

SUSTAINABLE DEVELOPMENT REPORT 2024

The SDGs and the UN Summit of the Future

Includes the SDG Index and Dashboards



A catalogue record for this book is available from the British Library

Library of Congress Cataloging-in-Publication data

The SDGs and the UN Summit of the Future. Sustainable Development Report 2024

© Jeffrey D. Sachs, Guillaume Lafortune and Grayson Fuller

ISBN: 978-0-903200-18-9 (paperback)

ISBN: 978-0-903200-19-6 (ePDF)

ISBN: 978-0-903200-20-2 (ePUB)

Published by Dublin University Press Dublin, Ireland, 2024

www.dublinuniversitypress.com

Design: Pica Publishing, New York, London, Paris

Printed by Ingenidoc in Rouen, France.

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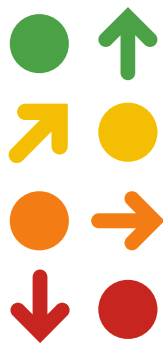
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SUSTAINABLE DEVELOPMENT REPORT 2024

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the Future

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By Jeffrey D. Sachs, Guillaume Lafortune and Grayson Fuller



Acknowledgements

The *Sustainable Development Report* (SDR) reviews progress made each year on the SDGs since their adoption by the 193 UN member states in 2015. This year's edition focuses on the UN Summit of the Future and on the SDGs under review this year at the High-Level Political Forum, with notably dedicated chapters related to SDG17 (Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development) and SDG2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture).

The report was prepared by the SDSN's SDG Transformation Center and coordinated by Guillaume Lafortune in cooperation with Jeffrey D. Sachs. Lead writers are Jeffrey D. Sachs, Guillaume Lafortune and Grayson Fuller. The statistical work was led by Grayson Fuller, in collaboration with Guilherme Iablonovski, Sara Allali, and Samory Touré and under the overall supervision of Guillaume Lafortune. The interactive website and data visualization that accompanies this report was developed by Max Gruber and Ruben Andino. Members of the Leadership Council of the SDSN led the preparation of Part 1. "Recommendations of the High-Level Group of SDSN for The Summit of the Future". Part 4. "Pathways for Sustainable Land-Use and Food Systems" was prepared by the FABLE Consortium, led by Aline Mosnier, Clara Douzal, Charlotte Chemarin, Davide Cozza and Maria Diaz at SDSN in collaboration with country teams.

For their contributions at various stages, we also thank Eamon Drumm, Richard Kundratitz, Juliana Torres Cortes, María Cortés Puch, Alyson Marks, Sonja Neve, Ryan Swaney, Isabella Massa and, more broadly, the chairs and managers of the 55 national and regional SDSN Networks. For their inputs at the reviewing phase, we thank Javier Benayas (SDSN Spain, Universidad Autónoma de Madrid) and Eric Rosenthal (SDSN Italy). The SDG Index and Dashboards combines data and analyses produced by international organizations, civil society organizations, and research centers. We thank all of these for their contributions and collaboration in producing the report, including during the annual public consultation process that took place between April 18th and April 26th, 2024.

We thank Dublin University Press and Roberto Rossi of Pica Publishing for preparing the report for publication. We also thank partners at the Environmental systems research institute (ESRI). We welcome feedback on the publication and data that may help to strengthen future iterations of this work. Please notify us of any publications that use the SDG Index and Dashboards data or the Sustainable Development Report and share your publication with us at info@sdgtransformationcenter.org.

An interactive online dashboard and all data used in this report can be accessed at: sdgtransformationcenter.org

June 2024

Published by Dublin University Press

Please cite this report as:

Sachs, J.D., Lafortune, G., Fuller, G. (2024). The SDGs and the UN Summit of the Future. Sustainable Development Report 2024. Paris: SDSN, Dublin: Dublin University Press. doi:10.25546/108572

This report has been prepared with the extensive advice and consultation of the SDSN Leadership Council members. Members of the Leadership Council serve in their personal capacities; the opinions expressed in this report may not reflect the positions or policies of their host institutions. Members are not necessarily in agreement on every detail of this report. The views expressed in this report do not reflect the views of any organization, agency, or programme of the United Nations.

Design, layout and copyediting by Pica Publishing Ltd – www.pica-publishing.com

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Acronyms and Abbreviations

| | |
|----------------|---|
| AI | Artificial Intelligence |
| CAPI | Computer Assisted Personal Interviewing |
| CEPEI | Centro de Pensamiento Estratégico Internacional |
| CSA | Central Statistics Agency (Ethiopia) |
| CTGAP | Cape Town Global Action Plan for Sustainable Development Data |
| CTGAP | Global Action Plan for Sustainable Development Data |
| DAC | Development Assistance Committee of the OECD |
| DANE | National Administrative Department of Statistics (Colombia) |
| DSSI | Debt Service Suspension Initiative |
| EO | Earth observation |
| EU | European Union |
| FABLE | Food, Agriculture, Biodiversity, Land-Use, and Energy Consortium |
| FAO | Food and Agriculture Organization |
| FAO | Food and Agriculture Organization |
| FELD | Food, Environment, Land and Development Action Tracker |
| G20 | Group of Twenty (intergovernmental forum comprising 19 countries and the European Union) |
| G7 | Group of Seven (intergovernmental forum comprising Canada, France, Germany, Italy, Japan, |
| GDP | Gross domestic product |
| GeoGIAM | Group on Earth Observations Global Agricultural Monitoring Initiative |
| GIS | Geographic information system |
| HIC | High-income-country |
| HLAB | High-Level Advisory Board on Effective Multilateralism |
| ICAO | International Civil Aviation Organization |
| ICLEI | Local Governments for Sustainability |
| ICS | International Continenence Society |
| IFAD | International Fund for Agricultural Development |
| ILO | International Labour Organisation |
| ILO | International Labour Organization |
| IMF | International Monetary Fund |
| IMF | International Monetary Fund |
| IMO | International Maritime Organization |
| ITU | and the International Telecommunication Union |
| LAC | Latin American countries |
| LIC | Low-income country |
| LMIC | Lower-middle-income country |
| LSMS | Living Standards Measurement Study |
| MDB | Multilateral Development Bank |
| MENA | Middle East and North Africa |

Acronyms and Abbreviations

| | |
|-------------------------------|--|
| MRIO | Multi-regional input-output |
| NBS | National Bureau of Statistics |
| NGO | Non-governmental organisation |
| NSO | National Statistic Office |
| ODA | Official Development Assistance |
| OECD | Organisation for Economic Co-operation and Development |
| SDG | Sustainable Development Goal |
| SDR | Sustainable Development Report |
| SDSN | Sustainable Development Solutions Network |
| SIDS | Small Island Developing States |
| STATIN | Statistical Institute of Jamaica |
| TReNDS | Thematic Research Network on Data and Statistics |
| UCLG | United Cities and Local Governments |
| UHC | Universal Health Coverage |
| UMIC | Upper-middle-income country |
| UN | DESA Department of Economic and Social Affairs |
| UN | The United Nations |
| UNCTAD | United Nations Conference on Trade and Development |
| UNDP | United Nations Development Programme |
| UNEP | United Nations Environment Programme |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UNFCCC | United Nations Framework Convention on Climate Change |
| UNFPA | United Nations Population Fund |
| UNICEF | United Nations Children's Fund |
| UNICEF | United Nations Children's Fund |
| UNIDO | United Nations Industrial Development Organization |
| United Nations-HABITAT | United Nations Human Settlements Programme |
| UNWTO | World Tourism Organization |
| UPU | Universal Postal Union |
| VNR | Voluntary National Review |
| WBG | World Bank Group |
| WFP | World Food Programme |
| WHO | World Health Organisation |
| WHO | World Health Organization |
| WIPO | World Intellectual Property Organization |
| WMO | World Meteorological Organization |
| WTO | World Trade Organization |

Executive Summary

Since 2016, the global edition of the *Sustainable Development Report* (SDR) has provided the most up-to-date data to track and rank the performance of all UN member states on the SDGs. This year's edition was written by a group of independent experts at the SDG Transformation Center, an initiative of the SDSN. It focuses on the UN Summit of the Future, with an opening chapter endorsed by 100+ global scientists and practitioners. The report also includes two thematic chapters, related to SDG 17 (Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development) and SDG 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture).

This year's SDR highlights **five key findings**:

1. On average, only 16 percent of the SDG targets are on track to be met globally by 2030, with the remaining 84 percent showing limited progress or a reversal of progress. At the global level, SDG progress has been stagnant since 2020, with SDG 2 (Zero Hunger), SDG 11 (Sustainable Cities and Communities), SDG 14 (Life Below Water), SDG 15 (Life on Land) and SDG 16 (Peace, Justice and Strong Institutions) particularly off track. The five SDG targets on which the highest proportion of countries show a reversal of progress since 2015 are: obesity rate (under SDG 2), press freedom (under SDG 16), the Red List Index (under SDG 15), sustainable nitrogen management (under SDG 2), and – due in large part to the COVID-19 pandemic, along with other factors that vary across countries – life expectancy at birth (under SDG 3). Goals and targets related to basic access to infrastructure and services, including SDG 9 (Industry, Innovation and Infrastructure), show slightly more positive trends, although progress remains too slow and uneven across countries.

2. The pace of SDG progress varies significantly across country groups. Nordic countries continue to lead on SDG achievement, with the BRICS countries making significant progress while poor and vulnerable nations lag far behind. As in previous years, European countries – notably the Nordic countries – top the 2024 SDG Index. Finland is ranked first, followed by Sweden (#2), Denmark (#3), Germany (#4), and France (#5). Yet even these countries face significant challenges in meeting several SDGs. Since 2015, average SDG progress in the BRICS (Brazil, the Russian Federation, India, China, and South Africa) and BRICS+ countries (Egypt, Ethiopia, Iran, Saudi Arabia, and the United Arab Emirates) has outpaced the world average, while East and South Asia has emerged as the region that has made the greatest progress toward the SDGs. In contrast, the gap between the world's average SDG performance and the performance of the poorest and most vulnerable countries, including the Small Island Developing States (SIDS), has widened since 2015.

3. Sustainable development remains a long-term investment challenge. Reforming the global financial architecture is more urgent than ever. The world requires many essential public goods that far transcend the nation-state. Low-income countries (LICs) and lower-middle-income countries (LMICs) urgently need to gain access to affordable long-term capital so that they can invest at scale to achieve their sustainable development objectives. Mobilizing the necessary levels of finance will require new institutions, new forms of global financing (including global taxation), and new priorities for global financing (such as investing in quality education for all). The report outlines five complementary strategies to reform the global financial architecture.

4. Global challenges require global cooperation. Barbados ranks the highest in its commitment to UN-based multilateralism; the United States ranks last. As with meeting the challenge of the SDGs, strengthening multilateralism requires metrics and monitoring. The report's new Index of support to UN-based multilateralism (UN-Mi) ranks countries based on their engagement with the UN system – including treaty ratification, votes at the UN General Assembly, membership in UN organizations, participation in conflicts and militarization, use of unilateral sanctions, and financial contributions to the United Nations. The five countries most committed to UN-based multilateralism are: Barbados (#1), Antigua and Barbuda (#2), Uruguay (#3), Mauritius (#4), and the Maldives (#5). By contrast, the United States (#193), Somalia (#192), South Sudan (#191), Israel (#190), and the Democratic Republic of Korea (#189) rank the lowest on the UN-Mi.

5. The SDG targets related to food and land systems are particularly off-track. The SDR evaluates three possible pathways towards achieving sustainable food and land systems. Globally, 600 million people will still suffer from hunger by 2030; obesity is increasing; and greenhouse gas emissions from agriculture, forestry, and other land use (AFOLU) account for almost a quarter of total annual global GHG emissions. The Food, Agriculture, Biodiversity, Land-Use, and Energy (FABLE) Consortium brought together more than 80 researchers from 22 countries to evaluate combinations of scenarios at the national level to assess how 16 targets related to food security, climate mitigation, biodiversity conservation and water quality could be achieved by 2030 and 2050. They found that the continuation of current trends would widen the gap between countries on targets related to climate mitigation, biodiversity, and water quality. While pursuing existing national commitments would improve the situation to some extent, these remain largely insufficient. FABLE's "global sustainability" pathway, however, showed that significant progress is possible, but will require several dramatic changes: 1) Avoid overconsumption and limit animal-based protein consumption through dietary shifts that are compatible with cultural preferences; 2) Invest to foster productivity, particularly for products and areas with high demand growth; and 3) Implement inclusive, robust, and transparent monitoring systems to halt deforestation. This pathway would avoid up to 100 million hectares of deforestation by 2030 and 100 gigatons of CO₂ emissions by 2050. Additional measures would be needed to avoid trade-offs with on-farm employment and water pollution caused by excessive fertilizer application, and to ensure that no one is left behind, particularly in the fight to end hunger.

For comments or questions please write to: info@sdgtransformationcenter.org



Part 1

Recommendations of the
UN Sustainable Development
Solutions Network for the
Summit of the Future

Part 1

Recommendations of the UN Sustainable Development Solutions Network for the Summit of the Future

The Summit of the Future is a unique and vital opportunity for the world community to update and upgrade the United Nations (UN) to meet the great challenges of the 21st century. We are midway between the founding of the UN in 1945 and the year 2100. This is a key moment to take stock of the accomplishments and limitations of the UN to date, and to update and upgrade the UN institutions for the balance of the century. The UN Sustainable Development Solutions Network (SDSN) is pleased to present its recommendations for United Nations 2.0 as a contribution to the upcoming summit. This statement is the work of many individuals listed at the end of this statement.

We take *sustainable development* to be the guiding principle for our age, as summarized by the five P's: People, Planet, Prosperity, Peace, and Partnerships. *People* signifies the commitment to leave no person, no group, no nation, and no region behind. *Planet* signifies the challenge of living within the planetary boundaries. *Prosperity* signifies the commitment to extend the material benefits of modern education and technology to all parts of the world, and to all member states of the UN. *Peace* signifies the vital commitment by all nations in the nuclear age to live together under the UN Charter and international law, including the duty of non-intervention in the internal affairs of other nations and the duty of peaceful resolution of conflicts, guided by international law. *Partnerships* signifies the commitment by all stakeholders, including governments, civil society, and business organizations, to work together cooperatively, honestly, and ethically to achieve the shared goals of humanity.

These five P's also express the core aspirations of the UN member states for the basic pillars of human decency: human rights, as in the foundational Universal Declaration of Human Rights; gender equality, as underscored in SDG 5; the end of extreme poverty in a world of great wealth, as called for by SDG 1; and the end of hunger in a world of dazzling technological breakthroughs in sustainable agriculture, promoted in SDG 2.

We underscore the priority of Peace as the necessary condition to achieve every other objective. If war is the continuation of politics with other means, as was

famously written,¹ it is also the stark failure of politics. The genius of the UN is that it can avert death and destruction through diplomacy and the commitment of all nations to the UN Charter. We appeal to all nations to resort to diplomacy, negotiation, and international law to resolve grievances that arise between states. When wars are raging or threatening to rage, the Security Council should work relentlessly to identify their underlying political causes, and adopt measures to end or prevent the conflicts in ways that meet the vital and just interests of all parties.

We note that we have arrived at a new phase in global history. The year 1945 marked the end of the Second World War, and the start of the era of decolonization, in which the UN played a major role. It also marked the start of the Cold War and of a world dominated by two superpowers. The 2020s mark the start of a new multi-polar era, in which all regions of the world are achieving significant breakthroughs in education, science and technology. No region yearns for a "hegemon," that is, for one dominant power. All regions yearn for prosperity, security, peace and cooperation, without one dominant country or region lording it over the others. While vast differences in material conditions still exist across the globe, there are real prospects for the emerging economies, both low income and middle income, to narrow the educational and technological gaps with the richer countries, enabling all parts of the world to enjoy the benefits of modern science and technology. Of course, the convergence to shared prosperity will depend utterly on peace, cooperation, and effective multilateral institutions.

1. Carl von Clausewitz, *On War* (1832).

At the same time, the year 2024 marks a crossroads. One path, the wrong path, leads to deepening ecological crises, increasing climate-driven disasters, widening inequalities, spreading conflicts, and even more dangerous new AI-enabled technologies for war, fake news, and state surveillance; while the other path leads to sustainability, the end of poverty, global peace, and the harnessing of digital technologies for human progress for all. The Summit of the Future is a timely and urgent opportunity to choose the path of peace and sustainable development.

A new and effective multilateralism is more important than ever before also because peoples and nations are more interconnected than ever before. No nation can solve the global climate crisis on its own. No nation can make a low-cost and just energy transition on its own. No nation can ensure peace and security on its own. No nation by itself can protect the vital ecosystems – such as river sheds, inland seas, ocean fisheries, rainforests, wetlands, and alpine regions – that they share with neighboring countries. No nation by itself can avoid the potential dangers and pitfalls of runaway technologies, whether advanced biotechnologies that can create new pathogens, or artificial intelligence (AI) systems that can create fake news or provocations to war.

In the language of public economics, the world requires many essential public goods that far transcend the nation state. While national governments are essential to providing many public goods at the national scale, regional groupings such as the European Union, African Union, ASEAN, the Arab League, and many others should be essential actors to providing regional public goods such as ecosystem protection and regional decarbonized energy systems. The UN and its many specialized agencies are essential in providing global public goods and protecting the global commons, such as the legal frameworks for climate action, the protection of biodiversity, the law of the seas, the protection of the ozone layer, the stability of the global financial system, the Universal Declaration of Human Rights and its covenants, and the peaceful resolution of inter-state disputes.

In addition to providing global public goods, the UN must also help to protect the biosphere and its diversity,

critical ecosystems such as the rainforests, the oceans and the atmosphere, and the stable climate of the Holocene, on which civilization has been built, but which is now on the verge of escaping our grasp due to anthropogenic climate change. Achieving sustainable land systems, and crucially, sustainable food systems, is one of the six SDG transformations identified by the SDSN and one of the most complex of the SDG transformations.²

To a great extent, Sustainable development is a long-term investment challenge. To achieve prosperity, social inclusion, and environmental protection, nations and regions require well-designed, well-implemented, and properly governed and financed programs of public and private investment. Major investment priorities include quality education, universal health coverage, zero-carbon energy systems, sustainable agriculture, urban infrastructure, and digital connectivity. All of this requires long-term national and regional plans backed by a Global Financial Architecture (GFA) that is reformed to be fit for purpose. The overwhelming problem with the current GFA is that most low-income countries (LICs) and lower-middle-income countries (LMICs) pay an inordinately high cost of capital, much higher than paid by the high-income countries (HICs). The deck is stacked against the LICs and LMICs. These countries urgently need to gain access to affordable long-term capital, so that they can invest at scale to achieve their sustainable development objectives. To bring about the needed financial mobilization, new institutions and new forms of global financing – including global taxation – will be required.

We underscore the enormous responsibility for achieving the SDGs and safeguarding the planetary boundaries of the members of the G21 (the former G20 plus the newest permanent member, the African Union). The G21 represents the preponderance of the world's GDP, population, forests, landmass, and fossil-fuel production. Given the universality of the 2030 Agenda, the UN system needs to strengthen existing and design new mechanisms to enforce the implementation of the SDGs also within and by the G21 members.

2. See Sachs, J.D. et al (2019). <https://www.nature.com/articles/s41893-019-0352-9>

1. Sustainable development and financing for development

The private sector must be a key driver for sustainable development, including leadership of technological transformations in energy, agriculture, climate resilience, digital economy and urban infrastructure essential for sustainable development. Profits must be the reward for contributions to the common good, not private gains achieved at the public's expense. Ethical businesses should align with the SDGs and hold themselves accountable to these global goals.

The SDGs highlight the strengths and weakness of the current UN system. The 193 UN member states achieved a great milestone in agreeing to a shared framework for global transformation by 2030, and to 17 overarching goals with 169 specified targets. Furthermore, the SDG agenda has taken hold. Almost all UN member states (188 out of 193) have presented Voluntary National Reviews (VNRs) of their SDG strategies, and 2 more will do so in 2024, leaving only Haiti, Myanmar, and the United States as the final three nations to have not yet taken part in the VNR process.

On the other hand, the SDGs will not be achieved by 2030, in significant part because of the many shortcomings of the Global Financial Architecture. The severe and ongoing geopolitical tensions have also gravely undermined cooperation among the major economies. Of course, Covid-19 was also an enormous shock to the global economy and to progress on the SDGs.

It has become clear that the UN system needs significant upgrading, in essence, a UN 2.0. We declare this out of our deep commitment to the UN system, and our abiding belief in its centrality for the future we want. We believe that the UN should be strengthened and empowered to underpin the new multi-polar world. Reforms include new UN bodies, such as a UN Parliament, new forms of global financing, and new strategies to ensure observance of international law and peace among the major powers. Ultimately, the UN Charter itself will need to be revised and updated to reflect our 21st century needs and realities.

A new multilateralism that works should be based on five core pillars of UN reform. First, the UN should empower nations and regions to adopt meaningful

and comprehensive pathways to sustainable development by 2050. During the transition to 2050, ambitions must remain high for advances in prosperity, social justice, and environmental sustainability. Second, the UN should promote the implementation of the SDG pathways through stronger global agreements and more empowered UN institutions. Third, the UN should have the capacity to finance the SDGs through new global taxes and a renovated GFA. Fourth, the UN should represent *We the Peoples* by adding new forums of representation, especially a new UN Parliament of the Peoples. Fifth, the UN and its member states should harness the advances in science and technology for the human good, and be ever-vigilant against the potential misuses of advanced technologies including biotechnology, AI, and geoengineering.

In this spirit, we recommend specific reforms in the five major areas of the Summit of the Future agenda: sustainable development and financing for development; international peace and security; science, technology, and innovation; youth and future generations; and global governance.

1. Sustainable development and financing for development

The challenges of sustainable development are profound: at least one billion people caught in deep poverty, billions more facing serious material deprivations, environmental crises continuing to worsen, and global cooperation undercut by deep divisions among the major powers. Yet there are also important reasons for hope. Technological advances are bringing new solutions to the forefront, and low-cost digital platforms can empower even the poorest of the poor, as has been shown throughout Asia and Africa. The SDGs offer an invaluable, if challenging, framework for progress. Governments around the world are successfully fashioning integrated sustainable development strategies and institutional structures to achieve the SDGs.

1.1 The SDG Agenda should remain the core of global cooperation to 2050

The SDGs were initially set for the fifteen-year period 2016–2030, following the fifteen-year period of the Millennium Development Goals (MDGs). It is clear that the SDGs will not be achieved in the original time frame. There are four reasons. First, many of the objectives – such as the transition to zero-carbon energy systems – necessarily require a horizon to 2050. Second, despite the commitments made in the Addis Ababa Action Agenda (2015) to align financial flows with the sustainable development agenda, the needed reform of the GFA has not yet been achieved. Thus, the emerging economies have faced chronic shortfalls in financing the SDGs. Third, a series of global crises, including Covid-19, and wars in Ukraine, the Middle East, Africa, and other parts of the world, not only directly impeded SDG progress but also significantly heightened tensions among the major powers and undermined the global cooperation needed to achieve the SDGs. Fourth, national and global governance of the SDGs have been deeply impaired by social polarization, powerful lobbies, lack of empowerment (or actual disempowerment) of civil society and academic institutions, and *my-country-first* policies that have imperiled global cooperation.

For all these reasons, we strongly urge that the Summit of the Future recognize the pivotal role of the SDGs in aligning national, regional and global policies, and commit to the SDG framework until 2050, so as to reinforce the efforts already underway and to recognize the time horizon needed to reorient the world economy to sustainable development. The new horizon of 2050 does not mean a slackening of effort. Rather, it means improved long-term planning to achieve highly ambitious 2050 goals and milestones on the way to 2050.

We also call for coherence in the international policy framework, notably around trade and investment policies. Protectionism is on the rise in the major economies, and if unchecked by multilateral rules could stifle the opportunities for economic development in the emerging and developing economies. The multilateral trade system under the WTO should therefore be supported and strengthened to align with the SDGs and climate agenda. The current system of investor-state

dispute mechanisms should be overhauled so that it is not used as a bludgeon to slow or stop the transition to clean, green, and sustainable technologies.

We call on the Summit of the Future to establish follow-up inter-governmental mechanisms to extend the SDG agenda to mid-century with highly ambitious timelines, updated goals, and the systematic implementation of enhanced means of implementation, as discussed throughout this statement.

1.2 The Sustainable Development Agenda should be properly financed

At the essence of achieving sustainable development is investment in the capital of every individual and economy worldwide. These capital assets include human capital (health and education), infrastructure, enterprise capital, intellectual capital (scientific and technological know-how), and natural capital. Societies achieve sustainable development through balanced and bold investments in these forms of capital. The greatest differences in economic and social indicators across nations, and in progress towards the SDGs, results from differences in the stocks of capital per person in the population, which in turn have resulted from past history, political institutions, geographical factors, and other determinants. Yet in the richest countries, with high capital assets per person, vested interests continue to block transitions from unsustainable to sustainable technologies (for example, regarding the role of fossil fuels).

The greatest challenge and opportunity for the poorer nations is a rapid increase in productive capital per person, based on dynamic investments in education, health care, infrastructure (power, digital, water and sanitation, transport, housing, and others), business capital, and protection of nature. By bold and well-designed investment programs, the poorest countries can end extreme poverty and make rapid strides towards the SDGs. The single most important investment of all, quantitatively and qualitatively, is education. With higher education, and a supportive business and regulatory environment, many other things follow: improved technologies, better decision making, healthier and more

2. International peace and security

satisfying lives, and the ability of economies to attract domestic and international business investments.

All evidence developed by academia, the Bretton Woods system, and UN institutions is that there remains a massive shortfall in the pace of investments needed for the poorer nations to achieve the SDGs. Perhaps even more shockingly, this shows up in the shortfall of primary and secondary education, where poorer countries are unable to finance universal access as called for by SDG 4 (Quality Education). The result is hundreds of millions of children either out of school entirely or in classrooms with 60–100 students per teacher and meager or non-existent school supplies.

In order to mobilize the needed investment flows for human and infrastructure capital, the GFA must be reformed and made fit for sustainable development. The major objective is to ensure that the poorer countries have adequate financing, both domestic and from external sources, and at sufficient quality in terms of the cost of capital and the maturity of loans, to scale up the investments required to achieve the SDGs.

There are five complementary strategies to reform the GFA. The first is to increase the scale of financing from official sources, including bilateral Official Development Assistance and multilateral financial institutions, including multilateral development banks. The IMF should be empowered with the resources and the mandate to serve as a true lender of last resort for member states caught in a liquidity crisis. The second is to increase the scale and performance of national development banks that are mission-oriented and fit for purpose for providing patient, long-term financing to achieve the SDGs. The third is to institute global taxation, for example, on CO₂ emissions, air and sea travel, financial transactions, and other international goods and “bads,” in order to mobilize sufficient global resources to provide the necessary global public goods. The fourth is to reform the private capital markets and their regulation (including the system of credit ratings) to support larger private flows of capital into the low-income and lower-middle-income countries. The fifth is to restructure existing debts, including debt-for-SDG swaps, debt-for-Nature swaps, lower interest rates, and much longer maturities consistent with the time horizon to achieve sustainable development.

1.3 Countries and regions should produce medium-term sustainable development strategies

Sustainable development in general, and the SDGs specifically, require long-term public investment plans, transformation pathways, and a mission orientation to provide the public goods and services required to achieve the SDGs. For this purpose, all nations and regions need medium-term strategies to achieve the SDGs. These strategies, with a horizon to the year 2050, and in some cases beyond, should provide an integrated framework for local, national, and regional investments to achieve the SDGs, and for the technological transformations needed to achieve green, digital, and inclusive societies. Medium-term SDG Frameworks should be presented and updated annually by each nation at the ongoing High-Level Political Forum, and systematically and critically reviewed by peer countries and by the UN system.

2. International peace and security

2.1 The core principles of non-intervention should be reinforced and extended

The greatest threat to global peace is the interference by one nation in the internal affairs of another nation against the letter and spirit of the UN Charter. Such interference, in the form of wars, military coercion, covert regime-change operations, cyberwarfare, information warfare, political manipulation and financing, and unilateral coercive measures (financial, economic, trade, and technological), all violate the UN Charter and generate untold international tensions, violence, conflict, and war.

At the same time, individual nations should abide by the international law to which they have subscribed. It is the responsibility of the UN as a whole, to ensure collective mechanisms for enforcement of the law, while no individual nation nor group of nations outside of UN processes should interfere in the internal affairs of other nations in the name of enforcing global rules.

For this reason, the UN member states should resolve to end illegal measures of intervention by any nation or group of nations in the internal affairs of another nation

or group of nations. The principles of non-intervention, enshrined in the UN Charter, UN General Assembly Resolutions, and international law, should be reinforced along the following lines.

First, no nation should interfere in the politics of any other country through the funding or other support of political parties, movements, or candidates.

Second, no nation or group of nations should deploy unilateral coercive measures, as recognized repeatedly by the UN General Assembly.

Third, in a world operating under the UN Charter, there is no need for nations to permanently station military forces in foreign countries other than according to UN Security Council decisions. Existing overseas military bases should be reduced dramatically in number with the aim of phasing out and eliminating overseas military bases over the course of the next 20 years.

2.2 The UN Security Council and other UN agencies should be strengthened to keep the peace and sustain the security of member states

The UN Security Council should be reformed, expanded, and empowered to keep the peace under the UN Charter. Reform of its structure is described in section 5 below. Here we emphasize enhancing its power and tools, including super-majority voting to overcome the veto by one member; the power to ban the international flow of weapons to conflict zones; strengthened mediation and arbitration services; and enhanced funding of peace-building operations, especially in low-income settings.

The Security Council should actively encourage collective security, in which national borders are respected and the great powers are actively discouraged by the Security Council from pulling smaller nations into dangerous geopolitical contests. The scourge of proxy wars must be actively resisted in our new multi-polar setting, especially by avoiding “bloc” politics and military alliances that press or encourage smaller countries to “choose sides” in big-power rivalries, thereby exacerbating the tensions among the big powers.

The Security Council should also be attentive to requests from member states to support them in preserving internal peace when it is threatened by global illicit arms flows, transborder drug trafficking, international organized crime, external debt insolvency, or other factors that undermine the capacity of the state to carry out its core functions.

In addition to the UN Security Council, other key instrumentalities of global peacekeeping, human rights, and international law should be strengthened. These include the authority and independence of the International Court of Justice and the International Criminal Court, the functionality of and support for UN-based humanitarian assistance, especially in war zones, and the role of the UN Human Rights Council in defending and promoting the Universal Declaration of Human Rights.

2.3 The nuclear powers should return to the process of nuclear disarmament

The greatest danger to global survival remains thermo-nuclear war. In this regard, the ten nations with nuclear weapons have an urgent responsibility to abide by the Non-Proliferation Treaty mandate under Article VI “to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.” All nations, and especially the nuclear powers, should ratify and comply with the *Treaty on the Prohibition of Nuclear Weapons*.

2.4 Systematic monitoring of UN-based multilateralism

The UN Sustainable Development Solutions Network has launched a new index of UN-based multilateralism (see Part 3). As with the challenge of the SDGs, strengthening multilateralism requires metrics and monitoring. The SDSN UN-Mi shows that the United States is currently the country least adherent to UN-based systems. Other major powers also have significant scope for improvement in their multilateralism, according to the data presented by SDSN. We believe that all countries need to be accountable to their peers for adherence to the UN Charter, rules, norms, and procedures.

3. Science, technology and innovation and digital cooperation

3.1 Enhancing the multilateral governance of technological risks

The world is experiencing unprecedented advances in the power, sophistication, and risks of advanced technologies across a range of sciences, technologies and applications. These include biotechnology, including the ability to enhance pathogens and to create new forms of life; artificial intelligence, including the potential for pervasive surveillance, spying, addiction, autonomous weapons, deep fakes, and cyberwarfare; nuclear weapons, notably the emergence of yet more powerful and destructive weapons and their deployment outside of international controls; and geoengineering, for example proposals to alter the chemical composition of the atmosphere and oceans, or to deflect solar radiation, in response to anthropogenic climate change.

The world has become painfully aware in recent years that the dramatic advances of these technologies lack substantive regulatory oversight at the national and global levels. To the contrary, these technologies are being developed and deployed in secrecy by military agencies, intelligence agencies, and private companies, often with no or little oversight by the public or representative institutions. A debate continues as to whether the Covid-19 pandemic was in fact an accidental disaster originating in cutting-edge “gain-of-function” research on dangerous pathogens, highlighting the indisputable dangers posed by the manipulation of dangerous pathogens using new, cutting-edge biotechnologies.

Digital technologies are being rapidly and pervasively militarized, including quantum computing, AI, cyberwarfare, hypersonic and counter-hypersonic missiles, electronic warfare, undersea warfare, uncrewed vehicles, as well as multi-domain capacities including missile attack, cyber, space, and electronic warfare. Digital technologies threaten fundamental values of personal privacy, enable untraceable targeted discrimination by states, and pose the threat of overbearing state surveillance.

We therefore call on the UN General Assembly to establish urgent processes of global oversight of each class of cutting-edge technologies, including mandates to relevant UN agencies to report annually to the UN General Assembly on these technological developments, including their potential threats and requirements of regulatory oversight.

3.2 Universal access to vital technologies

In the same spirit, we also call upon the UN General Assembly to establish and support global and regional centers of excellence, training, and production to ensure that all parts of the world are empowered to participate in the research and development, production, and regulatory oversight of advanced technologies that actually support sustainable development (rather than hyper-militarization). Universities in all regions of the world should train and nurture the next generation of outstanding engineers and scientists needed to drive sustainable development, with expertise in structural transformations in energy, industry, agriculture, and the built environment. Africa in particular should be supported to build world-class universities in the coming years.

3.3 Universal access to R&D capacities and platforms

More than ever, we need open science for scientists in poorer countries and regions, including universal free access to scientific and technical publications, to ensure fair and inclusive access to the advanced technological knowledge and expertise that will shape the global economy and global society in the 21st century. UN normative instruments such as the UNESCO 2019 Recommendation on Open Educational Resources (OER) can effectively contribute to global digital cooperation and knowledge sharing.

We also emphasize the crucial role of public financing in R&D. While it is true that private-sector, profit-oriented R&D is a key feature of the global knowledge economy, a strong public role in R&D has also proven to be vital, especially to support basic science and those areas where the public good is vitally at stake, including

environmental sustainability and the urgent needs of the poor that are systematically bypassed by the profit motive alone. A vivid example is the case of tropical disease burdens of high prevalence among very poor populations, where market incentives alone are utterly inadequate to mobilize the needed R&D efforts.

4. Youth and future generations

The most important capital of any society, by far, is its human capital. The universal access of the population to quality education, nutrition, health and lifelong learning is the single greatest determinant of the ability of each nation and region to end poverty, achieve social inclusion, and attain environmental sustainability. The returns on investment in human capital, in direct economic benefit not to mention societal benefit and gains in personal wellbeing, are the highest returns available to any society. Despite the centrality of human capital for sustainable development, and despite the availability of know-how, technology, and the organizational means to ensure that no child is left behind, the current neglect of the world's children is startling and shocking. Hundreds of millions of children are being left behind, in poverty and destitution, because of a lack of access to education, nutrition, healthcare, and job skills.

We therefore call on the Summit of the Future to prioritize the access of every child on the planet to the core investments in their human capital, and to create new modalities of global long-term financing to ensure that the human right of every child to quality primary and secondary education, nutrition, and healthcare is fulfilled no later than 2030. We recognize the crucial need for gender equality (SDG 5) to ensure that girls as well as boys are enabled and encouraged to reach their full potential. We encourage public measures to strengthen the family and the capacity of families to provide the nurturing, nutrition, safe environment, early childhood stimulus, and learning environment, that are vital to enabling children to achieve their full potential. We stress the need for the community to ensure access for young people to mental health services when needed and protection against violence and digital abuse.

The financing gap to achieve universal access to human capital is on the order of \$200 billion per year

for education and \$200 billion per year for healthcare and nutrition, and therefore less than one-half of 1% of world output. These sums are entirely manageable. The multilateral development banks in particular should immediately step forward with greatly increased long-term low-interest financing for human capital investments at the scale required and called for by the SDGs, and notably SDG target 3.8 (universal health coverage) and SDG target 4.1 (universal completion of schooling at least through upper-secondary).

As we attend to the needs of the young, we should also of course recognize the significance of aging and extended lifespans for the old. The expansion of life expectancy is one of the glories of modern know-how, and in countries where life expectancy continues to lag far behind, the leading countries should help with urgency to promote improved public health outcomes. Yet we must also take steps to ensure that these longer lives are lived in good health and wellbeing. Chronic diseases, loneliness and the isolation of elders could weigh heavily on the future, unless we nurture the needed “care economy” for an aging population.

4.1 Universal education for sustainable development and global citizenship (*paideia*)

In adopting the SDGs, the UN member states wisely recognized the need to educate the world's children in the challenges of sustainable development. They did this in adopting Target 4.7 of the SDGs:

4.7 By 2030 ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development

Target 4.7 is, in effect, the call for a 21st century *paideia*, the ancient Greek concept of the core knowledge, virtues, and skills that should be attained by all citizens of the Polis. Today, we have a global polis – a global citizenry – that must be equipped to foster and promote

5. Transforming global governance

the values of sustainable development and the respect of human rights throughout the world. We call on the Summit of the Future to reinforce Target 4.7 and to bring it to life in education for sustainable development around the world. This includes not only an updated and upgraded curriculum at all levels of education, but training at all stages of the life cycle in the technical and ethical skills needed for a green, digital, and sustainable economy in an interconnected world.

4.2 Council of youth and future generations

A young person born today is most likely to live into the 22nd century, assuming the vital conditions of peace, access to healthcare and education, and an adequate and universally achievable material standard of living. Young people of course have the greatest stake in achieving sustainable development by mid-century and securing a world of peace and social justice. Young people also have special perspectives and skills that will be vital to the success of sustainable development. They are digital citizens, growing up in the digital age; they are global citizens, growing up in a world that is more interconnected and interdependent than ever before. And they are highly vulnerable to the choices that governments make in the next few years. The environmental and geopolitical threats raise the specter of dire and irreversible losses unless the proper policies are adopted.

For this reason, the voices of youth are essential. The empowerment of youth, through training, education, mentorship, and participation in public deliberations, can foster a new generation that is committed to sustainable development, peace, and global cooperation. A new UN Council of Youth and Future Generations can strengthen the UN's activities in training and empowering young people, and can provide a vital global voice of youth to meet today's complex challenges. We therefore call on the Summit of the Future to support the establishment of a new UN Council of Youth and Future Generations as a UN General Assembly subsidiary body under Article XXII. We also call on the existing UN organs – ECOSOC, the UN Security Council, the Human Rights Council, and others – to actively promote the voices of young people in their sessions, proceedings, and practices.

5. Transforming global governance

5.1 There should be the establishment of a UN Parliamentary Assembly

Around the world, civil society, scholars, and citizens have called for strengthening global institutions by establishing representation of *We the Peoples* in the UN. We propose as a first instance to establish a “UN Parliamentary Assembly” as a subsidiary body of the UN General Assembly according to Article XXII of the UN Charter (“The General Assembly may establish such subsidiary organs as it deems necessary for the performance of its functions.”). The new UN Parliamentary Assembly would be constituted by representative members of national parliaments, upon principles of representation established by the UN General Assembly. In some manner, representation could be organized on the basis of “Degressive Proportionality,” meaning that every UN member state would have at least one representative, with the number of representatives based on the population of the UN member states, and with a maximum number of representatives for the largest nations. Ideally, the size of the UN Parliamentary Assembly would be such as to enable in-person meetings at the UN General Assembly as well as virtual public sessions throughout the year.

The UN Parliamentary Assembly should have oversight of the UN budget, and be vested with specific powers regarding the collection and disposition of international taxation (see section 1.1 above).

5.2 Other UN subsidiary bodies should be established

Invoking the powers under Article XXII, the UN General Assembly should establish new subsidiary chambers as needed to support the processes of sustainable development, and the representativeness of UN institutions. The new chambers might include, *inter alia*:

A Council of the Regions to enable representation of regional bodies such as ASEAN, European Union, Africa Union, Eurasian Economic Union, and others;

A Council of Cities to enable representation of cities and other sub-national jurisdictions;

A Council of Indigenous Peoples to represent the estimated 400 million indigenous peoples of the world;

A Council of Culture, Religion, and Civilization to promote a culture of peace and non-violence, global citizenship, and appreciation for cultural diversity, religion, and civilizations;

A Council of Youth and Future Generations to represent the needs and aspirations of today's youth and of generations to come (see section 4.1 above);

A Council on the Anthropocene to support and enhance the work of the UN agencies in fulfilling the aims of the Multilateral Environmental Agreements (including the Paris Climate Agreement and the Kunming-Montreal Global Biodiversity Framework) and the environmental objectives of the Sustainable Development Goals.

5.3 The UN Security Council should be reformed in membership and powers.

Its effectiveness is the paramount requirement for global survival. In recent decades, however, the Security Council has been gravely hampered by widely recognized shortcomings in its composition, the overuse of the veto power, and the insufficiency of its tools to address threats to the peace. There has been a long debate on how to reform the UN Security Council. We urge the UN member states to reach a consensus to move forward on this critical issue.

Specifically, we call on the UN Security Council and the General Assembly to adopt urgently needed reforms of the Security Council structure and processes. These should include:

- The addition of India as a permanent member, considering that India represents no less than 18% of humanity, the third largest economy in the world at purchasing-power parity, and other attributes signifying India's global reach in economy, technology, and geopolitical affairs;

- The adoption of procedures to override a veto by a super-majority (perhaps of three-quarters of the votes);
- An expansion and rebalancing of total seats to ensure that all regions of the world are better represented relative to their population shares;
- The adoption of new tools for addressing threats to the peace, as outlined above in section 2.2.

6. Conclusions

The UN Sustainable Development Solutions Network (SDSN) applauds the UN General Assembly, the UN Secretary General, and the UN agencies in promoting a unique and invaluable reflection on the shared future of humanity. The Summit of the Future is a remarkable occasion to strengthen our bonds on a planet challenged by poverty amidst plenty, widening social inequalities, dire environmental threats, and the horrific costs and grave dangers of war. The SDSN represents more than 2,000 universities, think tanks, national laboratories and other organizations committed to sustainable development in all parts of the world. As a global network, we are committed to doing our part through education, training, research, policy analysis, convening, and collaborative efforts of all sorts, including this statement to the world's governments, to promote sustainable development, peace, and the future we want.

List of signatories

| | |
|------------------------------------|---|
| Jeffrey D. Sachs | President of the UN Sustainable Development Solutions Network (SDSN), University Professor and Director of the Center for Sustainable Development at Columbia University |
| Emmanuel Adamakis | Elder Metropolitan of Chalcedon |
| Mohammed Al-Sabah | President of Sabah Al-Salem Foundation |
| Anthony Annett | Visiting Scholar, Center for Sustainable Development, Columbia University |
| Luiz Augusto Galvão | Senior Researcher, Fiocruz Center for Global Health |
| Chandrika Bahadur | Chief Executive Officer, The Antara Foundation |
| Gustavo Béлиз | Former Secretary of Strategic Affairs. Argentina; member, Pontifical Academy of Social Sciences (PASS) |
| Sergio Besserman Vianna | President, Rio de Janeiro Botanical Garden Research Institute, Brazil; Board member, SDSN Brazil |
| Zulfiqar Bhutta | Founding Director, Institute for Global Health and Development, the Aga Khan University, South-Central Asia, East Africa and United Kingdom; Robert Harding Inaugural Chair in Global Child Health, Hospital for Sick Children, Toronto |
| Eugenie L. Birch | University of Pennsylvania |
| Irina Bokova | Former Acting Minister of Foreign Affairs, Bulgaria |
| Helen Bond | University Professor, Howard University |
| Rocco Buttiglione | Professor of Philosophy, Instituto de Filosofia Edith Stein, Granada (Spain) |
| James Chelang'a | Moi University, Kenya |
| Kieth Rethy Chhem | CamTech University, Cambodia |
| Jacqueline Corbelli | Founder, US Coalition on Sustainability, SustainChain™ |
| María Cortés Puch | Vice President for Networks, SDSN |
| Ramu Damodaran | Senior Fellow, CSEP |
| Jack Dangermond | President, Esri |
| Vibha Dhawan | Director General, The Energy and Resources Institute (TERI) |
| Bineta Diop | Founder and Chair of the Board, Femmes Africa Solidarité |
| David Donoghue | Distinguished Fellow of ODI; co-facilitator for 2030 Agenda negotiations |
| Gonzalo Fanjul | Policy Director, Barcelona Institute of Global Health (ISGlobal) |
| Sybil Fares | Advisor on Middle East and Africa, SDSN |
| Maria João Filgueiras Rauch | Network Manager, SDSN Portugal |
| Xiaolan Fu | Oxford University |
| Stuart Gibb | Director, Environmental Research Institute, The University of the Highlands and Islands |
| Ken E. Giller | Emeritus Professor, Wageningen University, The Netherlands |
| Enrico Giovannini | Former Minister of Labour and Social Policies, Italy |
| Ana Marta González | Professor of Philosophy, University of Navarra, Spain |
| Charlotte Kendra Gotangco Gonzales | Ateneo De Manila University |
| Ian Greer | President and Vice-Chancellor, Queen's University |
| Andrew Haines | Professor of Environmental Change and Public Health, London School of Hygiene and Tropical Medicine |
| James Hansen | Climate Science, Awareness and Solutions, Columbia University |
| Olli-Pekka Heinonen | Director General of the International Baccalaureate |
| Naci İnci | Rector, Boğaziçi University |
| Naoko Ishii | The University of Tokyo |
| Vuk Jeremić | Former President, United Nations General Assembly |
| Pavel Kabat | Secretary General, Human Frontier Science Program |

| | |
|---------------------------|---|
| Norichika Kanie | Chair, SDSN Japan, Professor, Graduate School of Media and Governance, Keio University |
| Kerry Kennedy | President, Robert F. Kennedy Human Rights |
| Young-Mok Kim | Former Diplomat, South Korea |
| Niclas Kjellström-Matseke | Chairman, Desmond & Leah Tutu Legacy Foundation; Founding Partner, 17 Asset Management |
| Kouakou Koffi | Président Université Alassane Ouattara, Bouaké, Côte d’Ivoire |
| Phoebe Koundouri | Professor, Athens University of Economics and Business; Professor, Technical University of Denmark; Chair, SDSN Global Climate Hub; Co-Chair, SDSN Europe; President, EAERE |
| Rato Kozakou-Marcoullis | Former Foreign Minister, Cyprus |
| Samuel Kweku Hayford | University of Education, Winneba, Ghana; Member, Networks Strategy Council |
| Markoa Kyprianou | Former Minister of Foreign Affairs, Cyprus |
| Guillaume Lafortune | Vice President, SDSN; member, Grenoble Center for Economic Research (CREG) |
| Zlatko Lagumdžija | Former Chairperson of the Council of Ministers of Bosnia and Herzegovina |
| Upmanu Lall | Arizona State University and Columbia University |
| Frannie Leautier | Partner and CEO, SouthBridge Investments |
| Woo-Kyun Lee | Professor, Korea University; Co-Chair, SDSN-Korea |
| Klaus Leisinger | Global Values Alliance |
| Carol Leonard | Emeritus, St Antony’s College |
| Adalberto Luis Val | Brazilian National Institute for Amazonian Research (INPA) |
| Patrick Maluki | University of Nairobi, Kenya |
| Julia Marton-Lefèvre | Co-Founder of Villars Institute |
| Marianna Mazzucato | Professor in the Economics of Innovation and Public Value, Founding Director, Institute for Innovation and Public Purpose (IIPP), University College London (UCL) |
| Gordon McCord | School of Global Policy and Strategy, University of California San Diego |
| Rodrigo Medeiros | SDSN Brazil |
| Francisco J. Meza | Director, Institute for Sustainable Development, Pontifical Catholic University of Chile |
| Miriam Mirolla | Academy of Fine Arts, Rome |
| Vijay Modi | Columbia University |
| Oscar Molina Tejerina | Provost, Universidad Privada Boliviana (UPB); Chair, SDSN Bolivia |
| Tae Hoon Moon | Emeritus Professor, Chung Ang University, Seoul; Co-Chair, SDSN, Republic of Korea |
| Miguel Ángel Moratinos | Under-Secretary-General, High Representative for the United Nations Alliance of Civilizations |
| John O’Halloran | President, University College Cork |
| Ngozi Odiaka | Joseph Sarwuan Tarka University, Makurdi, Benue State, Nigeria; Co-Chair, SDSN Nigeria |
| Soogil Oh | The Cyber University of Korea |
| Seth Ohemeng-Dapaah | Country Director, Millennium Promise, Ghana |
| Joaquim Oliveira | Counsellor, CEPII; President of the Board, CIREM |
| Serik Orazgaliyev | Nazarbayev University |
| Leire Pajín | International Development Director, ISGlobal (Barcelona Institute for Global Health) |
| Costas N. Papanicolas | Founding President, The Cyprus Institute, Co-Chair SDSN Cyprus |
| Antonio Pedro | Deputy Executive Secretary (Programme Support), United Nations Economic Commission for Africa |
| Antoni Plasència | Barcelona Institute for Global Health; University of Barcelona |
| Labode Popoola | University of Ibadan; Chair of SDSN Nigeria |
| Riccardo Pozzo | Tor Vergata University, PASS |
| Stefano Quintarelli | Copernicani NPO |

List of signatories

| | |
|--------------------------|--|
| Sabina Ratti | Chair, SDSN Italy |
| K. Srinath Reddy | Distinguished Professor of Public Health, Public Health Foundation of India |
| Aromar Revi | Founding Director, Indian Institute for Human Settlements (IIHS) |
| Angelo Riccaboni | University of Sienna, Co-Chair UN SDSN Europe, Paris |
| Katherine Richardson | University of Copenhagen |
| Johan Rockström | Potsdam Institute for Climate Impact Research, Germany |
| Joanna Rubinstein | President and Chief Executive Officer, World Childhood Foundation USA |
| José Saniger | Universidad Nacional Autónoma de México (UNAM) |
| HH Muhammad Sanusi II | Emir of Kano |
| Aleksandra Schellenberg | Global Head, Legal Sustainable Finance |
| Guido Schmidt-Traub | Systemiq |
| Jasmina Selimović | Central Bank of Bosnia and Herzegovina; University of Sarajevo |
| Ismail Seragelidin | Founding Director of the Bibliotheca Alexandrina |
| Marco Simões-Coelho | Federal University of Rio de Janeiro (UFRJ) |
| David Smith | University of the West Indies |
| Vera Songwe | Brookings Institution |
| Jennifer Stengaard Gross | Co-Founder, Blue Chip Foundation; Director, The William, Jeff, and Jennifer Gross Foundation |
| Jatna Supriatna | Co-Chair, SDSN Indonesia; Professor of Conservation Biology, Universitas Indonesia |
| Nicolaos Theodossiou | Aristotle University of Thessaloniki; Chair, SDSN Black Sea |
| John Thwaites | Monash University |
| Emma Torres | VP for the Americas, SDSN |
| Rocky Tuan | Vice-Chancellor and President, The Chinese University of Hong Kong |
| Kevin Chika Urama | Chief Economist, African Development Bank Group (AfDB) |
| William Vendley | Secretary General Emeritus, Religions for Peace International |
| Virgilio Viana | International Institute for Environment and Development |
| Martin Visbeck | Kiel University |
| Patrick Paul Walsh | University College Dublin |
| Yuqing (Philo) Wang | Senior Manager, SDSN |
| Wing Thye Woo | Vice-President for Asia, SDSN |
| Lan Xue | Tsinghua University |
| Hiro Yoshikawa | NYU Steinhardt |
| Ali Ahmad Yousefi | Chancellor, Kateb University, Kabul, Afghanistan |
| Stefano Zamagni | Prof. of Economics, University of Bologna; Pontifical Academy of Social Sciences |



Part 2

The SDG Index and Dashboards

Part 2

The SDG Index and Dashboards

The SDG Index and Dashboards provides an annual assessment of SDG progress in all 193 UN member states. It builds on a peer-reviewed, statistically audited, and transparent methodology (Schmidt-Traub et al. 2017; Lafortune et al. 2018; Papadimitriou, Neves, and Becker 2019). The methods summary provides additional information about the underlying data sources and the main changes from previous editions. This year's SDG Index incorporates 125 indicators, including 98 global indicators and 27 additional indicators used for the OECD countries' dashboards. While all UN member states have a country profile, only those with less than 20 percent of missing data have an SDG Index score and rank. This is to ensure the comparability of the results and minimize missing data bias. This year, 167 countries are ranked in the SDG Index, including for the first time Guinea-Bissau. We also include average results and country profiles for the BRICS (Brazil, Russian Federation, India, China, and South Africa) and the BRICS+ countries for the first time, incorporating countries that were invited to become part of the BRICS in 2023 (Egypt, Ethiopia, Iran, Saudi Arabia, and the United Arab Emirates). The full database and methodological papers, as well as regional and local editions of the SDG Index and Dashboards, are available on the SDG Transformation Center website (<https://sdgtransformationcenter.org>).

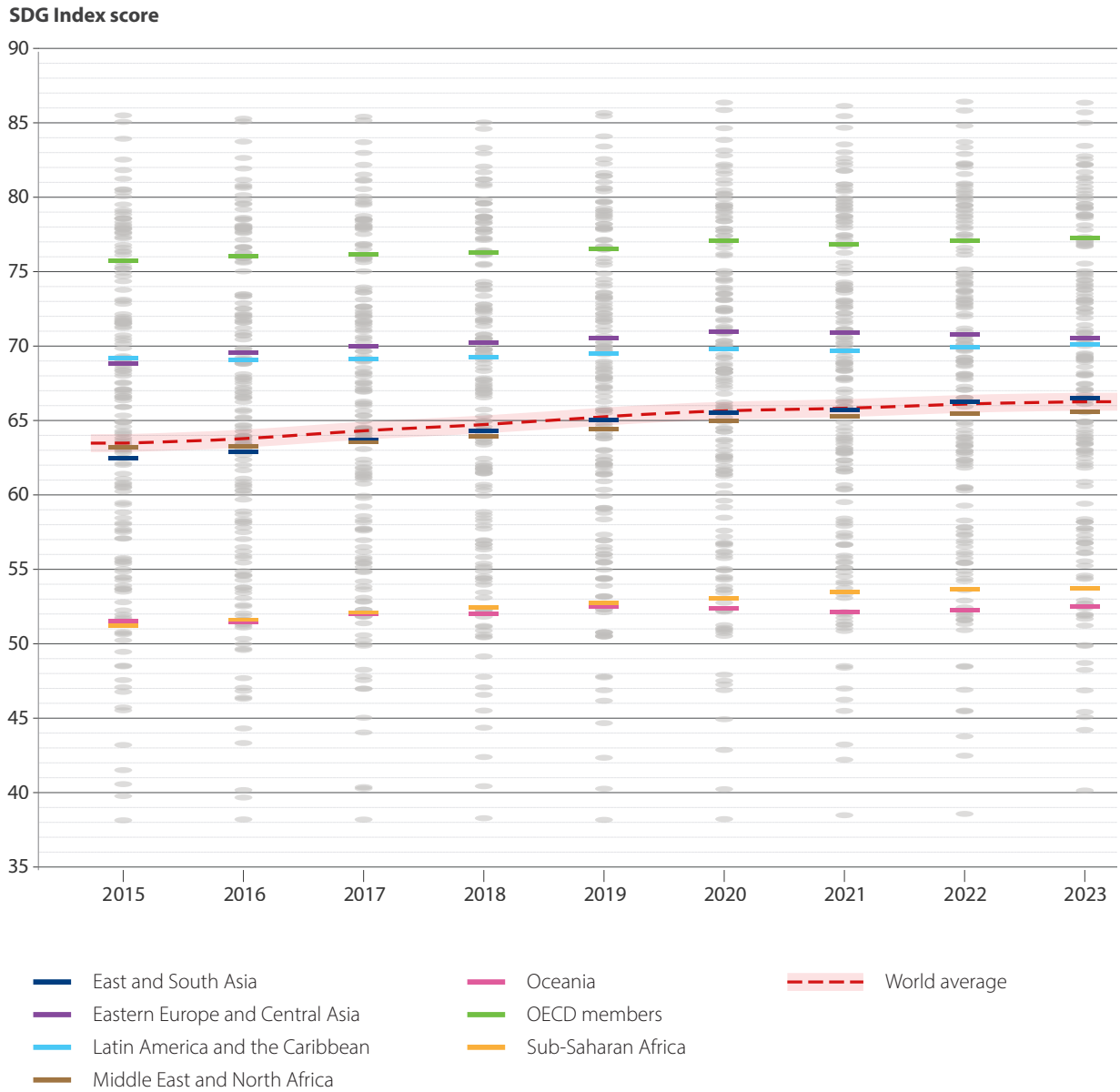
Global SDG Progress

Overall, at the global level, SDG progress has stalled since 2020 (Figure 2.1). Global SDG progress was already too slow even before the COVID-19 pandemic and other crises hit. Based on the rate of progress since the SDGs were adopted by the international community in 2015, none of the 17 SDGs will be achieved by 2030 (Figure 2.2). The spread in SDG performance across countries remains wide, with scores ranging from

80+ in top performing countries to below 50 in countries where SDG implementation remains particularly challenging. At the global level, SDG 2 (Zero Hunger), SDG 11 (Sustainable Cities and Communities), SDG 14 (Life Below Water), SDG 15 (Life on Land) and SDG 16 (Peace, Justice and Strong Institutions) are particularly off track, with major SDG challenges (as indicated by red on the dashboards) and no or very limited progress since 2015. SDG 2 (Zero Hunger) is the only goal that none of the 193 UN member states has achieved or is on track to achieve, due to undernourishment, obesity, unsustainable agriculture and/or unsustainable diets (or a combination of these). Part 4 discusses integrated pathways and scenarios for sustainable food and land-use systems.

The poorest and most vulnerable countries, including the Small Islands Developing States (SIDS), are not catching up with the world average SDG Index score. Prior to the pandemic, SDG progress was too slow globally, but there was some convergence taking place, with poorer countries progressing faster on the SDG Index between 2015 and 2019 (+1.6 points) than rich countries (+0.7 points) (Figure 2.3). Since 2020, the SDG Index score of rich countries has slightly improved (+0.3 points), while that of the poorest countries has stagnated (+0.1 points), with the result that the average score of the poorest countries for 2023 is only 51, compared with 77.6 for the rich countries. The gap between the world average SDG Index score and that of poor countries and SIDS is larger in 2023 than it was in 2015 (Figure 2.4). Poor countries and countries with structural vulnerabilities may be particularly affected by the multiple and simultaneous crises, and by the effects of climate change (Massa et al. 2023). The socio-economic consequences of these crises might be exacerbated by having only limited access to international financing, including international capital markets (see Part 1). In contrast, the average SDG progress in BRICS and BRICS+ countries since 2015 has been faster than the world average.

Figure 2.1
The world average SDG Index over time and individual country scores, 2015–2023



Note: The dots represent individual country scores. Precise values by country are available in the SDG Index database. The world and regional averages are population weighted. Countries that are OECD member states are only included in the OECD regional average, they are not included in other regional groupings. Oceania does not include Australia nor New Zealand.

Source: Authors

The 2024 SDG Index Score and Ranking

As in previous editions, European countries, particularly the Nordic countries, top the 2024 SDG Index. Finland ranks first, followed by Sweden and Denmark. Interestingly, Finland also ranks first on the World Happiness Report (Helliwell et al., 2024). However, even these countries face significant challenges in achieving several SDGs, especially SDG 2 (Zero Hunger), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action) and SDG 15 (Life on Land), partly driven by unsustainable consumption patterns and negative international spillover effects. Countries at the bottom of the SDG Index ranking tend to be impacted by military conflicts, security issues, and political or socio-economic instability. Yemen, Somalia, Chad, the Central African Republic, and South Sudan rank at the bottom of this year's SDG Index.

Progress by SDG target

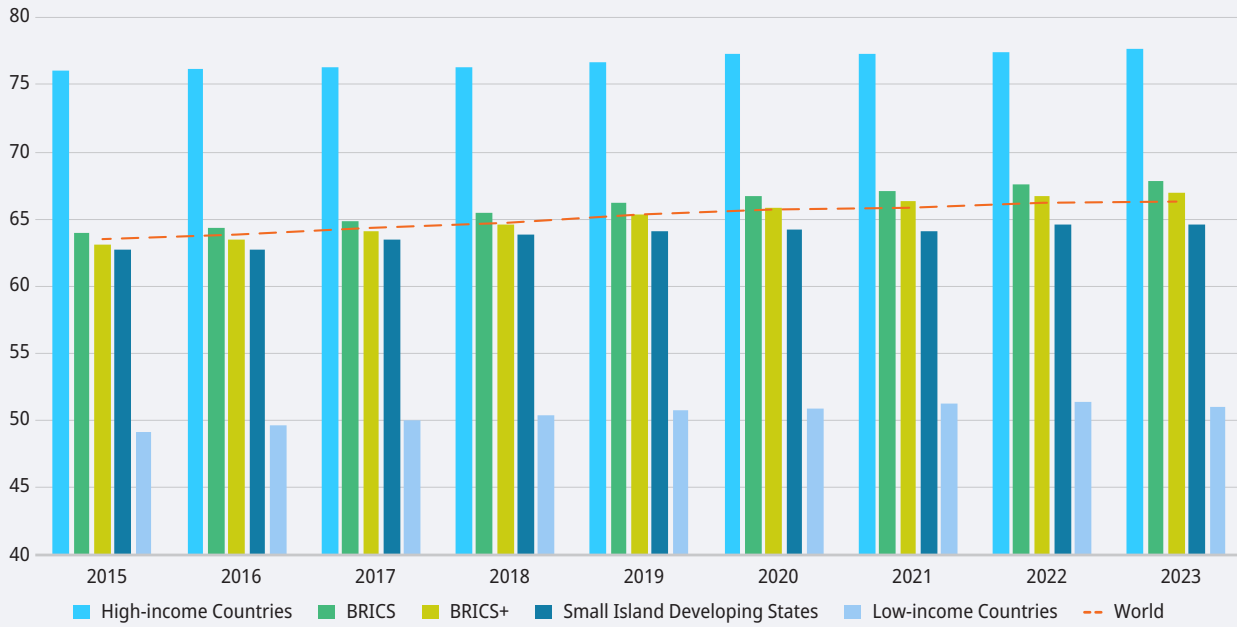
Based on the SDG Index, we estimate that only about 16% of the SDG targets are on track to be achieved. The remaining 84% either show limited progress (insufficient to achieve the target by 2030) or even a reversal of progress. The majority of the targets that are particularly off-track are related to food systems, biodiversity, sustainable land use, or peace and strong institutions. Globally, the five SDG targets on which the highest proportion of countries show a reversal in progress since 2015 are obesity rate (under SDG 2), press freedom (under SDG 16), the red list index (under SDG 15), sustainable nitrogen management (under SDG 2) and life expectancy at birth (under SDG 3). According to Reporters Without Borders, press freedom has declined in many parts of the world since the adoption of the SDGs, and in particular since 2022. In contrast, targets related to basic access to services and infrastructure tend to show more positive trends, including: mobile broadband use (under SDG 9), internet use (under SDG 9), access to electricity (under SDG 7) and under-five mortality (under SDG 3). Most countries are also making progress on the statistical performance index (under SDG 17).

Figure 2.2
World SDG Dashboard 2024



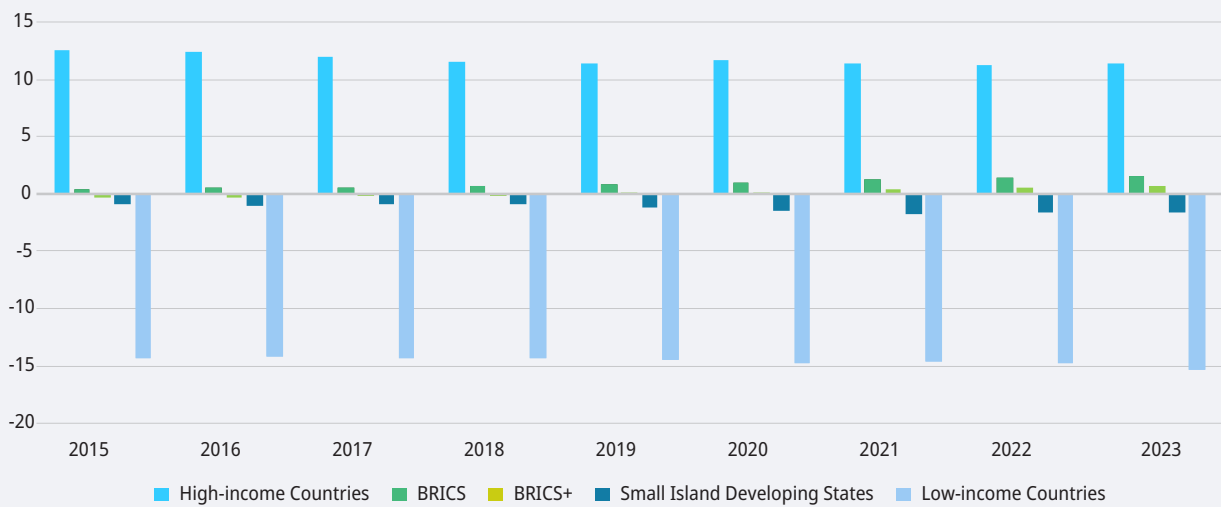
Source: Authors

Figure 2.3
Average SDG Index score by selected country groups, 2015–2023



Source: Authors

Figure 2.4
Gap in percentage points between average SDG Index scores by country groups and the world average, 2015–2023



Note: Positive values mean that average scores are above the world average, negative values mean that average scores are below the world average.
Source: Authors

International spillovers

The SDGs are a global responsibility. As such, the domestic implementation of the SDGs should not compromise other countries' ability to achieve them (Schmidt-Traub, Hoff, and Bernlöhr 2019). Via unsustainable consumption, the export of toxic waste, illicit trade, unfair tax competition, tax havens and, more generally, poor implementation of SDG 17 (Partnerships for the Goals), including support to UN-based multilateralism, countries can generate negative international spillovers, which are incorporated in the SDG Index but also compiled separately as part of the 'International Spillover Index'. Positive spillovers are also considered, such as the provision of Official Development Assistance (ODA). This year's edition includes 16 spillover indicators, one of which is a new indicator measuring countries' support for UN-based multilateralism. Further details on our conceptual framework and policy and data work on international spillovers have been presented in previous editions and are available on the SDG Transformation Center website.

Overall, rich countries tend to generate larger negative international spillovers, driven principally by trade-related spillovers such as unsustainable

consumption, which fuels deforestation and other negative environmental and social impacts in the rest of the world. Several studies by the SDSN and partners discuss in detail policy and data priorities towards curbing negative consumption-based spillovers (Schmidt-Traub, Hoff, and Bernlöhr 2019; Malik et al. 2021; 2022; University of Tokyo, Systemiq, and SDSN 2023; Ishii et al. 2024; Fuller and Bermont-Diaz 2024). Many rich countries also perform poorly on indicators related to unfair tax competition, tax havens, and the profit shifting of multinationals, and on the new index of support for UN-based multilateralism (discussed in Part 3). Some rich countries are also among the largest exporters of major conventional weapons. Finally, only five of the 31 OECD/DAC member states have met their ODA targets, with most countries falling well short of the 0.7% of gross national income (GNI) target. To address international spillovers – particularly trade-related spillovers – global partnerships and UN-based multilateralism are critical, including to establish ambitious norms and standards for a more sustainable trade system that works for people and the planet (Remaking trade for a Sustainable Future 2023).

Figure 2.5
The 2024 SDG Index Ranks and Scores










| | <u>Rank</u> | <u>Country</u> | <u>Score</u> | <u>Rank</u> | <u>Country</u> | <u>Score</u> |
|---|-------------|-----------------|--------------|-------------|------------------------|--------------|
|  | 1 | Finland | 86.4 | 45 | Thailand | 74.7 |
| | 2 | Sweden | 85.7 | 46 | United States | 74.4 |
| | 3 | Denmark | 85.0 | 47 | Argentina | 74.4 |
|  | 4 | Germany | 83.4 | 48 | Kyrgyz Republic | 74.2 |
| | 5 | France | 82.8 | 49 | Armenia | 74.1 |
| | 6 | Austria | 82.5 | 50 | Bosnia and Herzegovina | 74.0 |
| | 7 | Norway | 82.2 | 51 | North Macedonia | 73.8 |
| | 8 | Croatia | 82.2 | 52 | Brazil | 73.8 |
|  | 9 | United Kingdom | 82.2 | 53 | Israel | 73.5 |
| | 10 | Poland | 81.7 | 54 | Vietnam | 73.3 |
| | 11 | Slovenia | 81.3 | 55 | Dominican Republic | 73.1 |
| | 12 | Czechia | 81.3 | 56 | Russian Federation | 73.1 |
| | 13 | Latvia | 81.0 | 57 | Montenegro | 73.1 |
|  | 14 | Spain | 80.7 | 58 | Cyprus | 72.9 |
| | 15 | Estonia | 80.5 | 59 | Costa Rica | 72.9 |
| | 16 | Portugal | 80.2 | 60 | Tunisia | 72.5 |
| | 17 | Belgium | 80.0 | 61 | Bhutan | 72.5 |
|  | 18 | Japan | 79.9 | 62 | Fiji | 72.3 |
| | 19 | Iceland | 79.5 | 63 | Azerbaijan | 72.2 |
| | 20 | Hungary | 79.5 | 64 | Peru | 71.9 |
| | 21 | Slovak Republic | 79.4 | 65 | Singapore | 71.4 |
| | 22 | Switzerland | 79.3 | 66 | Kazakhstan | 71.1 |
| | 23 | Italy | 79.3 | 67 | Maldives | 70.9 |
|  | 24 | Netherlands | 79.2 | 68 | China | 70.9 |
| | 25 | Canada | 78.8 | 69 | Morocco | 70.9 |
| | 26 | New Zealand | 78.8 | 70 | United Arab Emirates | 70.5 |
| | 27 | Moldova | 78.8 | 71 | Algeria | 70.5 |
| | 28 | Ireland | 78.7 | 72 | Türkiye | 70.5 |
| | 29 | Greece | 78.7 | 73 | Mauritius | 70.4 |
|  | 30 | Belarus | 78.6 | 74 | Colombia | 70.3 |
| | 31 | Lithuania | 78.1 | 75 | Ecuador | 70.1 |
| | 32 | Chile | 77.8 | 76 | Suriname | 70.0 |
| | 33 | Korea, Rep. | 77.3 | 77 | Jamaica | 69.5 |
| | 34 | Uruguay | 77.1 | 78 | Indonesia | 69.4 |
| | 35 | Serbia | 77.0 | 79 | Malaysia | 69.3 |
|  | 36 | Malta | 77.0 | 80 | Mexico | 69.3 |
| | 37 | Australia | 76.9 | 81 | Uzbekistan | 69.2 |
| | 38 | Luxembourg | 76.8 | 82 | Barbados | 69.2 |
| | 39 | Cuba | 76.7 | 83 | Egypt, Arab Rep. | 69.1 |
| | 40 | Romania | 76.7 | 84 | Panama | 69.1 |
| | 41 | Bulgaria | 75.5 | 85 | Jordan | 69.1 |
|  | 42 | Albania | 75.0 | 86 | Iran, Islamic Rep. | 69.0 |
| | 43 | Georgia | 74.9 | 87 | El Salvador | 68.6 |
| | 44 | Ukraine* | 74.8 | 88 | Cabo Verde | 68.2 |

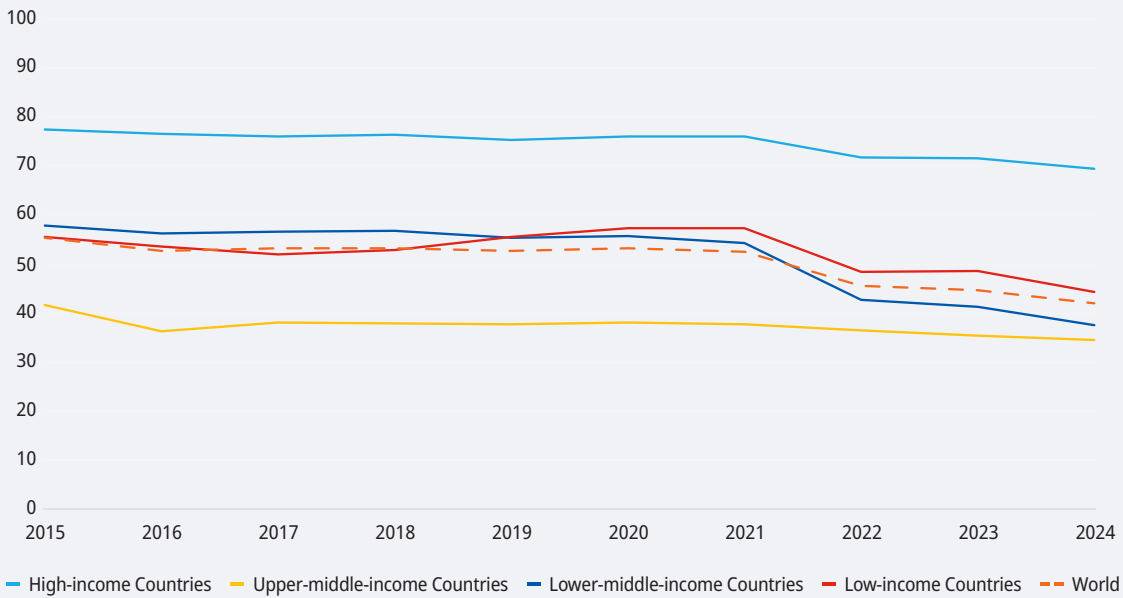
Figure 2.5
(continued)

| Rank | Country | Score | Rank | Country | Score |
|------|-----------------------|-------|------|--------------------------|-------|
| 89 | Tajikistan | 68.1 | 129 | Togo | 58.4 |
| 90 | Bolivia | 68.1 | 130 | Tanzania | 58.2 |
| 91 | Paraguay | 68.0 | 131 | Sierra Leone | 58.2 |
| 92 | Philippines | 67.5 | 132 | Mauritania | 58.2 |
| 93 | Sri Lanka | 67.4 | 133 | Eswatini | 57.8 |
| 94 | Turkmenistan | 67.1 | 134 | Zimbabwe | 57.8 |
| 95 | Nepal | 67.1 | 135 | The Gambia | 57.6 |
| 96 | Brunei Darussalam | 67.0 | 136 | Cameroon | 57.3 |
| 97 | Guyana | 66.7 | 137 | Pakistan | 57.0 |
| 98 | Namibia | 66.5 | 138 | Mali | 56.8 |
| 99 | Mongolia | 66.3 | 139 | Benin | 56.8 |
| 100 | Oman | 66.1 | 140 | Malawi | 56.8 |
| 101 | Belize | 65.5 | 141 | Guinea | 56.4 |
| 102 | Qatar | 64.9 | 142 | Uganda | 56.1 |
| 103 | Saudi Arabia | 64.9 | 143 | Burundi | 56.1 |
| 104 | Cambodia | 64.9 | 144 | Lesotho | 55.5 |
| 105 | Gabon | 64.9 | 145 | Ethiopia | 55.2 |
| 106 | Nicaragua | 64.7 | 146 | Nigeria | 54.6 |
| 107 | Bangladesh | 64.3 | 147 | Zambia | 54.4 |
| 108 | Iraq | 64.2 | 148 | Mozambique | 54.3 |
| 109 | India | 64.0 | 149 | Burkina Faso | 52.9 |
| 110 | Lebanon | 63.9 | 150 | Congo, Rep. | 52.7 |
| 111 | Kuwait | 63.8 | 151 | Haiti | 52.7 |
| 112 | The Bahamas | 63.7 | 152 | Liberia | 52.5 |
| 113 | Bahrain | 63.6 | 153 | Comoros | 52.4 |
| 114 | Botswana | 63.4 | 154 | Papua New Guinea | 52.0 |
| 115 | South Africa | 63.4 | 155 | Angola | 51.9 |
| 116 | Senegal | 63.4 | 156 | Guinea-Bissau | 51.9 |
| 117 | Ghana | 63.0 | 157 | Djibouti | 51.7 |
| 118 | São Tomé and Príncipe | 63.0 | 158 | Madagascar | 51.2 |
| 119 | Lao PDR | 63.0 | 159 | Sudan | 49.9 |
| 120 | Myanmar | 62.8 | 160 | Niger | 49.9 |
| 121 | Côte d'Ivoire | 62.7 | 161 | Congo, Dem. Rep. | 48.7 |
| 122 | Venezuela, RB | 62.5 | 162 | Afghanistan | 48.2 |
| 123 | Kenya | 62.2 | 163 | Yemen, Rep. | 46.9 |
| 124 | Honduras | 62.0 | 164 | Somalia | 45.4 |
| 125 | Trinidad and Tobago | 61.8 | 165 | Chad | 45.1 |
| 126 | Rwanda | 60.9 | 166 | Central African Republic | 44.2 |
| 127 | Syrian Arab Republic | 60.6 | 167 | South Sudan | 40.1 |
| 128 | Guatemala | 59.4 | | | |

* The data for Ukraine correspond to the situation prior to February 2022, as many data points have not been updated since then.
Source: Authors

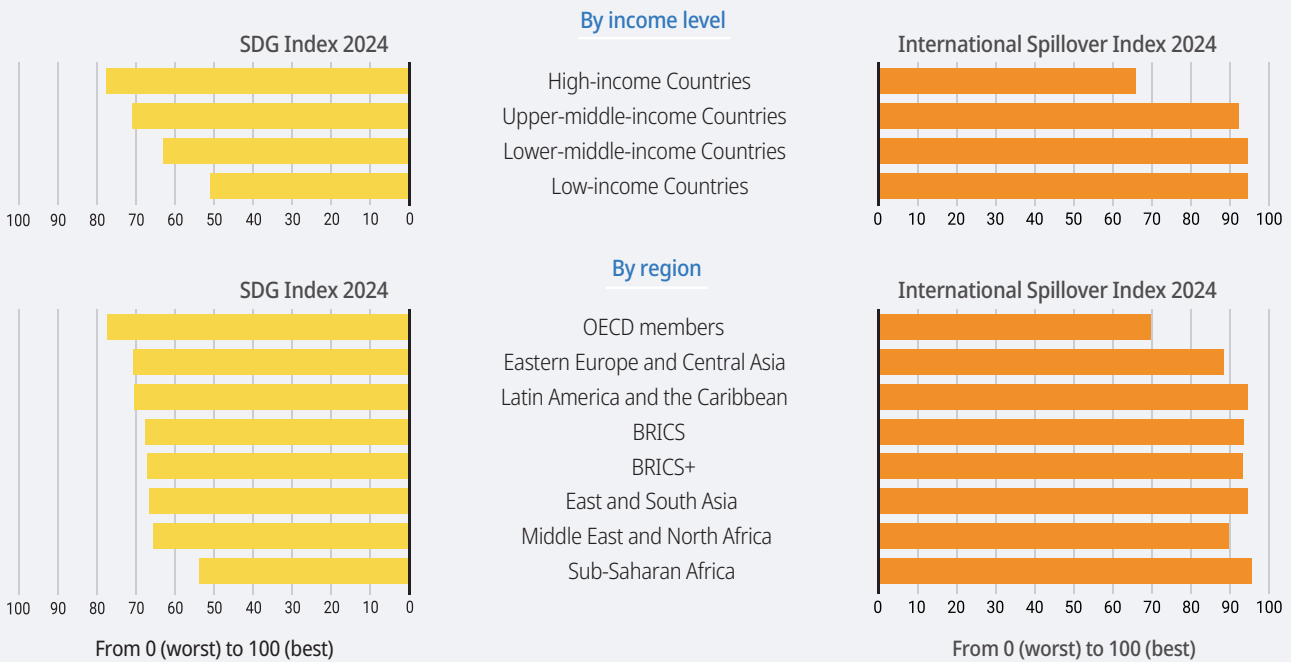


Figure 2.6
Press Freedom Index, 2015–2024



Note: Included under SDG 16 (Peace Justice and Strong Institutions) Source: Authors' elaboration, based on Reporters Without Borders

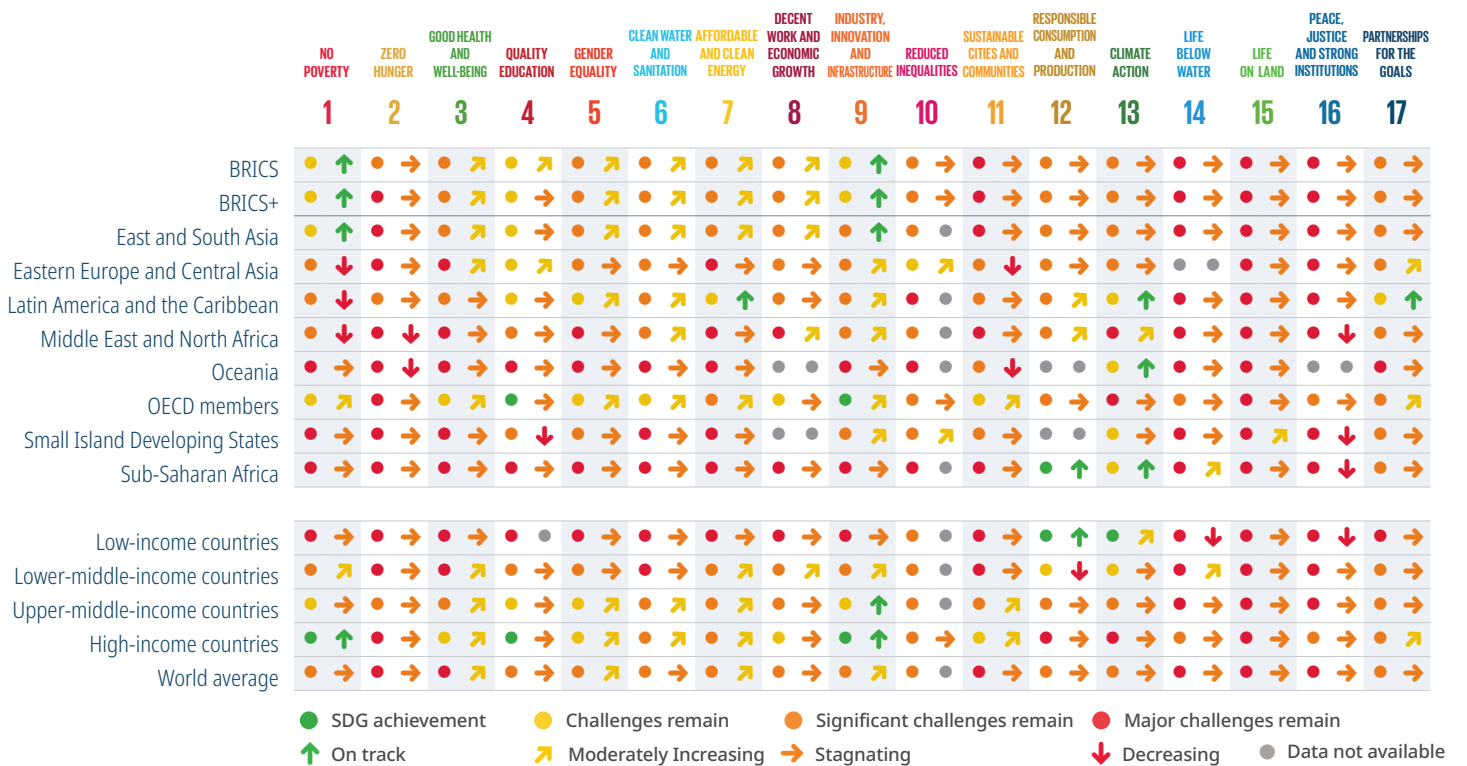
Figure 2.7
SDG Index scores versus International Spillover Index scores, 2024



Note: More details about the indicators used to compile the International Spillover Index are accessible in the methods' summary. Averages are population-weighted. Source: Authors

Annex: Regional dashboards

Figure 2.8
2024 SDG dashboards by region and income group (levels and trends)



Note: Excluding OECD specific indicators. Population-weighted averages.
Source: Authors

Figure 2.9
2024 SDG dashboards for OECD countries (levels and trends)

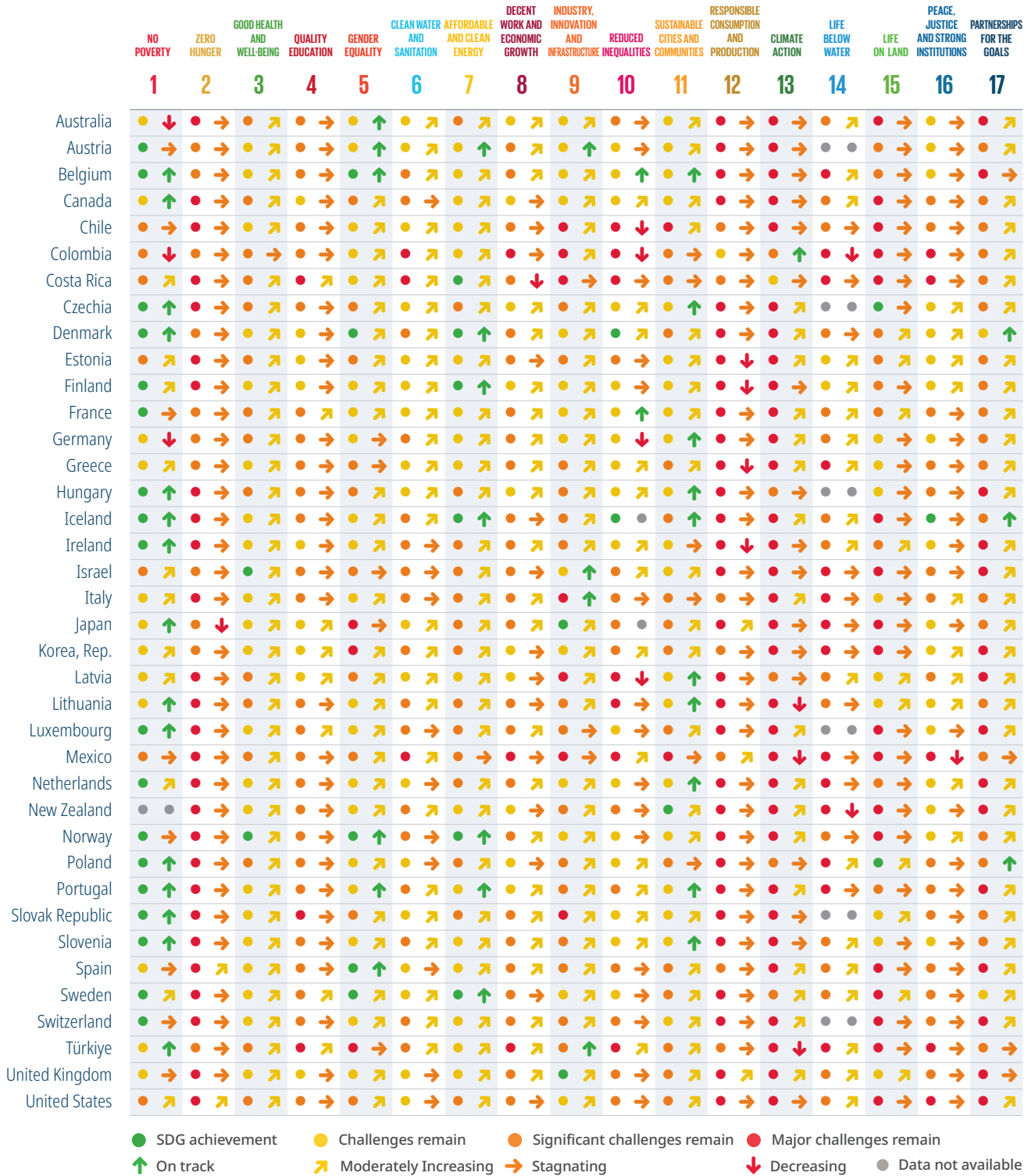
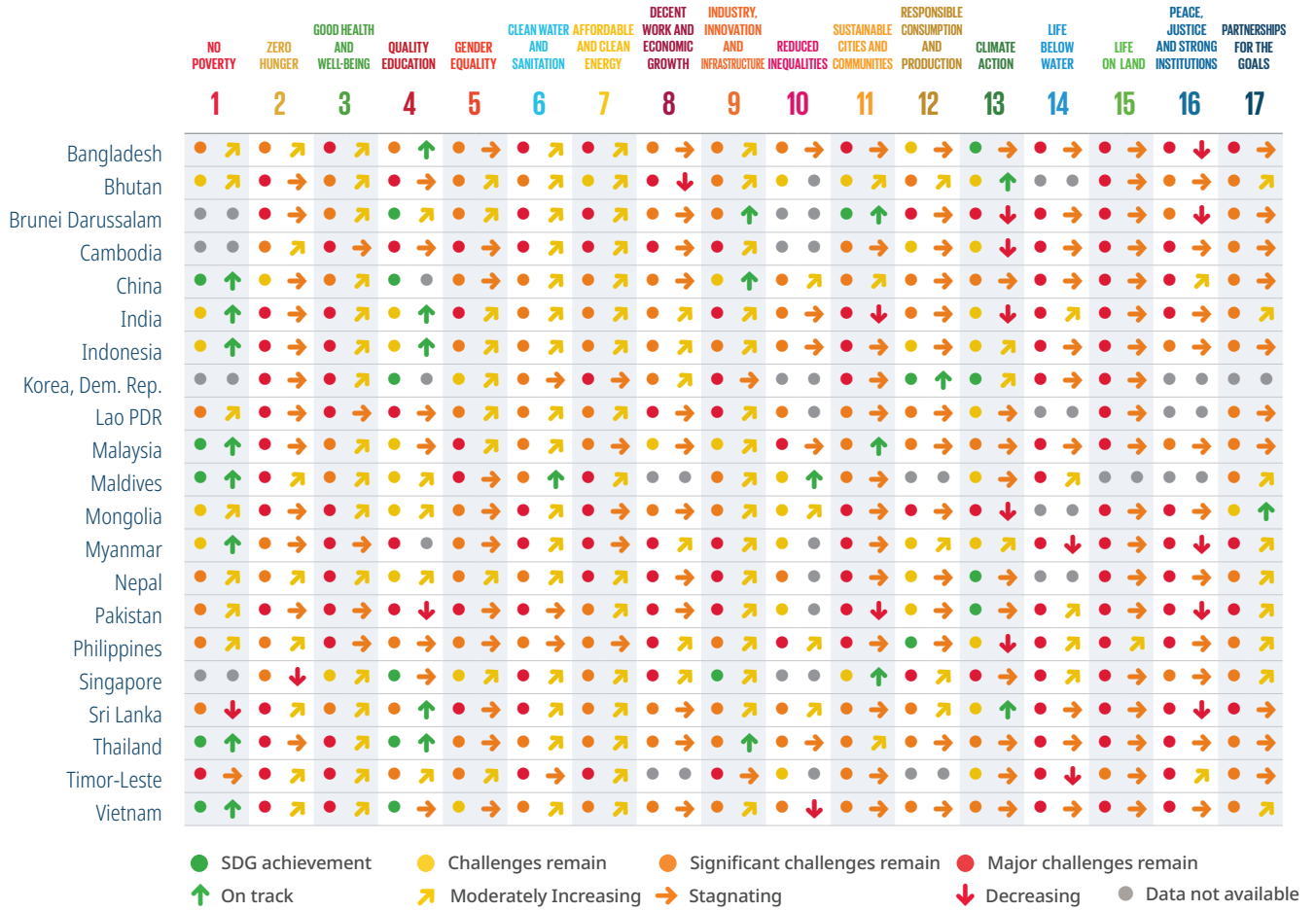


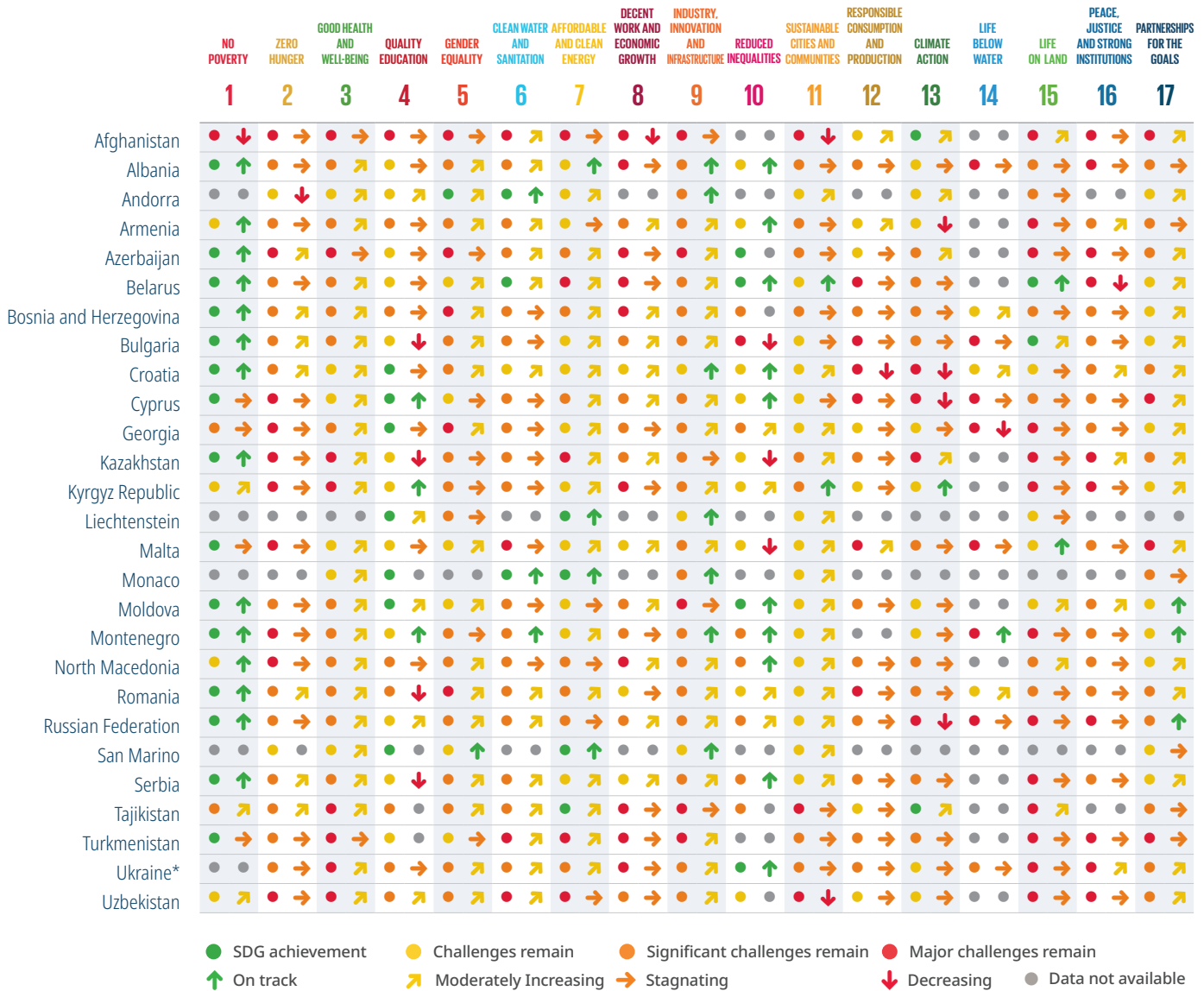
Figure 2.10
2024 SDG dashboards for East and South Asia (levels and trends)



Source: Authors

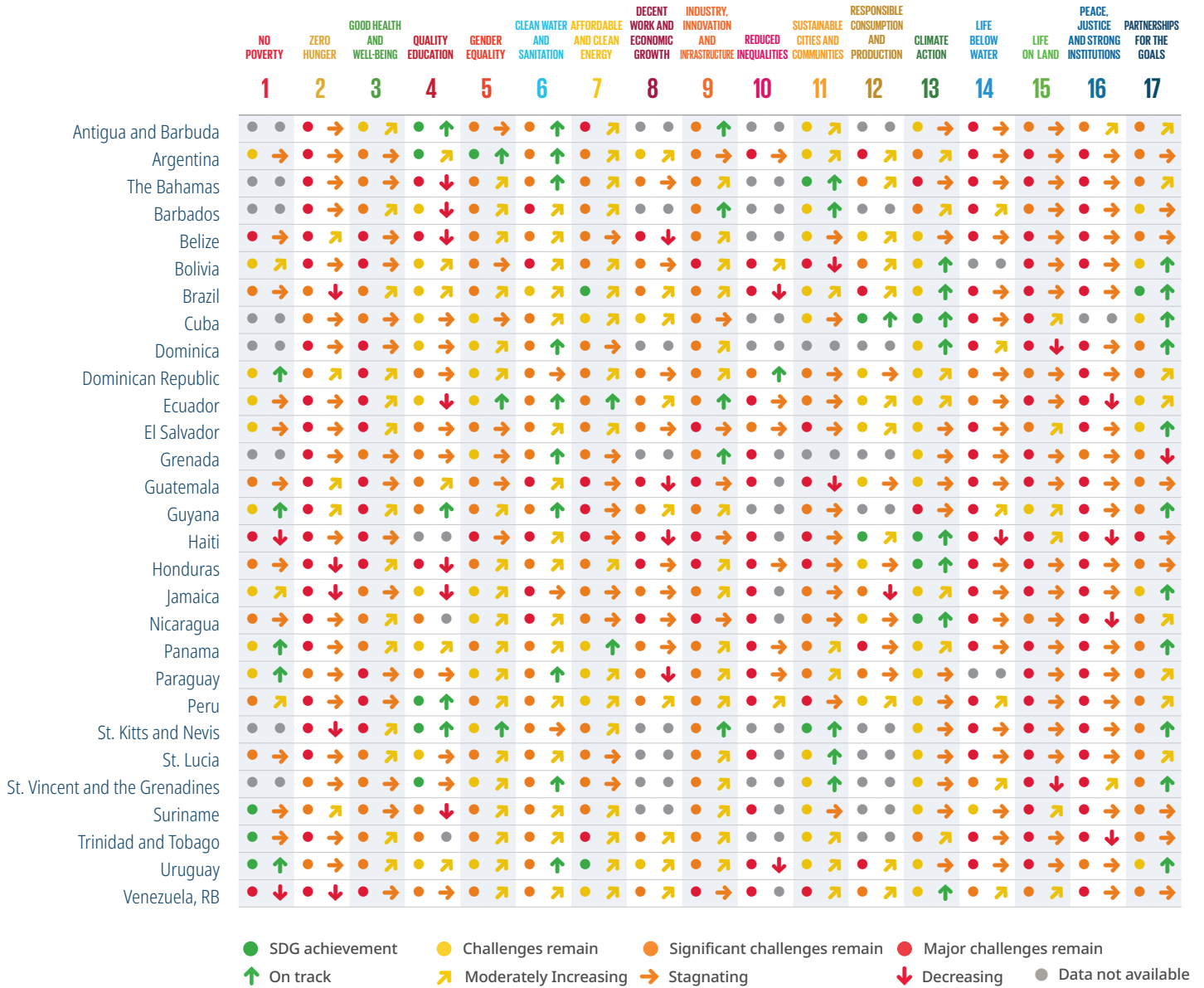
Figure 2.11

2024 SDG dashboards for Eastern Europe and Central Asia (levels and trends)



Source: Authors
 *The data for Ukraine correspond to the situation prior to February 2022, as many data points have not been updated since then.

Figure 2.12
2024 SDG dashboards for Latin America and the Caribbean (levels and trends)



Source: Authors

Figure 2.13

2024 SDG dashboards for the Middle East and North Africa (levels and trends)

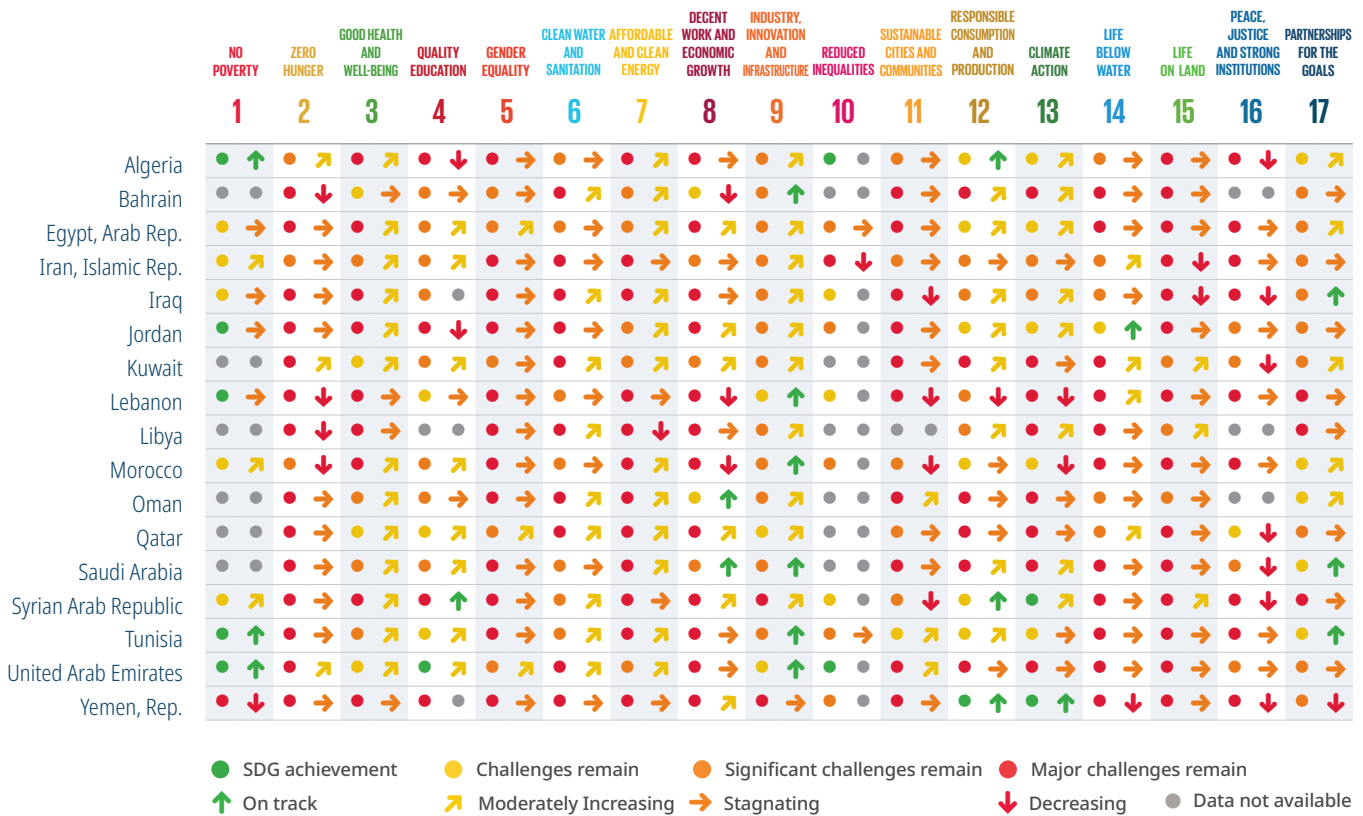
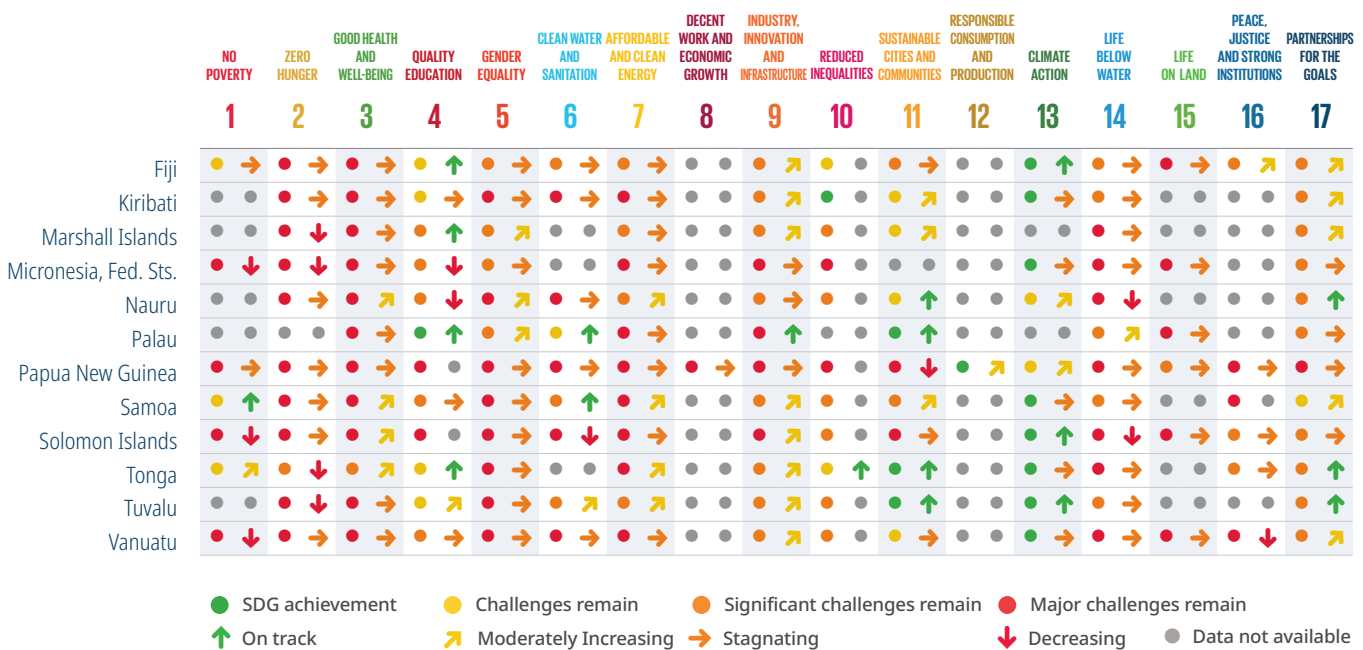


Figure 2.14

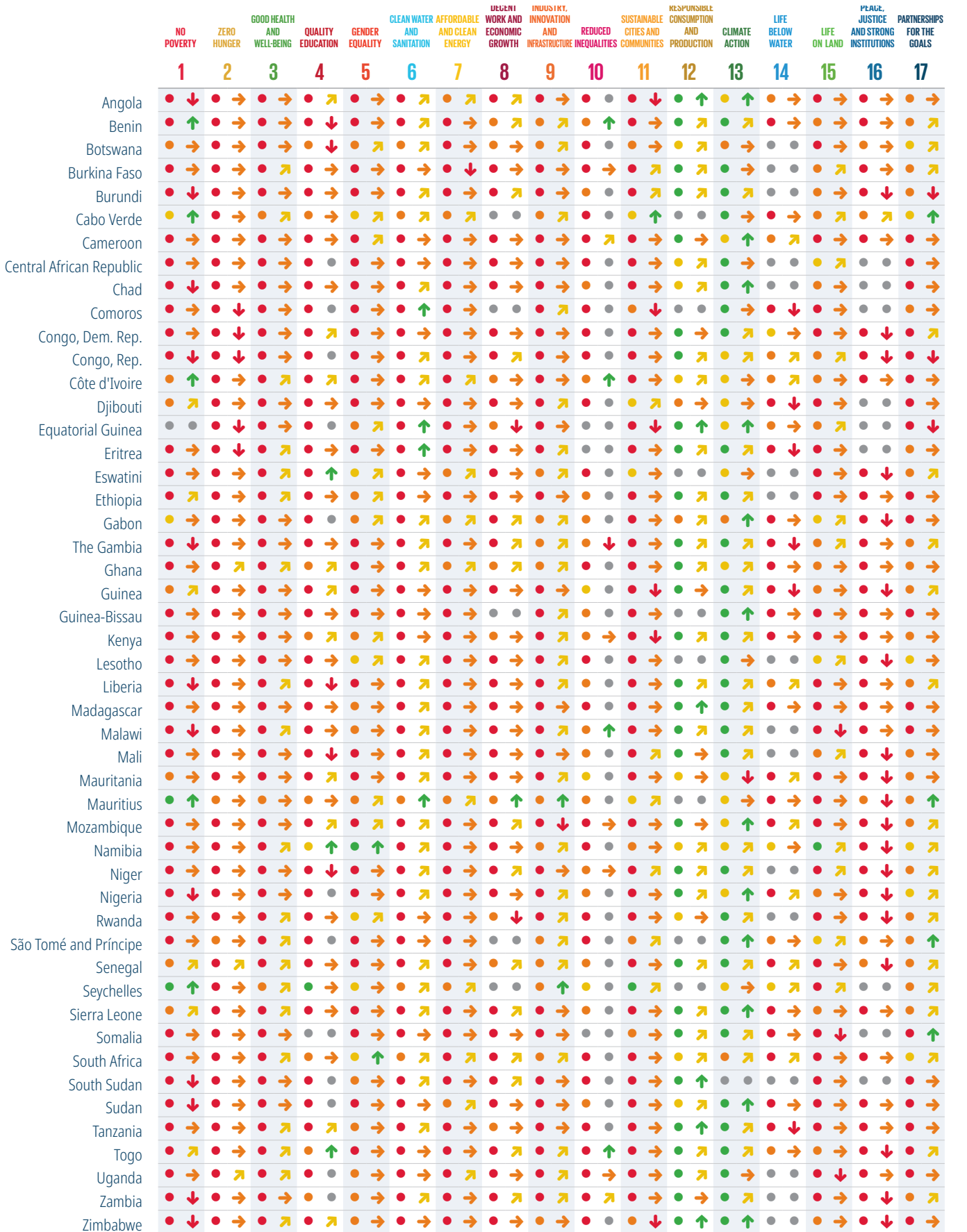
2024 SDG dashboards for Oceania (levels and trends)



Source: Authors

Figure 2.15

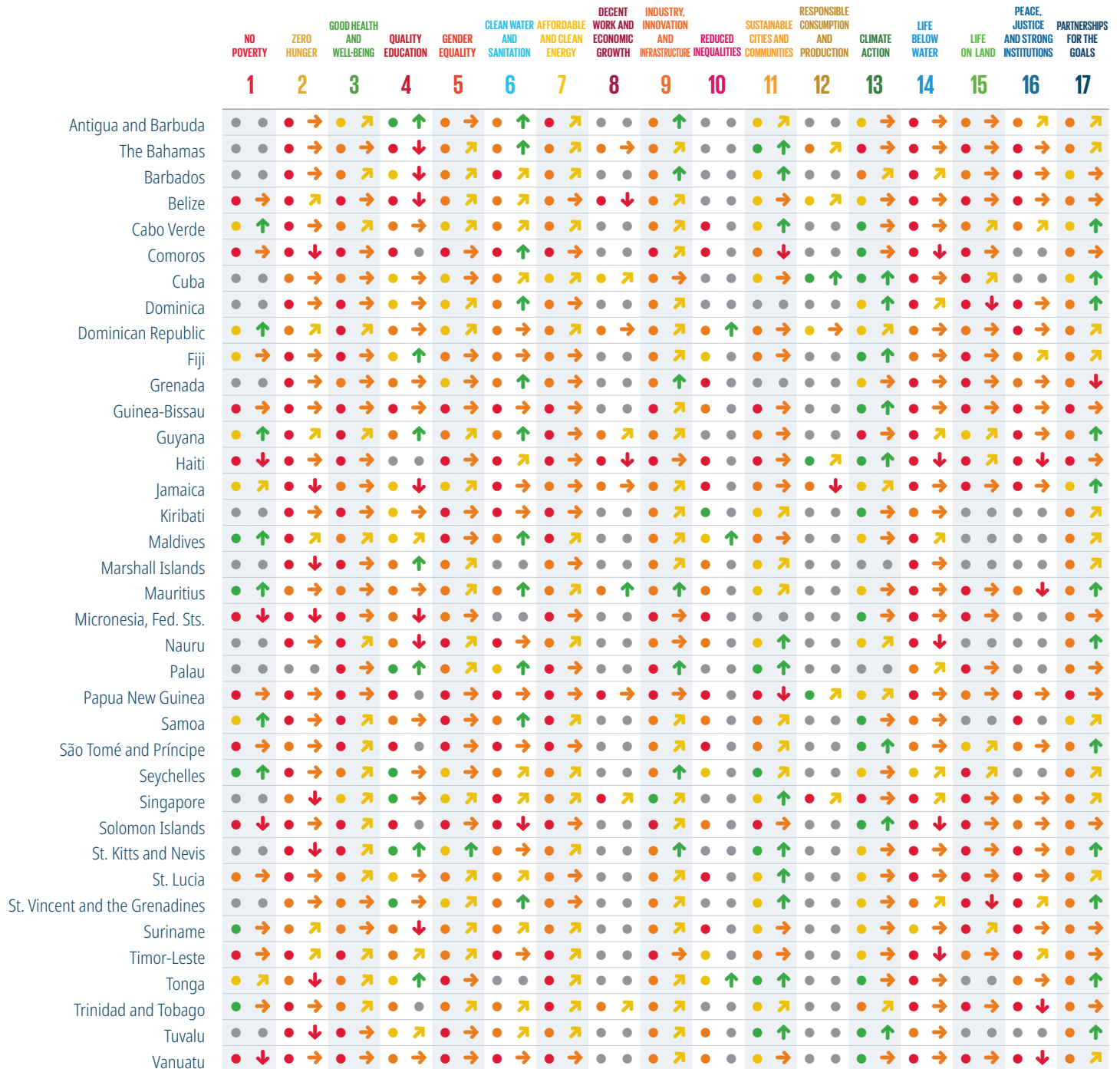
2024 SDG dashboards for sub-Saharan Africa (levels and trends)



● SDG achievement
 ● Challenges remain
 ● Significant challenges remain
 ● Major challenges remain
↑ On track
 ↗ Moderately Increasing
 → Stagnating
↓ Decreasing
● Data not available

Source: Authors

Figure 2.16
2024 SDG dashboards for Small Island Developing States (SIDS) (levels and trends)



● SDG achievement ● Challenges remain ● Significant challenges remain ● Major challenges remain
↑ On track ↗ Moderately Increasing → Stagnating ↓ Decreasing ● Data not available

Source: Authors

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Part 3

Government Support to UN-Based Multilateralism and the SDGs

Part 3

Government Support to UN-Based Multilateralism and the SDGs

In 2015, all UN member states committed to SDG 17, to revitalize global partnership for sustainable development. The UN Summit of the Future in September 2024 is a “once-in-a-generation opportunity” to “mend eroded trust and demonstrate that international cooperation can effectively tackle current challenges as well as those that have emerged in recent years or may yet be over the horizon” (UN 2024). In 2025, the World Social Summit “will provide an opportunity for the international community to strengthen the United Nations’ framework for effective social development” (Club de Madrid 2022). During this year’s High-level Political Forum on Sustainable Development, SDG16 (Peace, Justice, and Strong Institutions) and SDG 17 (Partnerships for the Goals) will be specifically under review by the international community.

Building on previous editions, this chapter aims to gauge countries’ efforts and commitment to UN-based multilateralism and the SDGs. It uses sound data and metrics to evaluate nation-states’ efforts to adhere to the principles of the UN Charter and implement the SDGs. This year’s chapter presents an improved, updated and universal Index of Countries’ Support to UN-Based Multilateralism (UN-Mi). Nation-states are still at the center of the multilateral system and should therefore be held accountable for promoting UN-based multilateralism and implementing SDG17 (Partnerships for the Goals).

Building on the methodology presented in the pilot working paper (Sachs, Lafortune and Drumm, November 2023), we gauge countries’ commitment to UN-based multilateralism by focusing on six headline indicators:

1. Ratification of major UN treaties
2. Percentage of votes aligned with the international majority at the UN General Assembly (UNGA)
3. Participation in selected UN organizations and agencies
4. Participation in conflicts and militarization
5. The use of unilateral coercive measures (UCMs)
6. Contribute to the UN budget and international solidarity

We first present the overall score and ranking for this year’s Index of Government Support to UN-Based Multilateralism (UN-Mi). We then describe and present each indicator used in the UN-Mi and, building on previous editions, also discuss specific government efforts to promote and implement the SDGs.

The 2024 Index of Countries’ Support to UN-Based Multilateralism (UN-Mi)

Overall, we find that the majority of the world’s population live in countries with moderate to high levels of support for UN-based multilateralism. The average UN-Mi across all 193 UN member states is 65 and the median is 70. We estimate that 90% of the world’s population lives in a country with a UN-Mi score above 50; which means they are more than halfway towards perfect support to UN-based multilateralism. As an example, out of 193 UN member states, 90% have ratified two-thirds or more of the major UN treaties, 66% vote with the international majority at UNGA two-thirds of the time, more than half (55%) are members of the 24 organizations and entities considered, 80% have limited or no participation in conflicts and militarization, around 70% make no use or very limited use of UCMs, and the vast majority are not subject to the provisions of Article 19 related to significant arrears in the payment of dues to the UN.

Figure 3.1

The 2024 Index of Countries' Support to UN-Based Multilateralism (UN-Mi)

| Rank | Country | Score | Rank | Country | Score |
|------|--------------------------------|-------|------|-----------------|-------|
| 1 | Barbados | 92.0 | 44 | Malta | 78.4 |
| 2 | Antigua and Barbuda | 91.1 | 45 | Seychelles | 78.2 |
| 3 | Uruguay | 90.7 | 46 | Lesotho | 78.1 |
| 4 | Mauritius | 89.7 | 47 | Montenegro | 77.7 |
| 5 | Maldives | 88.8 | 48 | Morocco | 77.6 |
| 6 | Jamaica | 88.7 | 49 | Lao PDR | 77.6 |
| 7 | Costa Rica | 88.6 | 50 | Uganda | 77.3 |
| 8 | Argentina | 88.6 | 51 | Algeria | 77.3 |
| 9 | Fiji | 88.3 | 52 | Brazil | 77.2 |
| 10 | Chile | 87.2 | 53 | Cambodia | 77.1 |
| 11 | Belize | 86.8 | 54 | South Africa | 77.0 |
| 12 | Paraguay | 86.7 | 55 | Gabon | 77.0 |
| 13 | Mongolia | 86.3 | 56 | Sri Lanka | 77.0 |
| 14 | Senegal | 85.6 | 57 | Guyana | 76.7 |
| 15 | Trinidad and Tobago | 85.5 | 58 | Austria | 76.7 |
| 16 | St. Vincent and the Grenadines | 85.4 | 59 | Togo | 76.6 |
| 17 | The Bahamas | 85.0 | 60 | Kazakhstan | 76.6 |
| 18 | Tunisia | 85.0 | 61 | Mexico | 76.5 |
| 19 | Zambia | 84.7 | 62 | Luxembourg | 76.4 |
| 20 | Panama | 84.6 | 63 | Japan | 76.2 |
| 21 | Sierra Leone | 84.6 | 64 | Mozambique | 76.1 |
| 22 | Cabo Verde | 84.5 | 65 | Moldova | 76.1 |
| 23 | Guatemala | 84.3 | 66 | Qatar | 76.0 |
| 24 | Peru | 83.9 | 67 | The Gambia | 75.7 |
| 25 | Malaysia | 83.1 | 68 | Nepal | 75.7 |
| 26 | Madagascar | 82.8 | 69 | Switzerland | 75.6 |
| 27 | Philippines | 82.7 | 70 | Samoa | 75.3 |
| 28 | Botswana | 82.6 | 71 | Colombia | 75.0 |
| 29 | St. Lucia | 82.5 | 72 | New Zealand | 74.8 |
| 30 | Dominican Republic | 82.5 | 73 | Mauritania | 74.7 |
| 31 | El Salvador | 82.3 | 74 | Thailand | 74.5 |
| 32 | Suriname | 81.5 | 75 | Indonesia | 74.5 |
| 33 | Namibia | 81.3 | 76 | Ireland | 74.2 |
| 34 | Côte d'Ivoire | 81.2 | 77 | Albania | 73.9 |
| 35 | Ghana | 80.7 | 78 | Grenada | 73.5 |
| 36 | Bolivia | 80.6 | 79 | Ecuador | 73.4 |
| 37 | Jordan | 80.2 | 80 | Germany | 73.3 |
| 38 | Bangladesh | 80.2 | 81 | Nigeria | 73.2 |
| 39 | Vietnam | 80.1 | 82 | North Macedonia | 72.8 |
| 40 | Kuwait | 79.5 | 83 | Croatia | 72.7 |
| 41 | Honduras | 79.2 | 84 | Benin | 72.7 |
| 42 | Nicaragua | 79.0 | 85 | Vanuatu | 72.6 |
| 43 | Malawi | 78.6 | 86 | Tanzania | 72.6 |
| | | | 87 | Djibouti | 72.2 |

Figure 3.1
(continued)

| Rank | Country | Score | Rank | Country | Score | Rank | Country | Score |
|------|------------------------|-------|------|-----------------------|-------|------|--------------------------|-------|
| 88 | Kenya | 72.0 | 132 | Timor-Leste | 64.2 | 176 | Latvia | 54.2 |
| 89 | Brunei Darussalam | 71.8 | 133 | Tajikistan | 63.7 | 177 | Central African Republic | 54.0 |
| 90 | St. Kitts and Nevis | 71.6 | 134 | Serbia | 63.7 | 178 | Nauru | 52.1 |
| 91 | Cuba | 71.0 | 135 | Poland | 63.6 | 179 | Chad | 51.9 |
| 92 | Bosnia and Herzegovina | 70.7 | 136 | Papua New Guinea | 63.6 | 180 | Myanmar | 51.5 |
| 93 | Hungary | 70.4 | 137 | Canada | 63.6 | 181 | Micronesia. Fed. Sts. | 50.6 |
| 94 | Angola | 70.3 | 138 | Iraq | 63.5 | 182 | Ukraine | 50.3 |
| 95 | Oman | 70.3 | 139 | India | 63.5 | 183 | Equatorial Guinea | 50.0 |
| 96 | Netherlands | 70.3 | 140 | Korea. Rep. | 63.3 | 184 | Congo. Dem. Rep. | 49.4 |
| 97 | Zimbabwe | 70.1 | 141 | Cameroon | 63.1 | 185 | Russian Federation | 48.5 |
| 98 | Congo. Rep. | 69.8 | 142 | Kiribati | 63.0 | 186 | Syrian Arab Republic | 47.6 |
| 99 | Azerbaijan | 69.7 | 143 | Bhutan | 62.3 | 187 | Afghanistan | 47.4 |
| 100 | Portugal | 69.6 | 144 | Solomon Islands | 62.1 | 188 | Iran. Islamic Rep. | 45.5 |
| 101 | Iceland | 69.4 | 145 | Eritrea | 61.2 | 189 | Korea. Dem. Rep. | 31.7 |
| 102 | Spain | 69.2 | 146 | Haiti | 61.0 | 190 | Israel | 29.0 |
| 103 | Guinea-Bissau | 69.2 | 147 | Slovak Republic | 60.9 | 191 | South Sudan | 24.1 |
| 104 | Bahrain | 69.2 | 148 | Lebanon | 60.9 | 192 | Somalia | 23.6 |
| 105 | Guinea | 69.2 | 149 | Andorra | 60.8 | 193 | United States | 15.8 |
| 106 | Sweden | 68.6 | 150 | Burundi | 60.3 | | | |
| 107 | Norway | 68.5 | 151 | São Tomé and Príncipe | 60.3 | | | |
| 108 | Singapore | 68.5 | 152 | Turkmenistan | 60.3 | | | |
| 109 | Italy | 68.4 | 153 | Saudi Arabia | 60.2 | | | |
| 110 | Mali | 68.3 | 154 | Tonga | 59.9 | | | |
| 111 | Georgia | 68.3 | 155 | Belarus | 59.8 | | | |
| 112 | Egypt. Arab Rep. | 68.1 | 156 | Tuvalu | 59.6 | | | |
| 113 | Denmark | 67.7 | 157 | Australia | 59.6 | | | |
| 114 | Kyrgyz Republic | 67.6 | 158 | Eswatini | 59.1 | | | |
| 115 | Cyprus | 67.5 | 159 | Uzbekistan | 58.9 | | | |
| 116 | Rwanda | 67.5 | 160 | United Kingdom | 58.9 | | | |
| 117 | Finland | 67.4 | 161 | Comoros | 58.5 | | | |
| 118 | Monaco | 67.2 | 162 | Pakistan | 58.4 | | | |
| 119 | Liechtenstein | 67.0 | 163 | Türkiye | 58.3 | | | |
| 120 | China | 66.8 | 164 | Marshall Islands | 57.4 | | | |
| 121 | United Arab Emirates | 66.7 | 165 | Greece | 57.2 | | | |
| 122 | San Marino | 66.6 | 166 | Yemen. Rep. | 57.1 | | | |
| 123 | Czechia | 66.5 | 167 | Palau | 56.8 | | | |
| 124 | Slovenia | 66.3 | 168 | Ethiopia | 56.6 | | | |
| 125 | Armenia | 66.1 | 169 | Dominica | 56.5 | | | |
| 126 | Belgium | 65.4 | 170 | Liberia | 55.6 | | | |
| 127 | Romania | 64.9 | 171 | France | 55.5 | | | |
| 128 | Niger | 64.7 | 172 | Estonia | 55.4 | | | |
| 129 | Burkina Faso | 64.4 | 173 | Lithuania | 54.9 | | | |
| 130 | Bulgaria | 64.3 | 174 | Sudan | 54.4 | | | |
| 131 | Libya | 64.3 | 175 | Venezuela. RB | 54.4 | | | |

However, there are significant differences in support to UN-based multilateralism across countries and country groupings. Overall, Barbados, Antigua and Barbuda, and Uruguay top the 2024 UN-Mi – with scores above 90 percent. By contrast, the Democratic Republic of the Congo, the Russian Federation, the Syrian Arab Republic, Afghanistan, the Islamic Republic of Iran, the Democratic People’s Republic of Korea, Israel, South Sudan, Somalia, and the United States are the ten countries least committed to UN-based multilateralism, all with scores below 50 percent (and below 40 percent for the Democratic People’s Republic of Korea, Israel, South Sudan, Somalia and the United States).

Detailed indicator and country results

In this report, we focus on G20 and large countries (those with more than 100 million inhabitants) in presenting detailed indicator results. The full dataset is, however, accessible online.

The first indicator is “Percentage of major UN treaties ratified”. This indicator covers 59 Conventions, International Conventions, and Agreements adopted by the United Nations from 1946–2023, including those adopted before 1946 that were later added to the UN treaty system. It covers UN instruments ratified by more than 50 percent of the international community. It excludes Protocols, Optional Protocols,

Box 3.1. Methods Summary

The *Index of Government Support to UN-Based Multilateralism* (UN-Mi) aims to gauge countries’ support to UN-based multilateralism under the 1945 United Nations Charter, and especially its Article 1. Unlike other existing initiatives (International Peace Institute and Institute for Economics and Peace 2022; Global Nation 2023) we focus on nation-states rather than looking at the world as one single bloc or observation.

To compile the UN-Mi, we made use of the UN library and website as well as third-party data. Python scripts were used to compile the historical dataset of UNGA votes over time and extract UN treaty ratification data. It is beyond the scope of the UN-Mi to evaluate the implementation of UN treaties in practice. Membership in UN organizations and the payment of dues was tracked via desk research. Finally, we use the Global Peace Index, SIPRI, the Drexel Database and OECD/DAC data to track, respectively, participation in conflicts, military expenditure, use of Unilateral Coercive measures, and official development assistance as a share of GNI.

The year of reference is either the latest year for which data are available (for example, membership in UN organizations as of 2023, the 2023 Global Peace Index scores, the list of countries in arrears of payment to the UN under the terms of Article 19 of the UN Charter as of January 2024), or in the case of ODA/GNI, an average across the last five years (to reduce the potential effect of year-on-year volatility). The UCM variable tracks sanctions introduced before January 1, 2022 that are still ongoing.

The indicators were normalized on a scale from 0–100 using the min-max method, where 0 corresponds to low support and 100 to high support to UN-based multilateralism. The UN-Mi is compiled as the arithmetic weighted average of all the normalized indicators.

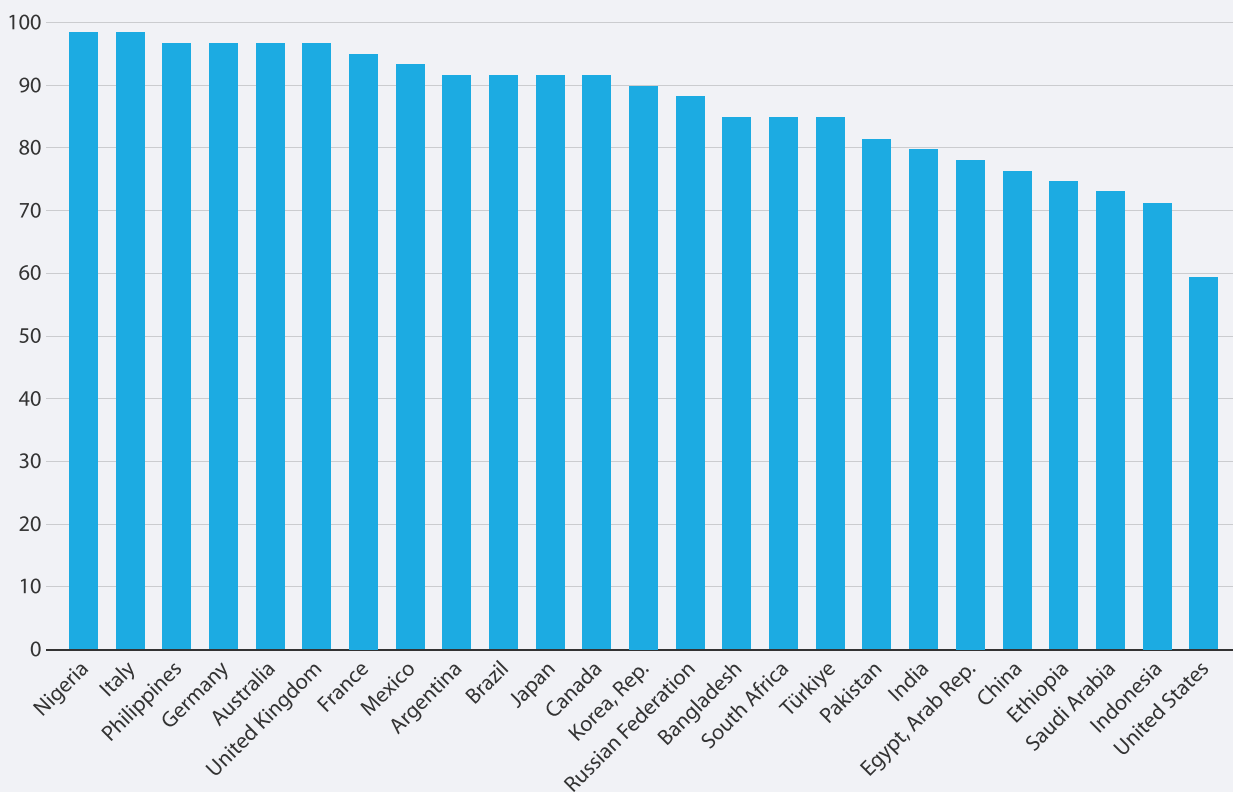
Further details are available in Sachs, Lafortune and Drumm (2023) and Lafortune and Sachs (2024, forthcoming). The full dataset for this year’s UN-Mi is accessible at <https://sdgtransformationcenter.org/>

and Amendments, as well as Conventions that were later terminated or only applied to a small number of countries. We recorded whether member states have signed or ratified them. Signature of a treaty is not legally binding, however, ratification (or acceptance, accession, definitive signature, and succession) is. Argentina, Australia, Brazil, Canada, France, Germany, Italy, Japan, Mexico, Nigeria, the Philippines, and the United Kingdom have all ratified more than 90% of major UN treaties. By contrast, Ethiopia, Indonesia, Saudi Arabia, and the United States have ratified fewer than 75 percent.

Figure 3.3 presents more specifically the ratification status of the nine UN human rights treaties. Around 80

percent of all 193 UN member states have ratified at least seven of these. Because neither the International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families nor the International Convention for the Protection of All Persons from Enforced Disappearance have been ratified by 50 percent of the international community, they are not included in the UN-Mi calculation. Among G20 and large countries, only Argentina, Mexico and Nigeria have ratified all nine of these UN human rights treaties. By contrast, the United States is among only nine countries that have ratified fewer than four, and the only one of the G20 and large countries to have ratified fewer than five.

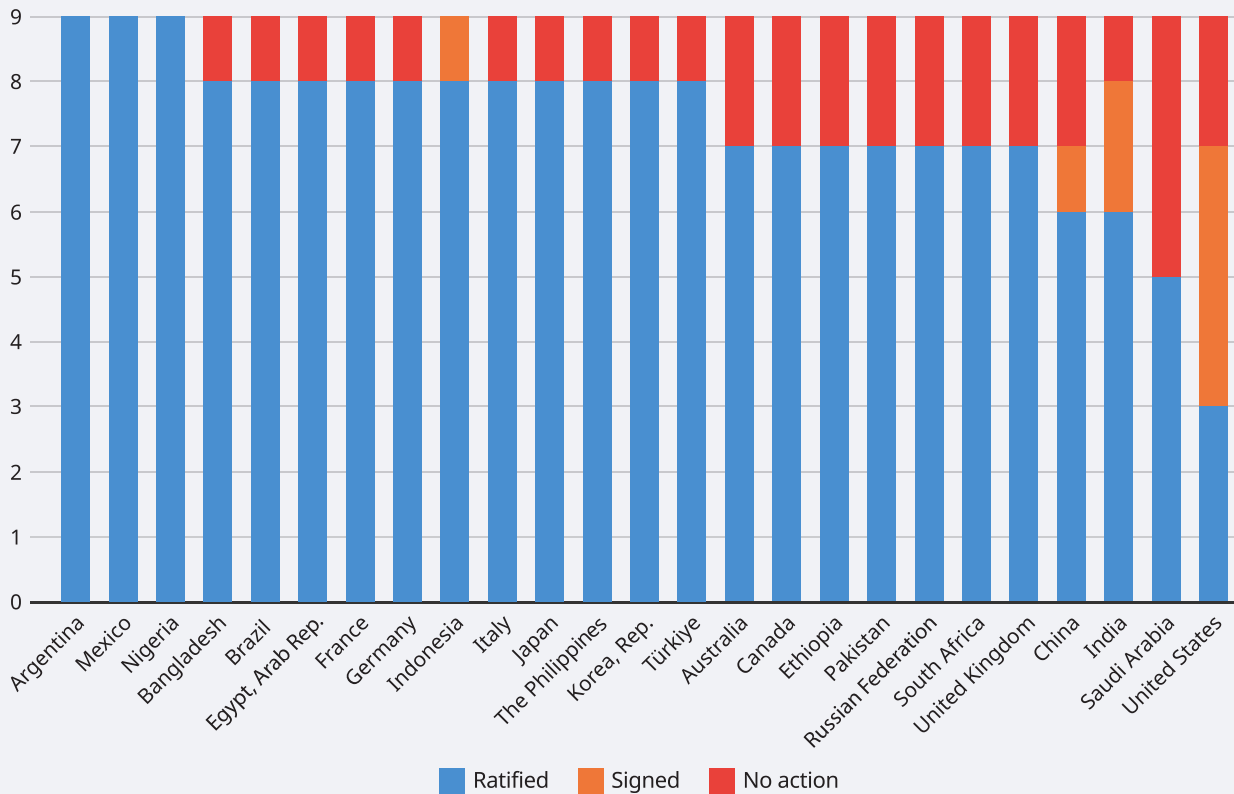
Figure 3.2
Major UN treaties ratified, G20 and large countries, 1945–2023



Note: Treaties ratified by 50%+ of UN member states. N=59. As of January 1, 2024.
Source: Authors' calculations based on UN treaty database.

Figure 3.3

Ratification status of the nine UN human rights’ Treaties, G20 and large countries



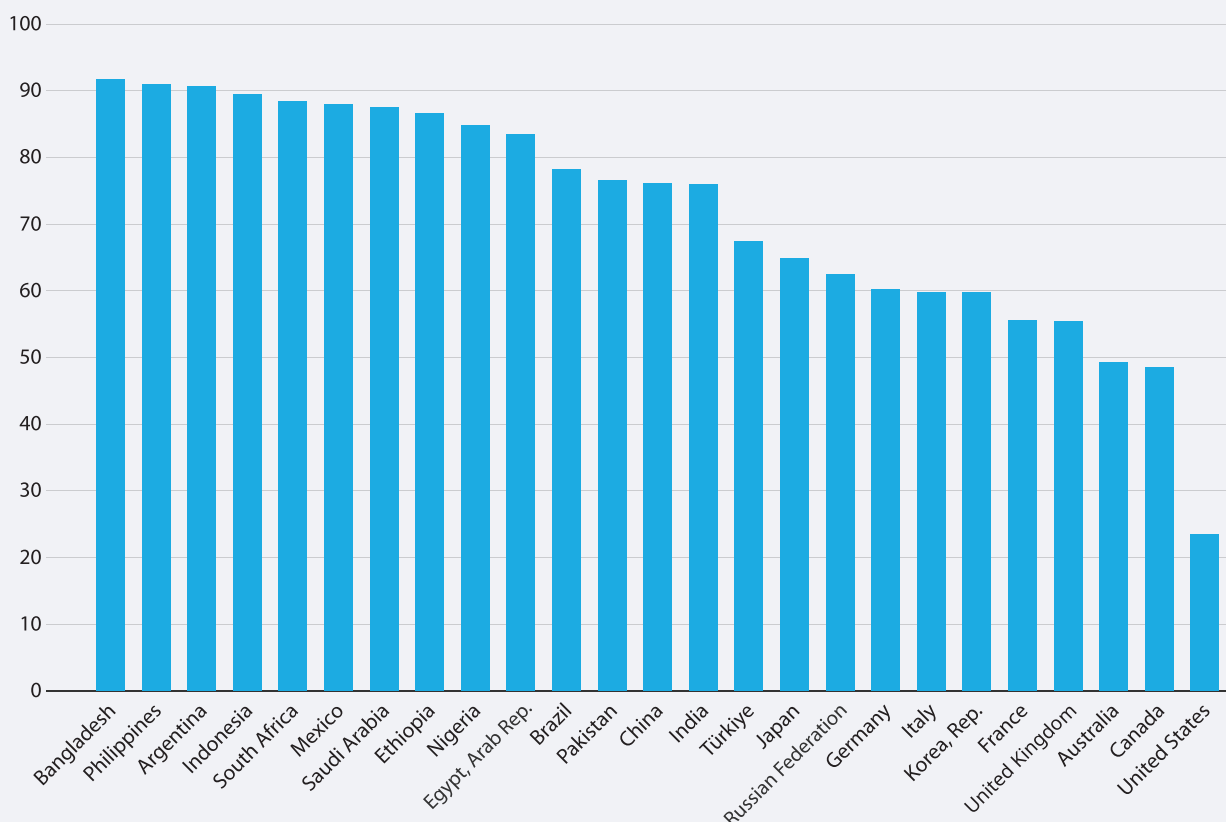
Note: Covers the nine UN human rights’ treaties (excluding optional protocols): 1. International Convention on the Elimination of All Forms of Racial Discrimination (ICERD), 1965; 2. International Covenant on Civil and Political Rights (ICCPR), 1966; 3. International Covenant on Economic, Social and Cultural Rights (ICESCR), 1966; 4. Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), 1979; 5. Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (CAT), 1984; 6. Convention on the Rights of the Child (CRC), 1989; 7. International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (ICMW), 1990; 8. International Convention for the Protection of All Persons from Enforced Disappearance (CPEd), 2006; 9. Convention on the Rights of Persons with Disabilities (CRPD), 2006.

Source: Authors’ elaboration, based on <https://indicators.ohchr.org/>

The second indicator relates to “Percentage of votes aligned with the majority vote at the UN General Assembly”. Chapter IV of the UN Charter describes the role and function of the UN General Assembly, or UNGA, which is the main decision-making body of the United Nations. This indicator considers 5,256 UNGA resolutions with a recorded vote since 1945. It establishes the percentage of times that each UN member state voted with the simple international majority (not weighted by population) out of a total of 482 recorded votes over the

period 2018–2022. The data were obtained from the UN digital library via python web scraping. For each resolution, UN member states can vote yes or no, abstain, or be absent. In the vast majority of cases (98% of the time) the majority vote is yes. The UNGA votes of Argentina, Bangladesh and the Philippines were aligned with the majority vote 90 percent of the time. By contrast, the votes of Australia and Canada were aligned with the majority vote less than 50 percent of the time, with those of the United States aligned less than 25 percent.

Figure 3.4
Percentage of votes aligned with the majority vote at the UN General Assembly, G20 and large countries, 2018–2022



Note: Simple majority (not population weighted). Votes recorded between 2018 and 2022. N=482 recorded votes.
Source: Authors' calculations, based on UN Digital Library voting data

The third indicator refers to “Membership and participation in selected United Nations organizations”. Chapter IX of the UN Charter describes the role of specialized agencies in fostering international economic and social cooperation. This indicator captures membership in 24 UN organizations: all 15 specialized agencies,¹ the 6 United Nations funds and programmes (UNDP, UNEP, UNFPA, UN-HABITAT, UNICEF and WFP), the UN Conference on Trade and Development (UNCTAD), the UN Framework Convention on Climate Change (UNFCCC), and the World Trade Organization (WTO). These were selected to represent a broad range of issues related to sustainable development (education, health, finance, trade, telecommunication, and industrial

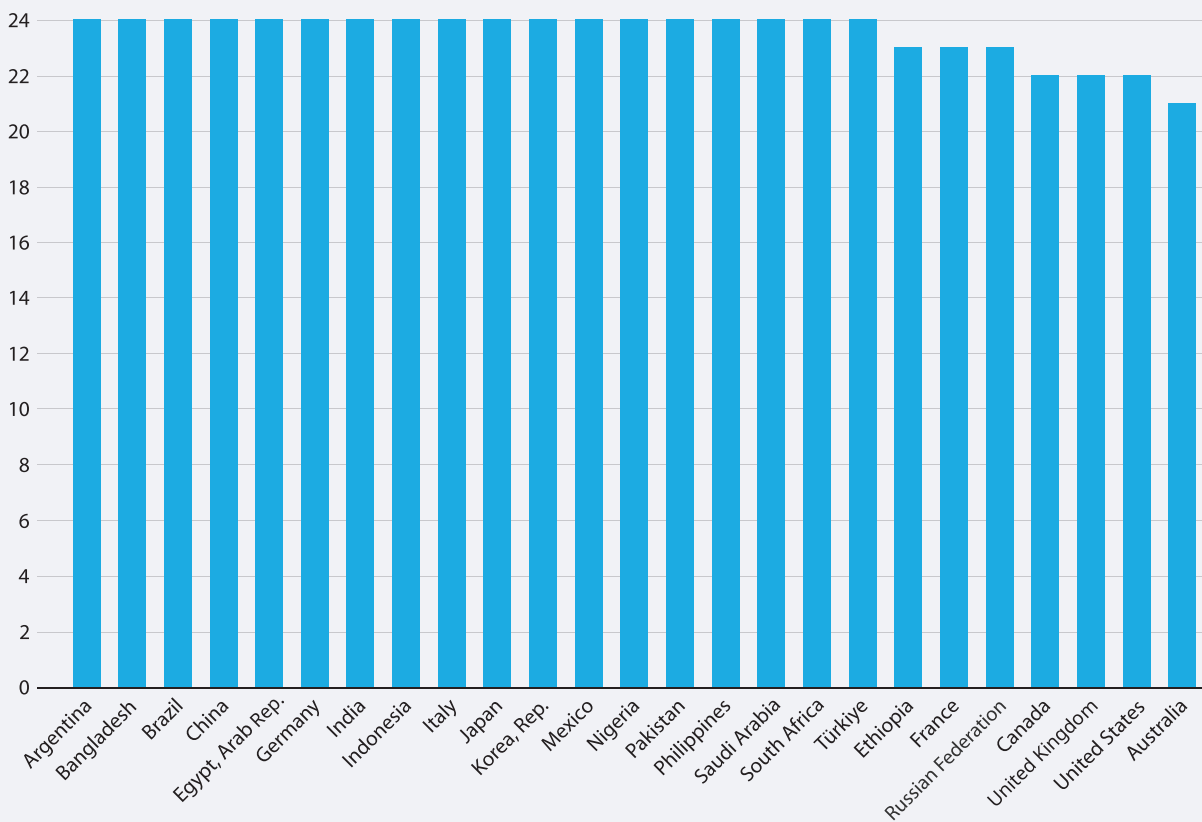
1. UN Specialized Agencies: the Food and Agriculture Organization (FAO); the International Civil Aviation Organization (ICAO); the International Fund for Agricultural Development (IFAD); the International Labour Organization (ILO); the International Monetary Fund (IMF); the International Maritime Organization (IMO); the International Telecommunication Union (ITU); the UN Educational, Scientific and Cultural Organization (UNESCO); the United Nations Industrial Development Organization (UNIDO); the World Tourism Organization (UNWTO); the Universal Postal Union (UPU); the World Health Organization (WHO); the World Intellectual Property Organization (WIPO); the World Meteorological Organization (WMO); and the World Bank Group – including the International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), and the International Finance Corporation (IFC). United Nations funds and programmes: UN Development Programme (UNDP), UN Environment Programme (UNEP), UN Population Fund (UNFPA), UN Human Settlements Programme (UN-HABITAT), UN Children’s Fund (UNICEF), World Food Programme (WFP).

policies), as well as including all of the specialized agencies. Most G20 and large countries are members of all 24, however Australia is not a member of UNIDO, UNWTO or IFAD; Canada, the United Kingdom and the United States are not members of UNIDO and UNWTO; the Russian Federation is not a member of UNWTO; France left UNIDO in 2014; and as of 2023, Ethiopia is not a member of WTO.

The fourth indicator relates to “Participation in conflicts and militarization”. As emphasized in the Preamble of the UN Charter, all UN member states are supposed to “practice tolerance and live together in peace with one another as good neighbours” and “unite [their] strength

to maintain international peace and security.” This indicator captures each country’s participation in conflicts and military build-up, using data provided by the Global Peace Index (GPI) 2023 and compiled by the Institute for Economics and Peace. The indicator is computed as the simple average of GPI Pillar 1 (Ongoing domestic and international conflict) and Pillar 2 (Militarization) (IEP 2023). Comparable data on military expenditure as a percentage of GDP and the number of armed service officers per capita are included, as are financial contributions to United Nations peacekeeping missions. Argentina, Canada, Germany, and Japan perform best among G20 and large countries on this indicator. By contrast the Russian Federation performs the worst.

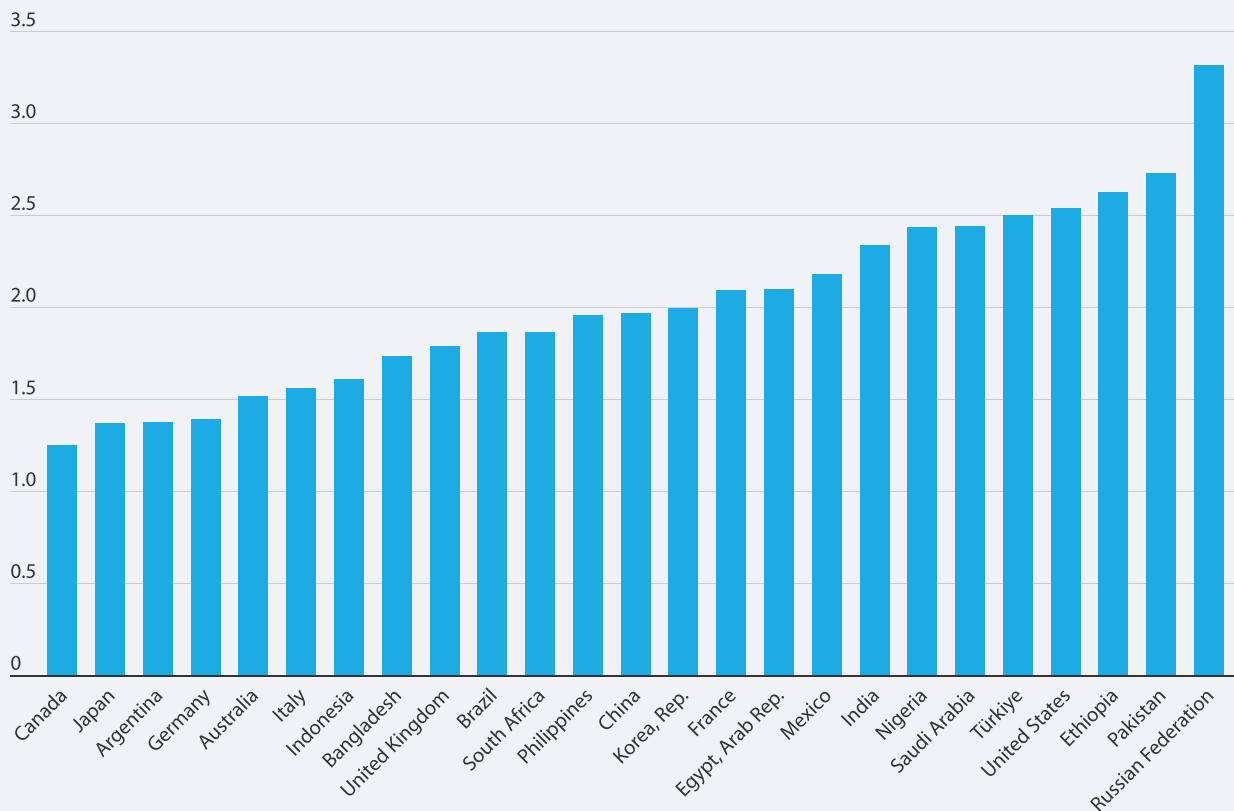
Figure 3.5
Membership in selected UN organizations, G20 and large countries, 2023



Note: Max = 24. As of January 1, 2024.

Source: Authors, data compiled via desk research on individual organizations and agencies’ web portals

Figure 3.6
Participation in conflicts and militarization, G20 and large countries, 2023



Note: From 1 (best) to 5 (worst).
Source: Authors' elaboration, based on IEP's Global Peace Index.

The fifth indicator is related to the “Use of unilateral coercive measures (UCMs)”. This indicator reviews the adoption by UN member states of unilateral sanctions against another UN member state. Several UN resolutions stress that unilateral coercive measures and practices “are contrary to international law, international humanitarian law, the UN Charter and the norms and principles governing peaceful relations among States, and highlight that on long-term, these measures may result in social problems and raise humanitarian concerns in the States targeted” (OHCHR 2024). In 2014, the Human Rights Council created the mandate of the

Special Rapporteur on the negative impact of unilateral coercive measures on the enjoyment of human rights.

Since 1966, the Security Council has established 31 sanctions regimes: in Southern Rhodesia, South Africa, the former Yugoslavia (2), Haiti (2), Angola, Liberia (3), Eritrea/Ethiopia, Rwanda, Sierra Leone, Côte d’Ivoire, Iran, Somalia/Eritrea, Iraq (2), the Democratic Republic of the Congo, Sudan, Lebanon, the Democratic People’s Republic of Korea, Libya (2), Guinea-Bissau, the Central African Republic, Yemen, South Sudan and Mali, as well as sanctions on ISIL (Da’esh) and Al-Qaida

and on the Taliban. The famous 1977 United Nations Security Council Resolution 418 unanimously imposed a sanctions regime against apartheid South Africa.

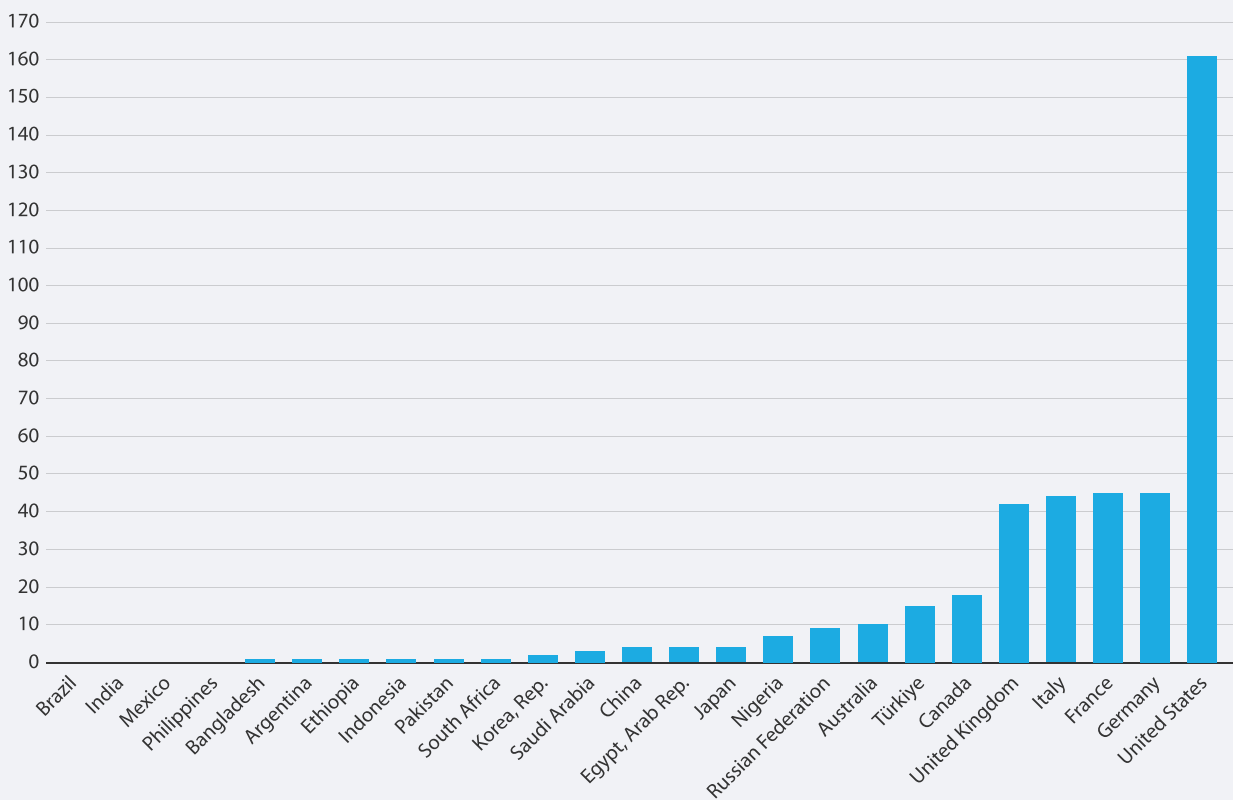
The data on UCMs presented in this report come from the Drexel Global Sanctions Database (V3, March 2023), which provides information on sanctions adopted against other countries, including the beginning and final year of sanction imposition (Felbermayr et al. 2020; Drexel University, WIFO, and Hochschule Konstanz University of Applied Sciences 2023). Here we present sanctions adopted unilaterally from 1950 to 2021 that are still in place as of 2022. For our purpose, a sanction is considered unilateral if it has not been approved by the UN

Security Council, even if it is imposed by multiple countries. Sanction regimes adopted unilaterally by regional organizations, such as the EU or the League of Arab States, were allocated to their member organizations.

Finally, the sixth indicator relates to each country's "Contribution to the UN budget and international solidarity". Articles 17 and 19 of the UN Charter cover financial and budgetary arrangements of the UN. Under Article 19, "a Member of the United Nations which is in arrears in the payment of its financial contributions to the Organization shall have no vote in the General Assembly if the amount of its arrears equals or exceeds the amount of the contributions due from it for the

Figure 3.7

Use of unilateral coercive measures (UCMs), G20 and large countries, number (1950–2022)



Note: UCMs adopted between 1950 and 2021 that continued into 2022.
Source: Authors, based on Drexel Global Sanctions Database

preceding two full years.” The UN Fifth Committee maintains a list of countries subject to the provisions of Article 19, all of which are assigned a value of 0 on this indicator in the UN-MI, while other countries are given a value of 100. As of February 2024, these countries were: Afghanistan, Comoros, Dominica, Ecuador, Liberia, São Tomé and Príncipe, Somalia, and the Bolivarian Republic of Venezuela. For OECD/DAC and other countries with available data, this score is adjusted on the basis of their contribution to international solidarity, measured by the share of their GNI that is devoted to official development assistance (averaged over the period 2018–2022). Five OECD/DAC members achieved the 0.7% target (Denmark, Germany, Luxembourg, Norway, and

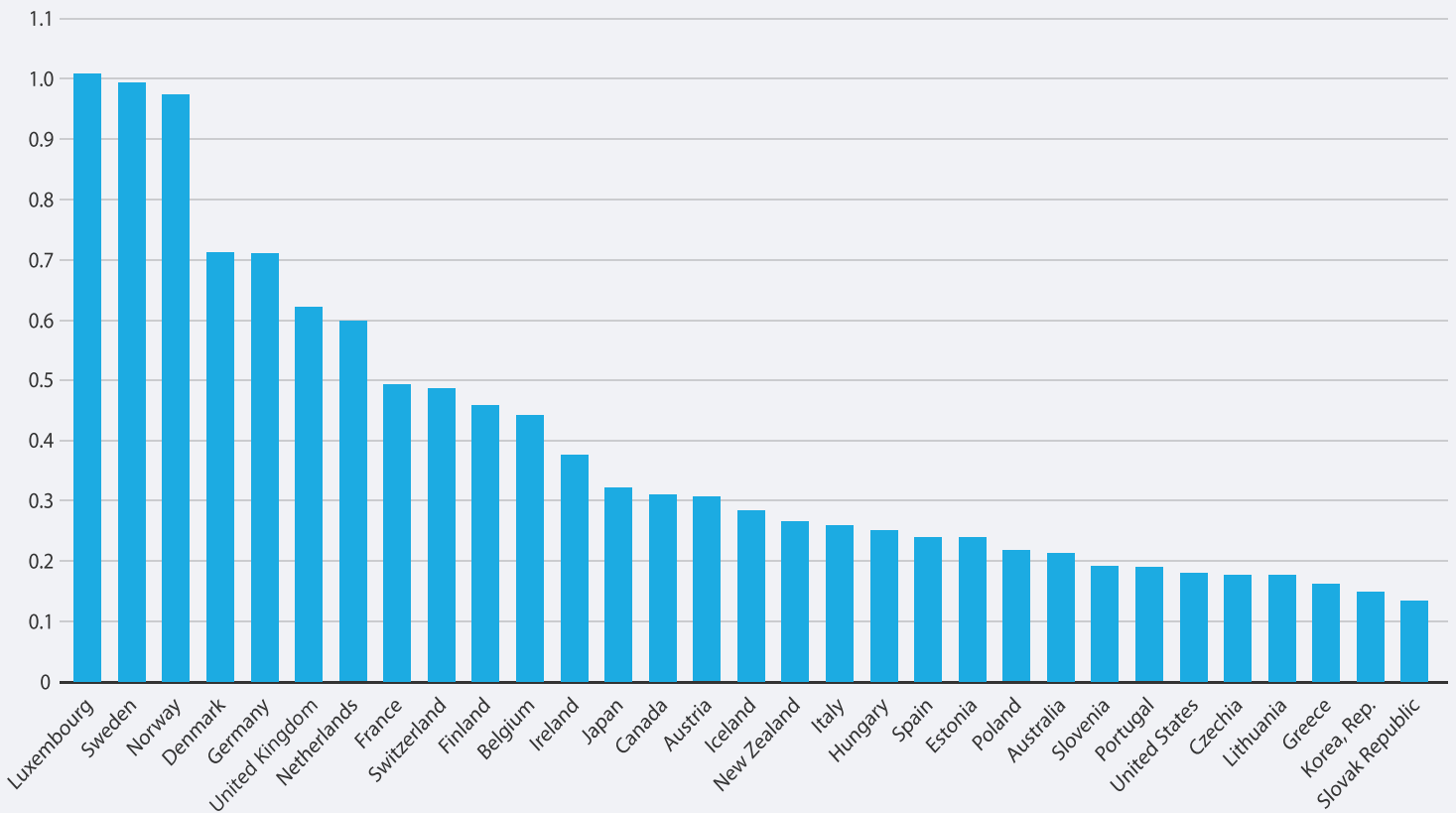
Sweden). Box. 3.2 discusses and compares the evolution of expenditure on international solidarity and military expenditure since the adoption of the SDGs in 2015.

Government efforts to implement the SDGs

Since 2018, the SDSN has mobilized its global network to track government efforts and commitments for the SDGs (including speeches, strategies, action plans, national indicator frameworks, consultations, and the integration of the SDGs in national budgets). Using the Six

Figure 3.8

Official Development Assistance (ODA) as share of GNI, OECD DAC members, 2018–2022



Note: Countries listed in descending order of the average ratio ODA/GNI over the period 2018–2022. Internationally agreed target: 0.7%. Source: OECD, 2023

Box 3.2. Are the member countries of the OECD Development Assistance Committee (DAC) more on track to achieving their targets on international solidarity or military expenditure?

In April 2024, the OECD/DAC updated its database on expenditure related to official development assistance (OECD 2024). The same month, the Stockholm International Peace Institute updated its military expenditure database (SIPRI 2024).

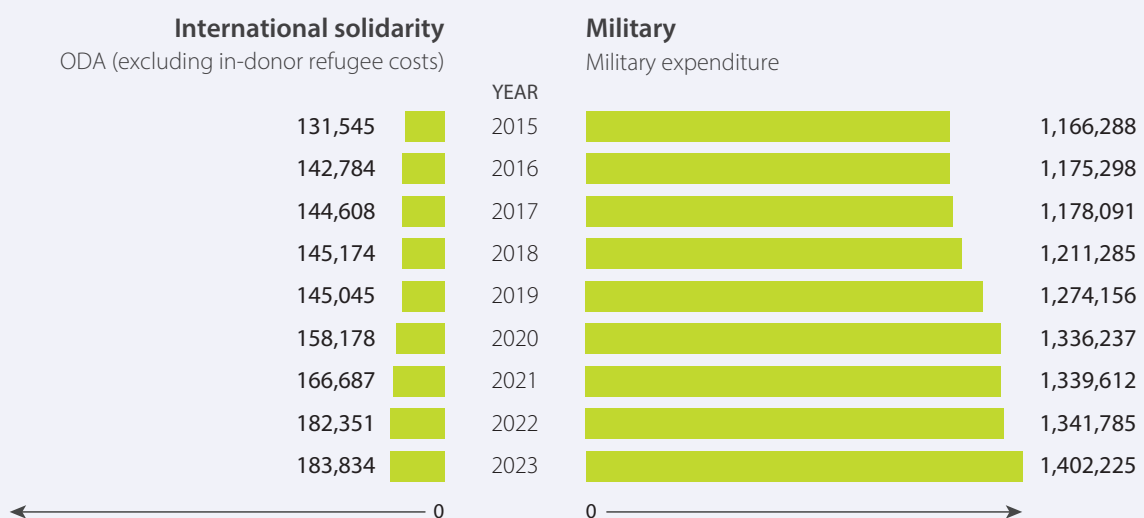
Figure 3.9 and 3.10 compare the evolution of spending on ODA and military focusing on the 31 individual OECD/DAC member countries (excluding the EU as a bloc). The ODA figure also excludes in-donor refugee costs; expenditures happening inside donor countries to cover the first-year costs of sustaining developing country refugees arriving in their country which can be reported as ODA. In their recent statement, the DAC Civil Society Reference Group (DAC/CSO RG) expressed concerns about the underlying trends reflected in the ODA figures, and in particular about how they believe donors are inflating their ODA figures via the payment of in-donor refugee costs which “constitutes a payment by donors to themselves” (DAC Civil Society Reference Group 2024).

Officially, the 32 OECD/DAC members (including the European Union) spent 223.7 billion USD on ODA in 2023 or 0.37% of their GNI (OECD, 2024). When excluding the EU and in-donor refugee costs, this falls to 183.8 billion USD. By contrast the same 31 OECD/DAC member countries spent more than 1402.2 billion USD (or 1.4 trillion) on military expenditure. Overall, OECD/DAC members spent seven times more on military expenditure than on ODA in 2023.

In 1970, the UN adopted a resolution calling on the most developed countries to dedicate 0.7% of their Gross National Income (GNI) to ODA. Via Agenda 2030 and the SDGs, countries recommitted to this target in 2015 (under SDG 17.2 – Implement all development assistance commitments). Since 2014, member countries of the North Atlantic Treaty Organization (NATO) are expected to dedicate 2% of their GDP to military expenditure. Out of the 31 OECD/DAC members, 24 are formal members of NATO and 4 are NATO’s Asian-Pacific partners (AP4 – Australia, Japan, New Zealand, and South Korea).

The number of OECD/DAC members that had achieved the 0.7% of GNI ODA target dropped from four countries in 2015, the year that the SDGs were adopted, to three in 2023 when we exclude in-donor refugee costs (when in-donor refugee costs are included, however, five countries achieved the target in 2023). By contrast, the number of OECD/DAC members that reached their target on military expenditure almost doubled over the same period – rising from 6 of the 31 member countries in 2015 to 11 in 2023. In 2024, several additional NATO countries are also expected to reach their military expenditure targets.

Figure 3.9
Total expenditure on ODA versus military expenditure in OECD/DAC members (31) since the adoption of the SDGs, 2015–2023, millions USD, constant 2021 prices



Box 3.2. (continued)

Figure 3.10

Number of OECD/DAC members that achieved internationally agreed targets on international solidarity versus military expenditure since the adoption of the SDGs, 2015–2023



Note: ODA excludes in-donor refugee costs. When including in-donor refugee costs, five countries achieved the internationally agreed target on ODA/GNI in 2023: Denmark, Germany, Luxembourg, Norway and Sweden. Covering all OECD DAC members except the European Union as a bloc.
Source: OECD/DAC and SIPRI, April 2024

Transformations Framework, we produce sectoral policy scorecards to track the evolution of investment and legislative frameworks for each major transformation. We also evaluate the participation of countries in formal SDG review processes, notably the submission of Voluntary National Reviews (VNRs). The methodology and databases from past editions are available online (Lafortune, Woelm, and Valentiny 2022; Sachs et al. 2023).

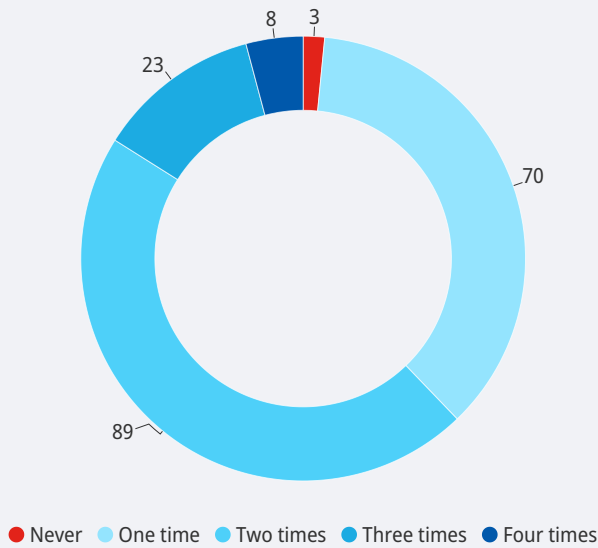
Overall, in 2024, 190 out of the 193 UN member states will present a Voluntary National Review (VNR). This includes countries that are to present a VNR in July 2024, according to the list presented by ECOSOC (Ojeda 2023). Argentina, Azerbaijan, Colombia, Mexico, Sierra Leone, Togo, Uruguay, and the Arab Republic of Egypt have been particularly engaged in the VNR processes over the years and have each presented four VNRs. Two non-UN-members (the European Union and Palestine)

have also submitted VNRs. By contrast, three countries have never taken part in the VNR process – Haiti, Myanmar, and the United States.

Increasingly, regional and local authorities are also preparing Voluntary Local Reviews (VLRs). Figure 3.12 summarizes the number of VLRs submitted by country. Recently, the OECD and SDSN surveyed more than 240 regional and local authorities and stakeholders and found that financing is the main barrier to implementing the SDGs at the subnational level (OECD and SDSN 2024). The SDSN Global Commission for Urban SDG Finance will release its final recommendation in July 2024 to address the specific challenges faced by local and regional authorities in financing the SDGs.²

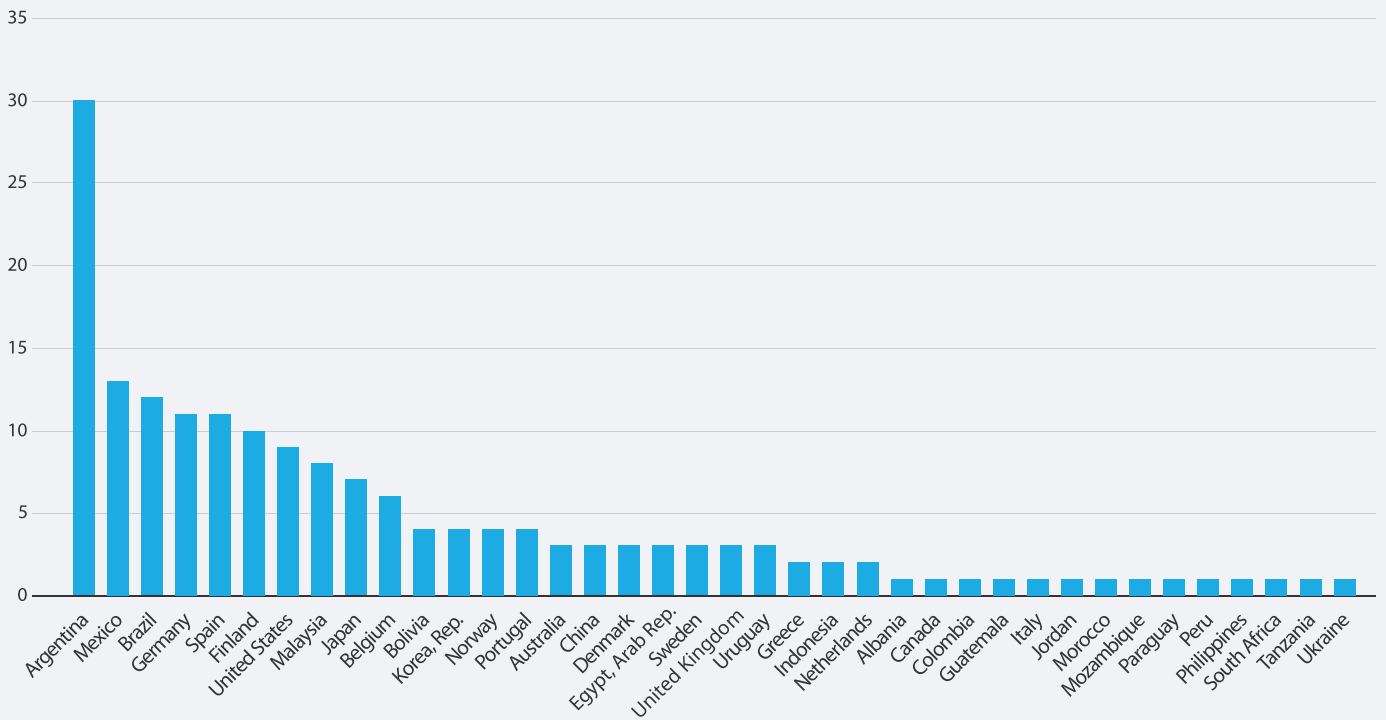
2. More information about the work of this SDSN Commission is available at: <https://urbansdgfinance.org/>

Figure 3.11
Participation in Voluntary National Review process
(number of countries), 2016–2024



Note: N=193.
Source: Authors, based on desk research and <https://sustainabledevelopment.un.org/vnrs/>

Figure 3.12
Number of Voluntary Local Reviews presented by country



Note: As of March 2024.
Source: Authors, based on desk research and <https://sdgs.un.org/topics/voluntary-local-reviews>.

Figure 3.13
The 2024 UN-Mi versus number of VNRs submitted (2016–2024)



Source: Authors

The SDSN 2023 Survey of Government Efforts for the SDGs emphasized persisting discrepancy between expressed political support for the SDGs and integration of the goals into strategic public policy processes, especially long-term budget and investment framework. This is aligned with findings in the literature (Biermann et al. 2022; Kotzé et al. 2022; IGS 2023). Interestingly, the countries that perform well on the UN-Mi tend to also be those that engage more deeply with the SDGs. Figure 3.13 compares the UN-Mi total score and the number of VNRs presented for all 193 UN member states.

Outlook

Effective UN-based multilateralism is more important than ever before, because people and nations are more interconnected than ever before. No nation can solve the global climate crisis on its own. No nation can make a low-cost energy transition on its own. No nation can ensure peace and security on its own. No nation by itself can protect the vital ecosystems or avoid the potential dangers and pitfalls of runaway technologies, whether advanced biotechnologies that can create new pathogens, or artificial intelligence systems that can create fake news or provocations to war. Collectively, new funding mechanisms must be identified to channel

the world's global savings to sustainable development investments, based on countries' needs and commitments to achieving the SDGs, and to safeguard the global commons (Rockström et al. 2024).

Nation-states, which remain at the heart of the multilateral system, must be held accountable for upholding the values and principles of the UN Charter and implementing the SDGs – the shared global vision for sustainable development. All countries, richer and poorer alike, should use the momentum of the upcoming international conferences and summits – including the Summit of the Future (2024), COP 29 in Azerbaijan (2024) and COP 30 in Brazil (2025), the UN World Social Summit (2025), and the fourth International Conference on Financing for Development in Spain (2025), among others – to recommit to strengthening UN-based multilateralism and global partnerships, as emphasized by SDG 17 (Partnerships for the Goals), and to accelerated actions for the SDGs.

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Part 4

Transforming Food and Land systems to achieve the SDGs

Recommended citation:

FABLE (2024) Transforming food and land systems to achieve the SDGs. In Sachs et al. (2024) *The Sustainable Development Report 2024*. SDSN, New York and Paris.

Authors

FABLE Secretariat: Clara Douzal (SDSN), Charlotte Chemarin (Alliance Bioversity International – CIAT), Aline Mosnier (SDSN), Davide Cozza (SDSN), Maria Diaz (SDSN), Sarah Jones (Alliance Bioversity International – CIAT), Fernando Orduña-Cabrera (IIASA), Alejandro Rios-Ochoa (IIASA), Lucie Adenäuer (SDSN), Yiorgos Vittis (IIASA), Andrea Sanchez (Alliance Bioversity International – CIAT), Valeria Javalera-Rincon (IIASA), Marcial Sandoval G. (IIASA), Michael Obersteiner (IIASA, Oxford University), Fabrice DeClerck (Alliance Bioversity International – CIAT, EAT), Carolina Navarrete Frias (Alliance Bioversity International – CIAT).

FABLE Country Teams: **Argentina:** Federico Frank (National Agricultural Technology Institute), Adrian Monjeau (Fundación Bariloche), Camila Bertranou (Fundación Bariloche), **Australia:** Javier Navarro- Garcia (CSIRO), Raymundo Marcos-Martinez (CSIRO), **Brazil:** Wanderson Costa (INPE), Fernando Ramos (INPE), **Canada:** René Reyes (UBC, Instituto Forestal de Chile), Hisham Zerrifi (UBC), Gregory Paradis (University of British Columbia), Avery Maloney (University of British Columbia), **Colombia:** John Chavarro (Javeriana University, CENIGAA), Andres Peña (Javeriana University), Ricardo Arguello (Independent), Jorge Escobar (Javeriana University), Wilfredo Marimon Bolivar (CENIGAA), **Denmark:** Simone Højte (CONCITO), Regitze Skou Fertin (CONCITO), Emil Fraas (CONCITO), Tavs Nyord (CONCITO), **Ethiopia:** Yonas Getaneh (Alliance of BI-CIAT), Yirgalem Nigussie (PSI), Mekonnen Bekele (PSI), Kalkidan Mulatu (Alliance of BI-CIAT), Wuletawu Abera (Alliance of BI-CIAT), Yodit Balcha (Alliance of BI-CIAT), Desalegn Anshiso (PSI), Tadesse Kuma (PSI), Degefie Tibebe (Alliance of BI-CIAT), Desalegn Begna (PSI), Jemal Mohammed (PSI), Beneberu Assefa (PSI), Kaleab Kebede (PSI), Meron Eshete (Alliance of BI-CIAT), Tagay Hamza (MoWE), Getachew Tesfaye (Alliance of BI-CIAT), Lulseged Tamene (Alliance of BI-CIAT), **Finland:** Heikki Lehtonen (Natural Resources Institute Finland), Janne Rämö (Natural Resources Institute Finland), **Germany:** Livia Rasche (Universität

Hohenheim), Uwe Schneider (University of Hamburg), Jan Steinhauser (International Institute for Applied Systems Analysis), **Greece:** Conrad Landis (AE4RIA), Konstantinos Dellis (AE4RIA), Alexandra Ioannou (AE4RIA), Maria Angeliki Chatzigiannakou (Uppsala University), Chrysi Laspidou (AE4RIA), Phoebe Koundouri (AE4RIA), **India:** Ankit Saha (IIMA), Vartika Singh (IIMA), Prantika Das (IIMA), Aditi Joshi (IIMA), Chandan Kumar Jha (IIMA), and Ranjan Kumar Ghosh (IIMA), Hermann Lotze-Campen (Humboldt-Universität zu Berlin, Department of Agricultural Economics, PIK), Miodrag Stevanović (PIK), **Indonesia:** Habiburrachman A.H. Fuad (Research Center for Climate Change, University of Indonesia), **Mexico:** Charlotte Gonzalez-Abraham (Independent), Marcela Olguín (SilvaCarbon- Latin America, the Caribbean and Canada), Sonia Rodriguez Ramirez (National Institute of Public Health of Mexico), Gordon McCord (UCSD), Juan Manuel Torres Rojo (Centro de Investigación y Docencia Económicas), Arturo Flores Martinez (Instituto Politécnico Nacional), Oscar G. Cardenas Hernandez (Universidad de Guadalajara), Daniel Avila Ortega (Stockholm University), **Nepal:** Shyam Basnet (Southasia Institute of Advanced Studies (SIAS)), Prajal Pradhan (University of Gottingen), Sushant Acharya (Southasia Institute of Advanced Studies (SIAS)), Rajendra Uprety (AgriGreen Nepal), Pashupati Pokhrel (Ministry of Industry, Agriculture and Cooperative, Koshi provincial government, Nepal), Dil Khatri (Southasia Institute of Advanced Studies (SIAS); Swedish University of Agricultural Sciences), Ram Basnet (Freelance Consultant), **Norway:** Bob Van Oort (CICERO), Anne-Sophie Daloz (CICERO), **Russian Federation:** Anton Stokov (RANEP), **Rwanda:** Dative Imanirareba (Rwanda Fertilizer Company), **Sweden:** Marianne Hall (Lund University), Ingo Fetzer (Planetary Boundary Research Network and the Baltic Sea group, Stockholm Resilience Centre Stockholm University), **Türkiye:** Zeynep Tacer Caba (BAU SÜGAM (Bağçeşehir University, Sustainable Food Systems Research Centre)), Müge Kesici (BAU SÜGAM), Pinar Özüyar (BAU SÜGAM), **United Kingdom:** Alison Smith (University of Oxford), John Lynch (University of Oxford), Paula Harrison (UKCEH), Sarah Jones (UKCEH/University of Lancaster), and Freya Whittaker (UKCEH), **United States:** Grace C. Wu (UCSB), Justin Baker (NCSU), Gordon McCord (UCSD), Christopher Wade (RTI International).

Part 4

Transforming Food and Land systems to achieve the SDGs

SDG 2 (Zero Hunger) is one of the five SDGs that the international community will review in depth at the High-Level Political Forum on Sustainable Development in July 2024. SDG 2 faces numerous challenges and shows concerning trends in global progress: 600 million people will still suffer from hunger by 2030,¹ and the prevalence of undernourishment increased to 10% of the global population in 2021 after years of decline.^{1,2} Despite a drop in the number of countries experiencing high food prices, falling from 48.1% in 2020 to 21.5% in 2021,³ accompanied by a steady increase in cereal yield from 3.4 tonnes per hectare in 2000 to 4.4 tonnes per hectare in 2021,⁴ the prevalence of stunting and wasting among children under the age of five remains high (20% and 7%, respectively, in 2021 according to SDR 2024). Many countries now face the dual challenge of undernourishment and overweight. The global prevalence of obesity has increased from 9% in 2005 to 16% in 2022, indicating an alarming upward trend. According to the SDG Index, none of the 193 UN member states has achieved SDG 2 (see Part 2).

Among the six Transformations¹³ required to ensure the achievement of all SDGs, the fourth focuses on food, land, and water. This Transformation underpins the achievement of SDG 2, SDG 6 (Clean Water and Sanitation), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), SDG 14 (Life Below Water), and SDG 15 (Life on Land), and contributes to the achievement of all of the SDGs. Our food and land-use systems play a pivotal role in the stability of our planetary boundaries and the Earth's system resilience.¹¹ Agriculture accounts for more than half the Earth's land surface⁶ and 70% of freshwater use,⁷ yet it is profoundly affected by the worsening climate-change crisis and increasing water scarcity.⁸ Food systems already contribute to one-third of global human-induced greenhouse gas emissions⁹ and are the main driver of biodiversity loss.¹⁰

A holistic approach is needed to leverage potential synergies and trade-offs associated with the transformation of food and land systems¹³ and to account for environmental and social spillovers embodied in the trade of agrifood products.¹² The Food, Agriculture, Biodiversity, Land, and Energy (FABLE) Consortium, a global network established in 2017, aims to support this integrated approach by facilitating the development of ambitious, locally tailored strategies for food and land-use systems. FABLE brings together researchers from universities and national research centres worldwide, fostering collaboration among interdisciplinary teams and dialogues with stakeholders to develop national quantitative pathways. FABLE members support the alignment of national objectives with planetary boundaries and sustainability targets.

Here we present results of the 2023 'Scenathon', in which researchers from 22 countries across all continents, together with the FABLE Secretariat, explored three alternative futures for national and regional food and land-use systems. *Scenathon* stands for 'a marathon of scenarios' and refers to an iterative process used by FABLE to compare and align national pathways with the SDGs and planetary boundaries. This is the third Scenathon coordinated across FABLE country teams, following the first in 2019¹⁴ and the second in 2020.¹⁵ Using an open-access modelling tool, the FABLE Calculator and the FABLE decentralized modelling infrastructure, we compare our results with global sustainability goals across four main areas: **1)** food security and nutrition [SDGs 2 and 3]; **2)** GHG emissions reduction [SDG 13]; **3)** forest and biodiversity conservation [SDG 15]; and **4)** sustainable water, nitrogen, and phosphorous use [SDGs 6, 12 and 14]. We highlight change levers to guide sustainable development policies to 2030 and to 2050, together with risks of trade-offs and opportunities for synergies.

4.1 The FABLE Scenathon 2023 approach

We use the FABLE Calculator,¹⁶ an Excel-based tool that computes land use, land cover, animal stocks, and agricultural input use for each 5 year-time period until 2050.* Countries represented individually in the Scenathon 2023 were Argentina, Australia, Brazil, Canada, China, Colombia, Denmark, Ethiopia, Finland, Germany, Greece, India, Indonesia, Mexico, Norway, Nepal, Russia, Rwanda, Sweden, Türkiye, the UK, and the United States. These 22 countries account for 60% of global terrestrial land and are home to 4.5 billion people. To ensure global coverage, all remaining countries were grouped into six ‘rest of’ world regions (Figure 4.1). Country models were uploaded to the

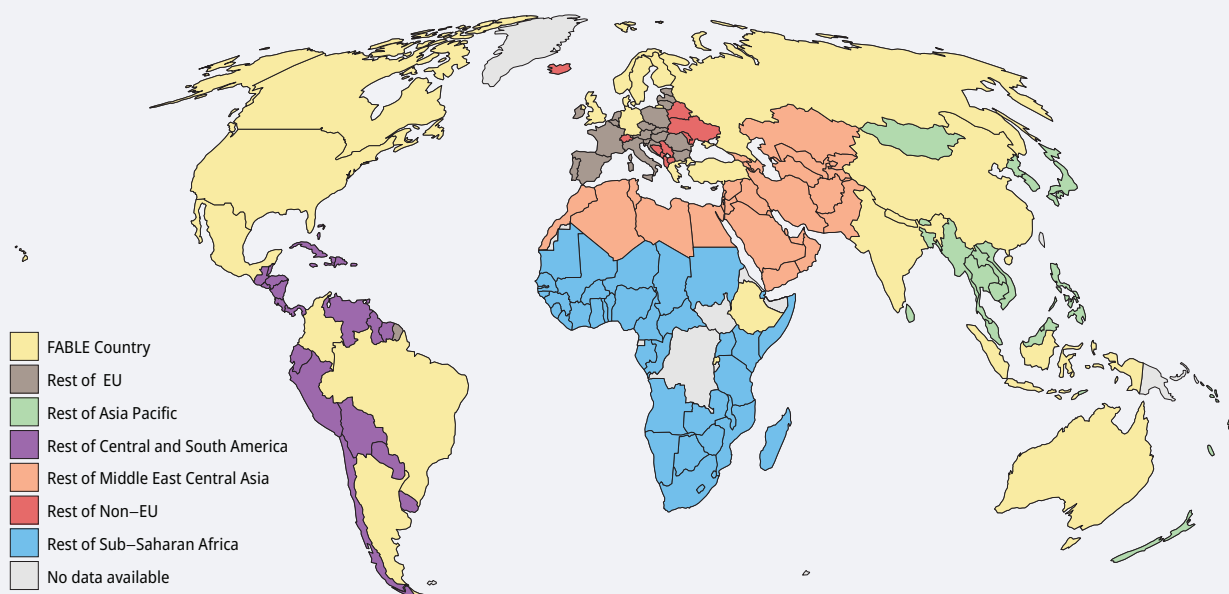
Scenathon web platform, with their exports adjusted to achieve equilibrium between global exports and global imports. Standardised reporting tables allowed aggregation of national and regional results to the global level.¹⁹

In the Scenathon 2023, participants agreed on a set of targets to be achieved collectively and simultaneously. Those 16 targets encompass four domains (Figure 4.2), related to the following SDGs:

SDG 2 – Target 2.1 is to end hunger by 2030, while target 2.2 aims to eliminate all forms of malnutrition, including both insufficient and excessive kilocalorie intake in comparison to what is needed for a healthy life. For target 2.1, we compute the prevalence of under-nourishment by country and region.²⁰ For target 2.2, we compare the average per capita kilocalorie intake of each country and region with the minimum dietary energy requirement (MDER), setting a range of 10% to 50% above the MDER as our food security objective.

* Other models, such as the global partial equilibrium models MAgPIE¹⁷ and GLOBIOM,¹⁸ have provided complementary results for some countries, allowing useful benchmarking of results across pathways.

Figure 4.1
Countries and regions included in the Scenathon 2023







Source: Authors

Disclaimer: The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of the SDSN and co-authors of this chapter concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

SDG 13 – The climate-change mitigation targets are based on the Paris Climate Agreement²¹ goal of limiting warming to 1.5 degrees Celsius by the end of the century, along with estimates of corresponding GHG emissions threshold from agriculture and land-use change in the latest IPCC assessment report⁸ and related literature.^{22,23} To meet these goals, GHG emissions from on-farm agricultural production must be below 4 Gt CO₂e per year by 2050 and the agriculture, forestry and other land use sector should have become a net sink (-1.3 Gt CO₂ per year in 2050). In accordance with the 2021 methane pledge²⁴ and UNEP's estimates of methane reduction potential, targets aim to decrease global agricultural methane emissions by 20 Mt CH₄ and 28 Mt CH₄ by 2030 and 2050 respectively compared to 2020 levels.

SDG 15 – The land and biodiversity targets are based on the Kunming-Montreal Global Biodiversity Framework (KMGBF).²⁵ Target 1 of the KMGBF, which aims at halting the loss of land important to biodiversity by 2030, is captured by our targets of reaching zero deforestation and zero loss of current 'land where natural processes predominate' (LNPP)^{26,27} as well as a target to increase the area of LNPP by 15% between 2020 and 2050. In Target 3 of the KMGBF, countries have also committed to ensuring that, by 2030, at least 30% of global ice-free terrestrial land is effectively conserved and managed through systems of protected areas and other effective conservation measures. Target 10 of the KMGBF addresses the need to increase the coverage of biodiversity-friendly agricultural practices, which is reflected in a global target of achieving 50% of cropland under agroecological practices.

Figure 4.2
Sustainability targets that need to be met collectively in the Scenathon 2023

| SDG | Indicator | Target 2030 | Target 2050 |
|---|---|--|---|
|  | Kilocalories per capita per day Prevalence of undernourishment | At least 10% > MDER ⁽ⁱ⁾ Lower than 50% > MDER ⁽ⁱ⁾ < 5% | |
|  | Protected areas Agroecological practices Deforestation Land where Natural Processes Predominate | 30% of total land 50% of cropland No loss No loss in mature LNPP | 15% gain in total LNPP compared to 2020 |
|  | CO ₂ e from agriculture ⁽ⁱⁱ⁾ CH ₄ from agriculture CO ₂ from AFOLU ⁽ⁱⁱⁱ⁾ Cumulative CO ₂ from AFOLU ⁽ⁱⁱⁱ⁾ | -20 Mt compared to 2020 | < 4 Gt CO ₂ e -28 Mt compared to 2020 < -1.3 Gt in 2050 < 40 Gt between 2020 and 2050 |
|  | Nitrogen application Phosphorous application Consumptive blue water use for irrigation | | < 68 Tg (or Mt) < 16 Tg (or Mt) < 2,453 km ³ yr ⁻¹ |

Notes:

(i) MDER = Minimum Dietary Energy Requirement

(ii) This target includes on-farm CO₂, CH₄, and N₂O emissions from crops and livestock production, with CO₂e computed using AR6 GWP.

(iii) AFOLU = agriculture, forestry and other land use. This target includes CO₂ emissions from crops and livestock production, CO₂ emissions from land conversion, CO₂ sequestration from afforestation and abandonment of agricultural land, and CO₂ savings due to the substitution of fossil fuels by biofuels.

Source: Authors

SDG 6 and SDG 14 – Nitrogen and phosphorus have allowed for a dramatic increase in agricultural land productivity in recent decades, but in many places, nitrogen from chemical fertilizers and organic manure applied to soil exceeds crop growth requirements, with the remainder leaching into waterways and polluting the air, causing negative impacts on terrestrial biodiversity, aquatic biodiversity, and human health. The global targets for water, phosphorous and nitrogen use draw from the scientific literature on planetary boundaries.^{28, 29-31}

FABLE evaluated three different pathways (combinations of scenarios at the national level) for achieving these targets: the Current Trends pathway, the National Commitments pathway, and the Global Sustainability pathway. The **Current Trends pathway (CT)** represents a low-ambition trajectory primarily shaped by existing policies, offering a glimpse into a future heavily reliant on current practices and policies. In contrast, the **National Commitments pathway (NC)** attempts to predict how food and land systems will evolve if national strategies, pledges, and targets concerning climate, biodiversity, and food systems are met. Finally, the **Global Sustainability pathway (GS)** identifies how feasible additional actions could potentially be taken to help align national and regional pathways with global sustainability targets.

For each of these pathways, researchers established a number of assumptions for each country and region regarding the evolution of various parameters of the model related to population growth, dietary patterns, food waste, food import and export levels, crop and livestock productivity, agricultural expansion, afforestation, livestock density, protected areas expansion, post-harvest losses, biofuel demand, urban expansion, agricultural practice coverage, and irrigation area expansion. Assumptions on the extent to which these levers will drive changes in food and land systems from 2020 to 2050 vary across countries and regions (Figure 4.8). To validate and even co-design some of these assumptions, teams in Colombia, Denmark, Ethiopia, Greece, India, Mexico, Norway, and the UK held in-country consultations with local stakeholders. In addition, for the first time, the Secretariat invited third parties to provide feedback on the pathways' assumptions online via the FABLE Consortium website.

4.2 Can we achieve the SDGs related to food and land systems?

Of the 16 targets used to assess progress towards sustainable food systems, only two are met in CT, while climate mitigation, nitrogen, phosphorous and LNPP goals trend in the reverse direction and the gap to meet these targets widens. In NC, we achieve four targets, yet this comes at the cost of higher phosphorous and nitrogen use and increased GHG emissions. In the most ambitious pathway (GS), five targets are reached, and we are making progress towards all targets except the prevalence of undernourishment (Figure 4.3; Part 4 Annex).

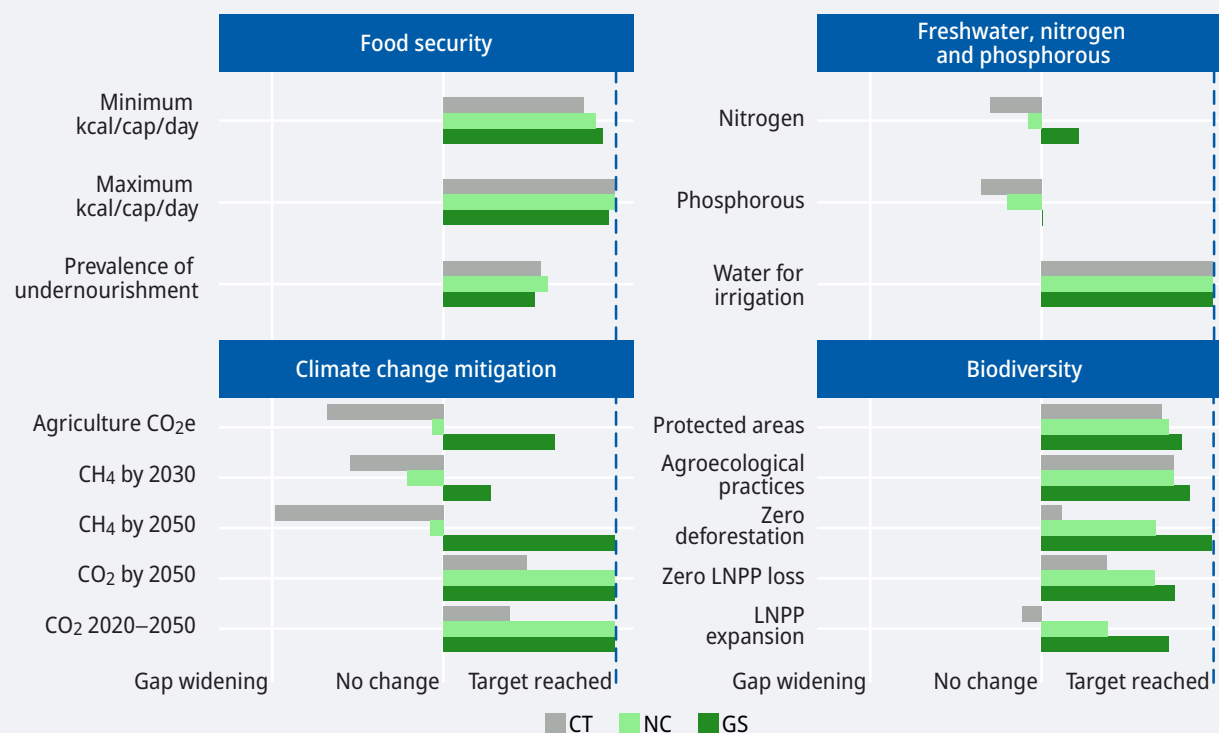
Many of these results are driven by interactions between the evolution of demand and land productivity. Demand takes into account food, feed and other non-food uses (including biofuels) as well as food loss and waste. In 2020, almost half of the demand in terms of calories was for food, 16% for feed, 14% for food loss and waste, and 23% for other non-food uses. Between 2000 and 2020, overall demand and land productivity* both grew at a rate of 2.4% per year, resulting in a stable global agricultural land area during this period. However, trends were uneven across world regions, with agricultural land expanding in the global South and reducing in the global North, due to demand growing faster than productivity in the Global South and vice versa in the North.

Our results showed that land productivity and demand continue to grow at the same pace globally in CT, although at a slower rate from 2020 to 2050 than that of 2000 to 2020 (reduced to around 0.7% per year). In NC and GS, however, land productivity increases at a greater speed than demand (+0.4 and +0.8 percentage points per year between 2020 and 2050 in NC and GS respectively), leading to an 11% reduction of total agricultural land in NC and a 22% reduction in GS, with the largest absolute reductions observed in Australia, the United States, and China.

* Total demand growth is expressed as the average annual growth rate of total kilocalories demanded, land productivity growth is expressed as the average annual growth rate of the total kilocalories produced divided by the sum of cropland and pastureland area, using FAOSTAT data.

Figure 4.3

Gap between global results in each pathway and the global sustainability targets



Notes: Targets have been standardized to allow for comparison. "No-change" indicates a level equivalent to that of 2020. The left area indicates a deterioration compared to 2000–2020, while the right area indicates an improvement towards achieving the targets. The gap for undernourishment target is measured by the proportion of countries and regions where the prevalence of undernourishment is below 5% between 2030 and 2050. The gaps for the dietary intake targets are measured by the proportion of countries and regions within the Minimum Dietary Energy Requirement (MDER) range during the same period. For targets on protected areas, agroecological practices, and LNPP expansion, the gaps are measured as their positions within a range from 0% to their respective FABLE targets. The gaps for the remaining targets are assessed by comparing their levels or trends in the target year with those of 2020. Detailed results are given in Figure 4.9.

Source: Authors

The evolution of demand

In our projections, by 2050, total consumption will increase from 2020 in CT, increase but more slowly in NC, and decrease in GS. At the global level, average per capita kilocalorie intake remains nearly constant between 2020 and 2050, although dietary composition changes over time and varies across pathways. In all three pathways, and to a greater extent in NC and GS, scenarios with shifts towards national dietary recommendations or the Planetary Healthy Diet proposed by the EAT–Lancet Commission result in a reduction of per capita kilocalorie intake in countries with currently high levels of consumption, with the largest reductions seen

in the consumption of animal products, oils, and sugar. Countries with a lower per capita consumption in 2020 increase their intake per capita over time in all three pathways, although to a lesser extent in NC and GS due to lower target consumption, with increased intakes of oils, meat, pulses, and sugar in CT and oils, nuts, fruits and vegetables in NC and GS. The consumption of cereals decreases (from 53% of total intake in 2020 to 47%, 45% and 41% in 2050 in CT, NC, and GS respectively), however, cereals continue to be the dominant food group at the global level in all pathways. Nuts and pulses see the largest relative consumption increases in all three pathways, accompanied with increased trade volume for those products globally.

Fewer countries meet targets on avoiding overconsumption compared to the targets on achieving minimum average calorie consumption levels. Our findings indicate trade-offs between limiting overconsumption and reducing hunger, as measured by the prevalence of undernourishment, but the latter is dependent on mechanisms not represented in our model, such as the evolution of inequalities, the level of support for the poorest, the impacts on food prices of measures introduced to promote these dietary shifts and, more particularly, the cost of healthy foods (see Part 4 Annex).

While global consumption of animal-based products increases over time in CT and NC, so does demand for feed (+29% between 2020 and 2050 in CT, +4% in NC), particularly for corn, wheat, and barley in CT and for corn, rice, and sorghum in NC. The worldwide trade volume for these products increases correspondingly. Reducing global consumption of animal-based products in GS reduces feed demand by 13% between 2020 and 2050, primarily for corn, wheat, and barley. In parallel, post-harvest losses and food waste are assumed to decrease in several countries and regions in NC and GS, with an average reduction of 1.1% and 1.8% per year between 2020 and 2050 in NC and GS respectively. These reductions help to close the gap towards achieving SDG 12.3 and SDG 2, although they rely on a reduction of food loss and waste across the whole food chain.

The evolution of productivity

Total land productivity is a combination of cropland productivity (here measured as plant-based kilocalories per hectare of cropland) and pastureland productivity (kilocalories from the production of ruminants per hectare of pastureland). Both cropland and pastureland productivity* increase over time in all pathways, with the GS pathway showing the greatest gains (+18% for cropland and +35% for pasture) by 2050 compared to 2020.

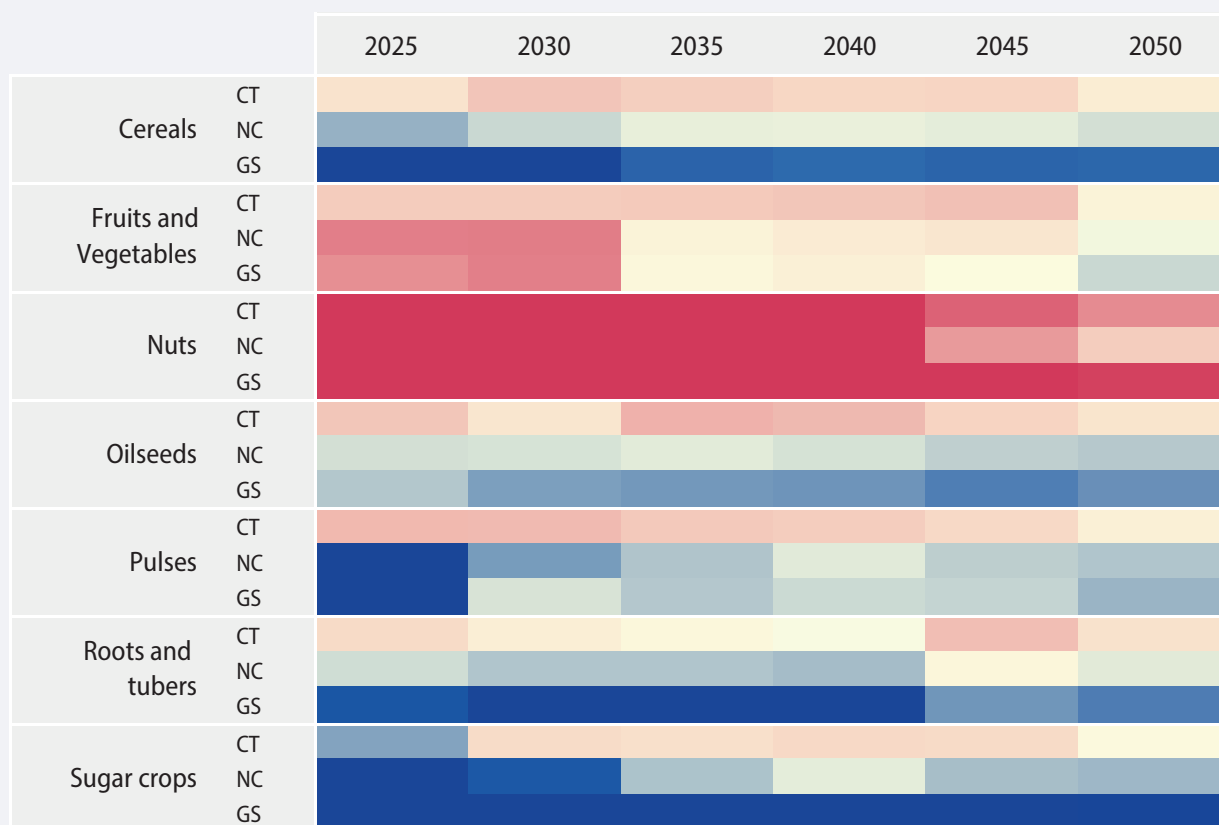
* In our model, the evolution of crop yield depends on technological change, fertilizer use, the number of harvests per hectare per year, and the adoption of irrigation and agroecological practices, while pastureland productivity depends on the number of ruminants per hectare of pasture (stocking rate) and the use of complementary non-grass feed.

When we compare the evolution of crop productivity and demand for different types of crops we observe that: 1) in CT, the average productivity increase is lower than demand growth for almost all crop types, but this situation tends to switch in GS, 2) the rate of increased productivity of nuts, fruits and vegetables consistently lags behind the rate of demand growth, and 3) the most challenging decade is ahead of us, with demand growing faster than productivity for more crops up to 2030 (Figure 4.4).

Higher agricultural productivity saves land, but depending on how it is achieved, can lead to trade-offs with other SDGs. In many places, nitrogen from chemical fertilizers and organic manure applied to soil exceeds crop growth requirements and leaches into waterways, with negative impacts on aquatic biodiversity (SDG 14) and human health through the pollution of drinking water (SDG 6). Through dietary shifts and the increasing use of organic fertilizer instead of synthetic fertilizer in organic farming systems, the global peak volume of nitrogen applied to soils and left on pasture is reached by 2040 in NC and 2020 in GS. However, even with ambitious sustainability efforts, we fail to stay within the nitrogen and phosphorus planetary boundaries. The per hectare application of nitrogen and phosphorus on agricultural land continues to increase in India in all pathways, even though the critical surplus has already been exceeded.³¹ The share of harvested area under irrigation remains stable across time for all pathways, at around 20%, which explains how all three remain largely below the water planetary boundary. These results likely underestimate increases in irrigation water demand over the coming decades, as two-fifths of the world's population already live in areas that suffer high water stress and this proportion will increase with climate change.³² This highlights the need for a deeper analysis of results concerning input use – at the river basin level, for example.

Agroecological practices can alleviate the tradeoffs between SDG 2 (Zero Hunger) and the other SDGs by relying more on enhancing natural ecosystem processes rather than external inputs. These practices can help restore biodiversity and build production resilience to climate change. In our model, we include organic farming, reduced tillage, cover crops, cultivar mixtures, embedded natural systems, and a mix of

Figure 4.4
Growth in annual productivity vs. growth in demand for various crop types, 2025–2050



Notes: CT: Current Trends pathway, NC: National Commitments pathway, GS: Global Sustainability pathway. Shades of pink indicate that the productivity growth rate is lower than the demand growth rate, with darker pink indicating a larger negative value. Shades of blue indicate that the productivity growth rate is higher or equal to the demand growth rate, with darker blue indicating a larger positive value. Other crop types represented in the FABLE Calculator but not displayed here are 'Beverage crops, cocoa, and spices' and 'Fiber crops'.
Source: Authors

diversified farming systems that all impact productivity, climate and biodiversity outcomes³³ (and in the case of organic farming, lead to the substitution of manure for synthetic fertilizers). Under GS, an increased adoption of agroecological practices, particularly in the six regions and in China, Russia, and Argentina, narrows the gap but still falls short of the 50% target. An ambitious expansion of organic farming that coincides with a reduction of livestock herds due to dietary shifts under NC and GS also raises the possibility of manure shortages in some European countries.

The evolution of agricultural land

Agricultural land expansion or reduction is a key driver of our results regarding SDG 15 (Life on Land). The area of existing mature LNPP (land where natural processes predominate) decreases substantially between 2020 and 2030 in all pathways due to conversion into productive lands or newly afforested areas. In NC, 44 million hectares of loss of LNPP is avoided compared to CT, but large losses continue in Brazil, Mexico, Sub-Saharan Africa, the United States, and the 'rest of Non-EU countries' region. The GS pathway is effective

in ending deforestation* (and, consequently, the target of no loss of LNPP in forests) through the success of zero-deforestation policies (for example, in Brazil and Indonesia) combined with dietary shifts and productivity increases. However, 30 million hectares of grasslands, shrublands, wetlands and other non-forested LNPP are lost, with the result that the world significantly overshoots the zero-loss target of the Kunming-Montreal Global Biodiversity Framework. Despite the continued losses in biodiversity-rich areas, a large decrease in productive lands in NC and GS allows for net gains in LNPP between 2020 and 2050 (+6% in NC, +11% in GS),

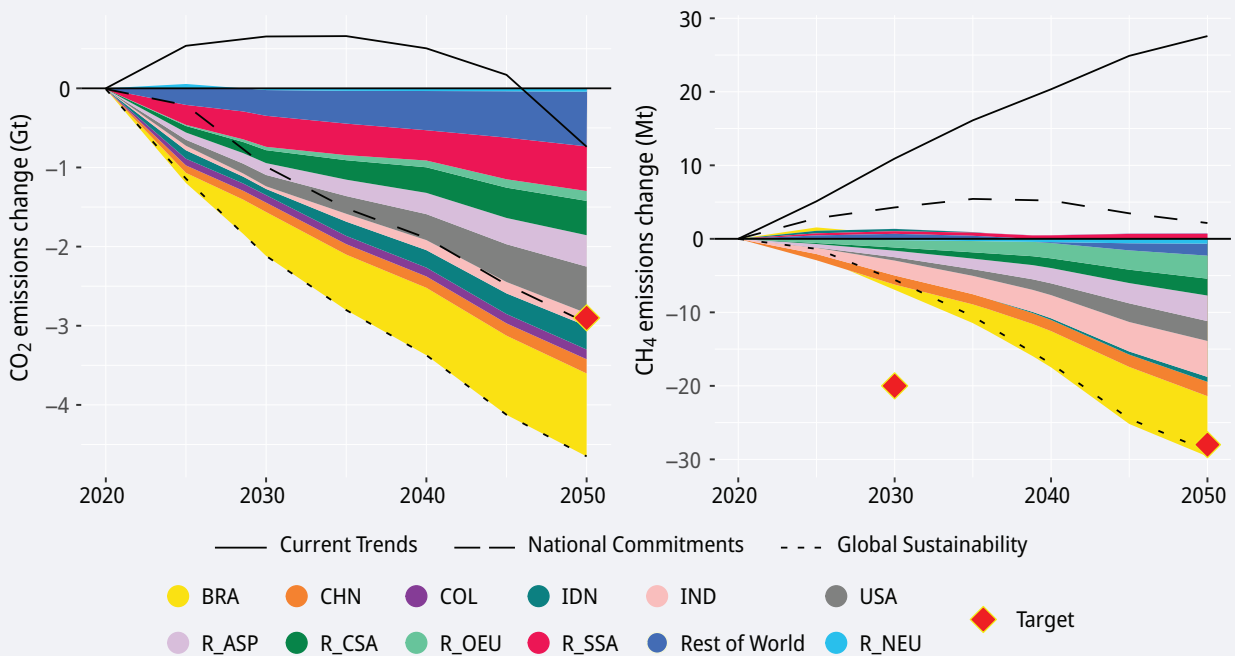
but this still falls short of our target (+15%). Any future expansion of areas where natural processes predominate is dependent on the potential for these to become established on newly afforested land and abandoned agricultural land.

In parallel, we observe that the share of protected areas – including ‘other effective area-based conservation measures’ (OECMs) – increases in all pathways. The target is almost achieved in GS (25% protected by 2030) thanks to ambitious expansions of protected areas in Ethiopia, Canada, Finland, Mexico, and Sweden.

* A small, deforested area remains in GS due to some urban expansion.

Figure 4.5

GHG emission changes in the GS pathway including the breakdown by FABLE countries and regions in addition to total changes in CT, GS and NC pathways compared with 2020 levels



Notes: Targets and emissions reductions are expressed in absolute reduction levels compared to 2020. The decomposition is done for GS only. BRA- Brazil, CHN- China, IDN- Indonesia, COL- Colombia, IND- India, R_ASP- Rest of Asia and Pacific, R_CSA- Rest of Central and South America, R_OEU- Rest of European Union, R_NEU- Rest of Europe non-EU, R_SSA- Rest of Sub-Saharan Africa.

Source: Authors

The evolution of GHG emissions

Methane (CH₄) remains in the atmosphere for a much shorter time than CO₂, but it also absorbs much more energy, leading to a large potential to curb GHG emissions in the short term. Both in CT and NC, we fall significantly short of our CH₄ targets in 2030, with emissions continuing to increase after 2020 (Figure 4.5). In GS, the CH₄ emissions reduction target is achieved by 2050 (-29 Mt). However, even if CH₄ emissions have started declining by 2030, it will not be enough to meet the short-term target. This reduction is made possible by increased livestock productivity (especially in Brazil, Central and South America, the Middle East, and Sub-Saharan Africa), combined with a dietary shift towards a reduced consumption of red meat (especially in the USA, Brazil and rest of EU).

To stay below 1.5°C of global warming, we need to achieve CO₂ neutrality by 2050 along with net negative CO₂ emissions from AFOLU (agriculture, forestry and other land use). We meet our 2050 target in both NC and GS (Figure 4.5). Our results show net removals of 2.3 Gt CO₂ and 3.6 Gt CO₂ by 2050, which are equally attributed to sequestration on abandoned productive land, prevented deforestation, and afforestation efforts. However, while our findings highlight the significant progress that can be realised towards reducing GHG emissions from agriculture and through land use change, the FABLE target of agricultural emissions being less than 4 Gt CO₂e per year by 2050 is not achieved. Agricultural emissions are reduced by 1.1 Gt and 1.4 Gt annually in NC and GS compared to CT. Although to meet the target, N₂O emissions need to be cut by 56% compared to 2020, in GS we lower them by 34%, due to a reduced number of ruminants, lower crop residues and a reduction in synthetic fertilizers associated with a lower production of major crops such as corn, rice, barley, and sugarcane.

4.3 Discussion and recommendations

What are the main levers to achieve the SDGs related to food and land systems from our results?

The higher the future demand for agricultural commodities, the greater the need to increase productivity to prevent land expansion, which could compromise SDG 13 (Climate Action) and 15 (Life on Land). Currently, 38% of total cropland³⁴ and 30% of water for agriculture³⁵ is used for animal feed, so limiting protein consumption to recommended levels and increasing the share of proteins derived from plants saves resources. Many countries have taken the opportunity of renewing their Dietary Guidelines to promote healthy and sustainable diets, including Brazil,³⁶ Germany, and Sweden. This effort must be pursued in other countries and accompanied by strong economic incentives for the food industry and consumers.

Yield gaps are particularly large for rainfed cereals in Africa.³⁷ The application of more nutrients will be required to close this gap, but this will depend on improving access to quality inputs, especially for smallholders, to reach SDG target 2.3. Practices need to be carefully tailored to the local context, soils, and climate to avoid worsening pollution and compromising SDGs 6, 14, and 15. Our findings particularly highlight the importance of investing in nuts, fruits and vegetables: while shifts towards healthier diets increase demand for these products, our projections of productivity growth for these products lags behind. This could lead to a sharp increase in prices, reducing the affordability of healthy diets in the future.

Regulations and incentives to prevent the conversion of forest and other biodiversity-rich areas to agricultural land are critical to achieving SDG 15 (Life on Land) and also significantly contribute to SDG 13 (Climate Action). In GS, 19 of the 22 participating countries as well as all regions assume effective deforestation control mechanisms will have been implemented by 2030. While FAO reports that deforestation has slowed in recent years, increases have been observed in Brazil and Indonesia. Countries urgently need to invest in robust, transparent and inclusive deforestation monitoring systems to ensure that their commitments will be translated into action.

What other levers are needed to meet the targets that are not represented in this study?

Our results show a significant number of countries are failing to reduce the prevalence of undernourishment to below 5%. This result is driven by the assumption that inequalities will remain constant over time, meaning that unless inequalities are sufficiently addressed, SDG 2 cannot be met without wasting resources and generating large surpluses for the wealthier, compromising the achievement of SDGs 3, 6, 13, 14, and 15.

The challenge of staying within the planetary boundary for nitrogen and phosphorous has also been highlighted by other studies,³⁸ but significant gaps remain in our analysis. The fertilizer reductions from certain agroecological practices that improve soil health, notably using leguminous crops for nitrogen fixation, are not yet captured in the model, meaning our results may underestimate the pollution and cost reductions from expanding agroecological practices. These could help to close gaps towards meeting our targets.^{39,40} More generally, technologies for precision agriculture or the introduction of new cultivars, feed additives, vaccines, inhibitors, or alternate wetting and drying to reduce water use in rice irrigation⁴¹ could enable additional reductions of CH₄ and N₂O emissions. However, the deployment of mitigation measures in agriculture remains slow, due to a lack of institutional support.⁸ Effective policy interventions and investment plans are urgently needed.

The 2011 Aichi Target pledge for countries to protect 17% of land and marine areas by 2020 was almost achieved,⁴² however the quality of protected areas varies across regions, often excluding zones of particular importance for biodiversity.^{43,44} This highlights the importance of monitoring 'land where natural processes predominate' separately from the coverage of protected areas. Better targeting of protected area expansion and other effective area-based conservation measures to incorporate zones that play key roles in biodiversity, such as linking up habitat areas, as well as the provision of financial support and inclusive governance approaches to ensure effective protection and buy-in from the local population could help achieve SDG 15 (Life on Land) and the Kunming- Montreal Global Biodiversity Framework targets.

Which SDGs related to food and land systems are not represented here and what measures are needed to avoid trade-offs?

Achieving SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action) requires close collaboration between the energy sector and the agricultural and forestry sectors. Several studies have highlighted, for example, risks associated with the large-scale deployment of biofuels.⁴⁵ New opportunities to develop clean energy, such as through agrivoltaics, woody energy crops, or bioenergy with carbon capture and storage (BECCS), need to be carefully assessed in the context of limited resources and the prioritisation of SDG 2 (Zero Hunger).

Around one-quarter of the world's labour force works in agriculture,⁴⁶ with many living below the poverty line.⁴⁷ Quality Education (SDG 4) in rural areas and Gender Equality (SDG 5) are critical levers to help farmers adopt new practices and rise out of poverty. Our results find that in GS, total agricultural work, measured in full-time equivalent workers, would decrease by 19% by 2050 compared to 2020. Support will be needed to help these workers diversify their income sources and receive a larger share of the value added of the agrifood system. Finally, SDG 16 (Peace, Justice, and Strong Institutions) represents the enabling condition to achieving all of the other SDGs. More concertation and coordination are needed at the local, national, and international levels (see Parts 1 and 3) to monitor trade-offs between all SDGs and ensure a more equitable distribution of costs and benefits across and within countries in order to avoid conflicts.

Part 4 Annex: Levers for change

Computation of the prevalence of undernourishment

In the actual computations, the distribution is assumed to be lognormal and thus fully characterized by three parameters: mean dietary energy consumption (DEC), its coefficient of variation (CV), and the minimum dietary energy requirement (MDER) per capita. The CV is affected by differences in energy requirements across a country's population (i.e., normal diversity in the population) as well as by differences in household socio-economic characteristics (i.e., inequalities in the

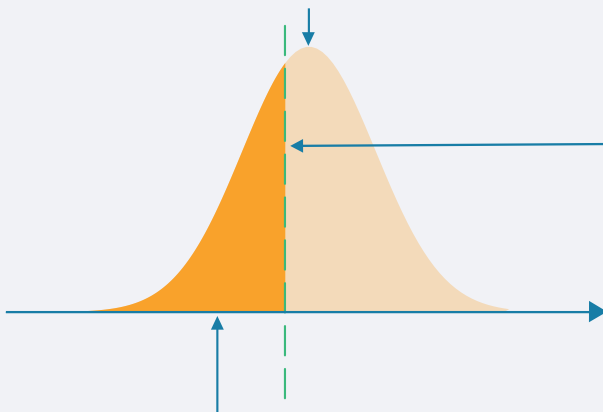
ability of households to match consumption to requirements). The CV is taken from the FAO and kept constant at 2020 levels from 2020 onward.

To project the future prevalence of undernourishment (PoU), we need to project these three variables. The Average kilocalorie intake per capita and the minimum dietary energy requirement (MDER) are taken from the FABLE Calculator, but the coefficient of variation is currently kept constant. Since the MDER varies only very slightly across pathways, our findings indicate that the evolution of PoU is driven only by the evolution of average kilocalorie intake: if it increases, PoU decreases; if it decreases, PoU increases.

Figure 4.6
Computation of the prevalence of undernourishment

How is the PoU calculated?

The Prevalence of Undernourishment (PoU) is based on the **distribution of habitual dietary energy consumption of hypothetical average individuals**.



The **threshold** corresponds to the **lower limit of acceptable energy requirements** to be in **good health** and have socially desirable physical activity.

The PoU calculates the **probability** that the **habitual dietary energy consumption** of individuals is **below the lower limit of acceptable energy requirements**.

Source: FAO

Figure 4.7

Projected and FAO historical values of prevalence of undernourishment

| | | CV | Prevalence of Undernourishment | | | |
|-----|----|------|--------------------------------|-------------------|------|------|
| | | FAO | | FABLE projections | | |
| | | 2020 | 2020 | 2020 | 2030 | 2050 |
| ARG | CT | | | | 3.5 | 3.7 |
| | NC | 0.28 | 3.3 | 3.1 | 3.5 | 3.7 |
| | GS | | | | 6.5 | 3.6 |
| BRA | CT | | | | 2.1 | 0.7 |
| | NC | 0.27 | 3.7 | 3.5 | 2.4 | 1.1 |
| | GS | | | | 4.5 | 9.9 |
| COL | CT | | | | 6.4 | 4.7 |
| | NC | 0.31 | 6.3 | 7.3 | 6.8 | 6.8 |
| | GS | | | | 7.9 | 8.9 |
| ETH | CT | | | | 22.5 | 25 |
| | NC | 0.37 | 22.3 | 21.4 | 22.5 | 25 |
| | GS | | | | 22.5 | 25 |
| IDN | CT | | | | 10 | 13.6 |
| | NC | 0.28 | 6.1 | 9.6 | 6.1 | 6.3 |
| | GS | | | | 7.4 | 37 |
| IND | CT | | | | 14.9 | 13.6 |
| | NC | 0.29 | 15.9 | 15.2 | 15.3 | 16.6 |
| | GS | | | | 15.3 | 16.5 |
| NPL | CT | | | | 5.1 | 6.2 |
| | NC | 0.28 | 5.2 | 4.2 | 5.2 | 6.2 |
| | GS | | | | 6 | 16.4 |
| RWA | CT | | | | 12.5 | 17.2 |
| | NC | 0.36 | 32.4 | 29.1 | 12.4 | 12 |
| | GS | | | | 12.7 | 12.9 |
| ASP | CT | | | | 3.2 | 1.6 |
| | NC | 0.24 | 7.7 | 3.5 | 2.7 | 1.6 |
| | GS | | | | 5.7 | 13.4 |
| CSA | CT | | | | 7.5 | 4.6 |
| | NC | 0.27 | 14.2 | 8.7 | 7.5 | 4.6 |
| | GS | | | | 9.2 | 8.7 |
| NEU | CT | | | | 3 | 2.9 |
| | NC | 0.22 | 4.1 | 2.7 | 3.5 | 4.5 |
| | GS | | | | 3.2 | 4 |
| NMC | CT | | | | 6.8 | 3.9 |
| | NC | 0.3 | 13.2 | 8.4 | 7.7 | 5.8 |
| | GS | | | | 9.8 | 12.1 |
| SSA | CT | | | | 20.8 | 18.1 |
| | NC | 0.32 | 19.7 | 23 | 20.8 | 18 |
| | GS | | | | 22.1 | 20.5 |

Note: Australia, Canada, China, Germany, Denmark, Finland, the UK, Greece, Mexico, Norway, Russia, Sweden, The US, and the rest of EU region are not listed here because they have a prevalence of undernourishment below 2.5% in 2020 and below 5% from 2030 on.

Source: FAO and authors

Figure 4.8
Levers for change

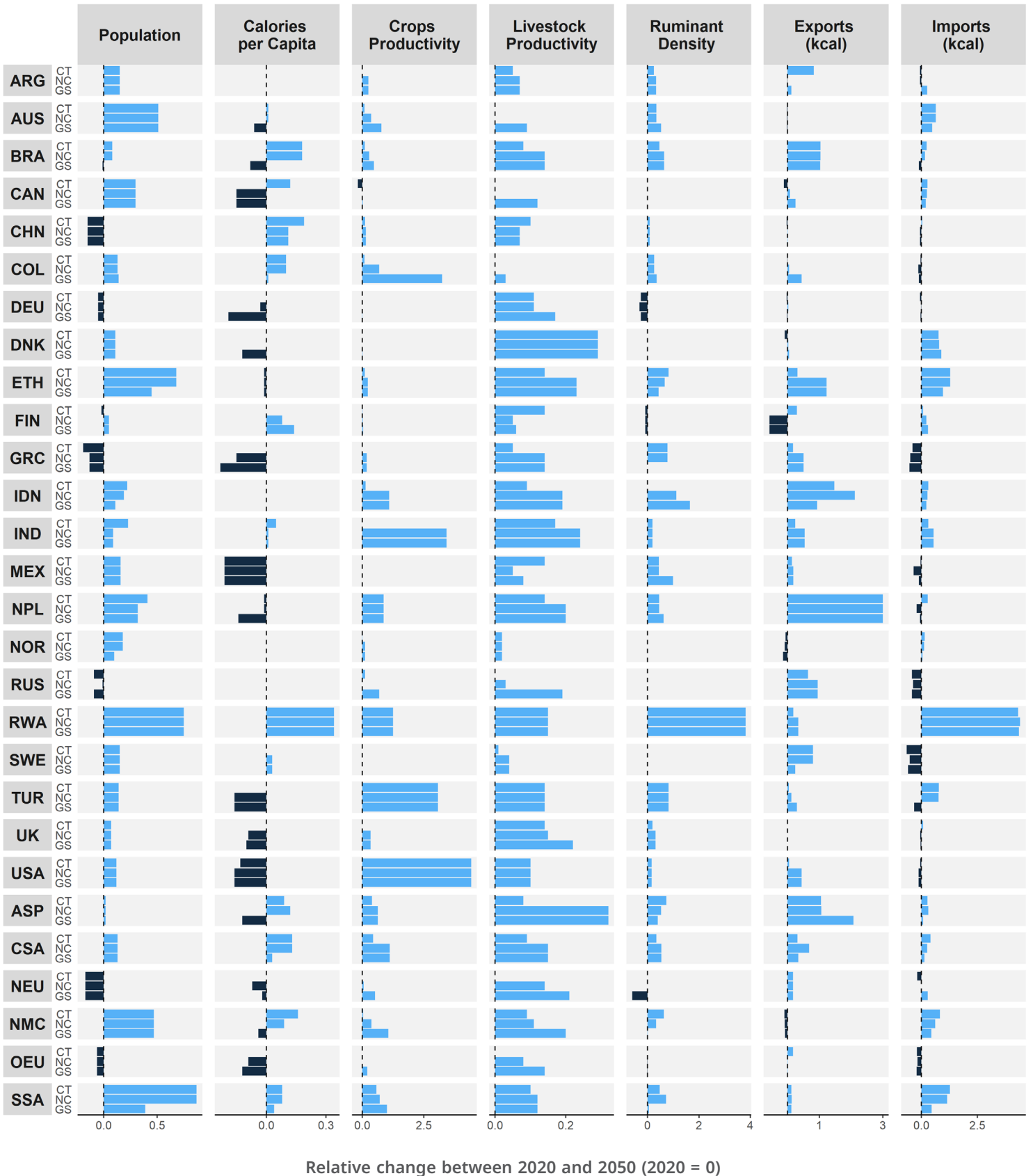
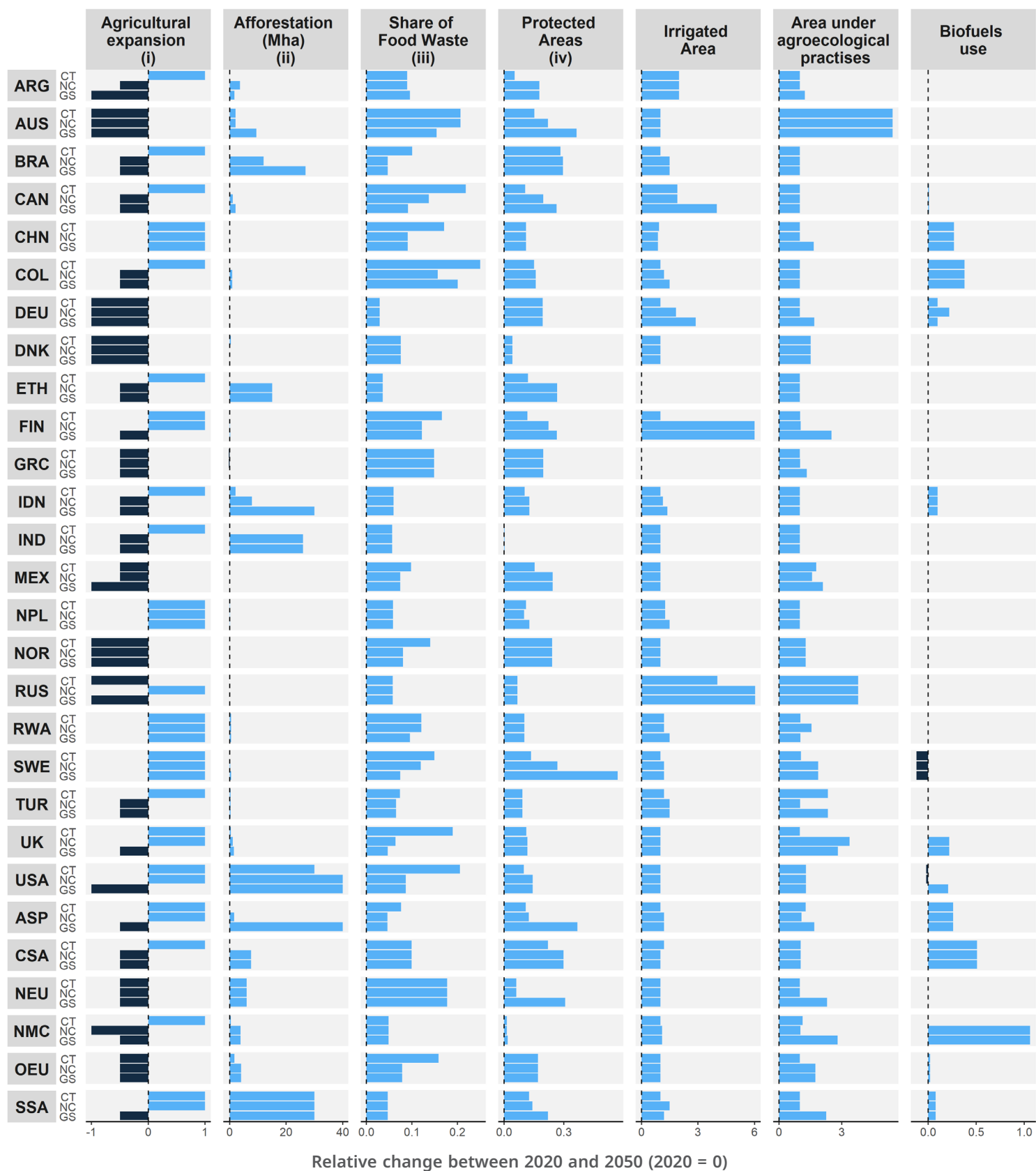


Figure 4.8
(continued)



Notes: Relative changes can be derived from both the country team's scenario assumptions and the combined effect of multiple changes in the calculator. (i) Results are expressed in code, taking the value 1 for the 'Free expansion scenario', -0.5 for 'No deforestation' and -1 for 'No Agricultural expansion'. (ii) Results are expressed in net increase rather than relative change. (iii) Results are expressed % of consumption which is wasted. (iv) Results are expressed in % of total land in 2050. Source: Authors

Results by target

Figure 4.9

Detailed results by target and pathway

| Domain | Target | Current Trends | National Commitments | Global Sustainability |
|-------------------------------------|--|------------------------------|-----------------------------|-----------------------------|
| Food security | Kcal/cap/day at least 10% >MDER from 2030 on in each country | Yes | Yes | No (IDN) |
| | Kcal/cap/day lower than 50% >MDER from 2030 on in each country | No (ARG, BRA, CAN, CHN, TUR) | NO (BRA, RUS, TUR) | No (ARG, RUS) |
| | <5% of prevalence of undernourishment from 2030 on in each country | No (6 countries, 3 regions) | No (6 countries, 3 regions) | No (8 countries, 5 regions) |
| Biodiversity | Protected areas on 30% of total land in 2030 | 21.10% | 22.40% | 24.60% |
| | 50% of cropland under agroecological practices in 2030 | 38.60% | 38.60% | 43.30% |
| | No loss of mature forest from 2030 | - 100 Mha | - 38 Mha | - 0.32 Mha |
| | No loss of mature land where natural processes predominate from 2030 | - 97 Mha | - 53 Mha | - 35 Mha |
| | 15% gain in land where natural processes predominate between 2020 and 2050 | -1.60% | 6.00% | 11.20% |
| Climate change mitigation | < 4 Gt CO ₂ e from agriculture in 2050 | 7.2 Gt | 6.1 Gt | 4.7 Gt |
| | -20 Mt CH ₄ from agriculture in 2030 compared to 2020 | + 10.9 Mt | + 4.2 Mt | - 5.6 Mt |
| | -28 Mt CH ₄ from agriculture in 2050 compared to 2020 | + 27.6 Mt | + 2.2 Mt | - 28.8 Mt |
| | < -1.3 Gt CO ₂ from AFOLU in 2050 | + 0.01 Gt | - 2.3 Gt | - 3.6 Gt |
| | < 40 Gt CO ₂ from AFOLU cumulated between 2020 and 2050 | 57.6 Gt | - 1.7 Gt | - 42.4 Gt |
| Freshwater, Nitrogen and Phosphorus | < 68 Tg of nitrogen use in 2050 | 283 Tg | 247 Tg | 198 Tg |
| | < 16 Tg of phosphorous use in 2050 | 34.1 Tg | 32.1 Tg | 29.3 Tg |
| | < 2,453 km ³ of blue water used for irrigation in 2050 | 1323 km ³ | 1094 km ³ | 912 km ³ |

Notes: MDER = Minimum Dietary Energy Requirement, AFOLU = agriculture, forestry and other land use
 IDN= Indonesia, ARG=Argentina, BRA- Brazil, CAN- Canada, CHN- China, RUS- Russian Federation, TUR- Türkiye.
 Source: Authors

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Annex

Methods Summary and Data Tables

A.1 Interpreting the SDG Index and Dashboards results

The *Sustainable Development Report 2024* provides an assessment of progress towards the SDGs for all UN member states. The SDG Index score is presented on a scale of 0 to 100 and can be interpreted as a percentage towards optimal performance on the SDGs. Therefore, the difference between 100 and a country's SDG Index score is the distance, in percentage points, that must be overcome to reach optimum SDG performance. To minimize missing data bias, we do not calculate an overall SDG Index score and rank for countries missing data on more than 20 percent of the indicators. The same basket of indicators and similar performance thresholds are used for all countries to generate comparable scores and rankings.

Substantial differences in rankings may be due to small differences in aggregate SDG Index scores. This calls for caution when interpreting differences in rankings between countries. Differences of two or three positions between countries should not be interpreted as “significant”, whereas differences of 10 places may be ascribed to meaningful differences in performance. For further details, see the statistical audit by Papadimitriou et al. (2019) conducted on behalf of the EU Joint Research Centre (JRC).

The SDG Dashboards provide a visual representation of countries' performance on the 17 SDGs. The “traffic light” color scheme (green, yellow, orange, and red) illustrates how far a country is from achieving a particular goal. The SDG Dashboards are presented for all countries where data permits, including countries not included in the SDG Index. As in previous years, the SDG Dashboards and country profiles for OECD countries include additional metrics that are not available for non-OECD member states.

The SDG Trend Dashboards indicate whether a country is on track to achieve each individual goal by 2030 based on past performance. It builds on past annual growth rates, since 2015, which are extrapolated to 2030. Indicator trends are aggregated at the goal level to give an indication of how the country is progressing towards that SDG.

This section provides a brief summary of the methods used to compute the SDG Index and Dashboards. A detailed methodology paper is accessible online (Lafortune et al., 2018). The European Commission Joint Research Centre (JRC) conducted an independent statistical audit of the report's methodology and results in 2019, reviewing the conceptual and statistical coherence of the index structure. The detailed statistical audit report and additional data tables are available on our website: www.sdgtransformationcenter.org

Due to time lags in international statistics, this year's edition may not fully capture the severe consequences on the SDGs of the war in Ukraine and of other geopolitical and security crises over the past two years. The data for Ukraine correspond to a large extent to the situation before February 2022, as many data points have not been able to be updated since then. The inclusion of an indicator on exports of major conventional arms should not be interpreted as a value judgment by the authors on the policies implemented in the context of the war in Ukraine, but rather as an effort to evaluate more generally trends towards disarmament recognized by the United Nations as well as by civil society organizations as an important priority for peace, socio-economic stability and sustainable development (UN Office for Disarmament Affairs, 2018; Amnesty International, 2008).

A.2 Changes to the 2024 edition and limitations

The 2024 SDG Index covers 167 countries, one more than last year (Guinea-Bissau). This year, the SDR continues to integrate more indicators that build on geographic information systems (GIS) to increase data availability and timeliness. For example, under SDG 15 (Life on Land), we included a new indicator on

imported deforestation that uses geospatial datasets on yearly deforestation, crop and livestock distribution and main deforestation drivers, as well as carbon stocks, and links those results to MRIO tables in order to attribute deforestation to the final consumer of each commodity.

Table A.1

New indicators and modifications

| SDG | Indicator | Modification | Source |
|-----|--|--|-----------------------------------|
| 4 | Variation in mathematics performance explained by socio-economic status (%) | Modification: now measures variation in mathematics instead of science performance explained by student' socio-economic status to match the latest PISA. | OECD |
| 4 | Underachievers in mathematics (% of 15-year-olds) | Modification: now measures underachievers in mathematics instead of science to match the focus of the latest PISA. | OECD |
| 7 | CO ₂ emissions from fuel combustion per total electricity output (MtCO ₂ /TWh) | Modification: CO ₂ data now sourced from the Global Carbon Project. | Global Carbon Project & IEA |
| 8 | Youth not in employment, education or training (NEET) (% of population aged 15 to 24) | Modification: now measured as a percent of people aged 15–24. | OECD |
| 11 | Annual mean concentration of PM _{2.5} (µg/m ³) | Modification: data no longer limited to urban areas. | Washington University in St Louis |
| 11 | Population with convenient access to public transport in cities (%) | Replaces "Satisfaction with public transport (%)" | UN-Habitat |
| 12 | Production-based air pollution (DALYs per 1,000 population) | Replaces "Production-based SO ₂ emissions" | UNEP |
| 12 | Air pollution associated with imports (DALYs per 1,000 population) | Replaces "SO ₂ emissions associated with imports" | UNEP |
| 13 | GHG emissions embodied in imports (tCO ₂ /capita) | Modification: now measures all GHG emissions associated with imports, instead of just CO ₂ emissions. | Lenzen et al. (2022) |
| 15 | Imported deforestation (m ² /capita) | Replaces "Terrestrial and freshwater biodiversity threats embodied in imports (per million population)" | GSCI |
| 16 | Crime is effectively controlled (worst 0–1 best) | Replaces "Population who feel safe walking alone at night in the city or area where they live" | World Justice Project |
| 17 | Index of countries' support to UN-based multilateralism (worst 0–100 best) | New Indicator | SDSN |

Source: Authors

This edition also incorporates one new spillover indicator on countries' support to UN-based Multilateralism (See Part 3). Table A.1 summarizes these additions and identifies indicators that were replaced or modified due to changes in the methodology and estimates produced by data providers.

As last year, we present an overview of where the world stands on SDG progress, calculated using a population-weighted average for all UN member states. For the first time, BRICS (Brazil, Russian Federation, India, China and South Africa) and BRICS+ country profiles are also presented.

Limitations

Due to changes in the indicators and refinements in the methodology, SDG Index rankings and scores from one edition cannot be compared with the results from previous editions. However, Part 2 provides time series for the SDG Index calculated retroactively using this year's indicators and methods, providing results that are comparable across time. The full time series for the SDG Index are available for download online and on our interactive data visualization at sdgtransformationcenter.org.

Despite our best efforts to identify data for the SDGs, several indicator and data gaps persist at the international level (Table A.2).

To ensure the results are comparable across countries, we do not incorporate estimates received directly from national statistical offices. Data providers may adjust national data to ensure international comparability. As a result, some data points presented in this report may differ from data available from national sources. Moreover, the length of the validation processes by international organizations can lead to significant delays in publishing some data. National statistical offices may therefore have more recent data for some indicators than presented in this report.

A.3 Methodology (overview)

The SDG Index provides a comprehensive assessment of distance to targets based on the most up-to-date data available covering all 193 UN member States. This year's report includes 98 global indicators and 27 additional indicators included specifically for OECD countries' dashboards (due to better data coverage).

The following sections provide an overview of the methodology for indicator selection, normalization, aggregation and for generating indications on trends over time. Additional information including raw data, additional data tables and sensitivity tests, is available online.

A. Data selection

Where possible, we use official SDG indicators endorsed by the UN Statistical Commission. Where there are data gaps or insufficient data available for an official indicator, we include other metrics from official and unofficial providers. We used five criteria in selecting indicators suitable for inclusion in the report:

1. Their global relevance and applicability to a broad range of country settings.
2. Statistical adequacy: The indicators represent valid and reliable measures.
3. Timeliness: The indicators are current and published on a timely schedule.
4. Coverage: Data is available for at least 80 percent of UN member states with a population > 1 million.¹
5. Distance to targets must be measurable (optimal performance can be defined).

Data sources

The data come from a mix of official and non-official data sources. Most of the data (around two-thirds) come from international organizations (World Bank, OECD, WHO, FAO, ILO, UNICEF, other) which have extensive and rigorous data validation processes.

1. There are two exceptions to this rule: (i) New HIV infections and; (ii) Children involved in child labor.

Other data sources (around one-third) come from less traditional statistics including household surveys (Gallup World Poll), civil society organizations and networks (Oxfam, the Tax Justice Network, the World Justice Project, Reporters Without Borders), peer-reviewed journals (e.g., to track international spillovers), and geographic information systems (GIS).

These non-official data sources complement other data sources and help increase data availability and timeliness for key SDG indicators and targets. The full list of indicators and data sources is available in Table A.5 and online. The data for this year’s edition were extracted between March and April 2024.

Table A.2
Major indicator and data gaps for the SDGs

| SDG | Issue | Desired metrics |
|-----|--|--|
| 2 | Agriculture and nutrition | Food loss and food waste Global yield gap statistics |
| 3 | Health | Health care system resilience and preparedness to face global health risks Internationally comparable survey data on unmet care needs |
| 4 | Education | Internationally comparable measures of the quality of primary and secondary education Early childhood development (access and quality) |
| 5 | Women empowerment | Gender pay gap and other empowerment measures Violence against women |
| 6 | Water | Quality of drinking water and surface waters |
| 8 | Decent work | Decent work |
| 10 | Inequality | Wealth inequality Vertical mobility |
| 12 | Sustainable consumption and production | Environmental impact of transboundary physical flows (e.g. air pollution through wind, water pollution through rivers) Recycling and re-use (circular economy) Hazardous chemicals |
| 13 | Climate Action | Robust indicators of climate adaptation |
| 14 | Marine ecosystems | Maximum sustainable yields for fisheries Impact of high-sea and cross-border fishing |
| 15 | Terrestrial ecosystems | Leading indicators for ecosystem health Trade in endangered species |
| 16 | Peace and justice | Violence against children |
| 17 | Means of implementation | Development impact of trade practices Lead international indicator to track Policy Coherence for Sustainable Development |

Source: Authors

B. Missing data and imputations

To minimize biases from missing data, the SDG Index only includes countries that have data for at least 80 percent of the indicators. We make an exception for countries that have been in previous editions of the SDG Index as long as they are not missing more than 25 percent of the data.² The list of countries not included in the SDG Index due to missing data is presented in Table A.3 below. We include all UN member countries in the SDG Dashboards and country profiles, which also indicate where there are gaps in available SDG data for a country. We generally do not impute or model any missing data, except for a few exceptional circumstances. The list of indicators that include imputed data is available online in the Codebook.

C. Method for constructing the SDG Index and Dashboards

The procedure for calculating the SDG Index comprises three steps: (i) establish performance thresholds and censor extreme values from the distribution of each indicator; (ii) rescale the data to ensure comparability across indicators (normalization); (iii) aggregate the indicators within and across SDGs.

Establishing Performance thresholds

To make the data comparable across indicators, each variable was rescaled from 0 to 100, with 0 denoting worst performance and 100 describing the optimum. Rescaling is sensitive to the choice of limits and extreme values (outliers). The latter may become unintended thresholds and introduce spurious variability in the data. Consequently, the choice of upper and lower bounds can affect the relative ranking of countries in the index.

The upper bound for each indicator was determined using the following decision tree:

1. Use absolute quantitative thresholds in SDGs and targets: e.g., zero poverty, universal school completion, universal access to water and sanitation, full gender equality.

2. This applies to Comoros and Somalia.

2. Where no explicit SDG target is available, apply the principle of “Leave-No-One-Behind” to set upper bound to universal access or zero deprivation.
3. Where science-based targets exist that must be achieved by 2030 or later, use these to set the 100 percent upper bound (e.g., zero greenhouse gas emissions from CO₂ as required by no later than 2050 to stay within 1.5°C, 100 percent sustainable management of fisheries).
4. For all other indicators, use the average of the top 5 performers.

These principles interpret the SDGs as “stretch targets” and focus attention on the indicators where a country is lagging behind. The lower bound was defined at the 2.5th percentile of the distribution. Each indicator distribution was censored, so that all values exceeding the upper bound scored 100, and values below the lower bound scored 0.

Normalization

After establishing the upper and lower bounds, variables were transformed linearly to a scale between 0 and 100 using the following rescaling formula for the range [0; 100]:

$$x' = \frac{x - \min(x)}{\max(x) - \min(x)} \times 100$$

where x is the raw data value; max/min denote the upper and lower bounds, respectively; and x' is the normalized value after rescaling.

The rescaling equation ensured that all rescaled variables were expressed as ascending variables (i.e., higher values denoted better performance). In this way, the rescaled data became easy to interpret and compare across all indicators: a country that scores 50 on a variable is half-way towards achieving the optimum value; a country with a score of 75 has covered three quarters of the distance from worst to best.

Weighting and Aggregation

The results of several rounds of expert consultations on earlier drafts of the SDG Index made clear that there was no consensus across different epistemic communities on assigning higher weights to some SDGs over

others. As a normative assumption, we therefore opted for fixed, equal weight to every SDG to reflect policy-makers' commitment to treat all SDGs equally and as an integrated and indivisible set of goals. This implies that to improve their SDG Index score countries need

Table A.3

Countries excluded from the 2024 SDG Index due to insufficient data

| Country | Missing Values | Percentage of Missing Values |
|--------------------------------|----------------|------------------------------|
| Andorra | 45 | 48.4% |
| Antigua and Barbuda | 28 | 28.6% |
| Dominica | 39 | 39.8% |
| Equatorial Guinea | 26 | 26.5% |
| Eritrea | 21 | 21.4% |
| Grenada | 33 | 33.7% |
| Kiribati | 36 | 36.7% |
| Korea, Dem. Rep. | 29 | 29.6% |
| Libya | 25 | 25.5% |
| Liechtenstein | 60 | 64.5% |
| Marshall Islands | 48 | 49.0% |
| Micronesia, Fed. Sts. | 41 | 41.8% |
| Monaco | 60 | 61.2% |
| Nauru | 44 | 44.9% |
| Palau | 48 | 49.0% |
| Samoa | 27 | 27.6% |
| San Marino | 59 | 60.2% |
| Seychelles | 32 | 32.7% |
| Solomon Islands | 29 | 29.6% |
| St. Kitts and Nevis | 38 | 38.8% |
| St. Lucia | 24 | 24.5% |
| St. Vincent and the Grenadines | 30 | 30.6% |
| Timor-Leste | 22 | 22.4% |
| Tonga | 34 | 34.7% |
| Tuvalu | 46 | 46.9% |
| Vanuatu | 27 | 27.6% |

Source: Authors

to place attention on all goals with a particular focus on goals where they are furthest from achieving the SDGs and where incremental progress might therefore be expected to be fastest.

To compute the SDG Index, we first estimate scores for each goal using the arithmetic mean of indicators for that goal. These goal scores are then averaged across all 17 SDGs to obtain the SDG Index score. The results of various sensitivity tests are available online including comparisons of arithmetic mean versus geometric mean and Monte-Carlo simulations at the Index and Goal level. Monte-Carlo simulations call for prudence in interpreting small differences in the Index scores and rankings between countries as those may be sensitive to the weighting scheme.

Dashboards

We introduced additional quantitative thresholds for each indicator to group countries in a “traffic light” table. Thresholds were established based on statistical techniques and through various rounds of consultations with experts conducted since 2016.

Averaging across all indicators for an SDG might hide areas of policy concern if a country performs well on most indicators but faces serious shortfalls on one or two metrics within the same SDG (often

referred to as the issue “substitutability” or “compensation”). This applies particularly to high-income and upper-middle-income countries that have made significant progress on many SDG dimensions but may face serious shortfalls on individual variables, for example on the sustainability of diets and agriculture within SDG 2.

As a result, the SDG Dashboards focus exclusively on the two variables on which a country performs worst. We applied the additional rule that a red rating was assigned only if both the worst-performing indicators score red. Similarly, to score green, both indicators had to be green. The quantitative thresholds used for generating the dashboards are available in Table A5.

SDG Trends

Using historic data, we estimate how fast a country has been progressing towards an SDG and determine whether – if extrapolated into the future – this pace will be sufficient to achieve the SDG by 2030. For each indicator, SDG achievement is defined by the green threshold set for the SDG Dashboards. The difference in percentage points between the green threshold and the normalized country score denotes the gap that must be closed to meet that goal. To estimate trends at the indicator level, we calculated the linear annual growth rates (i.e., annual percentage improvements) needed to achieve the target by 2030 (i.e., 2015–2030)

Figure A.1

The Four-arrow system for denoting SDG trends

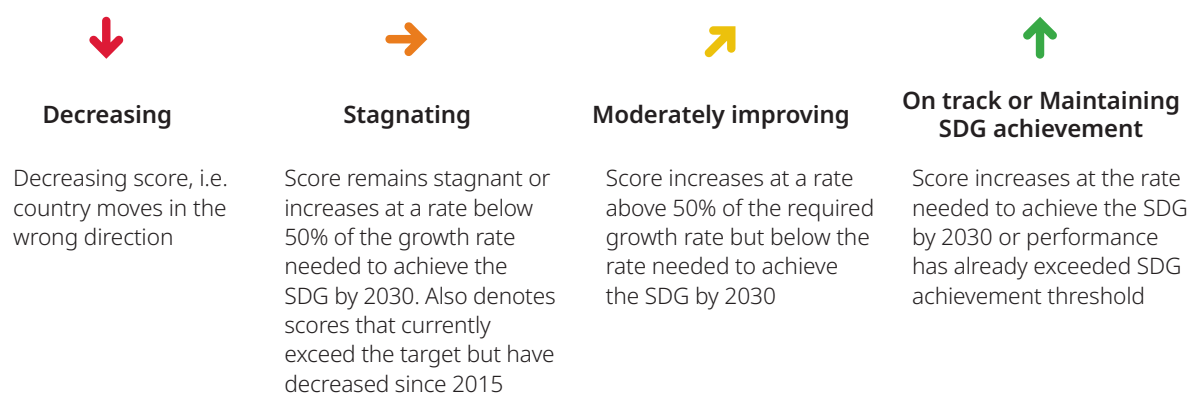
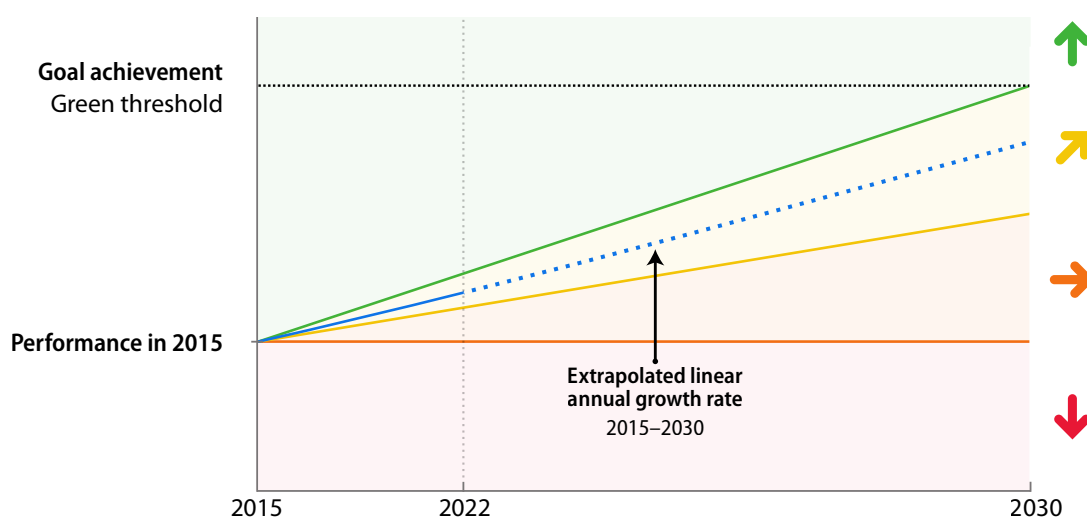


Figure A.2

Graphic representation of the methodology for SDG trends



Source: Authors

which we compared to the average annual growth rate over the most recent period since the adoption of the SDGs in 2015 (e.g. 2015–2023). Progress towards achievement on a particular indicator is described using a 4-arrow system (Figure 4.1). Figure A.2 illustrates the methodology graphically. Because time series data is required for these calculations, indicators with only one or very few data points across time could not be used for these analyses. The list of indicators used to generate the trend indications is available in Table A6.

Because projections are based on the growth rate over the last several years, a country might have observed a decline in performance in the past year (for instance due to the impact of COVID-19) but still be considered as being on track. This methodology emphasizes long-term structural changes over time since the adoption of the SDGs in 2015, and less so annual changes which may be cyclical or temporary. Countries that currently exceed an indicator target but have decreased since 2015, are assigned an orange arrow. This is because if the decreasing trend continues, the country may no longer meet the SDG target in the future.

Status of SDG targets

In addition to the SDG Index, Dashboards and Trends, we present an assessment of the status of SDG targets for all countries and for the world overall. To make this assessment, we only use trend indicators (Table A5) since time series data was needed to calculate rates of progress. Indicators used for OECD countries only were excluded to provide comparable results across countries.

In the case where the past rate of progress is sufficient to meet the target by 2030 – corresponding to the green arrow “On track or maintaining SDG achievement” — the indicator is counted as a target on track. Indicators where past rates of progress are insufficient to meet the SDG target — corresponding to the orange “stagnating” or yellow “moderately improving” arrows — are counted as limited progress. Finally, indicators that are going in the wrong direction — the red arrow “decreasing” — were counted as worsening. Indicators for which a country has already met the target but have decreased in score since 2015 were also considered worsening. For the assessment of the status of SDG

targets for the World (population-weighted average), we only considered as on track those indicators that showed consistent progress both in the long term (since 2015) and in the short term (the most recent year of reference for the indicator).

International Spillover Index

The 2024 International Spillover Index tracks the impacts of a given country's actions on others. The Sustainable Development Report 2024 contains 16 spillover indicators, including two that are used only in the

dashboards for OECD countries. The 14 remaining indicators are used to calculate the International Spillover Index Score. These indicators can be organized into three categories of international spillovers: 1) environmental and social impacts embodied into trade; 2) economy and finance and 3) UN-based multilateralism, peace and security. The International Spillover Index Score is calculated as the arithmetic average of a country's score on all of the indicators, weighted equally. The score ranges from 0 to 100, where a lower score denotes more negative spillover impacts and a higher score denotes fewer negative spillover impacts.

Table A.4
Spillover indicators and categories

| Spillover Categories | SDG | Indicator |
|--|-----|---|
| Environmental and social impacts embodied into trade | 2 | Exports of hazardous pesticides (tonnes per million population) |
| | 6 | Scarce water consumption embodied in imports (m ³ H ₂ Oeq/capita) |
| | 8 | Fatal work-related accidents embodied in imports (per million population) |
| | 8 | Victims of modern slavery embodied in imports (per 100,000 population) |
| | 12 | Air pollution associated with imports (DALYs per 1,000 population) |
| | 12 | Nitrogen emissions associated with imports (kg/capita) |
| | 12 | Exports of plastic waste (kg/capita) |
| | 13 | GHG emissions embodied in imports (tCO ₂ /capita) |
| | 14 | Marine biodiversity threats embodied in imports (per million population) |
| Economy and finance | 15 | Imported deforestation (m ² /capita) |
| | 17 | For high-income and all OECD DAC countries: International concessional public finance, including official development assistance (% of GNI) |
| | 17 | Corporate Tax Haven Score (best 0–100 worst) |
| | 17 | Financial Secrecy Score (best 0–100 worst)* |
| UN-based multilateralism, Peace & Security | 17 | Shifted profits of multinationals (US\$ billion)* |
| | 16 | Exports of major conventional weapons (TIV constant million USD per 100,000 population) |
| | 17 | Index of countries' support to UN-based multilateralism (worst 0–100 best) |

*Denotes OECD only indicator
Source: Authors

Table A.5Indicators included in the *Sustainable Development Report 2024***Legend for Note:**

[a] denotes OECD-only indicators

[b] denotes indicators not used in OECD dashboard but that are used in the calculation of OECD countries' index scores

| SDG | Notes | Trend | Indicator | Optimum | Green threshold | Red threshold | Lower bound | Reference Year | Source |
|-----|-------|-------|---|---------|-----------------|---------------|-------------|----------------|---------------------------|
| 1 | | ✓ | Poverty headcount ratio at \$2.15/day (2017 PPP, %) | 0 | 2 | 13 | 72.6 | 2024 | World Data Lab |
| 1 | | ✓ | Poverty headcount ratio at \$3.65/day (2017 PPP, %) | 0 | 2 | 13 | 51.5 | 2024 | World Data Lab |
| 1 | [a] | ✓ | Poverty rate after taxes and transfers (%) | 6.1 | 10 | 15 | 17.7 | 2021 | OECD |
| 2 | | ✓ | Prevalence of undernourishment (%) | 2.5 | 7.5 | 15 | 42.3 | 2021 | FAO |
| 2 | | ✓ | Prevalence of stunting in children under 5 years of age (%) | 0 | 7.5 | 15 | 40 | 2021 | UNICEF et al. |
| 2 | | ✓ | Prevalence of wasting in children under 5 years of age (%) | 0 | 5 | 10 | 16.3 | 2021 | UNICEF et al. |
| 2 | | ✓ | Prevalence of obesity, BMI ≥ 30 (% of adult population) | 2.8 | 10 | 25 | 35.1 | 2022 | WHO |
| 2 | | ✓ | Human Trophic Level (best 2–3 worst) | 2.04 | 2.2 | 2.4 | 2.45 | 2021 | Bonhommeau et al. (2013) |
| 2 | | ✓ | Cereal yield (tonnes per hectare of harvested land) | 7 | 2.5 | 1.5 | 0.2 | 2022 | FAO |
| 2 | | ✓ | Sustainable Nitrogen Management Index (best 0–1.41 worst) | 0 | 0.3 | 0.7 | 1.2 | 2018 | Zhang and Davidson (2019) |
| 2 | [a] | | Yield gap closure (% of potential yield) | 77 | 75 | 50 | 28 | 2022 | Global Yield Gap Atlas |
| 2 | | | Exports of hazardous pesticides (tonnes per million population) | 0 | 1 | 50 | 250 | 2021 | FAO |
| 3 | | ✓ | Maternal mortality ratio (per 100,000 live births) | 3.4 | 70 | 140 | 814 | 2020 | WHO et al. |
| 3 | | ✓ | Neonatal mortality rate (per 1,000 live births) | 1.1 | 12 | 18 | 39.7 | 2022 | UNICEF et al. |
| 3 | | ✓ | Mortality rate, under-5 (per 1,000 live births) | 2.6 | 25 | 50 | 130.1 | 2022 | UNICEF et al. |
| 3 | | ✓ | Incidence of tuberculosis (per 100,000 population) | 0 | 10 | 75 | 561 | 2022 | WHO |
| 3 | | ✓ | New HIV infections (per 1,000 uninfected population, all ages) | 0 | 0.2 | 1 | 5.5 | 2022 | UNAIDS |
| 3 | | ✓ | Age-standardized death rate due to cardiovascular disease, cancer, diabetes, or chronic respiratory disease in adults aged 30 to 70 years (%) | 9.3 | 15 | 25 | 31 | 2019 | WHO |
| 3 | | | Age-standardized death rate attributable to household air pollution and ambient air pollution (per 100,000 population) | 0 | 18 | 150 | 368.8 | 2019 | WHO |
| 3 | | ✓ | Traffic deaths (per 100,000 population) | 3.2 | 8.4 | 16.8 | 33.7 | 2021 | WHO |
| 3 | | ✓ | Life expectancy at birth (years) | 83 | 80 | 70 | 54 | 2021 | UNDESA |
| 3 | | ✓ | Adolescent fertility rate (births per 1,000 females aged 15 to 19) | 2.5 | 25 | 50 | 139.6 | 2022 | WHO |
| 3 | | ✓ | Births attended by skilled health personnel (%) | 100 | 98 | 90 | 23.1 | 2022 | UNICEF |

Table A.5
 (continued)

| SDG | Notes | Trend | Indicator | Optimum | Green threshold | Red threshold | Lower bound | Reference Year | Source |
|-----|-------|-------|---|---------|-----------------|---------------|-------------|----------------|---------------------------|
| 3 | | ✓ | Surviving infants who received 2 WHO-recommended vaccines (%) | 100 | 90 | 80 | 41 | 2022 | WHO and UNICEF |
| 3 | | ✓ | Universal health coverage (UHC) index of service coverage (worst 0–100 best) | 100 | 80 | 60 | 38.2 | 2021 | WHO |
| 3 | | ✓ | Subjective well-being (average ladder score, worst 0–10 best) | 7.6 | 6 | 5 | 3.3 | 2023 | Gallup |
| 3 | [a] | ✓ | Gap in life expectancy at birth among regions (years) | 0 | 3 | 7 | 11 | 2021 | OECD |
| 3 | [a] | ✓ | Gap in self-reported health status by income (percentage points) | 0 | 20 | 40 | 45 | 2022 | OECD |
| 3 | [a] | ✓ | Daily smokers (% of population aged 15 and over) | 10.1 | 18 | 32 | 35 | 2022 | OECD |
| 4 | | ✓ | Participation rate in pre-primary organized learning (% of children aged 4 to 6) | 100 | 90 | 70 | 35 | 2022 | UNESCO |
| 4 | | ✓ | Net primary enrollment rate (%) | 100 | 97 | 80 | 53.8 | 2022 | UNESCO |
| 4 | | ✓ | Lower secondary completion rate (%) | 100 | 90 | 75 | 18 | 2022 | UNESCO |
| 4 | | ✓ | Literacy rate (% of population aged 15 to 24) | 100 | 95 | 85 | 45.2 | 2022 | UNESCO |
| 4 | | ✓ | Tertiary educational attainment (% of population aged 25 to 34) | 52.2 | 40 | 10 | 0 | 2022 | OECD |
| 4 | [a] | ✓ | PISA score (worst 0–600 best) | 525.6 | 493 | 400 | 350 | 2022 | OECD |
| 4 | [a] | ✓ | Variation in mathematics performance explained by socio-economic status (%) | 8.3 | 10.5 | 20 | 21.4 | 2022 | OECD |
| 4 | [a] | ✓ | Underachievers in mathematics (% of 15-year-olds) | 10 | 15 | 30 | 48 | 2022 | OECD |
| 5 | | ✓ | Demand for family planning satisfied by modern methods (% of females aged 15 to 49) | 100 | 80 | 60 | 30 | 2024 | UNDESA |
| 5 | | ✓ | Ratio of female-to-male mean years of education received (%) | 100 | 98 | 75 | 41.8 | 2022 | UNDP |
| 5 | | ✓ | Ratio of female-to-male labor force participation rate (%) | 100 | 70 | 50 | 21.5 | 2023 | ILO |
| 5 | | ✓ | Seats held by women in national parliament (%) | 50 | 40 | 20 | 1.2 | 2024 | IPU |
| 5 | [a] | ✓ | Gender wage gap (% of male median wage) | 0 | 8 | 20 | 36.7 | 2022 | OECD |
| 6 | | ✓ | Population using at least basic drinking water services (%) | 100 | 98 | 80 | 40 | 2022 | JMP |
| 6 | | ✓ | Population using at least basic sanitation services (%) | 100 | 95 | 75 | 9.7 | 2022 | JMP |
| 6 | | ✓ | Freshwater withdrawal (% of available freshwater resources) | 12.5 | 25 | 75 | 100 | 2021 | FAO |
| 6 | | | Anthropogenic wastewater that receives treatment (%) | 100 | 50 | 25 | 15 | 2020 | EPI |
| 6 | | ✓ | Scarce water consumption embodied in imports (m ³ H ₂ Oeq/capita) | 30 | 800 | 3000 | 8000 | 2024 | UNEP |
| 6 | [a] | ✓ | Population using safely managed water services (%) | 100 | 95 | 80 | 10.5 | 2022 | JMP |
| 6 | [a] | ✓ | Population using safely managed sanitation services (%) | 100 | 90 | 65 | 14.1 | 2022 | JMP |
| 7 | | ✓ | Population with access to electricity (%) | 100 | 98 | 80 | 9.1 | 2021 | IEA, IRENA, UNSD, WB, WHO |

Table A.5
(continued)

| SDG | Notes | Trend | Indicator | Optimum | Green threshold | Red threshold | Lower bound | Reference Year | Source |
|-----|-------|-------|---|---------|-----------------|---------------|-------------|----------------|---|
| 7 | | ✓ | Population with access to clean fuels and technology for cooking (%) | 100 | 85 | 50 | 2 | 2021 | WHO |
| 7 | | ✓ | CO ₂ emissions from fuel combustion per total electricity output (MtCO ₂ /TWh) | 0 | 1 | 1.5 | 5.9 | 2022 | Global Carbon Project & IEA |
| 7 | | ✓ | Renewable energy share in total final energy consumption (%) | 55 | 32 | 10 | 3 | 2021 | IEA, IRENA, UNSD, WB, WHO |
| 8 | | | Adjusted GDP growth (%) | 5 | 0 | -3 | -14.7 | 2022 | World Bank |
| 8 | | | Victims of modern slavery (per 1,000 population) | 0 | 4 | 10 | 22 | 2022 | Walk Free Foundation (2018) |
| 8 | | ✓ | Adults with an account at a bank or other financial institution or with a mobile-money-service provider (% of population aged 15 or over) | 100 | 80 | 50 | 8 | 2021 | Global Findex Database |
| 8 | [b] | ✓ | Unemployment rate (% of total labor force, ages 15+) | 0.5 | 5 | 10 | 25.9 | 2024 | ILO |
| 8 | | ✓ | Fundamental labor rights are effectively guaranteed (worst 0–1 best) | 0.85 | 0.7 | 0.5 | 0.3 | 2022 | World Justice Project |
| 8 | | ✓ | Fatal work-related accidents embodied in imports (per million population) | 0 | 1 | 4 | 10 | 2018 | Alsamawi et al. (2017) |
| 8 | | | Victims of modern slavery embodied in imports (per 100,000 population) | 0 | 20 | 250 | 300 | 2018 | Malik et al (2022) |
| 8 | [a] | ✓ | Employment-to-population ratio (%) | 77.8 | 60 | 50 | 50 | 2023 | OECD |
| 8 | [a] | ✓ | Youth not in employment, education or training (NEET) (% of population aged 15 to 24) | 8.1 | 10 | 15 | 28.2 | 2021 | OECD |
| 9 | | | Rural population with access to all-season roads (%) | 99.5 | 90 | 60 | 35 | 2024 | SDSN (2023), based on Workman, R. & McPherson, K., TRL (2019) |
| 9 | | ✓ | Population using the internet (%) | 100 | 80 | 50 | 2.2 | 2022 | ITU |
| 9 | | ✓ | Mobile broadband subscriptions (per 100 population) | 100 | 75 | 40 | 1.4 | 2022 | ITU |
| 9 | | ✓ | Logistics Performance Index: Infrastructure Score (worst 1–5 best) | 3.8 | 3 | 2 | 1.6 | 2023 | World Bank |
| 9 | | ✓ | The Times Higher Education Universities Ranking: Average score of top 3 universities (worst 0–100 best) | 50 | 30 | 0 | 0 | 2024 | Times Higher Education |
| 9 | | ✓ | Articles published in academic journals (per 1,000 population) | 1.2 | 0.7 | 0.05 | 0 | 2022 | Scimago Journal Rank |
| 9 | | ✓ | Expenditure on research and development (% of GDP) | 3.7 | 1.5 | 1 | 0 | 2022 | UNESCO |
| 9 | [a] | ✓ | Researchers (per 1,000 employed population) | 15.6 | 8 | 7 | 0.8 | 2022 | OECD |
| 9 | | ✓ | Triadic patent families filed (per million population) | 115.7 | 20 | 10 | 0.1 | 2020 | OECD |
| 9 | [a] | ✓ | Gap in internet access by income (percentage points) | 0 | 7 | 45 | 63.6 | 2020 | OECD |
| 9 | [a] | ✓ | Female share of graduates from STEM fields at the tertiary level (%) | 50 | 30 | 20 | 15 | 2018 | World Bank |
| 10 | | ✓ | Gini coefficient | 27.5 | 30 | 40 | 63 | 2021 | World Bank |
| 10 | | ✓ | Palma ratio | 0.9 | 1 | 1.3 | 2.5 | 2022 | OECD & UNDP |

Table A.5
(continued)

| SDG | Notes | Trend | Indicator | Optimum | Green threshold | Red threshold | Lower bound | Reference Year | Source |
|-----|-------|-------|--|---------|-----------------|---------------|-------------|----------------|--|
| 10 | [a] | ✓ | Elderly poverty rate (% of population aged 66 or over) | 3.2 | 5 | 25 | 45.7 | 2021 | OECD |
| 11 | | ✓ | Proportion of urban population living in slums (%) | 0 | 5 | 25 | 90 | 2020 | UN Habitat |
| 11 | | ✓ | Annual mean concentration of PM2.5 (µg/m ³) | 6.3 | 10 | 25 | 87 | 2022 | Washington University in St Louis |
| 11 | | ✓ | Access to improved water source, piped (% of urban population) | 100 | 98 | 75 | 6.1 | 2022 | WHO and UNICEF |
| 11 | [a] | ✓ | Population with rent overburden (%) | 4.6 | 7 | 17 | 25.6 | 2020 | OECD |
| 11 | [a] | | Urban population with access to points of interest within a 15min walk (%) | 98 | 90 | 50 | 15 | 2024 | SDSN (2023), based on Nicoletti, L., Sirenko, M., & Verma, T. (2023) |
| 11 | | | Population with convenient access to public transport in cities (%) | 100 | 80 | 50 | 9 | 2020 | UN-Habitat |
| 12 | [b] | | Municipal solid waste (kg/capita/day) | 0.1 | 1 | 2 | 3.7 | 2019 | World Bank |
| 12 | | | Electronic waste (kg/capita) | 0.2 | 5 | 10 | 23.5 | 2019 | UNU-IAS |
| 12 | | ✓ | Production-based air pollution (DALYs per 1,000 population) | 0 | 2 | 10 | 24 | 2024 | UNEP |
| 12 | | ✓ | Air pollution associated with imports (DALYs per 1,000 population) | 0 | 2 | 12 | 35 | 2024 | UNEP |
| 12 | | ✓ | Production-based nitrogen emissions (kg/capita) | 2 | 20 | 50 | 100 | 2024 | UNEP |
| 12 | | ✓ | Nitrogen emissions associated with imports (kg/capita) | 0 | 10 | 30 | 90 | 2024 | UNEP |
| 12 | | ✓ | Exports of plastic waste (kg/capita) | 0 | 1 | 5 | 12 | 2023 | UN Comtrade |
| 12 | [a] | ✓ | Non-recycled municipal solid waste (kg/capita/day) | 0.6 | 0.8 | 1 | 1.5 | 2021 | OECD |
| 13 | | ✓ | CO ₂ emissions from fossil fuel combustion and cement production (tCO ₂ /capita) | 0 | 2 | 4 | 20 | 2022 | Global Carbon Project |
| 13 | | ✓ | GHG emissions embodied in imports (tCO ₂ /capita) | 0 | 1 | 4 | 16 | 2021 | Lenzen et al. (2022) |
| 13 | | | CO ₂ emissions embodied in fossil fuel exports (kg/capita) | 0 | 100 | 8000 | 44000 | 2023 | UN Comtrade |
| 13 | [a] | ✓ | Carbon Pricing Score at EUR60/tCO ₂ (%), worst 0–100 best) | 100 | 70 | 30 | 0 | 2021 | OECD |
| 14 | | ✓ | Mean area that is protected in marine sites important to biodiversity (%) | 100 | 85 | 65 | 0 | 2023 | Birdlife International et al. |
| 14 | | ✓ | Ocean Health Index: Clean Waters score (worst 0–100 best) | 100 | 80 | 70 | 28.6 | 2023 | Ocean Health Index |
| 14 | | ✓ | Fish caught from overexploited or collapsed stocks (% of total catch) | 0 | 25 | 50 | 90.7 | 2018 | Sea around Us |
| 14 | | ✓ | Fish caught by trawling or dredging (%) | 1 | 7 | 60 | 90 | 2019 | Sea Around Us |
| 14 | | ✓ | Fish caught that are then discarded (%) | 0 | 5 | 15 | 20 | 2019 | Sea around Us |
| 14 | | | Marine biodiversity threats embodied in imports (per million population) | 0 | 0.2 | 1 | 2 | 2018 | Lenzen et al. (2012) |
| 15 | | ✓ | Mean area that is protected in terrestrial sites important to biodiversity (%) | 100 | 85 | 65 | 0 | 2023 | Birdlife International et al. |

Table A.5
(continued)

| SDG | Notes | Trend | Indicator | Optimum | Green threshold | Red threshold | Lower bound | Reference Year | Source |
|-----|-------|-------|---|---------|-----------------|---------------|-------------|----------------|------------------------------------|
| 15 | | ✓ | Mean area that is protected in freshwater sites important to biodiversity (%) | 100 | 85 | 65 | 0 | 2023 | Birdlife International et al. |
| 15 | | ✓ | Red List Index of species survival (worst 0–1 best) | 1 | 0.9 | 0.8 | 0.6 | 2024 | IUCN and Birdlife International |
| 15 | | ✓ | Permanent deforestation (% of forest area, 3-year average) | 0 | 0.05 | 0.5 | 1.5 | 2022 | Curtis et al. (2018) |
| 15 | | ✓ | Imported deforestation (m ² /capita) | 0 | 10 | 30 | 50 | 2022 | GSCI |
| 16 | | ✓ | Homicides (per 100,000 population) | 0.3 | 1.5 | 4 | 38 | 2022 | UNODC |
| 16 | | ✓ | Crime is effectively controlled (worst 0–1 best) | 0.95 | 0.8 | 0.6 | 0.45 | 2022 | World Justice Project |
| 16 | | ✓ | Unsentenced detainees (% of prison population) | 7 | 30 | 50 | 75 | 2022 | UNODC |
| 16 | | | Birth registrations with civil authority (% of children under age 5) | 100 | 98 | 75 | 11 | 2023 | UNICEF |
| 16 | | ✓ | Corruption Perceptions Index (worst 0–100 best) | 88.6 | 60 | 40 | 13 | 2023 | Transparency International |
| 16 | | | Children involved in child labor (%) | 0 | 2 | 10 | 39.3 | 2020 | UNICEF |
| 16 | | | Exports of major conventional weapons (TIV constant million USD per 100,000 population)* | 0 | 0.04 | 2 | 3.4 | 2023 | Stockholm Peace Research Institute |
| 16 | | ✓ | Press Freedom Index (worst 0–100 best) | 88 | 70 | 50 | 40 | 2024 | Reporters sans frontières |
| 16 | | ✓ | Access to and affordability of justice (worst 0–1 best) | 0.75 | 0.65 | 0.5 | 0.1 | 2022 | World Justice Project |
| 16 | | ✓ | Timeliness of administrative proceedings (worst 0–1 best) | 0.85 | 0.7 | 0.4 | 0.15 | 2022 | World Justice Project |
| 16 | | ✓ | Expropriations are lawful and adequately compensated (worst 0–1 best) | 1 | 1 | 1 | 0 | 2022 | World Justice Project |
| 16 | [a] | ✓ | Persons held in prison (per 100,000 population) | 25 | 100 | 250 | 475 | 2021 | UNODC |
| 17 | | ✓ | Government spending on health and education (% of GDP) | 15 | 10 | 5 | 0 | 2022 | UNESCO |
| 17 | | ✓ | For high-income and all OECD DAC countries: International concessional public finance, including official development assistance (% of GNI) | 1 | 1 | 0 | 0 | 2023 | OECD |
| 17 | | ✓ | Other countries: Government revenue excluding grants (% of GDP) | 40 | 30 | 16 | 10 | 2022 | IMF |
| 17 | | | Corporate Tax Haven Score (best 0–100 worst) | 40 | 60 | 70 | 100 | 2021 | Tax Justice Network |
| 17 | [a] | ✓ | Financial Secrecy Score (best 0–100 worst) | 43 | 45 | 55 | 77 | 2022 | Tax Justice Network |
| 17 | [a] | ✓ | Shifted profits of multinationals (US\$ billion) | 0 | 0 | -30 | -70 | 2019 | Zucman et al. (2019) |
| 17 | | ✓ | Statistical Performance Index (worst 0–100 best) | 100 | 80 | 50 | 25 | 2022 | World Bank |
| 17 | | | Index of countries' support to UN-based multilateralism (worst 0–100 best) | 90 | 75 | 50 | 30 | 2023 | SDSN |

*Note: The inclusion of an indicator on export of major conventional weapons should not be interpreted as a value judgment by the authors on the policies implemented in the context of the war in Ukraine, but rather as an effort to evaluate more generally trends towards disarmament recognized by the UN and civil society organizations as an important priority for peace, socio-economic stability and sustainable development (UN Office for Disarmament Affairs, 2018; Amnesty International, 2008).

Source: Authors

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