this requires chemical analysis and not a simple inspection), or whether the new mRNA vaccine technology is safe, the related findings of science are valid or partners in research are honest. There is a lack of trust around the latest artificial intelligence-based algorithms applied by management and governments and the large language models, such as ChatGPT, owing to the great uncertainty, poor transparency and identified biases in these algorithms. Moreover, there are concerns that these technologies not only destroy jobs, but undermine decent work and exacerbate existing inequalities. As most people lack the means to verify the validity of information, images, videos and knowledge, the blurring of the lines between truth and falsehoods leads to increasing concerns about the negative impact of these technologies on human dignity, human and workers' rights and the achievement of the decent work and social goals of SDG 8.

Lastly, policies and measures to promote transformative processes to support SDG 8 may be resisted by some social communities and political groups, which highlights the need to secure broad social and political commitment. The benefits and burdens of technological change and innovations are often not distributed fairly, the procedures for designing policy measures may not be considered legitimate, and there may be unintended negative side effects, which may generate resistance to change. Empirical studies find that rule-making processes following participatory principles gain high legitimacy and that this is even more important than the distributive outcomes of the process. In other words, creating a strong perception of legitimacy and fairness is the foundation for political support for transformative processes (Werner and Marien 2022).

Capabilities for high-performing processes: Institutions and routines

Managing processes of technological change, innovations and diversification for high performance requires the collective capabilities at the levels of different teams and communities. At the organizational level, performance of enterprises, governments or associations in innovation activities and technological change is shaped by their collective agency, which is defined as a group's collective belief to be able to manage and control change processes for the intended outcomes (Bandura 2000) and " ...to make meaning of their environment through purposive consciousness, and reflective and creative action" (Sunstein 2017). Collective agency promotes collaborative work, provides motivation, and "accounts for a good share of variance in quality of group functioning and performance in diverse social systems" (Sunstein 2017). It drives members to pursue more challenging goals, expend more effort to achieve those goals and be resilient in difficult situations.

In addition, high-performing processes are enabled by the technological, organizational or management procedures and routines (Nelson and Winter 1982; Dosi 1982). They embody the capabilities to actually carry out various tasks competently. Enterprises therefore need to elaborate procedures to discover new technologies and search for commercially viable innovations. They need to develop agency to choose new technological trajectories in a responsible manner, break with existing approaches, develop new ideas and organize production in different ways. But they also need to take risks and overcome resistance to change. Economic geography provides evidence for the role of entrepreneurial agency in explaining high-performing region-specific processes of structural transformation and industrial development (Grillitsch et al. 2022).

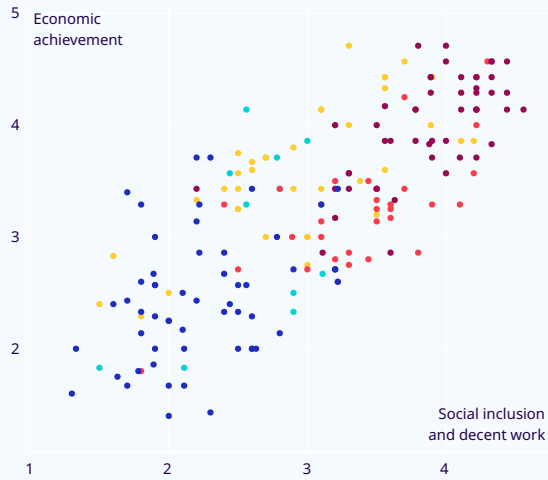
At the level of societies, the dynamic capabilities to manage processes reside in institutions. While mainstream economics discusses only the market-enhancing role of institutions, new institutional economics contends that institutions can explain the differences in economic performance in time and across space. Institutions are defined as the "rules of the game" (North 1990) and they determine the performance of economies by reducing uncertainty and creating trust relationships, cooperation, and incentives (Veblen 1898).²⁵ They guide and restrict choices, and the behaviour of individuals and organizations. However, similar to the routines at the enterprise level, societies develop collective agency, based on the sense of self-efficacy, and must develop collective procedures by learning to effectively apply the "rules of the game".

Recent research explores economic and political institutions and finds that inclusive institutions that serve all parts of society are associated with highly innovative activities, directing innovative entrepreneurship towards higher levels of economically complex activities. In contrast, extractive institutions which only benefit a country's elite limit innovation behaviour (Acemoglu and Robinson 2012; Vu 2022). Socially inclusive institutions also explain the observed patterns of achievements in the economic, social and environmental targets of SDG 8 discussed in chapter 1 of this report and in the 2019 ILO report on SDG 8. Figure 2.8 shows, for most countries, relatively balanced achievements across the economic and social goals, while the data across all countries do not show any correlation between achievement of social and economic targets, and achievement in environmental targets. The relatively balanced progress in economic and social progress is not achieved by a "trickle down" process as proposed by growth theories, but is the result of a long history of societal learning and distilling of knowledge from experience and in turn the building of institutions that retain the "rules" that societies value (Hayek 1945).

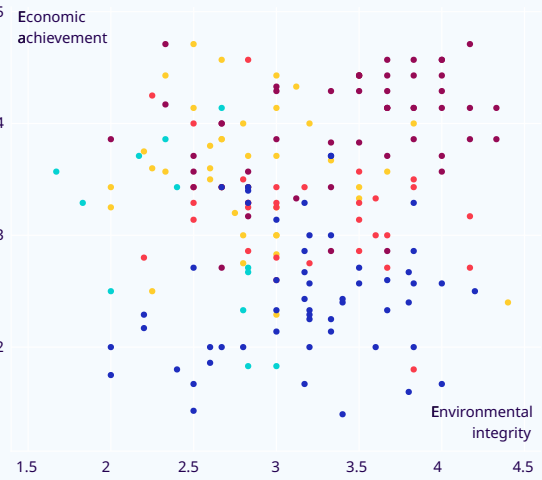
²⁵ Veblen rejects Adam Smith's (1776) idea of autonomous individuals driving economic progress, and argues that the "economic life history of a social group" is a cumulative process of adaptation and change in which habits, norms and institutions evolve, with these institutions shaping the group's economic decisions and actions: "All economic change is a change in the economic community, a change in the community's methods of turning material things to account. The change is always in the last resort a change in habits of thought" (Veblen 1898).

► **Figure 2.8. Relationships between average scores in achievement of the dimensions of SDG 8**

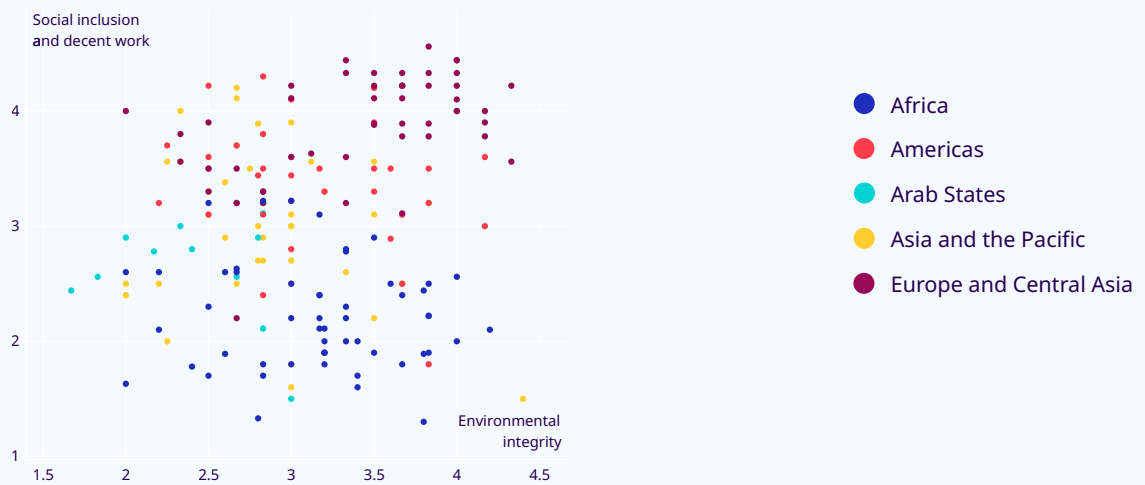
Panel a: Economic achievement and social inclusion and decent work



Panel b: Economic achievement and environmental integrity



Panel c: Social inclusion and decent work and environmental integrity



In time, social dialogue, social protection, occupational health and safety, redistributive institutions and minimum wage laws were adopted in many countries as these new rules to ensure alignment between economic and social development. When the ILO was created in 1919 with the mandate to develop international labour standards for its Member States, as national labour market institutions, collective bargaining and social dialogue gave a voice to workers, in addition to governments and employers. These instruments are critical to manage change in technologies in the workplace and to address the negative impact of technologies on employment and job quality to ensure decent work. By ratifying and adopting international labour standards, ILO constituents build up collective capabilities to implement high-performing technological and

economic change processes leading to progress in both economic and social targets of SDG 8, and thus to social justice. The strong imbalance between economic and social goals and environmental goals is explained by a lack of institutions in most countries, given that the importance afforded to protection of nature and environmental integrity has shifted only more recently on the political agenda as societies have learned from the rapid deterioration of humanity's life-support system. Societies today need to engage in processes to address the environmental crisis of the twentieth and twenty-first century, to mitigate the effects and avoid the unknown but harmful consequences of moving beyond tipping points.

It is important that public rather than market institutions steer technological change and support organizations in choosing robust trajectories when new technologies open bifurcation opportunities. Markets do not provide such choices. Rather, markets pre-determine the direction of change (that is productivity enhancing and labour saving). Steering technological change beyond interest (incentives) needs to be driven by institutions, and these institutions need to be public (Dosi 1982). Such institutions help stakeholders to make responsible choices, scientists to apply responsible search heuristics, and entrepreneurs who reshape innovations to support the SDGs, including SDG 8 (Acemoglu and Johnson 2023). They facilitate collaboration among different stakeholders, with a focus on building trust, transparency and inclusivity.²⁶

2.1.3. A common purpose of transformative change

As a third dimension of transformative change, achieving a consensus within society on a common purpose of change is highly relevant. This purpose needs to be clearly communicated and understood by the population.

Relevance for SDG 8

There is no one-size-fits-all approach to achieving SDG 8. Each society and social community needs to set priorities for the goals to be achieved, taking account of limited resources, and make choices regarding the path towards such achievement. Different groups within societies may have different aspirations and may therefore prioritize different purposes of change and different pathways, policies and strategies towards the common purpose. Establishing such a consensus facilitates cooperation between the different economic agents and stakeholders, and facilitates alignment and coordination of economic activities for consistency. It motivates stakeholders to work towards the common goals and accept the risks and uncertainties associated with disruptive change, and creates trust and supports tolerance for diversity of values within the common vision (van Dijk, de Kwaadsteniet and de Cremer 2009).

A process is needed at the nation level that is participatory and gives a voice to all stakeholders. The ILO promotes social dialogue in its various forms at the levels of enterprises, countries and regions; however, the engagement of civil society and other relevant stakeholders is also important for building consensus. The Friday for Future movement provides a prominent example.

²⁶ Lall emphasized the capabilities of governments to support the evolution of industries, an increasingly complex learning process, and of capabilities for enhanced competitiveness (Lall 1992; Lall 2000). Myrdal recommends "widespread government controls" to launch an upward cumulative process and "the movement of the whole social system upward", to raise the standard of living of the population and provide it with employment (Myrdal 1974).

In a globalized, networked world and a global society facing multiple challenges at the regional and global levels that no one country can solve alone, collective actions and transformative changes are needed at the international level to achieve the economic, social and environmental targets of SDG 8. This requires a consensus on a common purpose and a common vision on the way forward to be established, also at the international level. Human societies need to envisage a global process of transformative change, and define and reach consensus on the common purpose of this process. The 2030 Agenda provides guidance in shaping this process of change and its principle of balancing economic, social and environmental goals must apply not only at the national but also the global level. The recent initiative of the Secretary-General of the United Nations calling for a Global Accelerator on Jobs and Social Protection for Just Transitions, and the call of the Director-General of the ILO for a Global Coalition for Social Justice represent major efforts of the international community to work towards a consensus on such common purposes at the global level to propel progress in SDG 8.

Figure 1.1 in chapter 1 of this report demonstrates the deep imbalances between economic, social and environmental progress at the global level, and the limited prospects of the world's societies for making progress in SDG 8 targets. While there have been advancements worldwide in the economic targets, prospects for social and environmental progress are bleak. Moreover, the analysis reveals significant differences in the patterns of imbalances across regions, which reflects the need to also re-balance economic, social and environmental achievements between the Global South and the Global North. It is imperative to reduce these imbalances and to achieve a balanced pattern of sustainable development at the global level. Only by taking a global perspective on transformative change, and establishing balanced patterns of progress at the global level can we achieve SDG 8 at the global level.

Thus, to apply this principle of balancing progress, a common purpose and global compass must be identified. Such a compass should guide the international community in making responsible choices for balanced progress at the global level, with a view to rapidly solving the massive threat emerging from the global climate crisis, and driving economic and social development in the Global South.

As this compass needs to be accepted by all nations, we should consider the wide empirical evidence for the intrinsic desire of all peoples for social justice and fairness (Fehr and Schmidt 1999). The preamble of the ILO's Constitution establishes social justice as the compass by understanding the central role of social justice for universal peace, that is, peace among societies and nations. The 2019 ILO report on SDG 8 further highlights social justice as the compass for policymakers in addressing SDG 8 at the global level. Since the foundation of the Organization, a wide literature has established evidence for the justice, peace and development nexus. The 2019 ILO report on SDG 8 states:

Social justice needs to be a key principle guiding policies and choices to balance economic, social and environmental goals and when seeking to answer the fundamental questions that humanity is currently facing (ILO 2019a).

From a historical perspective, applying social justice as the compass for guiding policies and actions at the global level is essential. The United Nations Secretary-General states that the imbalances between poor and rich countries are the result of *“global injustices that go back hundreds of years but are still playing out today”* (author's italics) (United Nations 2023). In addition, the principle of social justice is relevant for all future generations and is thus intrinsic to the concept of sustainability, as it entails meeting “the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations 1987, 24).

Capabilities to establish consensus on a common purpose: Culture and value systems

Establishing and communicating a common purpose for change and finding consensus on the way forward requires significant capabilities. These capabilities are embodied in the specific cultures and in the value systems of collective entities, and they are reflected in shared expectations, attitudes, preferences and aspirations among members of social groups, and what people consider “a good life”. The human capability concept developed by A. Sen has been expanded by a concept of collective capabilities which argues that people have reason to value similar things. By acting together, or being member in a social network people may reshape their values, aspirations and preferences and develop instruments to achieve the lives they collectively value (Ibrahim (2006:404). In this sense, as societies develop different cultures, they ascribe different values to different purposes for change, with some being more conducive to achieving balanced progress in SDG 8 than others. For example, societies ascribe different degrees of prestige to particular economic activities, which depends on a “collective set of valuations”, is reflected in the ranking of economic activities, and may have a significant influence on the nature and speed of innovations and technological change (Mokyr 2016).

A recent ILO report (2023) exploring working conditions of essential workers (essential for the functioning of societies) found that many of the jobs in public service, education and health are described as having low prestige, which is reflected in low valuations and status of workers, low pay and often poor working conditions, which significantly affects people’s decisions to enter such occupations. The culture of a society often shapes values and expectations relative to the role of particular groups in society, such as women, religious groups and ethnic communities. This implies that occupations mainly performed by women or minorities, for example, will also be considered low value. Cultures therefore need to be fostered that value occupations for their contribution to society, and not for their prestige based on the nature of work or status of workers.

There are also different worldviews among cultures regarding the position of human beings relative to nature and society and these different understandings should be reflected in the moral and political compass, policies and institutions of societies. For example, communitarianism is common to various cultures in different regions and to original Nations and peoples such as the Ubuntu (Xhosa for “shared humanity”), Eco-swaraj (Hindi for “self-rule”) and Sumak kawsay (Quechua for “living in harmony”). Communitarianism understands human beings as social, and shaped by the multiple communities of which they are part. It is a particular economic model and life system which is based on reciprocity, solidarity, complementarity, equity and self-administration. It proposes property regimes and collective systems for economic and socio-political organization (UNRISD 2022).

The interest in the social and solidarity economy movement in regions worldwide reflects the values given to alternative economic and life models (UNTFSSSE 2019). The social and solidarity economy is reflected in the global cooperatives movement, traditional forms of solidarity and reciprocity in rural areas, and the urban informal economy in developing countries (Schwettmann 2021). The growing interest also in developed countries may reflect changes in value systems and lifestyle.

While SDG 8 focuses on growth, productivity and technology, the variety of cultures and the value people give to nature and their relationships with others may suggest different views and understandings on the purposes of transformative change. In multicultural societies, achieving consensus on the way forward may challenge some communities to adapt their value systems and develop a culture of learning and interethnic consensus, the promotion of which is an important task for politicians. According to Easterly (2002), ethnic divisions in many countries in the Global South have been identified as important barriers to development. He states that "... politicians exploit ethnic divisions to the detriment of growth. It remains a choice for individual politicians whether they seek to divide and conquer, or to promote interethnic consensus."

In the light of multiple global crises, many of which might only be overcome through societies' collective actions, forging consensus on the purpose of transformative change at the national and global levels remains a major challenge. Given the diversity of cultures and value systems across human societies, social justice needs to constitute the compass for value judgements, policies and strategies at the different levels. The recent initiatives of the United Nations and ILO mentioned above on the Global Accelerator and the Global Coalition on Social Justice are working towards this goal.

To conclude, this chapter's exploration of dynamic capabilities for transformative change has shown the key role of society in shaping the three dimensions of transformative change for progress in SDG 8. These are the capabilities to manage structural change, high-performing processes and a common purpose of transformative change.

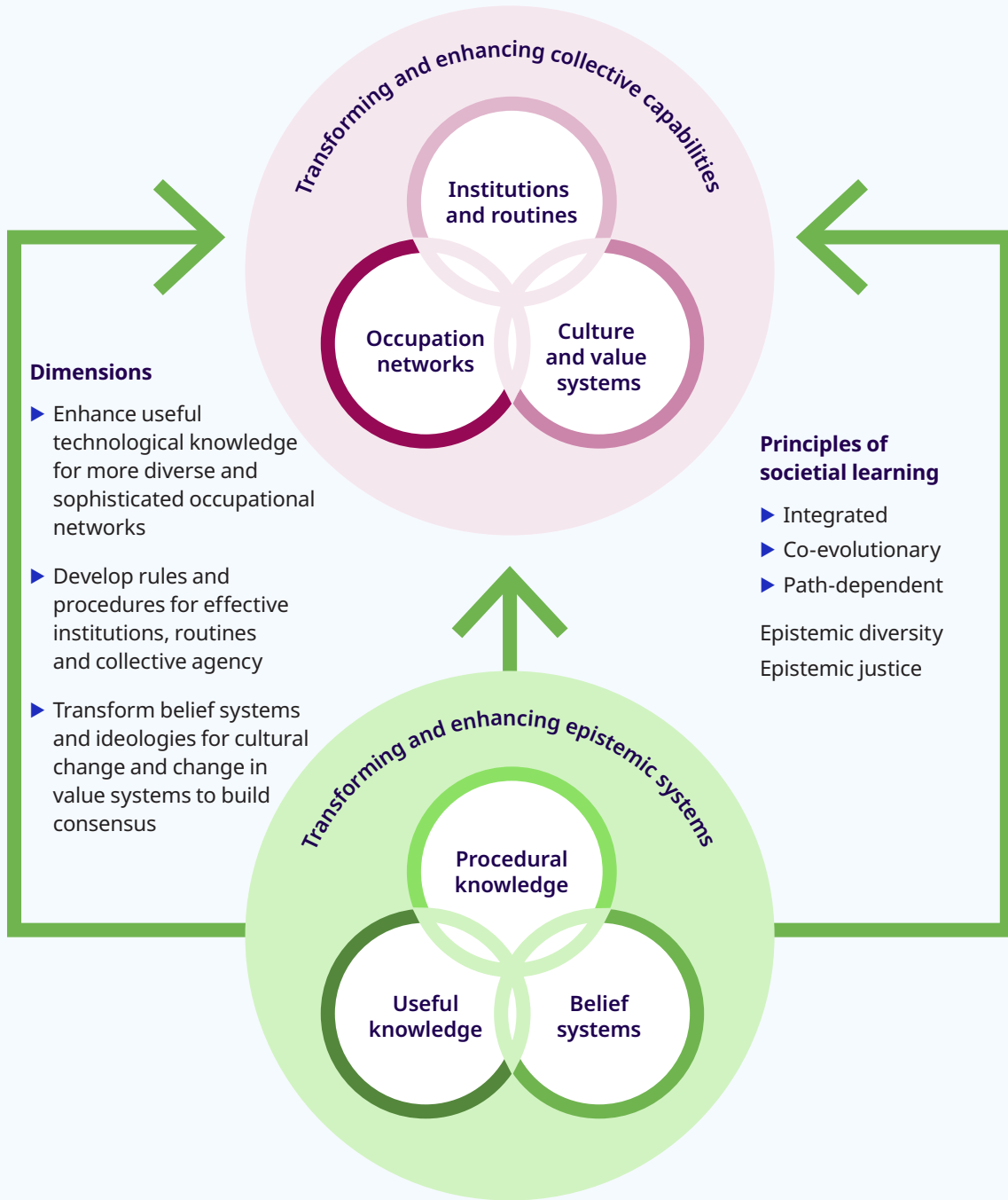
► 2.2. The evolution of collective capabilities: An epistemic approach

While the first section of this chapter explains the distinct nature and functions of capabilities in creating options for transformative change, this section explains how such capabilities evolve. The argument is set forth that capabilities are rooted in the knowledge base of a society, and that distinct sets of knowledge and beliefs at the collective levels of social groups are the building blocks of dynamic capabilities. It applies insights from theories of knowledge, evolutionary economics and empirical arguments to explain some of the principles by which a society's knowledge base is translated into dynamic capabilities. In order to gain a deeper understanding of the nature of dynamic capabilities, therefore, we need to analyse the knowledge base of a society.

2.2.1. The building blocks of dynamic capabilities

The knowledge bases of a society (or of local communities or social groups) are composed of distinct sets of knowledge and beliefs, each one with different properties and provided by different sources, and are therefore heterogeneous. While each person's experience and individually acquired knowledge contribute to a society's knowledge base, the analysis of capabilities at collective levels shifts the focus to bodies of knowledge and beliefs shared at the social level. As mentioned earlier, dynamic capabilities which enable a country to transform its economy cannot exist in individual skills, but at the collective levels. In the following paragraphs, three distinct bodies of knowledge and beliefs are presented as the main building blocks of capabilities, as depicted in figure 2.9.

► **Figure 2.9. Building collective capabilities through societal learning: Evolution of epistemic systems**



Firstly, “useful knowledge” is defined as the body of theory and the causal understandings that enable people to convert resources into goods and services (Kuznets 1965). While “propositional knowledge” relates to theories and principles about the natural world and to technology, “prescriptive knowledge” refers to the technique, rules and the actual instructions that guide actions to manipulate the natural environment for human material needs (Mokyr 2002 and 2016). Useful knowledge shapes the nature of

technological and technical knowledge shared by a society, and thus the nature, density and complexity of occupations in the labour force. The occupational structure has been discussed as the carrier of capabilities that shapes structural change in the economy. Useful knowledge may be developed by scientific methodologies; however, a lot of useful knowledge, such as indigenous, traditional and local knowledge, is based on the experience of previous generations.

Secondly, “procedural knowledge” is what enables societies to implement and perform transformative processes. It may be viewed as an algorithm that societies follow to sequence and coordinate tasks across different organizations. Procedural knowledge forms important building blocks of institutions and organizational routines, and may be divided into rules (how things should be done to meet standards of excellence) and the actual competence to apply these rules in a skilful way. This implies that although countries may follow the same sets of rules (laws and regulations), there may be significant differences in the implementation of these rules and the performance of institutions.

Thirdly, belief systems relate to knowledge which cannot be proven right or wrong but which provides worldviews. Philosophies provide a way of thinking about ethics, existence, thoughts, time, meaning or values, how we come to know what is real, good and true, and what is morally right or wrong. Political, social or economic ideologies shape individuals’ views on governance and on thinking about the meaning of progress and change. Religious beliefs provide sets of principles, teaching or doctrines which shape attitudes and values. All these different belief systems provide building blocks for a social community’s culture and value systems. They provide the basis for societies to build consensus on a common purpose. Individuals acquire values and culture in a process of socialization and “internalization” of values (Boyd and Richerson 1985).

These three distinct socially shared bodies of knowledge and beliefs form the main elements of the knowledge base of a nation. They need to be nurtured, accumulated, enriched and transformed for enhanced dynamic capabilities. Since they have different properties, they are acquired through different types and processes of learning, which require different degrees of effort and coordination. Explicit forms of knowledge, such as useful occupational and technological knowledge, can be easily articulated and codified, and therefore taught and shared. In contrast, although implicit forms of knowledge, such as the rules underpinning social norms or institutions, can in principle be articulated, people who are socialized in these rules and have internalized them may not be aware of them. Finally, tacit forms of knowledge cannot be articulated. This refers to procedural knowledge which can only be acquired through experience, practice and observational learning, while aiming to meet standards of excellence. (Polanyi 1966; Nelson and Winter 1982).

2.2.2. Complementary and interconnected nature of knowledge base and capabilities

The different components of a society’s knowledge base do not exist in isolation, rather, they interact with and are complementary to each other. This has been observed in many case studies of technology transfer across different countries and for various knowledge domains. The beliefs, attitudes and values of a society influence the direction of technological change, and these cultural aspects are reflected in the features and properties of new technologies. The transfer of technologies between countries with a significant cultural distance between them may, therefore, be difficult to achieve as the transferred useful knowledge elements may not be aligned with the beliefs and values in the receiving country. For example, technologies developed in societies that prioritize individual responsibility and accomplishment reflect these values, as they implicitly assume such behaviour of people. The transfer of such technologies to cultures advocating a strong commitment to the group as opposed to individuals, and holding the benefit to the whole in higher esteem than individual accomplishment, may be inappropriate or require significant adjustment (Wicklein 1998). This requires managers to “analyze their own organization’s culture to discover the role it will play in adopting a new technology” (Hoffman and Klepper 2000).

However, even where the cultural distance is perceived as low, different rules and procedural knowledge embodied in countries' institutions reportedly complicate the transfer of technologies. Studies show that transfer processes are complex and that both the receiving and sending enterprises need to design new elements and adjust technologies in order to align the transferred useful knowledge with the rules and procedural knowledge in the receiving country. The complementarity of the different knowledge systems underpinning technology, institutions and culture may set limits to the easy transfer of technologies.

The transfer of technologies is therefore not a "technological" issue. Technology needs to be understood as an integral part of an epistemic system. It is therefore obvious that there is no easy way for the explicit knowledge element of this epistemic system to flow to other countries, since it is not possible to simultaneously transfer the complementary implicit and tacit knowledge elements. This implies that enterprises aiming to transfer technologies need to understand these complementary and integrated knowledge elements, and to understand their own and the foreign culture. Case studies show that efforts are required of both partners to provide solutions, with teams of both enterprises working side by side for a period of time to transfer implicit and tacit knowledge, and an adjustment of cultural norms in the receiving country. Box 2.2 describes a case of technology transfer across different cultures and institutions.

► Box 2.2. Technology transfer across different cultures and institutions

A Japanese steel company provided machinery and equipment to a company in Brazil. This machinery embodied not only useful knowledge but also the tacit procedural knowledge and important elements of the Japanese belief and shared value system. While setting up the new factory in Brazil, the Japanese company had difficulties in transplanting their administrative structure, and while the team acquired technical skills through training, the tacit procedures embodied in the Japanese team could not be transferred. The problem was solved by hiring a specialized management consulting firm to recommend a new administrative structure that was compatible with the belief system embedded in Brazilian enterprises, and by sending Brazilian workers to work side by side with the team in the Japanese enterprise (Dahlman, Ross-Larson and Westphal 1987).

2.2.3. Co-evolution for high capabilities

The distinct capabilities also need to develop evenly and evolve simultaneously. Progress in one dimension of capabilities may not enlarge the options for transformative change if the other dimensions fail to make progress. For example, societies may accumulate large sets of useful knowledge, and develop a diverse and complex occupational network in the labour force, which would potentially allow diversification into many different goods and services, thus creating good jobs, employment opportunities and decent work. Belief systems, however, may prevent specific groups in a society from connecting to the occupational network. Attitudes, mindsets, prejudices or social norms that lead to discrimination against women, ethnic communities or racial groups prevent enterprises from recruiting for the best combination of occupations required for diversification. The potentially high capabilities residing in the occupational network therefore cannot be fully translated into diversification and structural transformation due to cultural values which lead to discrimination and exclusion.

This challenges policymakers to promote decent work and labour standards by transforming beliefs, worldviews and institutions which lead to social injustice, and unfair distribution of opportunities. This is essential for co-evolutionary and balanced patterns of learning within a country to identify the elements of the society's knowledge base that must be addressed. This may involve fostering a culture of non-discrimination and non-segregation, and equal access to education and labour markets; changes in institutions in response to new useful knowledge; and the promotion of technologies and innovations within the local cultural and institutional context.

Economic history provides wide evidence for the joint evolution of culture, institutions and technologies, and their contribution to economic development (Greif 2005; Alesina and Giuliano 2015). Such processes enhance capabilities and the options for transformative change.

2.2.4. Path-dependencies and shifts in trajectories

The distinct bodies of knowledge and beliefs evolve in a path-dependent manner. Useful knowledge and technologies move along trajectories due to the cumulative nature of learning. Individuals, organizations and societies retain what they have learned in the past and build on this knowledge when searching for new scientific knowledge, technical solutions and new goods and services (Dosi 1982; Perez 2010). As a consequence of path-dependent learning and evolution of capabilities, the development of options for transformative change is also path-dependent, and new technologies and diversification move along specific trajectories.

These trajectories, however, can be disrupted by revolutionary changes in the knowledge system, and shift the economy to a different transformation path. Such disruptions may be induced endogenously or through exogenous shocks, such as a change in beliefs and culture, through new technologies, such as artificial intelligence, robots, machine learning or large language models, or through institutional change, such as the implementation of a new trade regime. However, in any case, we can assume that enterprises and societies require new and enhanced capabilities to make the shift to a new path. This assumption is based on two interesting empirically observed cases where countries are trapped and fail to make a transition.

One case is provided by Perez (2010), who explains shifting techno-economic paradigms. According to her theory, which she developed by analysing recurrences since the Industrial Revolution, new technologies come in waves. First, new productivity-enhancing technologies are installed in existing industries. However, unintended effects (such as unemployment, unequal distribution of the productivity gains and rising inequality, and institutional failure to ensure decent work) lead to crises. Such crises mobilize social demands, political choices, institutions, values and expectations that are completely new. Perez argues that these societal changes are the forces driving the shift to a new phase (a "Golden Age") with product innovations, productivity explosion, new growth industries and job creation. This theory,

although it does not mention the concept of dynamic capabilities, in fact describes the evolution of new capabilities as a precondition for a shift into the Golden Age. Perez argues that developed countries are currently at a turning point, but the shift into the Golden Age phase is not automatic, and countries seem to be unable to make that move.

A second empirical observation is the so-called middle-income trap, which describes a well-known phenomenon where countries were able to shift to the middle-income level but are unable to move further into the high-income ranks. It is interesting to note that of the 101 middle-income economies in 1960, 23 countries qualify as high-income in 2022. One third of them are former socialist countries and all are members of the European Union: Estonia, Croatia, Cyprus, the Czech and Slovak republics, Hungary, Lithuania, Latvia, Malta, Poland and Slovenia (*The Economist* 2023). We can assume that the similarity and closeness of these countries to their neighbouring industrialized countries in Europe, in terms of culture and common institutional European Union framework, enabled these countries to enhance their capabilities to make the transformative change to a higher-level diversification and technology path. In addition, studies show that similar cultural and institutional contexts, and similar languages, support innovations through social influence and social learning. While the former socialist countries were able to escape the middle-income trap, around half of the countries which could not escape are in Latin America, a region whose economies are highly unequal, with large informal economies, small industrial sectors, low productivity and major export products in natural resources (ILO 2023d).

These empirical phenomena are still considered a “puzzle” in mainstream economics. This report suggests undertaking research by applying the framework presented herein to explain transformative change. Research would thus not only explain why the shifts are not taking place, but would also help to understand the capabilities of these countries, and how they can be enhanced. In middle-income countries, this analysis should take into account local and traditional economic systems, such as communitarian and informal economies, as well as formal market economies, to understand all the options embodied in the different economies and communities of such countries, and understand the possible learning paths to enhance dynamic capabilities.

2.2.5. Epistemic diversity, epistemic justice and societal learning

Diversity represents an important principle in evolutionary development. It has high value for building dynamic capabilities, and for driving innovation and transformative change as it propels societal learning and transformative change. The more diverse the knowledge base, the higher the possible combinations of knowledge for diversification. In turn, applying different sets of knowledge and beliefs leads to a more comprehensive and robust approach to problem-solving and improved decision-making. Different viewpoints challenge assumptions, reduce bias and improve the evaluation of evidence. Hence, epistemic diversity has the potential to become an important catalyser of endogenous learning processes.

The knowledge base in many societies is characterized by the co-existence of multiple knowledge and belief systems, which are a reflection of multiple ethnic communities with distinct cultures and worldviews, institutional variety and technological paradigms. These different shared bodies of knowledge and beliefs are often fragmented. Where collaboration and institutional support are limited, the co-creation of new knowledge is also limited, and so may be progress in indigenous technologies, innovation, technical learning and the development of dynamic capabilities (Srinivas 2021).

An emerging discussion on “epistemic injustice”, a recent theory and term developed by Fricker (2007), focuses on the exclusion and silencing of the knowledge of certain groups; the systematic distortion, misrepresentation or erasure of knowledge; undervaluing status or standing in communicative practices; and unfair distinctions in authority. In this respect, power is one important aspect in the complex interplay between knowledge and social relations (Foucault 1970). What is considered legitimate knowledge is in fact socially constructed, and power operates through the production, dissemination and recognition of knowledge.

The concept of epistemic injustice can also be applied to the unequal levels of recognition, legitimacy and validation afforded to the local or indigenous rules and customs compared with those afforded to imported modern or formal elements in many developing countries. Experience shows that the political, academic and international community seems to be biased towards the formal, scientific, Western-based knowledge, belief and institutional systems. In many African countries, for instance, the informal apprenticeship system provides occupational training to the majority of young people. These systems are regulated mainly by traditional rules and norms, and they largely co-exist with the formal technical and vocational education and training systems (TVET). The ILO's research agenda on informal apprenticeship in African countries demonstrates the high value of informal apprenticeship training in preparing young people for work and income in the informal economy, and their recognition by apprentices and master crafts people. However, the study also reveals low appreciation for the informal apprenticeship system as compared to formal training systems and approaches by policymakers and researchers (Nübler, Hofmann and Greiner 2009). Recognition, however, is key to receive support and attention from of policymakers, and to develop policies and strategies for upgrading traditional apprenticeships, building bridges to the formal training systems, and eventually co-evolving with the formal training system.²⁷

27 The evolution of the dual apprenticeship systems in countries like Germany, Austria and Switzerland provides an interesting example for the reform during the nineteenth century of traditional, crafts-based training systems into a modern training system which serves the needs of both industries and the crafts sector. This process was enabled through a new pedagogical ideology which affords high prestige, value and legitimacy to apprenticeship training.

3. Conclusion and policy recommendations

Despite decades of effort to advance the productive transformation of economies on a socially inclusive and environmentally sustainable basis, including through the promotion of science, technology and innovation (STI), progress has been lagging.²⁸ As the United Nations has documented, actions to meet the SDGs are not yet advancing at the speed or scale required (United Nations 2023). This report has shown that, similar to other SDGs, performance on SDG 8 has been weak across most of its dimensions and indicators and across most of the world.

Moreover, the outlook for future progress is not encouraging in an international environment characterized by multiple crises. Economic growth is far from the levels envisioned in the SDG targets, and unemployment rates, informality and decent work deficits remain high in many parts of the world. Prospects for achieving SDG 8 by 2030 are estimated to be good or moderate on only 8 of 23 indicators based on the 2010 to 2022 trend. Moreover, these prospects are highly imbalanced across economic, social and environmental dimensions, with environmental and social indicators being further from their 2030 targets than economic indicators. Such imbalances limit achievement of sustained, inclusive and sustainable economic growth as the foundation for the creation of good jobs, full employment and decent work.

The analysis of the data in chapter 1 demonstrates that there are major differences in prospects for achieving SDG 8 by 2030 among country groups. Eleven major patterns or typologies of country performance and prospects are identified. Prospects in ten of these country clusters, representing 153 nations, are unsatisfactory, poor or very poor in the majority of the 23 indicators, often in the overwhelming majority of them. Only in Cluster 11, which represents 31, mostly European countries, are prospects of meeting these targets estimated to be good or moderate in the majority of economic, social and environmental dimensions. In the absence of adequate remedial action, they are nevertheless likely to fall short in over a quarter of the targets.²⁹

These patterns of imbalances also differ significantly within country income groups. They reveal that performance in the economic and social dimensions are related; however, the data show that past performance on economic indicators is a necessary but not sufficient condition for such prospects on social inclusion and decent work. And across the 11 clustered country groups, the average prospects in the environmental dimension seem to be completely unrelated to the prospects in the economic and social dimensions.

28 See the [Global SDG Indicators Data Platform](#).

29 See appendix C for a detailed breakdown of prospects by indicator and cluster.

The inability of so many countries to make progress on the path to SDG 8 can in large part be ascribed to a lack of the coordinated international assistance that had been envisaged when the SDGs were adopted. In addition, it suggests a fundamental weakness in the prevailing model of economic growth which seeks to explain economic development as a process of accumulating physical capital (equipment, infrastructure) and human capital, with technological progress driving productivity increases. According to this understanding of economic progress, market forces drive quantitative growth, and such economic growth drives development across its social and environmental dimensions as well. However, as the data presented in Chapter 1 demonstrate, something important has been missing from this model. At the same time, alternative models that have been advanced by the evolutionary, structuralist and catching-up traditions also face limitations in explaining how to best harness STI for rapid, sustained and inclusive economic growth processes, and for balanced progress in the economic, social and environmental targets of SDG 8.

Chapter 2 of this report outlines a framework that recognizes more explicitly the complexity of transformative change processes in economies and their reliance on critical social and institutional factors. This framework is intended to complement mainstream growth, transformation and catching-up models by introducing the collective capabilities of societies as the missing element. Societies are the agents of transformative change, and their collective capabilities shape the options available for transformative change in the economy. Here, it is critical to note that collective capabilities, which reside at the level of societies in occupational networks, institutional systems and cultures and value systems, are fundamentally different from the skills of individuals.

Policymakers therefore need to pay explicit attention to collective capabilities when formulating policies to accelerate progress towards SDG 8. This entails applying policies at three distinct layers: Firstly, at the level of the economy, policymakers need to formulate industrial, trade, investment, technology and innovation policies to harness STI and shape transformative change for SDG 8, and they need to give special attention to the collective capabilities in the society, since they define the feasible options for transformative change. Secondly, collective capabilities are rooted in the knowledge base of societies, and policymakers need to pro-actively mobilise societies to transform and enhance their socially shared bodies of knowledge and beliefs (epistemic systems) for building and strengthening collective capabilities. Thirdly, major initiatives are required within the multilateral system to mobilize international solidarity in support of SDG 8, building on the UN Global Accelerator on Jobs and Social Protection for Just Transitions, and the Global Coalition for Social Justice that the ILO has been forging.

► 3.1. Enabling transformative change by boosting collective capabilities

The framework presented in this report seeks to reflect the complexity of the development process by factoring in the role of societies and their capabilities when explaining transformative changes in an economy. Creating collective capabilities is presented as a learning process in which socially shared knowledge and belief systems are transformed, while economic development is explained as a process of structural change towards the common good and aspirations of societies.

Such a development model recognizes the fundamental role of human societies as the sources of creativity, agency and responsibility, and thus as the carriers of dynamic capabilities. It adds a productive dimension to the normative dimension of a human-based approach to development. While decent work and respect for human and workers' rights contribute to development in their own right, the capabilities approach brings society back into the economic development debate, by recognizing essential human abilities such as imagination and creativity, self-confidence and agency, responsibility, and tenacity and resilience. This human-centred approach to transformative change brings further meaning to the ILO principle that labour is not a commodity.

In addition, this model recognizes the importance of pursuing multiple development objectives that go beyond economic growth. It highlights purpose-driven innovation and technological change and provides principles for patterns, processes and purposes of change that explain how to achieve multiple goals simultaneously.

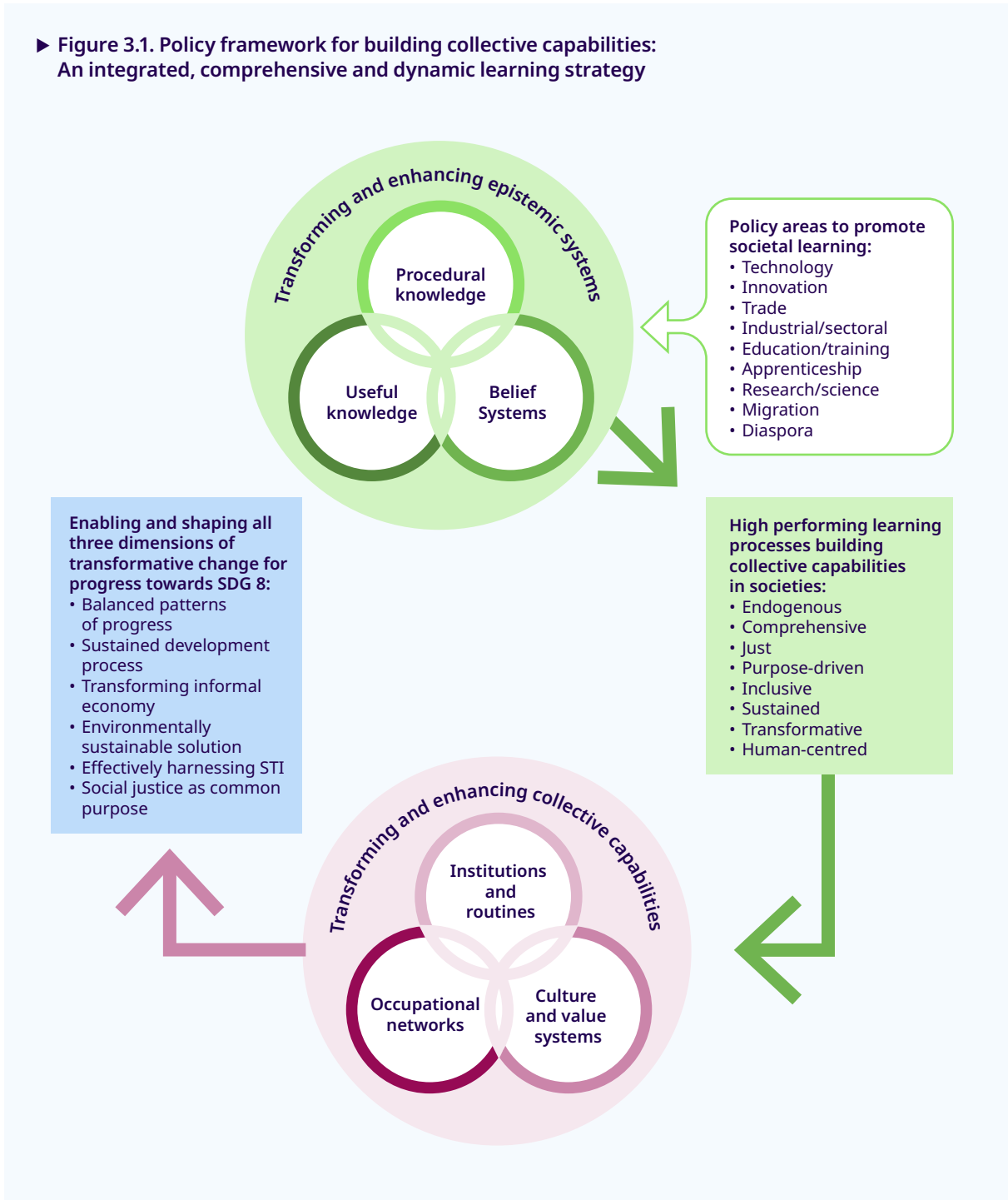
Moreover, this model shifts attention to the process of development rather than to the outcome, and the multiple dimensions of transformative change that need to be performed, coordinated, aligned and shaped. Sustained, inclusive and sustainable development processes require balanced progress in economic, social and environmental goals, and policies to promote achievement of these three goals simultaneously.

The model also recognizes the importance of building collective capabilities at the different levels of a society for a bottom-up approach and of ensuring that no one is left behind in building dynamic capabilities. Enhancing collective capabilities at the local community levels – in cities and rural areas, within research and enterprise teams and in associations of crafts people in the informal economy – is as critical as promoting capabilities in the formal economy at the subnational or national levels. This will enable each part of society to participate in the process of transformative change as an active agent of change, and thus to have their voice heard and participate in the benefits of change. At the global level, collective capabilities are imperative to achieve SDG 8 in all countries, which requires a partnership to be built between all nations and international institutions with powerful rules and procedures based on a common consensus on the way forward. The UN Global Accelerator on Jobs and Social Protection for Just Transitions needs to provide a focus for such collective efforts at the international level.

► 3.2. Specific policy recommendations

This section provides major policy recommendations based on the framework presented in chapter 2. At the same time as these domestic policy recommendations are implemented, there would need to be complementary actions at the multilateral level including through the above-mentioned UN Global Accelerator. Figure 3.1. presents the policy framework for building collective capabilities.

► **Figure 3.1. Policy framework for building collective capabilities: An integrated, comprehensive and dynamic learning strategy**



3.2.1. Integrate collective capabilities into policy frameworks and transformative change strategies

Collective capabilities enable societies to steer and shape transformative change processes that will help them to achieve the SDG 8 targets. Societies with limited capabilities will find it difficult to play their role as agents of change, and to make progress towards SDG 8. Policymakers therefore need to explicitly integrate collective capabilities into strategies to harness STI and promote economic growth, good jobs, employment and decent work. The challenge is to develop capabilities that enable societies to shape the three dimensions of transformative change simultaneously: to diversify into productivity-enhancing, job-creating and learning-intensive economic activities and sectors; to promote balanced patterns of economic, social and environmental progress for rapid and sustained processes towards SDG 8; and to build a consensus on the way forward and the purposes of innovation and change that promotes the common good.

Countries designing road maps for SDG 8 need to ensure that policies that drive transformative change in the economy are supported by collective capabilities. To inform policymakers on the design of effective road maps for harnessing STI for SDG 8 and related SDGs, the research community is challenged with integrating collective capabilities into policy frameworks and development models, and to implement a research agenda to provide further insights and empirical evidence. Researchers need to develop effective policy instruments as well as tools to assess collective capabilities and to monitor progress.

3.2.2. Implement comprehensive learning strategies to boost collective capabilities for balanced patterns of progress

Enhancing collective capabilities is a societal learning process that takes place within local communities, enterprise teams, government teams, trade unions and employers' organizations, or professional associations and networks. Structural change, technological change, institutional change and cultural change are all considered societal learning processes. Policy makers are challenged with developing a comprehensive and consistent strategy to generate high-performing capability development processes. To be effective, transformative, and creating balanced patterns in economic, social and environmental achievements, a wider epistemic approach to strengthening capabilities is essential. This approach need to go beyond the factor accumulation view of development in which education is treated in effect as a commodity whose supply is to be increased in a general sense. Instead, there must be a recognition of distinct bodies of knowledge and beliefs in societies that need to be cultivated and harnessed.

These knowledge and belief systems need to change as a system. This reflects Schumpeter's transformative model of growth, which contrasts with mainstream neoclassical economics: "What we are about to consider is that kind of change arising from within the system ... Add successively as many mail coaches as you please, you will never get a railway thereby." (Schumpeter 1912).

3.2.3. Recognize epistemic diversity to cultivate endogenous learning and sustained development

In order to generate sustained transformative change processes, it is important to generate endogenous learning processes. This entails translating collective capabilities into investment, innovation, new activities, new jobs and occupations, and employment. These changes in the economy and the world of work transform the knowledge base of the society, which in turn affects the society's capabilities. To ensure dynamism in this process, there must be a recognition of distinct bodies of knowledge and beliefs that need to be cultivated and harnessed, and of the value of diversity in knowledge systems for innovation.

Developed countries are in effect engaged in a long societal learning process in which they are endogenously transforming their traditional knowledge base and building up capabilities at the frontier level. Learning occurs as a "by-product" of economic, technological and innovation activities, as well as through investment in research and development to advance science and technologies. This historical learning experience has generated an unprecedented stock of diverse and sophisticated bodies of useful knowledge and rules, and procedural knowledge and belief systems. This process of developing such knowledge contributed to the building of dynamic capabilities which explains why developed countries continue to lead – and also drive – the techno-economic paradigm. The different carriers of collective capabilities – such as technologies, cultures and institutions – move along trajectories within these paradigms.³⁰

The knowledge base in many developing countries is different, as it embraces both traditional/indigenous and foreign/techno-scientific knowledge and belief systems. While people and communities are exposed to the different epistemic systems, and they may use traditional and modern technologies, and learn in the formal education and the informal apprenticeship systems, these distinct bodies of knowledge may find limited space to further advance as part of an endogenous process.

The challenge for policymakers, local governments and the research community is to understand local epistemic systems, their relationships with the formal system, and how these systems can benefit from epistemic diversity and be mobilized to shift from co-existence to co-evolution. In fact, one of the key messages here is that recognizing epistemic diversity is essential for local communities and for enhancing their self-efficacy and agency – and thus building collective capabilities. The local innovation and production systems (LIPS) model describes local paths to innovation for micro- and small enterprises. Under this model, local enterprises, supported by innovation and industrial policies, develop opportunity-driven innovation strategies (as opposed to survival-driven strategies) and develop dynamic capabilities by learning to access and combine knowledge and other resources from informal and formal sources to develop new goods, services and technologies (Petersen and Kruss, forthcoming).

30 In this process, developed societies have been able to build up similar collective capabilities, such as shared institutions (used to determine the legitimacy of useful and technological knowledge), procedures to validate knowledge (scientific methods), and value systems to judge ethical aspects of knowledge.

3.2.4. Promote an epistemic justice approach to cultivating societal learning in order to transform the informal economy

Informality and transition to the formal economy have become key concepts in the ILO's work, given the large decent work deficits observed in the informal economy. Indeed, in response to concerns about the rights of workers, social protection, decent working conditions and inclusive development, the ILO, in Recommendation 204, provides guidance on how to support and facilitate the transition from informality to the formal economy (ILO 2015).

It has been posited that the notion of informal economy is based on dual development models that describe economies in developing countries as having a traditional sector and a modern sector, with the latter absorbing the former. These models do not adequately capture the reality in most developing countries with societal learning and collective capabilities as the missing element. These dual models cannot explain how societies in developing countries build up the collective capabilities required to drive sustained growth processes in the modern, formal economy, nor do they explain how members of local communities, who were socialized in the community's indigenous technologies, culture and value systems and who follow traditional rules and procedures, will learn to become "formal".³¹

Of course, multiple examples exist of effective government policies to achieve transition to formality, the most well-known being the "bolsa familia" programme implemented in Brazil. Such government policies may be accelerated by a recognition of the role of collective capabilities in local communities. In this way, formalization should be modelled as a societal learning process in which local communities transform their epistemic system, a process that should be guided by the principle of epistemic justice in which recognition is accorded to all relevant bodies of knowledge and beliefs in a society. This approach challenges national and international experts and decision makers to give value to traditional bodies of knowledge and beliefs, and to support beliefs that ascribe prestige and status to activities such as on-the-job or apprenticeship training in the informal economy and to that of formal training courses. Without such epistemic inclusiveness or justice, insufficient rewards and opportunities for local communities to advance their knowledge base and innovation potential will be provided.

In other words, strategies to address decent work challenges in the informal economy should be considered from a local community's perspective rather than solely from that of the formal economy, with a view to exploring the community's collective capabilities and strategies to promote societal learning in order to enhance their capabilities, and within the context of national development policies facilitating transition to the formal economy.

3.2.5. Promote technology policies to build dynamic capabilities enabling "green" and sustainable solutions for SDG 8

Creating sustainable development and advancing progress towards SDG 8 requires countries to embark on new paths of local and endogenous learning. While major efforts by policymakers and industries, mainly in developed countries, aim to develop environmentally friendly technologies and innovations, as well as capabilities for new industries such as those related to producing renewable energy, most developing countries face the challenge of adapting these technologies to local circumstances, or blending elements of advanced technologies with local technologies. The ILO supports the development and use of appropriate technologies in developing countries, mainly in infrastructure projects, with the goal of strengthening the technological capabilities of local enterprises, and helping to create local technological paths for economic and social development while protecting the environment

³¹ The concept of transition describes the shift from a less desirable state to a more desirable one without exploring the process of transformative change in the epistemic systems of societies needed to achieve the new state.

(Ernst, Nübler and Pelivani 2023). A recent wave of so-called frugal innovations was triggered by the growing sustainability movement; approaches in which advanced technologies are simplified, downgraded and made less costly and adjusted to a context of vulnerability and poverty, or to reflect new lifestyles in developed countries. Frugal innovations are purpose-driven, and they are therefore particularly relevant for sustainable development and can simultaneously support social, economic and environmental targets (Albert 2019).

Another approach to embarking on new learning paths is to apply scientific methodologies to the validation and advancement of the knowledge of indigenous communities, and in this process co-create new knowledge and products. Hybridization is discussed as a way in which “epistemically diverse peoples meet” to bring together their technologies, institutions and culture (Balanzó-Guzman and Ramos-Mejía 2023). These interactions can support the sustainability transition and have led to improved farming techniques, increased resilience to the impacts of climate change, and natural resource co-management. Such hybridization initiatives require collaborative settings, platforms to promote intercultural exchange and trust-based communication, and dialogue between indigenous and scientific research communities.

Promoting technology policies to build collective capabilities for sustainability may enable these societies to take advantage of emerging windows of opportunities in the “green” industries. These windows of opportunities enable developing countries to leapfrog into cutting-edge technologies in green technologies and industries. Rapidly rising global demand for green technologies as part of countries’ transition to environmentally sustainable economies is expected to create “green” windows of opportunity for many developing and emerging countries. To be able to take advantage of such emerging windows of opportunities, countries need to develop strategies to rapidly build up those collective capabilities required for entering these new green industries (UNCTAD 2023).

3.2.6. Design industrial and sectoral policies to provide opportunities for learning to catch up

The nature and complexity of production structures and technologies existing in a country determine not only productivity, growth and jobs, but also the opportunities for learning. Rapid industrialization and technological progress have therefore been important elements in the catching-up process of developing countries. Managing a dynamic catching-up process challenges industrial, technology, trade and investment policies to fulfil multiple tasks in order to promote progress towards the targets of SDG 8. Public policies need to provide incentives to entrepreneurs to start new economic activities and to innovate in order to enhance productivity and create jobs and employment opportunities. Jointly with enterprises, they also face the challenge of promoting the skills and competences workers need for the efficient use of technologies and the productivity of enterprises.

From a dynamic perspective, however, it is the responsibility of all stakeholders to develop collective capabilities with high value for the country’s future development paths, to enhance options for harnessing STI and thus accelerate progress towards SDG 8. This involves industrial policies that target learning-intensive industries which can create steep learning curves in enterprise teams, to build increasingly complex routines, and for the labour force to acquire new occupations in information technology, artificial intelligence and robotics that enhance firms’ capabilities to diversify. Setting international labour standards or technical standards promotes innovation. Technology policies can support enterprise teams in jumping into new techno-economic paradigms and in entering selected industries in the future. Various trade policy measures can be used to promote learning that will help countries to catch up. The temporary protection of new industries from imports, for instance, may be justified. However, it is important to integrate measures into such protection schemes that enforce investment and learning and thus help to prevent rent-seeking behaviour (Salazar-Xirinachs, Nübler and Kozul Wright 2014). Export promotion can further help in the process of “learning to export” and in building the routines and institutions required for competitiveness in global markets, while exchange

rate policies can be used to promote investment in more sophisticated and learning-intensive industrial sectors.

3.2.7. Frame a human-centred and transformative education strategy to build collective capabilities for harnessing STI

Education and training policies play many different roles in enhancing transformative change for progress towards SDG 8. On the one hand, skills development and lifelong learning are high on the policy agenda of both developed and developing countries as they seek to equip workers with the new skills needed to ensure that advanced technologies are used and applied effectively. Skills development policies are an important component of any comprehensive policy framework for achieving the SDGs.

On the other hand, education plays a central role in enhancing collective capabilities. The educational content and curriculum influence the occupational structure in the labour force, and thus the options for diversification. Education, industrial and technology policies therefore need to be aligned to ensure that the occupational structure supports the aspired pattern of structural change in the economy. Moreover, education policies influence the development of collective agency, and psychological resources critical for innovation and change. Human beings and societies create new ideas and visions, search for knowledge, inventions and discoveries, reflect and take decisions, re-combine resources, and develop tenacity, resilience and agency. These traits of human societies need to be nurtured and the formal education systems plays a critical role in that regard. The challenge is to adopt learning theories, pedagogical principles and teaching and learning methods and practices aimed at strengthening the psychological resources that drive self-confidence and collective agency, mobilize curiosity and creativity, and promote value systems that support innovation and transformative change. It is essential that the learning process normalizes mistakes and makes failure, analysis and retrying accepted and valuable parts of the learning process.

To understand the process of learning for innovation and change, it is vital to recognize the role played by culture, norms, indigenous knowledge and local beliefs, as well as by the environment in which children and young people are socialized. Furthermore, to understand the process of learning for creativity, intelligence, motivation, attitudes, change and innovation, it is necessary to review insights from cognitive science, psychology and sociology, as well as the complementarities and synergies between teaching STEM and humanities (Echavarría, forthcoming; Kleine 2023).

The academic world also plays a pivotal role in shaping the future of sustainable development. As centres of knowledge, research and learning, universities and higher education institutions harbour a wealth of expertise across diverse disciplines and serve as hubs for nurturing future leaders, researchers and problem-solvers. By equipping students in all regions with the knowledge, skills and values needed to tackle global challenges, higher education institutions play a critical role in cultivating a new generation of changemakers committed to the SDGs. The challenge is to bridge the STI divides and support the responsible use of STI as drivers of sustainable development. Platforms and councils can be used to foster dialogue between researchers, academics and other stakeholders and to identify and promote opportunities and partnerships to accelerate transformations.

3.2.8. Harness migration and the diaspora to tap into external knowledge networks for accelerated societal learning

Engaging the diaspora community in their home country's economic activities can be a way of enriching a society's knowledge base and enhancing its dynamic capabilities. While the diaspora is often considered a brain drain, limiting the home country's development potential, if backed by the appropriate government policies it has the potential to provide knowledge and experience for rapid transformative change. The potential high value of the skilled diaspora communities for their home country lies in the contribution they can make to the diversity and complexity of the home society's occupational structure and skills mix. In addition, the diaspora community can bring to their home country a specific set of knowledge and insights that can only be acquired by having the experience of living and working in two worlds. Learning to live within a new epistemic context while having had the experience of living in the home country's epistemic system provides unique opportunities to understand the tacit and implicit knowledge of institutions and cultures in both countries. This can help to identify gaps and opportunities and what is needed for successful innovation, as well as to absorb technology, imitate goods and services and identify commercially profitable opportunities (Nedelkoska, forthcoming).

The engagement of the diaspora may take many different forms, but it requires efforts by the home country to strengthen the willingness of the diaspora to engage, in particular when people are well integrated into their host country. Recently, some countries have been successful in attracting returning migrants or joint ventures and in linking ethnic, social and professional networks of entrepreneurs, scientists and professionals between home and host countries. Strategies to attract larger diaspora clusters to move from the same location in the host to a location in the home country seem to be a highly effective way to enhance the collective capabilities in the home region. This strategy can help countries to attract many of the relevant complementary occupations required to build a new industry, as well as to transfer the socially shared implicit and tacit knowledge applied in firms in the host region and the unique knowledge of understanding the culture of the former host country.

Migrant workers may contribute to enhancing collective capabilities by increasing diversity in the host country's knowledge base and occupational network. The 2030 Agenda recognizes the "positive contribution of migrants for inclusive growth and sustainable development", and an OECD/ILO (2018) study on labour migration in developing countries concludes that adequate public policies aimed to leveraging the skills and expertise that immigrants bring and better integrating immigrants can play a key role in enhancing immigrants' contribution to their host countries' development. Such positive experiences of migration will be facilitated by respect for the rights defined by the ILO's General principles and operational guidelines for fair recruitment (ILO 2019).

► 3.3. Advancing social justice as the compass and common purpose for transformative change at local, national and global levels

This report highlights the need for societies to agree on a common purpose for transformative change. While local communities within a society may develop diverse cultures, worldviews, value systems and aspirations, they need to find a consensus on a purpose that allows society to agree on the way forward and a strategy to achieve the SDG 8 targets. Governments, workers' and employers' organizations and civil society need to act responsibly in managing progress towards the common good. It is the essential nature of social justice to make societies more cohesive and peaceful and economies more productive and innovative (ILO 2023e). This suggests that social justice supported by social dialogue should be the compass that guides policy choices and actions to accelerate progress towards SDG 8. Social justice

needs to become the organizing principle for managing and shaping societal relations and for ensuring the co-evolution of communities and societies with distinct cultures and value systems at the local, national and international levels.

Access to the natural resources needed by all people, such as access to fresh water and clean air, needs to be managed based on a “common good” approach. Social inequality in the use of natural resources such as water needs to be addressed, with access to these resources guided by social justice. Leaving the allocation of scarce water to markets leads to higher prices, uneven supply and unequal distribution, while policies designed to distribute water more equally help to drive more sustainable water resource management. Social inequality in access is one of the biggest problems that poor people face in obtaining water for their everyday needs. The issue is not solely technology and financing. Indeed, if structured poorly, these can even exacerbate inequality of access.

At its most recent session, which addressed the topic of a just transition towards environmentally sustainable economies and societies, the International Labour Conference (ILO 2023f) recognized the importance of distributional justice, and the need for a fair distribution of the burdens and benefits arising from change. Most importantly, it recognized social justice as a global common purpose and therefore the responsibilities shared by all to work towards the common good. The ILC concluded: “Just transition reflects a common global purpose that entails responsibilities for everyone, including governments, employers and workers. Transitions need concerted efforts and must be planned and structured in a way that addresses employment losses, decent work deficits, inequality and sectoral and educational misalignments” (ILO 2023).

As discussed in chapters 1 and 2 of this report and in the ILO SDG 8 report 2019, when seeking to achieve SDG 8, progress in the economic, social and environmental targets of SDG 8 needs to be balanced. This means shaping processes in which technological change and innovations lead to productivity, jobs and decent work, institutions enforce respect for workers’ rights, environmental integrity and a fair distribution of income, and value systems cultivate social justice as the compass to be used to address these imbalances at the national and global levels. Establishing a consensus on social justice as the common purpose of transformative change can help countries to catch up on the SDG 8 target clusters in which they have fallen behind. Such transformative changes will require changes in the value systems, norms, institutions, technologies, production structures and consumption behaviour of all societies.

Harnessing STI to advance progress towards SDG 8, however, also requires intergenerational social justice. Today’s societies need to take responsibility for the well-being of future generations, and social justice needs to be the compass that guides the relationship between current and future societies. Social justice between generations is intrinsic to sustainability, which is defined as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations 1987). The global community needs to act responsibly for the well-being of all future generations, and this requires policies that protect humanity’s life-supporting system by ensuring environmental integrity. Justice for future generations also relates to the fact that science has progressively developed ever new and more powerful forms of technologies that have the power to manipulate life and to threaten the essence of humanity. This raises fundamental ethical issues related to STI, since these effects may be irreversible (Jonas 1985). Ensuring social justice between current and future generations therefore involves protecting both the essence of humanity and nature, and this requires all communities – the research community, political decision-makers, managers, entrepreneurs, employers’ organizations, trade unions and workers – to act responsibly for the common good of future generations.

References

- Acemoglu, Daron, and Simon Johnson. 2023. *Power and Progress: Our Thousand-Year Struggle Over Technology and Prosperity*. New York: Public Affairs.
- Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2002. "Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution". *The Quarterly Journal of Economics* 117 (4): 1231–1294.
- Acemoglu, Daron, and James Robinson. 2012. *Why Nations Fail*. Danvers, M.A: Crown Business.
- Albert, Martin. 2019. "Sustainable frugal innovation – The connection between frugal innovation and sustainability". *Journal of Cleaner Production*, 237.
- Alesina, Alberto, and Paola Giuliano. 2015. "Culture and Institutions". *Journal of Economic Literature* 53 (4): 898–944.
- Altenburg, Tilman, and Anna Pegels. 2020. "Latecomer Development in a 'Greening' World: Introduction to the Special Issue". *World Development* 135.
- Andreoni, Antonio, Ha-Joon Chang, and Isabel Estevez. 2021. "The Missing Dimensions of the Human Capabilities Approach: Collective and Productive". *The European Journal of Development Research* 33(2): 179–205.
- Andreoni, Antonio, Pamela Mondliwa, Simon Roberts, and Fiona Tregenna. 2022. *Transformation in South Africa: The Challenges of Inclusive Industrial Development in a Middle-Income Country*. Oxford: Oxford University Press.
- Arrow, Kenneth J. 1962. "The Economic Implications of Learning by Doing". *The Review of Economic Studies* 29 (3): 155–173.
- Astorga, Rodrigo, Mario Cimoli, and Gabriel Porcile. 2014. "The role of industrial and exchange rate policies in promoting structural change, productivity and employment". In *Transforming Economies: Making industrial policy work for growth, jobs and development*, edited by Salazar-Xirinachs, José M., Irmgard Nübler and Richard Kozul-Wright, 79–111. Geneva: ILO.
- Balanzó-Guzmán, Alejandro, and Mónica Ramos-Mejía. 2023. "Towards epistemic diversity in sustainability transitions: an exploration of hybrid socio-technical systems". *Sustainability Science*.
- Bandura, Albert. 1986. *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs: Prentice-Hall.
- Barro, Robert J., and Jong-Wha Lee. 2013. "A new data set of educational attainment in the world, 1950–2010". *Journal of Development Economics* 104: 184–198.
- Becker, Gary, and Kevin M. Murphy. 1992. "The Division of Labor, Coordination Costs, and Knowledge". *Quarterly Journal of Economics* 107 (4): 1137–1160.
- Boyd, Robert, and Peter J. Richerson. 1985. *Culture and the Evolutionary Process*. Chicago: University of Chicago Press.
- Cimoli, Mario, Giovanni Dosi, and Joseph E. Stiglitz. 2009. *Industrial Policy and Development: The Political Economy of Capability Accumulation*. Oxford: Oxford University Press.
- Cohen, Guillaume, and Michal Shinwell. 2020. *How to measure distance to SDG targets anywhere: Adapting the methodology of the Measuring Distance to the SDG Targets study to go beyond OECD countries, with an application to selected Latin American countries*. OECD Statistics Working Papers, No. 2020/03.
- Dahlman, Carl J., Bruce Ross-Larson, and Larry E. Westphal. 1987. "Managing Technological Development: Lessons from the Newly Industrializing Countries". *World Development* 15 (6): 759–775.
- Dai, Rui, Rui Duan, Hao Liang, and Lilian Ng. 2021. *Outsourcing Climate Change*. European Corporate Governance Institute Finance Working Paper No. 723/2021.
- Dosi, Giovanni. 1982. "Technological Paradigms and Technological Trajectories: A Suggested Interpretation of the Determinants and Directions of Technical Change". *Research Policy* 11 (3): 147–162.

- Easterly, William R. 2002. *The Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics*. Massachusetts: MIT Press.
- Echavarría, Jaime, forthcoming. Education and learning: a human-centered approach for harnessing science, technology, and innovation. A literature Review. ILO Working Paper.
- Ernst, Christoph, Irmgard Nübler, and Joyanna Pelivani. 2023. *Selecting technology for capability development: An opportunity for more and better jobs? What we can learn from the construction sector*. Technical Paper No. 2. ILO 19th Regional Seminar for Labour-based Practitioners, Kigali, Rwanda.
- Foucault, Michel. 1970. "The archaeology of knowledge". *Social science information* 9 (1): 175-185.
- Fehr, Ernst, and Klaus M. Schmidt. 1999. "A Theory of Fairness, Competition, and Cooperation". *The Quarterly Journal of Economics* 114 (3): 817–868.
- Florida, Richard L. 2005. *Cities and the Creative Class*. New York: Routledge.
- Franck, Thomas M. 1998. *Fairness in International Law and Institutions*. Oxford: Clarendon Press.
- Fricker, Miranda. 2007. *Epistemic Injustice: Power & The Ethics of Knowing*. Oxford: Oxford University Press.
- Greif, Avner. 2005. "Commitment, Coercion, and Markets: The Nature and Dynamics of Institutions Supporting Exchange". In the *Handbook of New Institutional Economics*, edited by Ménard and M. M. Shirley, 727–788. New York: Springer.
- Grillitsch, Markus, Bjørn Asheim, Arne Isaksen, and Hjalti Nielsen. 2022. "Advancing the Treatment of Human Agency in the Analysis of Regional Economic Development: Illustrated with Three Norwegian Cases". *Growth and Change* 53 (1): 248–275.
- Hirai, Tadashi. 2022. "A balancing act between economic growth and sustainable development: Historical trajectory through the lens of development indicators". *Sustainable Development* 30 (6): 1900–1910.
- Hausmann, Ricardo. 2020. "The Missing Link in Economic Development". *Project Syndicate*. 29 December 2020.
- Hausmann, Ricardo, César A. Hidalgo, Sebastián Bustos, Michele Coscia, and Alexander Simoes. 2014. *The Atlas of Economic Complexity: Mapping Paths to Prosperity*. Massachusetts: MIT Press.
- Hausmann, Ricardo and César A. Hidalgo. 2011. "The Network Structure of Economic Output". *Journal of Economic Growth* 16: 309–342.
- Hayek, Friedrich A. 1945. "The Use of Knowledge in Society". *The American Economic Review* XXXV (4): 519–530.
- Hidalgo, César A., Bailey Klinger, Albert-Laszlo Barabasi, and Ricardo Hausmann. 2007. "The Product Space Conditions the Development of Nations". *Science* 317 (5837): 482–487.
- Hoffman, Norton, and Robert Klepper. 2000. "Assimilating New Technologies: The Role of Organizational Culture". *Information Systems Management* 17 (3): 36–42.
- Ibrahim, Solava S. (2006) "From Individual to Collective Capabilities: The Capability Approach as a Conceptual Framework for Self-help". *Journal of Human Development*, 7 (3): 397-416.
- IEA (International Energy Agency). 2022. *SDG7: Data and Projections*.
- ILO (International Labour Organization). 2017. *World Employment and Social Outlook: Trends for women 2017*.
- _____. 2018. *World Employment and Social Outlook: Trends 2018*.
- _____. 2019a. *Time to Act for SDG 8: Integrating Decent Work, Sustained Growth and Environmental Integrity*.
- _____. 2019b. *A quantum leap for gender equality: For a better future of work for all*.
- _____. 2019c. *General principles and operational guidelines for fair recruitment & Definition of recruitment fees and related costs*.
- _____. 2021a. *World Employment and Social Outlook: The role of digital labour platforms in transforming the world of work*.
- _____. 2021b. *World Social Protection Report 2020–22: Social protection at the crossroads – in pursuit of a better future*.
- _____. 2022a. *Global Employment Trends for Youth 2022: Investing in transforming futures for young people*.
- _____. 2022b. *Viet Nam's electronics supply chain: Decent work challenges and opportunities*.
- _____. 2022c. *Global Estimates of Modern Slavery: Forced Labour and Forced Marriage*.

- _____. 2023a. *ILO Monitor on the world of work*. 11th edition.
- _____. 2023b. *World Employment and Social Outlook: The value of essential work*.
- _____. 2023c. *World Employment and Social Outlook: Trends 2023*.
- _____. 2023d. "Informality and working poverty weigh down labour markets in Latin America and the Caribbean". *Labour Overview 2022 for Latin America and the Caribbean*.
- _____. 2023e. *Advancing social justice. Report of the Director-General*. International Labour Conference. 111th Session. ILC.111/Report IA.
- _____. 2023f. *Outcome of the General Discussion Committee on a Just Transition. Proposed resolution and Conclusions submitted to the Conference for adoption*. International Labour Conference. 111th Session. ILC.111/Record No. 7A.
- _____. 2023g. *Women and men in the informal economy: A statistical update*. English edition.
- International Monetary Fund (IMF). 2023. *World Economic Outlook*.
- Jonas, Hans. 1984. *The Imperative of Responsibility: In search of an ethics for the technological age*. Chicago: Chicago University Press.
- Kleine, Dorothea. 2013. *Technologies of Choice? ICTs, Development and the Capabilities Approach*. Massachusetts: MIT Press.
- Kleine, Dorothea. 2023. "A human-centred approach to innovation to accelerate progress towards the SDGs", Policy science brief. UNDESA.
- Kraemer-Mbula, Erika, and Sascha Wunsch-Vincent. 2016. *The Informal Economy in Developing Nations*. Cambridge: Cambridge University Press.
- Kuznets, Simon. 1965. *Economic Growth and Structure*. New York: W.W. Norton.
- Lall, Sanjaya. 1992. "Technological Capabilities and Industrialization". *World Development* 20 (2): 165–186.
- _____. 2000. "The Technological Structure and Performance of Developing Country Manufactured Exports, 1985–98". *Oxford Development Studies* 28 (3): 337–369.
- Lavopa, Alejandro, and Adam Szirmai. 2012. "Industrialization, Employment and Poverty". UNU-MERIT Working Paper Series No. 2012-081. United Nations University, Maastricht Economic and Social Research Institute on Innovation and Technology.
- Lee, Keun, and Andreas Pyka. 2021. *Innovation, Catch-up and Sustainable Development: A Schumpeterian Perspective*. Berlin: Springer.
- Lema, Rasmus, Xiaolan Fu, and Roberta Rabellotti. 2021. "Green windows of opportunity: latecomer development in the age of transformation toward sustainability". *Industrial and Corporate Change* 29 (5): 1193–1209.
- Li, Yang, and Frank Neffke. 2023. "Evaluating the principle of relatedness: Estimation, drivers and implications for policy". Center for International Development at Harvard University, Working Papers.
- Lewis, William Arthur. 1954. "Economic Development with Unlimited Supplies of Labour". *The Manchester School* 22 (2): 139–191.
- List, Friedrich. 1841. *Das nationale System der politischen Ökonomie*. Stuttgart/ Tübingen: J. G. Cotta'scher Verlag.
- Lucas, Robert E. Jr. 1988. "On the mechanics of economic development". *Journal of Monetary Economics*, 22 (1): 3–42.
- Mazzucato, Mariana, and Carlota Perez. 2022. "Redirecting growth: Inclusive, sustainable and Innovation-led". In *Modern Guide to Uneven Economic Development*, edited by Erik Reinert and Ingrid Harvold Kvangraven, 71–106. Cheltenham: Edward Elgar Publishing.
- Mokyr, Joel. 2002. *The Gifts of Athena: Historical Origins of the Knowledge Economy*. Princeton: Princeton University Press.
- _____. 2016. *A Culture of Growth*. Princeton: Princeton University Press.
- Myrdal, Gunnar. 1974. "What Is Development?". *Journal of Economic Issues* 8 (4): 729–736.

- Nedelkoska, Ljubica, and Nick Khaw. 2015. *The Albanian Community in the United States: Statistical Profiling of the Albanian-Americans*. Growth Lab: Center for International Development at Harvard University.
- Nedelkoska, Ljubica. Forthcoming. "Developing Innovation Capabilities through the Engagement of the Diaspora", ILO Working Paper.
- Neffke, Frank, and Martin Henning. 2009. "Skill-Relatedness and Firm Diversification. Max Planck Institute of Economics Evolutionary Economics Group". *Strategic Management Journal* 34 (3): 297–316.
- Neffke, Frank, Martin Henning, and Ron Boschma. 2011. "How Do Regions Diversify Over Time? Industry Relatedness and the Development of New Growth Paths in Regions". *Economic Geography* 87 (3): 237–265.
- Nelson, Richard R., and Sidney G. Winter. 1982. "The Schumpeterian Tradeoff Revisited". *The American Economic Review* 72 (1): 114–132.
- North, Douglas. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.
- Nübler, Irmgard. 2011. "Industrial policies and capabilities for catching up: Frameworks and paradigms", ILO Employment Working Paper No. 77.
- _____. 2013. "Education structures and industrial development: Lessons for education policies in African countries". Industrial Development and Policy in Africa UNU-WIDER Development Conference, June 24–25, Helsinki, Finland.
- _____. 2014. "A Theory of Capabilities for Productive Transformation: Learning to Catch up". In *Transforming Economies: Making Industrial Policy Work for Growth, Jobs and Development*, edited by José M. Salazar-Xirinachs, Irmgard Nübler, and Richard Kozul-Wright, 113–149. Geneva: ILO.
- _____. 2016. "New technologies: A job-less future or a Golden Age of job creation?" ILO Research Department Working Paper No.13.
- _____. 2018. "New technologies, innovation, and the future of jobs". In *Confronting Dystopia: The New Technological Revolution and the Future of Work*, edited by Eva Paus, 46–75. Ithaca: Cornell University Press.
- _____. 2020. "Shaping the Work of the Future: Policy Implications". In *Work in the Future. The Automation Revolution*, edited by Skidelsky, Robert, and Nan Craig, 189–201. London: Palgrave Macmillan.
- Nübler, Irmgard, Christine Hofmann, and Clemens Greiner. 2009. "Understanding informal apprenticeship – Findings from empirical research in Tanzania", ILO Employment Working Paper No. 32.
- OECD/ILO. 2018. *How Immigrants Contribute to Developing Countries' Economies*. Paris: OECD Publishing.
- Penrose, Edith. 1959. *The Theory of the Growth of the Firm*. New York: John Wiley & Sons Inc.
- Perez, Carlota, Luc Soete, Christopher Freeman, Richard Nelson, and Gerald Silverberg. 1988. "Catching-up in technology: entry barriers and windows of opportunity". *Technical Change and Economic Theory* 458–479.
- Perez, Carlota. 2010. "Technological Revolutions and Techno-economic paradigms". *Cambridge Journal of Economics* 34 (1): 185–202.
- Petersen, Il-ham, and Glenda Kruss. Forthcoming. "Understanding capabilities for innovation in the informal sector: towards inclusion in alternative development pathways", ILO Working Paper.
- Polanyi, Michael. 1966. *The Tacit Dimension*. London: Routledge & Kegan Paul Ltd.
- Romer, Paul. 1990. "Endogenous Technological Change". *Journal of Political Economy* 98 (5): S71–S102.
- Sachs, J. 2012. "From Millennium Development Goals to Sustainable Development Goals". *The Lancet* 379 (9832): 2206–2211.
- Salazar-Xirinachs, José M., Irmgard Nübler, and Richard Kozul-Wright. 2014. *Transforming Economies: Making Industrial Policies work for Growth, Jobs and Development*. Geneva: ILO.
- Schmidt, Verena, Edward Webster, Siviwe Mhlana, and Kally Forrest. 2023. "Negotiations by workers in the informal economy", ILO Working Paper No. 86.
- Schumpeter, Joseph. 1911. "The Theory of Economic Development". *Harvard Economic Studies* Vol. XLVI.
- Schumpeter, Joseph. 1912. *The Theory of Economic Development*. Cambridge, MA: Harvard University Press.

- Schwettmann, Jürgen. 2022. "Cooperatives in the social and solidarity economy: Sustainable development and decent work in Africa's informal economy". PhD thesis, Manchester Metropolitan University.
- Sen, Amyarta. 1989. "Development as Capability Expansion". *Journal of Development Planning* 19: 41–58.
- Sennett, Richard. 2008. *The Craftsman*. New Haven: Yale University Press.
- Smith, Adam. 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Vol. 1 (1 ed.). London: W. Strahan.
- Sommer, Christoph. 2019. "Social cohesion and economic development: Unpacking the relationship", German Institute of Development and Sustainability (IDOS) Briefing Paper No. 16/2019.
- Srinivas, Smita. 2021. "Institutional Variety and Ayres-Veblen "Lag": Implications for Selection and Development". *Journal of Economic Issues* 55:2, 293-305.
- Staccioli, Jacopo, and Maria Enrica Virgillito. 2021. "Back to the Past: The Historical Roots of Labor-Saving Automation". *Eurasian Business Review* 11: 27–57.
- Sunstein, Cass R. 2017. *Human Agency and Behavioral Economics: Nudging Fast and Slow*. London: Palgrave.
- The Economist*. 2023. *Which countries have escaped the middle-income trap?* May 2023.
- Usman, Zainab, and David Landry. 2021. *Economic Diversification in Africa: How and Why It Matters*. Carnegie Endowment for International Peace.
- UNCTAD (United Nations Conference on Trade and Development). 2023. *Technology and Innovation Report 2023. Opening green windows. Technological opportunities for a low-carbon world*.
- UNESCO (United Nations Educational, Scientific and Cultural Organization), UNICEF (the United Nations Children's Fund), and ECLAC (the Economic Commission for Latin America and the Caribbean). 2022. *Education in Latin America and the Caribbean at a cross roads: Regional monitoring report SDG4 – Education 2030*.
- UNIDO (United Nations Industrial Development Organization). 2021. *Industrial Development Report 2022. The future of industrialization in a post-pandemic world*.
- United Nations. 1987. *Our Common Future: Report of the World Commission on Environment and Development*. A/42/427.
- _____. 2022. *Chief Executives Board for Coordination. Valuing What Counts – United Nations System-wide Contribution on Progress Beyond Gross Domestic Product (GDP)*.
- _____. 2023. *The Sustainable Development Goals Report. Special Edition*.
- UNRISD (United Nations Research Institute for Social Development). 2022. *Crisis of Inequality. Shifting Power for a New Eco-Social Contract*.
- UNTFSS (United Nations Inter-Agency Task Force on Social and Solidarity Economy). 2019. *Implementing the Sustainable Development Goals: What Role for Social and Solidarity Economy?* 25–26 June 2019 conference summary.
- van Dijk, Eric, Erik W. de Kwaadsteniet, and David De Cremer. 2009. "Tacit Coordination in Social Dilemmas: The Importance of Having a Common Understanding". *Journal of Personality and Social Psychology* 96 (3): 665–678.
- Veblen, Thorstein. 1898. "Why Is Economics Not an Evolutionary Science?". *The Quarterly Journal of Economics* 12 (4): 373–397.
- Vu, Trung V. 2022. "Does Institutional Quality Foster Economic Complexity? The Fundamental Drivers of Productive Capabilities". *Empirical Economics* 63 (3): 1571–1604.
- Werner, Hannah, and Sofie Marien. 2022. "Process vs. Outcome? How to Evaluate the Effects of Participatory Processes on Legitimacy Perceptions". *British Journal of Political Science* 52 (1): 429–436.
- Wicklein, Robert C. 1998. "Designing for appropriate technology in developing countries". *Technology in Society* 20 (3): 371–375.
- World Health Organization (WHO) and ILO. 2021. *WHO/ILO joint estimates of the work-related burden of disease and injury, 2000-2016: global monitoring report, 2021*.
- World Travel and Tourism Council (WTTC). 2023. "Economic Impact Reports". <https://wttc.org/research/economic-impact>.

Appendices

A. Classifying indicators regarding prospects for SDG 8

The various targets of SDG 8, and of the SDGs in general, differ widely with regard to specification of the target that should be achieved through the related indicator. At the one end, target 8.7 concerns eradicating forced labour and eliminating child labour, which implies reducing the associated indicator to zero. At the other end, target 8.9 calls for sustainable tourism, which means that the associated indicator, the share of direct tourism GDP in total GDP, does not have any value, or even trend, which would be preferable over any other value. For indicators such as growth in labour productivity, associated with target 8.2, one can say that more is better, but it is not straightforward to state how much is good or sufficient. Furthermore, there is also the question of which achievements are feasible, since for some indicators there will simply always be a certain prevalence, for example due to frictional unemployment.³²

The methodology to evaluate indicators for targets set out by the SDGs closely resembles that of the OECD (Cohen and Shinwell 2020). Most indicators are evaluated directly against a scale, where higher (or lower) values imply a better score. The highest level is either set in accordance with a desirable target described by the SDGs or using the best country cases as a reference (table A.1). The remainder of the scale is set to cover the range of values across various countries. Hence, the scaling resembles a z-score approach (Cohen and Shinwell, 2020) but cut-off points are set at rounded values.

Some indicators are transformed either because their level cannot be evaluated directly or because a transformation better represents the objectives of SDG 8. For target 8.1, the presented indicator is based on the income group that a country would fall into if it were to maintain its past growth rate of GDP per capita. The income groups are those defined by the World Bank in 2022, with an additional highest threshold of US\$35,000 (in purchasing power parity terms). Therefore, the indicator evaluates per capita growth with respect to its objective of elevating the livelihoods of people to the levels of countries with high standards of living and not the growth rate per se.³³ The economic complexity index is a statistical measure showing countries' position relative to each other in terms of standard deviations from the mean. Therefore, a decline in a country's complexity index from 2.2 to 2 does not necessarily imply a decline in the complexity of production but could imply an increase in complexity of countries at the lower end of the spectrum. Therefore, the scaling does not consider downward trends in the economic complexity index – in those cases, the latest value is used for the scaling. Upward trends, however, are extrapolated, as such trends normally represent a real improvement. The share of forests in total land area (indicator 15.1.1) cannot easily be scaled, as natural features such as deserts or mountain ranges could limit the potential growth areas for forests. Consequently, the change in the indicator is evaluated.

³² Frictional unemployment refers to the phenomenon of people taking some time to find a new job upon losing or quitting a job. Even if all job losers were to find a new job within a certain amount of time, there would still be a certain number of unemployed at any given moment. Frictional unemployment can be positive as the quality of the job match likely increases when job seekers do not have to take the first available offer.

³³ GDP is only one component of standard of living, as so many other aspects play a role (Sen 1986), but it is the indicator chosen for target 8.1.

► **Table A.1. List of indicators, thresholds for ranking achievement and rationale for ranking scale used**

Achievement of dimension 1 – Economic development						
Indicator	Very poor (1)	Poor (2)	Unsatisfactory (3)	Mode-rate (4)	Good (5)	Rationale for ranking scale used
GDP (SDG 8.1): Extrapolated GDP per capita in 2030 based on average GDP per capita growth rate between 2010–2022. GDP is purchasing power parity adjusted (constant 2017 international dollars).	≤1085	>1085 & ≤4255	>4255 & ≤13205	>13205 & ≤35000	>35000	The thresholds for categories 1–4 equal the World Bank income group classification of 2022. The level of US\$35,000 is roughly the median GDP per capita of OECD countries in 2018.
Labour productivity growth (SDG indicator 8.2.1): average annual growth rate (%) of real GDP per employed person between 2010–2022.	≤0.5	>0.5 & ≤1.5	>1.5 & ≤3.0	>3.0 & ≤4.5	>4.5	The thresholds have been set to cover the range of values observed for countries.
Unemployment rate (SDG indicator 8.5.2): ILO modelled estimates, November 2022.	>15	≤15 & >10	≤10 & >6	≤6 & >3	≤3	The experience of various countries shows that unemployment rates beyond 15 per cent should be considered very poor, while rates between 10 and 15 per cent are a cause for concern. At the other end of the spectrum, a rate below 3 per cent can almost be considered to signal full employment in countries with frictional labour markets. This indicator only captures the fact of having a job. The quality of the job is an equally important dimension that also needs to be considered.
Financial account (SDG indicator 8.10.2): percentage of adults (aged ≥15 years) with an account at a financial institution; latest year (max 2021).	≤30	>30 & ≤50	>50 & ≤70	>70 & ≤90	>90	The target of 100 per cent is achievable: a “good” score therefore requires more than 90 per cent. The rest of the scale is spaced equally, in line with observed values.
Research and development expenditure as a percentage of GDP (SDG indicator 9.5.1); latest year (max 2021).	≤0.50	>0.50 & ≤1.00	>1 & ≤2	>2 & ≤3	>3	Most countries and subregions have research and development expenditure shares between 0 and 1 per cent; very few have a share above 3 per cent.
Percentage of population with access to electricity (SDG indicator 7.1.1); latest year (max 2020).	≤70	>70 & ≤80	>80 & ≤90	>90 & ≤99	>99	Lack of access to electricity limits access to almost any kind of modern technology, including information and communications technologies and the internet, thereby hampering innovation and learning. Full coverage is already achieved in 4 out of 11 subregions and is the benchmark for “excellence”.
Economic complexity index (non-SDG indicator); latest year (max 2020). ³⁴	≤0.00	>0 & ≤0.5	>0.5 & ≤1	>1 & ≤1.5	>1.5	SDG 8 calls for sustained growth but lacks indicators on the enabling conditions for such growth. Research shows that economic complexity is a good predictor of economic growth (Hausmann and Hidalgo 2011). The top 9 per cent of countries in the world have an economic complexity index of more than 1.5.

Achievement of dimension 2 – Social inclusion and decent work						
Indicator	Very poor (1)	Poor (2)	Unsatisfactory (3)	Moderate (4)	Good (5)	Rationale for ranking scale used
Labour income as share of GDP (SDG indicator 10.4.1): adjusted labour income share; ILO modelled estimates, November 2021, latest year 2020.	≤40	>40 & ≤50	>50 & ≤60	>60 & ≤70	>70	The labour income share depends on several factors, including the capital intensity of the economy. In fact, capital returns, such as resource rents, could be used by countries in a redistributive way. Nevertheless, a higher labour income share, all else being equal, shows that value creation is more inclusive. The scale reflects observed values around the world.
Percentage of youth not in education, NEET (SDG indicator 8.6.1); ILO modelled estimates, November 2022.	>25	≤25 & >20	≤20 & >15	≤15 & >10	≤10	Almost no country, and certainly no subregion, has a NEET rate below 10 per cent. A 5 percentage point grading has been used for the scale above that value.
Working poverty rate (SDG indicator 1.1.1): percentage of employed persons living on less than US\$1.90 per day, in purchasing power parity terms; ILO modelled estimates, November 2022.	>30	≤30 & >20	≤20 & >10	≤10 & >1	≤1	Countries with an extreme working poverty rate above 30 per cent also have good working poverty rates (percentage of workers living on less than US\$3.10 per day). In many of these countries, more than two thirds of workers live in extreme or moderate poverty. A “moderate” score requires the effective abolishment of working poverty.
Social protection coverage (SDG indicator 1.3.1): percentage of population covered by at least one social protection benefit; ILO estimates, latest year 2020.	≤30	>30 & ≤50	>50 & ≤70	>70 & ≤90	>90	The target of 100 per cent is achievable: a “good” score therefore requires more than 90 per cent. Coverage below 30 per cent is considered “very poor”. The rest of the scale is spaced equally, in line with observed values.
Informality rate (SDG indicator 8.3.1): informal employment as a percentage of total employment; ILO modelled estimates, November 2022.	>70	≤70 & >50	≤50 & >30	≤30 & >10	≤10	Informality rates are fairly equally distributed around the world. A “good” score requires an informality rate no higher than 10 per cent. Note that SDG indicator 8.3.1 refers to informal employment as a proportion of non-agricultural employment. For data availability reasons, we calculate the share out of total employment instead.
Female managers (SDG indicator 5.5.2): percentage of managers who are women; ILO modelled estimates, November 2022.	≤15	>15 & ≤30	>30 & ≤40	>40 & ≤48	>48	To reach the average level (though still “unsatisfactory”), more than one third of managers should be female. To attain a “good” score, that share should be close to 50 per cent. Empirically, a female management share significantly above 48 per cent is not observed, hence the scale above 48 per cent is not further differentiated.
Gender income ratio (SDG 8.5.1): gender income gap (ILO modelled estimates, November 2022) over gender ratio of hours worked, available for 2020 only; ILO modelled estimates, November 2022.	≤75	>55 & ≤85	>85 & ≤95	>95 & ≤99	>99	To reach the average level (though still “unsatisfactory”), women’s hourly earnings should be at least 85 per cent of men’s. A moderate score requires equal pay.

Achievement of dimension 2 – Social inclusion and decent work						
Indicator	Very poor (1)	Poor (2)	Unsatisfactory (3)	Moderate (4)	Good (5)	Rationale for ranking scale used
Completion rate of upper primary education (4.1.2), latest available year (between 2000 and 2022)	≤70	>70 & ≤80	>80 & ≤90	>90 & ≤99	>99	The target of 100 per cent is achievable: a “good” score therefore requires more than 99 per cent. The rest of the scale is spaced equally, in line with observed values.
Percentage of children aged 5 to 14 years who are engaged in child labour (SDG indicator 8.7.1); ILO modelled estimates, 2020.	>15	≤15 & >10	≤10 & >5	≤5 & >1	≤1	Note that the age range we have chosen deviates slightly from that in target 8.7.1 (5–17 years); this is for reasons of data availability. The threshold for a “very poor” score has been set to include the countries with the greatest observed prevalence of child labour. A “good” score requires a rate close to zero.
Fatal occupational injuries per 100,000 workers; WHO and ILO estimates, 2010 and 2016.	>15	≤15 & >10	≤10 & >5	≤5 & >1	≤1	Around a quarter of all countries have an incidence above 15, and hence fall into the “very poor” category. A “good” score requires an incidence close to zero.

Achievement of dimension 3 – Environmental integrity						
Indicator	Very poor (1)	Poor (2)	Unsatisfactory (3)	Moderate (4)	Good (5)	Rationale for ranking scale used
Domestic material consumption per capita (SDG indicator 8.4.1) (tonnes), 2019.	>40	≤40 & >30	≤30 & >20	≤20 & >10	≤10	Material consumption can never be zero, so it is difficult to set thresholds. The linear scale captures the variation across countries.
Carbon dioxide (CO ₂) emissions per unit of GDP (SDG indicator 9.4.1) (kg of CO ₂ per 2010 US\$ of GDP), 2019.	>0.4	≤0.4 & >0.3	≤0.3 & >0.2	≤0.2 & >0.05	≤0.05	In 2017, the global emission intensity was 0.34 kg of CO ₂ per unit of GDP. This needs to decrease by 40 per cent to ensure that a low temperature increase scenario is feasible by 2030. Accordingly, the threshold for a “moderate” score is 0.2 kg of CO ₂ per unit of GDP. However, because of GDP growth, further significant decreases in emission intensity are required.
Forest area (related to SDG indicator 15.1.1): percentage points change in forest area as a share of total land area between 2010 and 2020.	≤-5	>-5 & ≤-0.5	>-0.5 & ≤0.5	>0.5 & ≤4	>4	The threshold for a “very poor” score corresponds to the value that only 10 per cent of countries do not reach (that is, the worst performing countries). The threshold for a “good” score corresponds to the value that only 10 per cent of countries reach (that is, the best performing countries). Average performance requires that forest area remains approximately unchanged. We deviate from SDG indicator 15.1.1 by looking at change in forest area over several years rather than forest area at a given point in time. This approach takes into account the choices made by countries with regard to environmental policy.
Protection of land biodiversity (SDG indicator 15.1.2): average proportion of terrestrial Key Biodiversity Areas that are within protected areas (%), 2021.	≤30	>30 & ≤50	>50 & ≤70	>70 & ≤90	>90	The target of 100 per cent is achievable: a “good” score therefore requires more than 90 per cent. The rest of the scale is spaced equally, in line with observed values.
Protection of freshwater biodiversity (SDG indicator 15.1.2): average proportion of freshwater Key Biodiversity Areas that are within protected areas (%), 2021.	≤30	>30 & ≤50	>50 & ≤70	>70 & ≤90	>90	The target of 100 per cent is achievable: a “good” score therefore requires more than 90 per cent. The rest of the scale is spaced equally, in line with observed values.
Natural resource rent (non-SDG indicator): average contribution of natural resources to GDP (%), 2020 (World Bank data).	>20	≤20 & >10	≤10 & >5	≤5 & >1	≤1	A high share of “rent” from natural resources shows that the economy is highly dependent on their exploitation – something that is not sustainable in the long run. The scale is non-linear for the “very poor” category: one could consider countries with values above 10 per cent as having a strong reliance on natural resources but a 15 per cent threshold would make the group of countries under “very poor” too broad, hence the choice of 20 per cent for the threshold.

B. Clustering countries into groups based on maximum dissimilarity in three averaged dimensions of economic development, social inclusion and decent work, and environmental integrity

Clustering is a statistical exercise that identifies the closeness or distance of observations (countries in the case of this report) by using a measure of dissimilarity. This measure encompasses multiple indicators but otherwise can take different forms. A common measure, also used for this analysis, is the Euclidean distance, which essentially is the square root of the sum of squared differences. Alternative measures could be the sum of absolute differences, which has a lower penalization of large differences in any one dimension, or the maximum difference in any of the dimensions.

The variables used to measure distances are the unweighted averages of indicators of the three dimensions: economic development, social inclusion and decent work, and environmental integrity. A geometric mean presents a viable alternative to construct the composite index. Since the indicators are all rescaled into the range from 1 to 5, outliers are much less of a problem, thereby negating one of the arguments for a geometric mean. On the contrary, a geometric mean tends to underweight larger values, while all categories from 1 to 5 should be weighed equally.³⁵

While clustering could theoretically also be conducted on the 23 indicators shown in table 1.1, missing data renders this highly impractical. Standard clustering techniques do not allow for missing data, meaning that all of the missing data for the 23 indicators would need to be included in some way. Averages of the three dimensions provide a more practical choice, as missing values can be assumed to equal the average of non-missing country indicators. In addition, clustering along those dimensions facilitates the interpretation of the results in that regard.

A key element of clustering is the identification of the number of groups into which the countries should be clustered. The decision is based on a combination of statistical measures, visual inspection and a sanity check on the outcomes. As a first step, the analysis in this report conducts a hierarchical agglomerative clustering for each country income group, which builds groups of similar countries from the bottom up. At each step, the two countries (or groups of countries) that are most similar are grouped together. This way, the degree of dissimilarity of each additional split of a more aggregate group can be seen in a diagram called a dendrogram. Through the use of visual inspection and analysis of the implied country clusters, the number of country clusters per country income group is identified.

While agglomerative hierarchical clustering allows for the construction of a dendrogram to identify a sensible number of groups, it has the disadvantage of rarely providing the best groupings, and of potentially producing some very small groups. This is because groups are built from the bottom up, which creates a sort of path dependency leading to some less sensible results, such as one country being grouped with a “wrong” set of countries. The method of “kmeans” clustering creates homogeneous groups, clustering similar countries together but requiring the number of groups to be pre-set. The results from hierarchical clustering – the groupings and the indicator means of those groups – are therefore used in a “kmeans” clustering analysis to determine the final country groups.

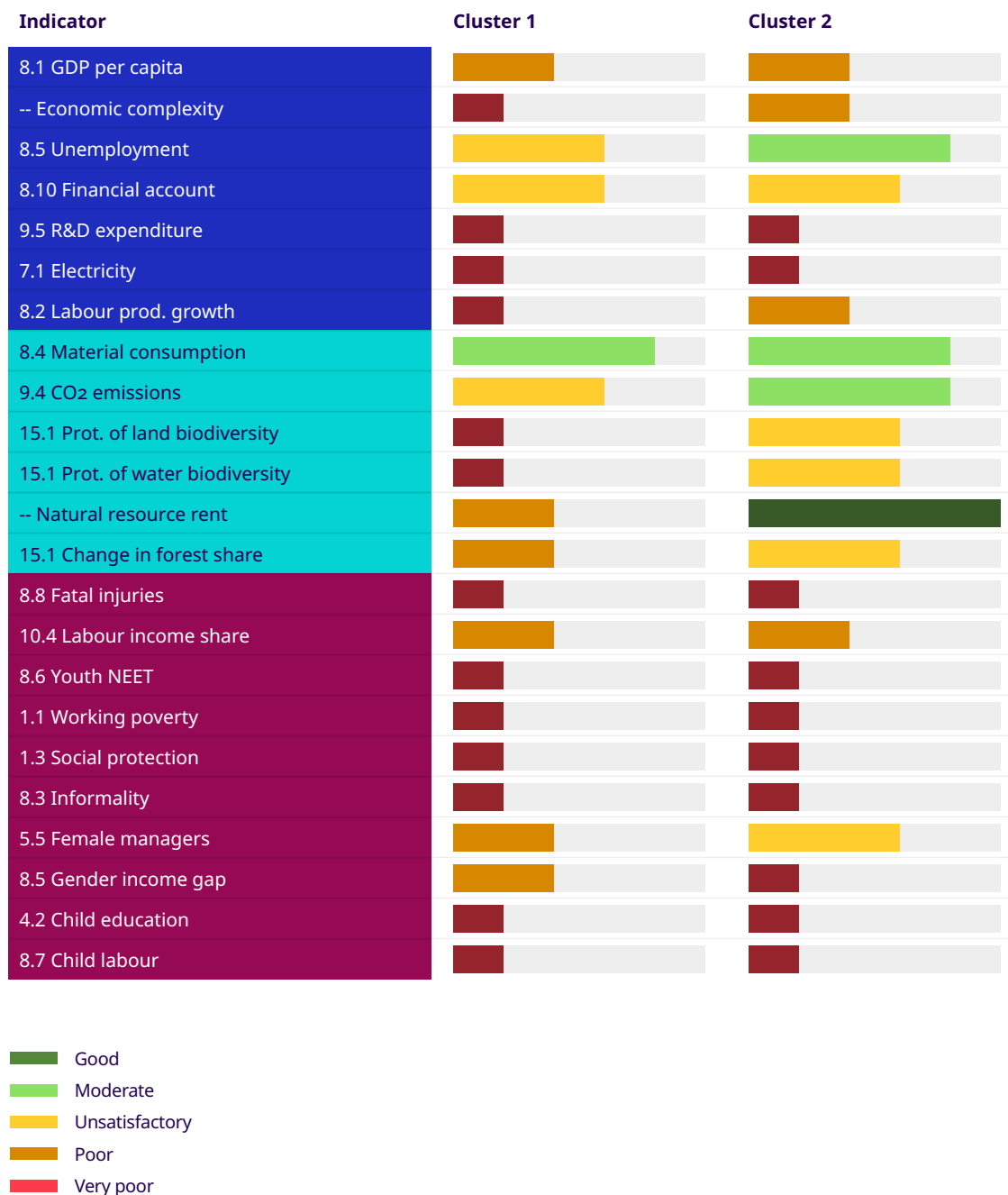
³⁵ The simple mean of the scores 1, 2, 3, 4, and 5 is 3, while the geometric mean is 2.6.

► Table B.1. List of countries by country cluster group

Low-income countries	Lower-middle-income countries	Lao People's Democratic Republic	Colombia	Australia
Cluster 1	Cluster 3	Lebanon	Costa Rica	Bahamas
Very low economy, Very low social, Low environment	Very low economy, Low social, Medium environment	Mongolia	Cuba	Barbados
Chad	Angola	Morocco	Dominican Republic	Brunei Darussalam
Eritrea	Congo	Myanmar	Fiji	Canada
Korea, Democratic People's Republic of	Djibouti	Nepal	Jamaica	Chile
Liberia	Eswatini	Philippines	Macedonia, the former Yugoslav Republic of	Guam
Somalia	Lesotho	Samoa	Mexico	Iceland
Sudan	Mauritania	Senegal	Moldova, Republic of	Korea, Republic of
Syrian Arab Republic	Occupied Palestinian Territory	Solomon Islands	Suriname	New Caledonia
Yemen	Cluster 4	Sri Lanka	Cluster 8	New Zealand
Cluster 2	Medium economy, Low social, High environment	Tajikistan	Very high economy, High social, Low environment	Norway
Low economy, Very low social, High environment	Algeria	Timor-Leste	Argentina	Puerto Rico
Afghanistan	Cameroon	Ukraine	Armenia	Singapore
Burkina Faso	Comoros	Uzbekistan	Bosnia and Herzegovina	Trinidad and Tobago
Burundi	Côte d'Ivoire	Vanuatu	Brazil	United States
Central African Republic	Haiti	Viet Nam	China	United States Virgin Islands
Congo, Democratic Republic of the	Honduras	Upper-middle-income countries	Georgia	Cluster 11
Ethiopia	Nicaragua	Cluster 6	Guyana	Very high economy, Very high social, High environment
Gambia	Nigeria	Medium economy, Medium social, Medium environment	Kazakhstan	Austria
Guinea	Pakistan	Azerbaijan	Malaysia	Belgium
Guinea-Bissau	Papua New Guinea	Belize	Maldives	Croatia
Madagascar	Sao Tome and Principe	Ecuador	Mauritius	Cyprus
Malawi	Tanzania, United Republic of	Equatorial Guinea	Russian Federation	Czechia
Mali	Tunisia	Gabon	Serbia	Denmark
Mozambique	Zimbabwe	Guatemala	Thailand	Estonia
Niger	Cluster 5	Iraq	Tonga	Finland
Rwanda	High economy, Medium social, Medium environment	Jordan	Turkey	France
Sierra Leone	Bangladesh	Libya	Turkmenistan	Germany
South Sudan	Benin	Montenegro	High-income countries	Greece
Togo	Bhutan	Namibia	Cluster 9	Hungary
Uganda	Bolivia	Paraguay	High economy, Medium social, Low environment	Ireland
Zambia	Cambodia	Peru	Bahrain	Italy
	Cape Verde	Saint Lucia	French Polynesia	Japan
	Egypt	Saint Vincent and the Grenadines	Kuwait	Latvia
	El Salvador	South Africa	Oman	Lithuania
	Ghana	Venezuela, Bolivarian Republic of	Qatar	Luxembourg
	India	Cluster 7	Saudi Arabia	Malta
	Indonesia	High economy, High social, High environment	United Arab Emirates	Netherlands
	Iran, Islamic Republic of	Albania	Cluster 10	Panama
	Kenya	Belarus	Very high economy, High social, Low environment	Poland
	Kyrgyzstan	Botswana		Portugal
		Bulgaria		Romania
				Slovakia
				Slovenia
				Spain
				Sweden
				Switzerland
				United Kingdom
				Uruguay

C. Prospects of achieving SDG 8 by 2030 across 23 indicators, by country cluster group

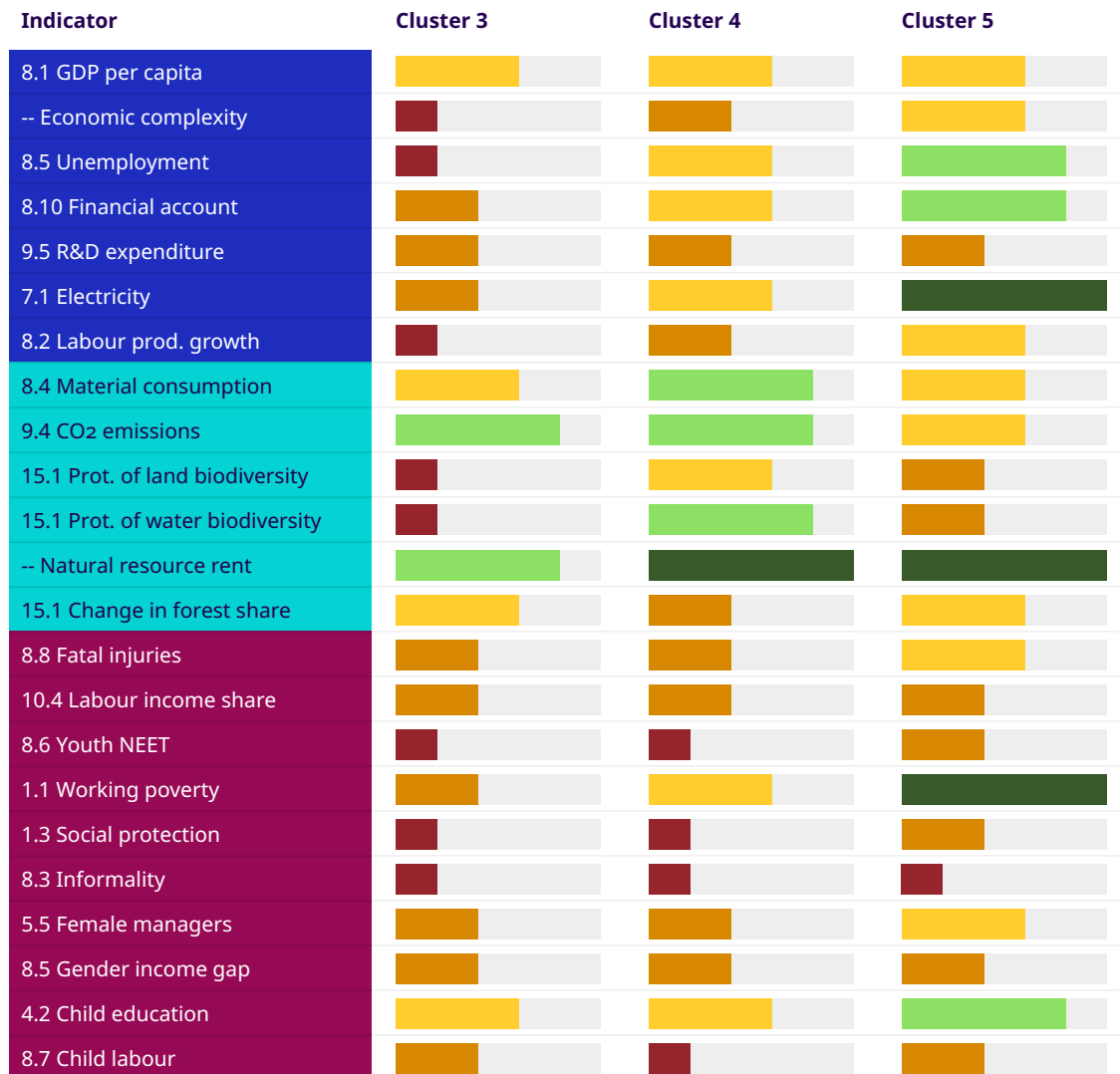
► Figure C.1. Prospects of achieving SDG 8 by 2030 across 23 indicators, low-income countries



Note: The figure shows unweighted averages by country cluster of the 23 indicators, recast into the scales 1 to 5. Countries with missing data for a certain indicator are ignored in the construction of the average, which is equivalent to assuming the average of that indicator for the countries with missing data. Table B.1 shows the country list for each country cluster group.

Source: ILO calculations.

► Figure C.2. Prospects of achieving SDG 8 by 2030 across 23 indicators, lower-middle-income countries



Note: The figure shows unweighted averages by country cluster of the 23 indicators, recast into the scales 1 to 5. Countries with missing data for a certain indicator are ignored in the construction of the average, which is equivalent to assuming the average of that indicator for the countries with missing data. Table B.1 shows the country list for each country cluster group.

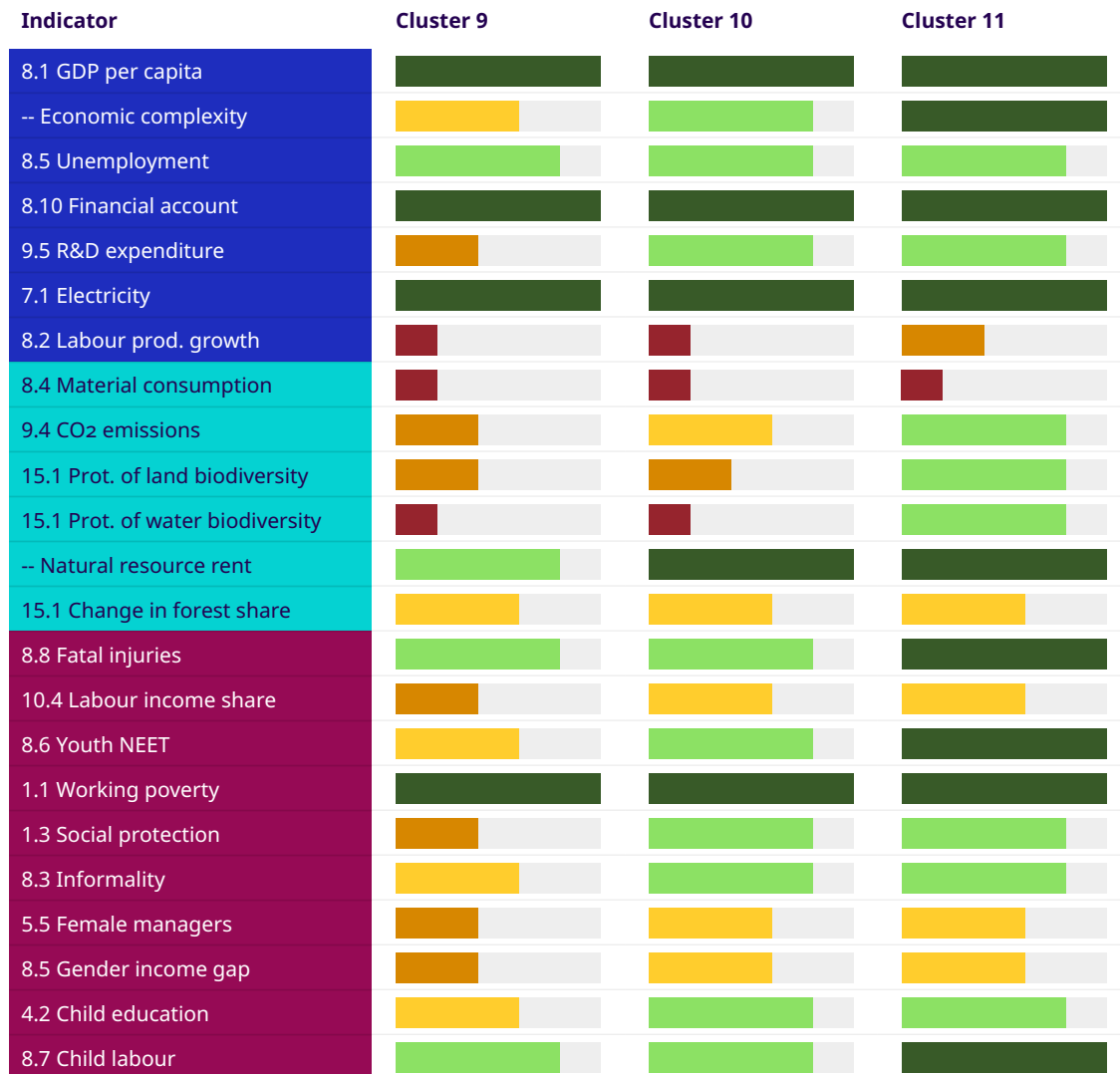
Source: ILO calculations.

► **Figure C.3. Prospects of achieving SDG 8 by 2030 across 23 indicators, upper-middle-income countries**

Note: The figure shows unweighted averages by country cluster of the 23 indicators, recast into the scales 1 to 5. Countries with missing data for a certain indicator are ignored in the construction of the average, which is equivalent to assuming the average of that indicator for the countries with missing data. Table B.1 shows the country list for each country cluster group.

Source: ILO calculations.

► **Figure C.4. Prospects of achieving SDG 8 by 2030 across 23 indicators, high-income countries**



Note: The figure shows unweighted averages by country cluster of the 23 indicators, recast into the scales 1 to 5. Countries with missing data for a certain indicator are ignored in the construction of the average, which is equivalent to assuming the average of that indicator for the countries with missing data. Table B.1 shows the country list for each country cluster group.

Source: ILO calculations.



ilo.org

International Labour Organization
Route des Morillons 4
1211 Geneva 22
Switzerland

I S B N 978-92-2-039007-8



9 789220 390078