

In Collaboration with
Grantham Research Institute
on Climate Change, LSE



Shaping an Equitable, Inclusive and Sustainable Recovery: Acting Now for a Better Future

BRIEFING PAPER
SEPTEMBER 2021



Contents

Introduction	3
1 Looking Back – An Unsustainable Path	4
2 Looking Forward – Building a Better Future	7
2.1 Framework for a new sustainable, inclusive and resilient growth path	8
2.2 Common horizons	9
2.3 Completing the rescue, enabling recovery	12
2.4 Building a better society — Investing in people, promoting inclusion and building social capital	15
2.5 Building a better economy — combining growth, climate and biodiversity	20
3 Conclusion—a Shared Responsibility, Acting Now	29
Contributors	33
Endnotes	34

Disclaimer

This document is published by the World Economic Forum as a contribution to a project, insight area or interaction. The findings, interpretations and conclusions expressed herein are a result of a collaborative process facilitated and endorsed by the World Economic Forum but whose results do not necessarily represent the views of the World Economic Forum, nor the entirety of its Members, Partners or other stakeholders.

© 2021 World Economic Forum. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, including photocopying and recording, or by any information storage and retrieval system.

Introduction



Klaus Schwab
Executive Chairman of the
World Economic Forum



Saadia Zahidi
Managing Director

The world is at an inflection point that will shape the future of our societies and the planet for the next century and beyond. The COVID-19 pandemic has impacted our socio-economic systems at a scale unprecedented since World War II. Across countries, much of the progress achieved in the past decades in eradicating poverty and hunger has been erased in just a few months, and recovery from the pandemic is set to be unequal across countries primarily because of asymmetrical access to vaccines. Inequalities within countries – already on the rise – have been dramatically exacerbated, as vulnerable workers were pushed out of labour markets while asset owners saw the value of their wealth rebound quickly and increase.

While we struggle to recover from the impact of the pandemic, we are also seeing, year after year, the increasing impact of human activities on the planet, in terms of climate change, degradation of nature and biodiversity loss. The significant investments driven by the public sector to sustain the recovery and the disruption to traditional socio-technical systems are an opportunity to accelerate the transformation of our economy towards more sustainable and inclusive paradigms.

Within this context, this paper, by Professor Lord Nicholas Stern and Hans Peter Lankes, provides a framework and a set of concrete proposals to guide multistakeholder action and inform the [World Economic Forum's Sustainable Development Impact Summit 2021](#), held in Geneva, 20–23 September.

To “build back better” and foster broader economies and societies we need a common vision and common targets for governments and businesses, an immediate broad-based recovery that leaves no one behind and an urgent shift in our economic and social models to ensure greater sustainability and inclusivity.

The World Economic Forum's Sustainable Development Impact Summit provides a platform for such alignment. Civil society organizations, business, government, innovators, social entrepreneurs and the younger generation will come together to form the partnerships and alliances needed to transform — from vision to reality — a more equitable, inclusive and sustainable future. We call on all actors to join this movement. The time to act is now.

1

Looking Back – An Unsustainable Path

The need to change course



Pandemics and wars place deep stress on societies and economies. They can transform what is possible both economically and politically — not only through the losses, destruction, dislocation, and the long shadows they cast into the future, but also through the desire to build something that can make the hardships more acceptable or understandable, to reflect on what brought about the traumas, and to make use of the creativity or lessons that emerge from the crises themselves.

As the COVID-19 crisis continues, there is a widespread and profound realization that we must “build back better and broader”, and an understanding of the great danger, difficulties and fragilities of the economies and societies we have created. And there is a realization that the crisis arrived on the back of forces and trends in our societies and economies that were becoming unsustainable — in terms of the environment, distribution and inclusion, and resilience.

Now is the time for decisive change, for shared understanding and shared action. The challenge is to rebuild and recover from the pandemic in a way that creates sustained growth and transforms our economies, redressing the social and ecological imbalances of our current global economic model. This paper frames the debate and outlines a

programme to help inform the World Economic Forum’s Sustainable Development Impact Summit 2021. It aims for a multistakeholder audience and has a particular focus on the private sector and the state coming together. Yet, other actors will need to join in.

First, we look back at key achievements of our economic model, as well as its unsustainability. Then, we introduce and describe a framework for a more sustainable, inclusive and resilient growth path for society. The framework distinguishes short-term recovery needs, the social agenda and the priorities for economy and the environment. Finally, the paper ends with a discussion of how different actors should engage and collaborate in this common endeavour.

The world has witnessed historically unparalleled growth and prosperity since World War II. Poverty has declined more rapidly than at any time in recorded human history. Life expectancy today is longer than ever before. Progress has relied on rapid productivity growth, driven particularly by technology, human capital and, more fundamentally, by enlightened global collaboration and institutional convergence on an embrace of the market economy and openness to trade, investment and ideas.



“ Commitments give hope, but action is already falling far behind intentions. We are not (yet) sufficiently decisive and united.

But many features of this global economic expansion have been deeply damaging. Financialization and the short-termism of markets have been to the detriment of sustainability in the economy, environment and society. We are witnessing climate change, high levels of local air pollution, the depletion of nature and loss of biodiversity and zoonotic pandemics: “Human-induced climate change is already affecting many weather and climate extremes in every region across the globe. Evidence of observed changes in extremes such as heatwaves, heavy precipitation, droughts, and tropical cyclones, and, in particular, their attribution to human influence, has strengthened since AR5 [2013].”¹

While economies have indeed grown, in many countries so have extreme inequalities of income and wealth, resulting in an erosion of societal cohesion. The poorest people are most vulnerable to the impacts of climate change, local air pollution and biodiversity loss. Trust in politics and institutions has weakened, reflecting a loss of shared values. In fact, the population share dissatisfied with the idea of democracy rose by one-fifth since 2005, to 58% in 2020—the “Global Democratic Recession”.² These problems are experienced not only by many advanced economies, but also by emerging economies as well as the global community as a whole. While recent decades have seen a slowdown in the drivers of growth (including productivity and investment) the economic, environmental and social downsides of this slowdown have been accelerating.

Well before the COVID pandemic there was an understanding of the need for change. The world adopted the [UN Sustainable Development Goals \(SDGs\)](#) and the [Paris Climate Agreement](#) in 2015. These targets reflect common, global ambitions for countries across the income spectrum. The 50th World Economic Forum in 2020 issued a watershed *Manifesto on the Universal Purpose of a Company in the Fourth Industrial Revolution*: “The purpose of a company is to engage all its stakeholders in shared and sustained value creation [... The company] fulfils human and societal aspirations as part of the broader social system.

Performance must be measured not only on the return to shareholders, but also on how it achieves its environmental, social and good governance objectives.”³

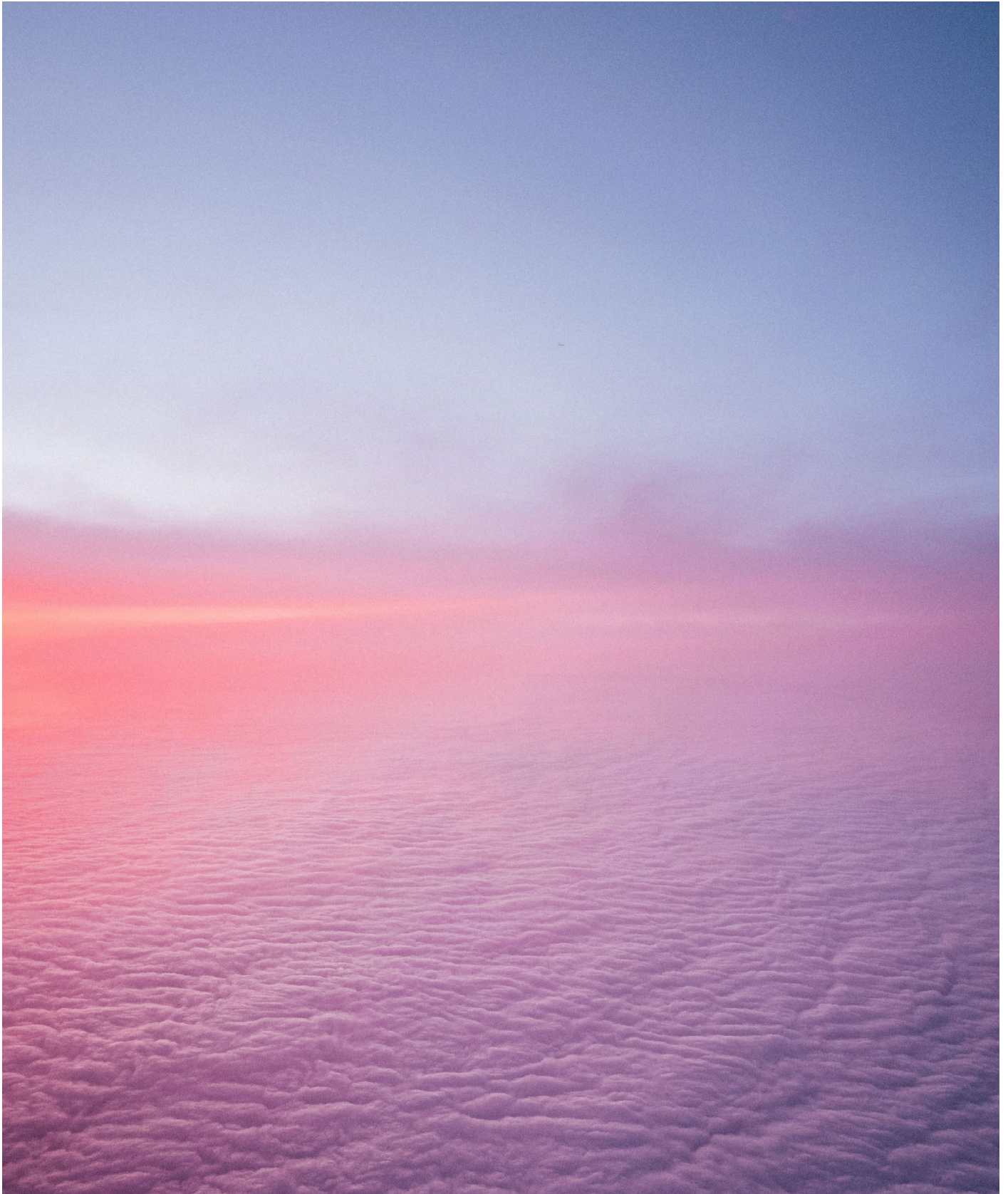
Going into the Sustainable Development Impact Summit 2021, momentum around goals and targets is growing, especially when it comes to climate change. Just 2-3 years after the concept first gained traction, one in five of the world’s largest publicly listed companies, as well as countries representing 61% of emissions and 56% of the global population, have adopted net zero targets for greenhouse gas emissions (GHGs).⁴ [The Glasgow Financial Alliance for Net Zero](#) (GFANZ) in April 2021 signed up 160 financial firms that are collectively responsible for \$70 trillion of assets. C40 Cities, a network of world megacities committed to addressing climate change, is similarly aligning action around the Paris goals.⁵

These commitments give hope, but action is already falling far behind intentions. We are not (yet) sufficiently fast, decisive, comprehensive and united to adequately redress societal distortions and avoid a climate calamity. Worse, the pandemic has shaken the foundations of our long-standing economic model and has exacerbated some of its pathologies. Both poverty and billionaire incomes have grown, racial and gender inequalities in labour markets have grown, and educational losses will leave lasting scars among those who have not been able to become more digitally connected.⁶ We’ve seen globalization of the virus, but nationalization of the vaccine. The result will be disparate recoveries and deepening cross-country inequalities for years to come. While fiscal action has often offered decent safety nets, climate change and environmental issues have as yet been seriously neglected in pandemic rescue and recovery initiatives.⁷ The OECD estimates that, among recovery package across 43 countries, only around 17% of spending can be classified as green measures.⁸ And environmentally positive spending is evenly matched by spending on measures categorized as having mixed or negative environmental impacts. This is hardly a promising basis for “building back better”.

2

Looking Forward – Building a Better Future

The next decade will be decisive



That the next decade will be decisive was already clear before COVID-19. But the pandemic has brought home the immediacy of our vulnerability to global environmental risks, and its impact has brutally highlighted the inequities of our system, both domestically and globally. At the same time, the pandemic has also brought hope, as

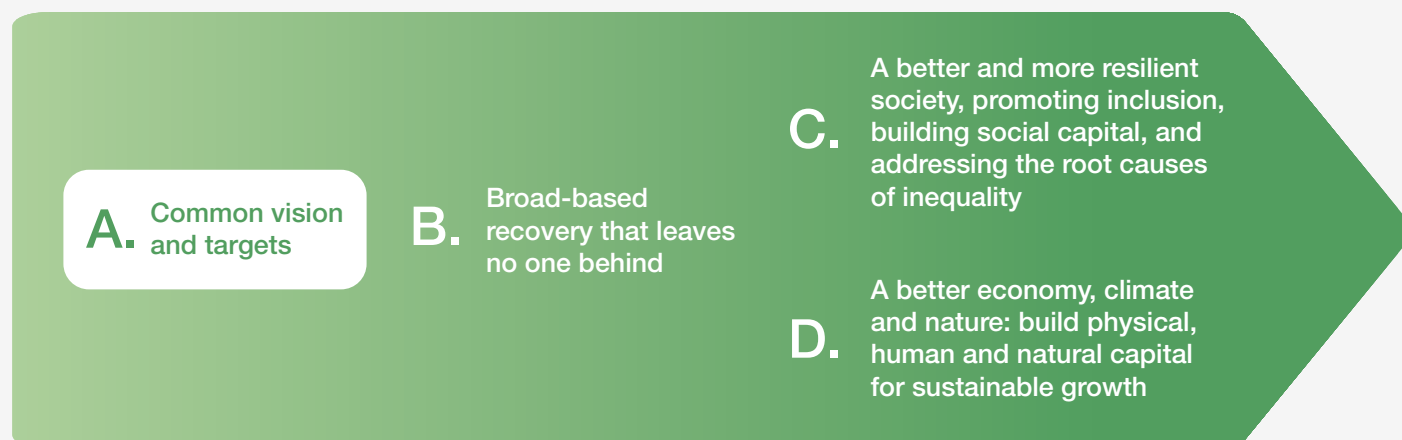
well as an appreciation of solidarity, leadership from business, government acting with strength and at scale, and a deeper understanding of our mutual connectedness and shared vulnerability. “Building back better and broader” has become both more urgent and more feasible.

2.1 Framework for a new sustainable, inclusive and resilient growth path

The challenges to the economy, environment and society are global challenges. In the same way that global collaboration and convergence have enabled past decades of material progress, the challenges to this model, and building a new one, will require numerous stakeholders to come together and act in concert. The goal is to recover rapidly and achieve strong long-term growth that’s ecologically sustainable and economically and socially inclusive and resilient. The SDGs and the Paris Agreement, agreed to by more than 190 states, provide guideposts, embodying values and principles for the new era. At a time of growing international division and threats to the global order, these are themes that can and should unify.

The new path doesn’t mean trading off prosperity for abstract principles. The perception that the current generation would be asked to somehow pay for its sins has burdened the discussion and weighed down the psychology of change. Quite to the contrary: charting a new course will enable more comprehensive use of all assets (human, natural, physical, social) within planetary and societal boundaries. Today’s inequality and market failures mean that capacity, talent and potential resources are wasted, while others are consumed in unsustainable excess. Sustainability, rooted in new technologies and practices, is driving a new industrial revolution.

FIGURE 1 Framework: a new approach for a sustainable, inclusive and resilient growth path



Therefore, change — inclusive, efficient, dynamic and green — is about opportunities for people, the planet and business. It is not about burdens on growth. These opportunities will power the next big global leap forward.

To realize these opportunities, we collectively need:

1. **A common horizon and common targets** that interact and reinforce each other.
 - Generate convergence around a more inclusive, fairer, more appealing form of growth and rising living standards.

- Design strategies towards zero-carbon and climate-resilient economies and for the stewardship of global commons.⁹

2. **A broad-based recovery** that leaves no one behind.

- Deploy the COVID-19 vaccine globally and rebuild health systems.
- Bring children back to school and mitigate disruptions in learning, and prevent the “scarring” of job seekers.

- Maintain job-rich, investment-driven economic stimulus until growth is robust, while setting the framework for fiscal sustainability.

Act jointly, internationally and in a coordinated manner, to address the uneven recovery.

3. **A better and more resilient society**, promoting inclusion, building social capital and addressing the root causes of inequality — demographics, opportunity, policies and institutions.

- Rebuild the social contract around access to education, health and both young- and old-age care.
- Ensure distributional fairness and cohesion at work.
- Rebalance the progressivity of fiscal revenue and expenditure.
- Create a partnership of stakeholders to build trust and promote agency.

4. **A better economy, climate and nature** to build physical, human and natural capital for sustainable growth. By enabling:

- The public sector — the foundational actor — to provide infrastructure and guardrails, rebalancing incentives and policy towards sustainability and innovation.
- The private sector to seize the opportunities, driving responsible transformation, boosting investment and harnessing technologies.
- The financial sector to align with long-term goals.
- International and regional cooperation to forge a common path.

There is more to social, environmental and economic change than can be captured in this framework - but these core components form a solid foundation.

2.2 Common horizons

A new approach to the global economy and the environment would foster a more cohesive society - but it also requires cohesion for its creation. The last few decades have seen a greater understanding of the meaning of well-being and what it takes to develop a more cohesive society. These key dimensions of development are embodied in the **UN Sustainable Development Goals (SDGs)** agreed to in 2015 by more than 190 countries. The goals relate to poverty, income, employment and good health; education; environment (including climate, water, oceans and biodiversity); reducing inequalities, including gender; and peace, security

and cooperation. They are a significant advance — in terms of sustainability in particular — on the Millennium Development Goals adopted in 2000, which were at the time a major advance on what was until then a narrow global focus on GDP. Further detail as well as further commitments on climate change were agreed to in the Paris Agreement adopted at the **United Nations Climate Change Conference (COP21)**, also in 2015, supplemented by growing momentum on biodiversity.

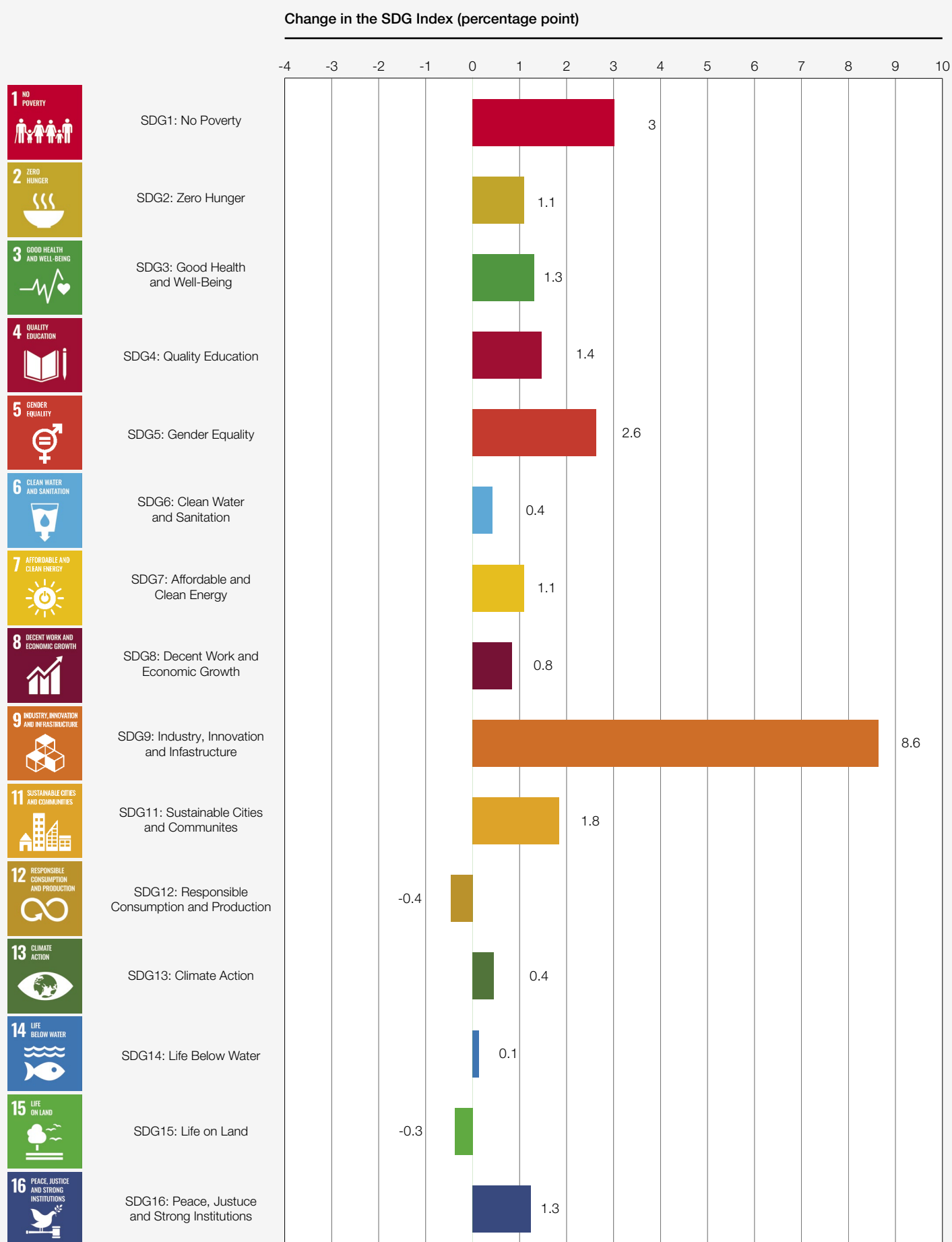
Box 1 outlines progress and achievements since the enactment of the SDGs.

BOX 1 Progress towards different SDGs¹⁰

The UN Sustainable Development Solutions Network (SDSN) created the SDG Index with the goal of assessing each country's overall performance on the 17 SDGs, giving equal weight to each Goal. In 2020, for the first time since the 2015 adoption of the SDGs, the global average SDG Index score has decreased, including in OECD countries. This decline was driven to a large extent by increased poverty rates and unemployment. Before the COVID-19 pandemic, the world was making significant progress on SDG 1 (No Poverty) and SDG 9 (Industry, Innovation and Infrastructure). Overall, by 2018 the percentage of people living in extreme poverty had decreased

by 1.4 percentage points globally since the adoption of the SDGs in 2015, but COVID-19 has led to a reversal in progress on SDG 1. Global investment in research and development has also grown, although with significant gaps between high-income countries and the rest of the world, contributing to progress towards SDG 9 (Industry, Innovation and Infrastructure). By contrast, even before COVID-19, many parts of the world were progressing too slowly or experiencing reversals in progress towards SDG 2 (Zero Hunger), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), SDG 14 (Life Below Water) and SDG 15 (Life on Land).

FIGURE B1 | Global progress by Sustainable Development Goal (SDG), 2015-2020



Source: : Lafortune, G., C. Kroll, G. Fuller, F. Woelm and J. Sachs, Sustainable Development Report 2021, Cambridge University Press, 2021.

Note : Data is population-weighted averages. Insufficient data for SDG 10: (Reduced Inequalities) and SDG 17 (Partnership for Goals). Time series for SDG 12 (Responsible Consumption and Production) is broadly based on the "Electronic waste" indicator.

“ What emerges is a vision of sustainable and broadly inclusive growth - while building human capital, replenishing nature and limiting global warming.

These overarching notions of well-being, development, just social systems and sustainability are the guideposts to establish a vision for a better world, capable of anchoring growth strategies and of driving policy, corporate planning and civil society agendas. They have informed a shift towards a broader set of targets for businesses and policy-makers beyond profits and GDP.¹¹ Yet, to serve as a dynamic force behind change they need continuous affirmation, and for stakeholders to come together around an understanding of where the old model has failed, what to aim for and how to get there. Nurturing this common vision across all actors would be a powerful engine for change and for ambition in implementing change. Development of a common vision is therefore as much a process as it is a set of results.

What emerges is a vision of sustainable and broadly inclusive growth - while building human capital, replenishing nature and limiting global warming - along with a process that restores trust in society through participation and agency.¹²

The outlines of this vision are much clearer in some areas than in others. [The UN Intergovernmental Panel on Climate Change \(IPCC\)](#) process has produced increasingly detailed guidance and targets for mitigating and managing climate change:

- We know that we need collective pledges to net-zero emissions by 2050 at the latest if the world is to have a fighting chance of limiting global warming to less than 1.5°C. As noted, there has been progress, with growing numbers of countries, corporations and financial institutions pledging to achieve net zero. But all stakeholders must pledge — there is no room for compromise on the climate.
- We also know that we must translate net zero into long-term strategies, specify targets for 2030 and reflect these in revised Nationally Determined Contributions (NDCs) ahead of the [2021 United Nations Climate Change Conference](#) (COP26) in Glasgow beginning in October. Pledges for dates far into the future are not enough to inform action today. Policy-makers and investors need to be able to recognize a path and gauge commitment around milestones.
- Just as important as the reduction of GHG emissions is the design of strategies for adaptation and resilience and for the environment and biodiversity, casting abstract visions into concrete and near-term targets. There is growing support for a global target to protect 30% of land and ocean areas by 2030, accompanied by appropriate domestic targets. As with climate change and emissions, part of this task must be to better understand the value of nature for

human well-being and progress. The valuation of natural capital should reflect the full range of environmental, health and economic benefits.

Targets and paths are crucial to guide timely decisions, even though they are evidently the reduced expression of a much richer story. Their narrowness might cast this agenda in an onerous light; indeed, in the climate change arena, skewed perceptions of costs and benefits have been a huge impediment to public action. The vision and narrative must systematically highlight the opportunity that comes with the new path — not just the costs that are all too easily associated with targets.

Apart from climate change, the global community lacks a broad and comprehensive framework and consultative process. There is no IPCC for SDG10 (“Reduce inequality within and among countries”), and no COP for inclusion. Nevertheless, it is clear what the critical work programme should be in forging a common vision.

Inequalities persist and the pandemic is exacerbating existing inequalities within and among countries.¹³ Stakeholders should, jointly, strive for a more precise understanding of the drivers of inequality and exclusion and how to address them. Despite widespread acknowledgement of these realities — including widening income and wealth gaps in many countries, low or declining social mobility, and the poorest and most fragile states falling further behind — and support for SDG 10, there is still much further to go in this regard. Institutions, policies, exclusionary practices and other factors that often differ across countries might explain inequities. So, too, might demographics, technology and globalization.

Shared understanding is the foundation of a shared vision and strategies — around equality of opportunity across gender, race and geography, or the distributional incidence of fiscal action. There may be a need for national dialogues on equitable access to education and health — and there is certainly urgency to recognize the growing needs related to ageing.

The common vision for a better economy, environment and society must be widely owned, and the responsibility to design it broadly shared. The SDGs and climate targets are not just for governments. Industry groups, civil society, labour and other actors should build the future on the same foundations, with business forging convergence around the purpose of the corporation and translating it into models of governance that support a balance of targets. Existing initiatives by the World Economic Forum and the Business Roundtable are encouraging, but need to be continued, widened and brought together with other efforts.

2.3 Completing the rescue, enabling recovery

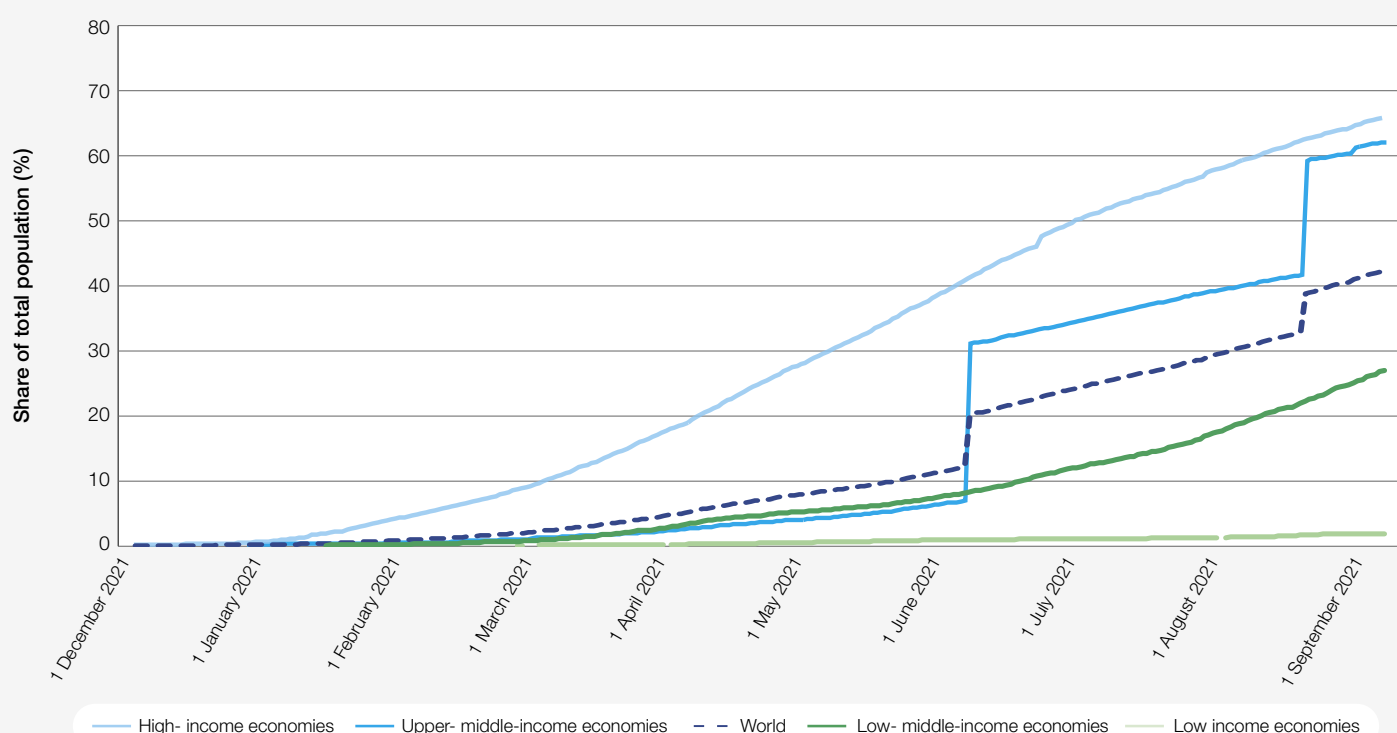
The COVID-19 pandemic is not over. We must not be blinded by the successful vaccine roll-out and economic rebound in rich countries. According to the International Monetary Fund (IMF), “vaccine access has emerged as the principal fault line along which the global recovery splits into two blocs: those that can look forward to further normalization of activity later this year (almost all advanced economies) and those that will still face resurgent infections and rising COVID death tolls.”¹⁴ Global output is now projected to grow at 6% and 4.9%, respectively, in 2021 and 2022, after declining by 3.2% in 2020. The past few months have seen prospects improving in advanced countries, reflecting the vaccine roll-out and substantial fiscal packages, but worsening in middle- and low-income countries as the Delta variant of the virus prolongs uncertainty and stop-go economies. In low-income countries, just under 2% of the population has received one dose of a vaccine (see Figure 2).

This dichotomous recovery risks amplifying the regressive distributional impact of the pandemic. Although the impact on cross-country income inequality is complex,¹⁵ the pandemic has exacerbated *within-country* inequality by hitting some groups — including fragile workers, those living in poverty, women, racial minorities and lagging regions — disproportionately hard, both in

terms of lives and livelihoods. The number of people living in extreme poverty grew by around 120 million in 2020.¹⁶ At the same time, wealth at the top of the global distribution shot up as central bank liquidity boosted asset markets. At least as importantly, the virus is likely to leave lasting scars on human capital. Learning losses from school closures have undone much of the educational progress achieved in recent years. At least 24 million children, predominantly girls, might never return to school. The losses are especially pronounced among children from poor and vulnerable backgrounds who have been unable to access digital and other learning alternatives. In total, according to the World Bank, children affected by learning losses stand to lose \$10 trillion in future lifetime earnings — equivalent to 8% of global GDP.¹⁷

Yet, no country can hope to insulate itself. As long as the virus is allowed to thrive anywhere, there is the prospect that it will keep developing variants, building vaccine resistance, spreading across the globe and upending economic recovery. To end the pandemic anywhere it must end everywhere. There is a need to act globally, to build on positive steps towards improved cooperation — but to go further and do so far more decisively. The world must act on vaccines and on human capital, shift economic interventions from rescue to recovery and act internationally to support poorer countries.

FIGURE 2 Share of population vaccinated with a minimum of one dose against COVID-19, by economy income group, December 2020–September 2021



Source: Official data collated by [Our World in Data](https://data.worldbank.org/). Last updated 31 August 2021, 14:40 GMT.

Note: Data for China added 10 June 2021.

“ The immediate challenge is to secure delivery of health services targeted to the poor.

Roll out vaccine globally

The single most important step now, that promises by far the highest payback in terms of a sustained global recovery as well as human capital restoration, is to accelerate the global roll-out of vaccines and treatments — based on principles of common humanity and mutual responsibility, as well as self-interest. This is a challenge that the public and private sectors can and should meet jointly, with funding and planning by public institutions and logistical and implementation assistance by the private sector, especially in poorer countries.

The aim must be to have vaccinated at least 40% of every country's population by the end of 2021, and 60% by the first half of 2022.¹⁸ Most low-income countries rely primarily on collective

vaccine procurement vehicles such as [COVAX](#) and the [African Vaccine Acquisition Trust \(AVAT\)](#) — which had delivered fewer than 100 million doses to about 90 countries as of mid-2021. G20 Finance Ministers and other bodies have stressed that strong international cooperation is needed, including support for the [Access to COVID-19 Tools \(ACT\) Accelerator](#) and its COVAX facility, but follow-through is lagging. As of early September 2021, an immediate priority is closing the remaining \$16.6 billion bilateral funding gap of COVAX for 2021. These funds represent a tiny fraction of high-income country fiscal support during the pandemic and would yield extraordinarily high returns for humanity and the global economy.¹⁹

Address human capital impact

Combined with the vaccine response it will be essential to address the skewed health and education impact of the pandemic. The immediate challenge is to secure delivery of health services targeted to the poor, with a focus on fundamental programmes that were disrupted by the pandemic — disruptions with consequences for public health as severe as those of COVID-19 itself. Priorities will differ by country and income levels, but might include immunization and child nutrition programmes, maternal and reproductive health services, infectious disease control programmes and increased screening for noncommunicable diseases.

Throughout, efforts should focus on the repercussions from the lockdown, which includes a surge in gender-based domestic violence.²⁰ This is not a responsibility that should be left to the public sector alone: business can be proactive and effective, for instance, in tackling gender-based violence by shaping culture and norms at work and recognizing and supporting victims. In fact, several international financial institutions issued a guide that sets out the business case during the pandemic in 2020, at a time when this pathology was spreading.²¹ Similarly, in supporting the recovery, there should be a resumption and

expansion of child and elderly care services to support women's re-entry into the labour market. Women, far more than men, have been pulled out of the labour force during the pandemic to care for children and elderly relatives — two-thirds more often than men according to a UK estimate.²² Globally, closing the gender gap has been delayed by a generation from 99.5 years to 135.6 years.²³ It is clear that businesses can and should complement public solutions in these areas.²⁴

Urgent action as part of the recovery is also needed on education, which has been a major victim of the pandemic response. The return to school everywhere takes place under the shadow of new virus surges. Schools need support to meet safety standards and to design learning recovery programmes and measures specifically aimed at retaining or winning back the predominantly poor students at risk of dropping out — with special attention to girls. The World Bank recommends pro-poor provision of school supplies, school feeding, cash transfer programmes with soft conditionality, scholarships and girls' empowerment support, as well as assistance for teachers in personalized teaching and accelerated learning.²⁵

Shift from economic rescue to recovery

The COVID-19 pandemic is causing historically severe shocks, both human and economic. The global fiscal response, largely for rescue and short-term support, has been equally unprecedented, with a global total of \$16 trillion to date for health measures and to support incomes, employment and financial lifelines for businesses.²⁶ However, the capacity to act has differed enormously, in a way that will also skew the recovery. Advanced economies spent one-fifth of

their 2020 GDP on fiscal support for their people and economies, and an additional 10% of GDP on loans, guarantees and equity.²⁷ Fiscal support in emerging markets was about 5% of GDP, and in low-income countries (LICs) only 2%. While advanced countries are now rebounding fast, there is no rebound happening in LICs.²⁸ A range of developing countries are having to prioritize fiscal consolidation even though their recovery falls short. A broad, global recovery

requires an urgent, concerted international effort to tackle the debt, fiscal and financing constraints of emerging market and developing countries.

The initial policy focus on health and economic rescue — i.e. the need to support people's lives and livelihoods and keep businesses solvent during the global pandemic — was of course necessary and understandable. With the roll-out of effective COVID-19 vaccines, however, the focus should shift decisively towards economic recovery. Though both rescue and recovery require public resources and debt, recovery seeks to drive investment and growth and is the most promising way of achieving fiscal stability over time, through growth that is strong and sustained and not at risk of faltering.²⁹ It is encouraging that programmes such as [NextGenerationEU](#) and the [American Jobs Plan](#) are beginning to take this longer-term view.

The macroeconomic framework supporting recovery efforts, including the fiscal stance, should be geared towards enabling a significant increase in investments. Specifics will differ across countries and income groups, but frontloading a public investment push, on the order of 1–2% of GDP and initially financed by public borrowing and declining in the outer years of the 2020s, would:³⁰

- Generate infrastructure and other capital in support of long-term growth, sustainability, resilience and inclusion

- Provide, in the short term, a fiscal impulse for the recovery, supporting demand in job-rich sectors while building growth expectations for private investors
- Create the foundation for complementary private investment and raise expected returns to that investment.³¹

The fiscal multiplier – the overall impact on GDP – of an increase in public investment tends to be higher than for other government expenditures or tax reductions.³² Modelling by the IMF suggests that a green public investment impulse, combined with expenditure-switching and other policies, would help set economies on a sustainable and strong long-term growth trajectory, with public investment providing early support for recovery.³³

Public debt remains affordable in many economies – across income groups – because interest rates are so low. Interest on general government debt as a share of GDP is clustering around 2%. For advanced and emerging market economies, this is lower than it has been for decades despite growing debt.³⁴ Low rates continue to be priced into forward bond yields, suggesting confidence that inflation will remain reasonably subdued.³⁵ Nevertheless, the current favourable borrowing environment will not last forever. The time for discretionary fiscal tightening and consolidation is when the motor of the private economy is comfortably running, generating jobs and increasing wages, growth and public revenues.³⁶

BOX 2 International financial support for recovery in lower-income, more vulnerable countries

- The recent allocation by the IMF Board of Governors of \$650 billion in Special Drawing Rights (SDRs) will provide important liquidity; its value would be considerably enhanced if, as encouraged by the G20 Venice Communique of Finance Ministers, a significant share of SDRs would be channelled to the neediest countries.
- Full implementation of the G20 “Common Framework for Debt Treatments beyond the DSSI” would facilitate timely and orderly debt

treatment with broad creditor participation. In this context, there should be consideration of debt-for-nature and debt-for-climate swaps.

- Furthermore, shareholders should request and enable the MDBs to scale up support for (green) recovery through the proposed accelerated IDA replenishment, more effective use of MDB balance sheets and MDB capital increases where appropriate.

Most advanced economies have the fiscal space, given the current low-interest environment, to implement an investment-led stimulus and growth programme. However, many emerging market and low-income countries do not have the necessary market access; many entered the COVID-19 crisis with high debt and limited resources. Yet, only a shared, global recovery can be truly vigorous and sustained — and ethically acceptable. In addition to global vaccine cooperation, there is an urgent need for international support to address financial constraints to recovery, especially in the poorest and most vulnerable countries. Several ideas and initiatives are already on the table and should be advanced

(see Box 2). Stepped-up finance must come from multilateral, official bilateral and private sources.

And finally, it is worth underlining that a vigorous recovery relies on an open trading system. Disrupted supply chains during the pandemic dragged the global economy down even further. The good news is that global trade volumes are now projected to rebound 9.7% in 2021, then moderate to 7.0% in 2022.³⁷ Recourse to renewed barriers would prevent the spread of ideas and global scaling of solutions and drive wedges into broader global cooperation. Facilitating trade and ensuring market access will in turn add further to demand stimulus.

2.4 Building a better society — Investing in people, promoting inclusion and building social capital

The Sustainable Development Goals set out a vision of inclusive development, declining inequality and political and institutional accountability. But even under the old global economic model, the world

has been moving away from this vision. Rising inequality within countries and a growing sense of precariousness have been social megatrends well before the pandemic.³⁸

TABLE 1 Share of national real income growth captured by income groups, selected countries, 1980–2016

Income group	China	Europe	India	Russia	US-Canada	World
Full Population	100%	100%	100%	100%	100%	100%
Bottom 50%	13%	14%	11%	-24%	2%	12%
Middle 40%	43%	38%	23%	7%	32%	31%
Top 10%	43%	48%	66%	117%	67%	57%
Top 1%	15%	18%	28%	69%	35%	27%
Top 0.1%	7%	7%	12%	41%	18%	13%
Top 0.01%	4%	3%	5%	20%	9%	7%
Top 0.001%	2%	1%	3%	10%	4%	4%

Source: Source: [World Inequality Database](#), 2017.

Note: Income estimates are calculated using 2016 Purchasing Power Parity (PPP) euros. PPP accounts for differences in the cost of living between countries. Values are net of inflation.

Though across countries incomes have been *converging*,³⁹ within countries they have been *diverging* sharply since the 1980s, with extremes that – if allowed to continue – would herald dystopian societies. Of the *addition* to national real income between 1980 and 2016, the population in the top income decile captured 67% in the United States and Canada, while the bottom 50% garnered virtually zero. In fact, its income share declined from 21% to 13%. Distributional inequality elsewhere has been less extreme, but also significant (Table 1).⁴⁰ While global forces such as technology and trade are factors behind these trends, it is clear from the cross-country differences that national policies determine outcomes.⁴¹

Social mobility is another troubling indicator. While countries differ in their experiences, globally, social mobility has been decreasing and income inequality increasing from one generation to the next.⁴² The World Economic Forum's Global Social Mobility Index shows how low social mobility entrenches historical inequalities and higher income inequalities have fuelled lower social mobility.⁴³

The upshot of these trends has been widespread public discontent with economic conditions, a growing sense of inequity and unfairness, and the “global democratic recession” mentioned earlier. Further, there has been a societal split: between those, better-educated and better-off for whom the system is working and who trust it — and those, for whom it isn't working and who don't trust it.⁴⁴ Politically, it has been accompanied by new forms of nationalism and extreme polarization.⁴⁵ And the pandemic has further exacerbated some of these trends.

To remedy this situation, societies — with governments, business and civil society all called upon to act — must address the sources of inequality and insecurity. The challenge, however, is to design a new socially and ecologically sustainable economy. There is a need to act along four dimensions for a decisive shift in approach: 1) tackling insecurity, 2) creating access and improving social mobility, 3) reassessing the distributional impact of public finance, and 4) implementing a stakeholder approach to business.

Tackling insecurity and sharing risks

Declining faith in both capitalism and the fairness of institutions is linked to fears about the future. Middle-income households have been particularly vulnerable in recent decades, battered by the steep rise in the prices of core services (housing, education and healthcare) relative to their incomes, as well as by the growing precariousness of jobs in a context of globalization and automation.⁴⁶ While research by the World Economic Forum⁴⁷ suggests that the world is facing a net-positive job landscape by 2025 – with 85 million jobs that will be made redundant and 97 million jobs that will be created – the Edelman Trust Barometer finds 83% of employees in developed and developing markets still fear losing their job.⁴⁸ Indeed, widescale reskilling (up to 50% of all employees by 2025) and a more proactive approach to re-employment and redeployment will be necessary to help workers transition to new opportunities.⁴⁹ Rising old-age dependency and dementia ratios reinforce the sense of uncertainty and can impose steep caregiving burdens on households.⁵⁰ Social change can of course be overall positive for society, such as the growing participation of women in the work force, but can still be disruptive — in this case to traditional expectations of “free” care for the young and the old.⁵¹

What is needed is a new “social contract”, a recasting of our mutual expectations and obligations

around life's risks and opportunities. A system that, by and large, focuses working-life protections on the formally employed and assigns the bulk of care responsibilities to households (mostly women) does not reflect the direction of technological, social and demographic change. Many of the most vulnerable workers — such as the self- and informally employed — are currently excluded from social protections. This new contract would:

- **Protect people of working age rather than jobs.** That means tying social entitlements to the individual and putting a floor on income below which no one should fall. This can be achieved, in part, through cash transfer programmes in developing economies or tax credits for low-wage workers in advanced economies.⁵² Holistic protection for workers irrespective of their employment status — formal, informal, gig or unemployed — would facilitate personal and industry transitions and support technological change.⁵³ Delinking support from traditional employment models would also help lower regional disparities in living standards. Building adaptive social protection systems will further require government investment in digital infrastructure, including in foundational identification, population registers and digital payment systems to respond to a range of shocks.⁵⁴



- **Support lifelong learning.** National statistics from around the world confirm that job seekers over the age of 45 comprise the bulk of the long-term unemployed.⁵⁵ Studies of adult learning demonstrate how links to employers, early intervention and sustained funding can keep people in work and contributing to society.⁵⁶ Continuous updating of skills and development of talent would help protect individuals from technology shocks and from being cast adrift mid-career. It has been also estimated to potentially boost global GDP by \$6.5 trillion by 2030.⁵⁶ Importantly, lifelong learning must be a shared responsibility of government, business and individuals, and would need agreement on new ways to promote and finance skills development.
- **Rebalance the care economy.**⁵⁸ A similar rebalancing of risks needs to occur around childcare and old age. Funding the costs of parental leave through general taxation would create a more level playing field for men and women in the labour market and be less of a burden for smaller firms. Employer-supported childcare, including through shared arrangements across businesses, supports female employment while benefiting firm productivity.⁵⁹ Linking pension ages to life expectancy would make sure that individuals save enough for their retirement. Automatic enrollment in pension plans and insurance for old-age care, funded through general taxation rather than linking it to employment as is usually the case, would give people more security at the end of their lives.

Creating access and improving social mobility

“Not only is social mobility declining in much of the world, but economies are generally failing to provide the conditions to turn this around.”

The World Economic Forum, in its report on [*Global Social Mobility Index 2020: why economies benefit from fixing inequality*](#), finds that not only is social mobility declining in much of the world, but economies are generally failing to provide the conditions to turn this situation around. Exclusion from economic opportunity because of socio-economic background, gender, religion or race is a strong predictor of education, income and wealth across lifetimes. Equal access to opportunity is critical for individuals to develop their potential irrespective of their backgrounds. With human capital as the key driver of economic growth, unequal access is impoverishing the entire global economy.

A new approach would focus on rebalancing access in key areas linked to social mobility (or the absence of it), especially education, health, inherited wealth and promising technologies. These measures are already mostly well-known and understood and can be adjusted to different levels of development. What is needed is the political will and fiscal means to implement them.

- **Target availability, quality and distribution of education programmes.** At the top of the list is universal early childhood education, including broad access to childcare services. Such policies would help level the playing field by compensating for disadvantages at home, financially benefit low-skilled and low-income workers and help keep women in the workforce.⁶⁰ While countries at all levels of economic development struggle to translate public spending into results, financing and accountability mechanisms that emphasize learning outcomes can help mitigate inequality and improve efficiency. Furthermore, education systems that ensure that learning can happen

anywhere, based on digital learning platforms, will be more resilient to future crises.⁶¹

- **Invest in accessible health and insurance.** Access to health services, especially insurance, at all income levels would support mobility over a lifetime by cushioning income losses and employment transitions from health shocks. These can have a lasting and cumulative impact at lower income levels. Health investments should also target children from lower socio-economic backgrounds to break the cycle of intergenerational disadvantages.
- **Tackle wealth accumulation across generations.** This should begin by managing loopholes and exemptions that resulted, for instance in the United States in 2020, in taxes on inheritance that are seven times lower than those on working-class incomes. They could go further towards aligning the principles that apply to the taxation of wealth transfers with those for incomes.⁶² With wealth inequality outpacing income inequality everywhere, and representing one of the main sources of intergenerational social stagnation, societies cannot avoid eventually confronting this issue with tighter taxation or other ways to incentivize change.
- **Create technology-driven markets that empower.** Technology can provide solutions where traditional approaches have failed. Digital education and health platforms can achieve mass reach at low cost, and fintech can be a big equalizer in access to financial services. The scaling and maturing of these “markets of the future” hinges, in many countries, on adapting outdated regulatory frameworks and on creating effective public-private delivery schemes.⁶³

Reassessing the distributional impact of public finance

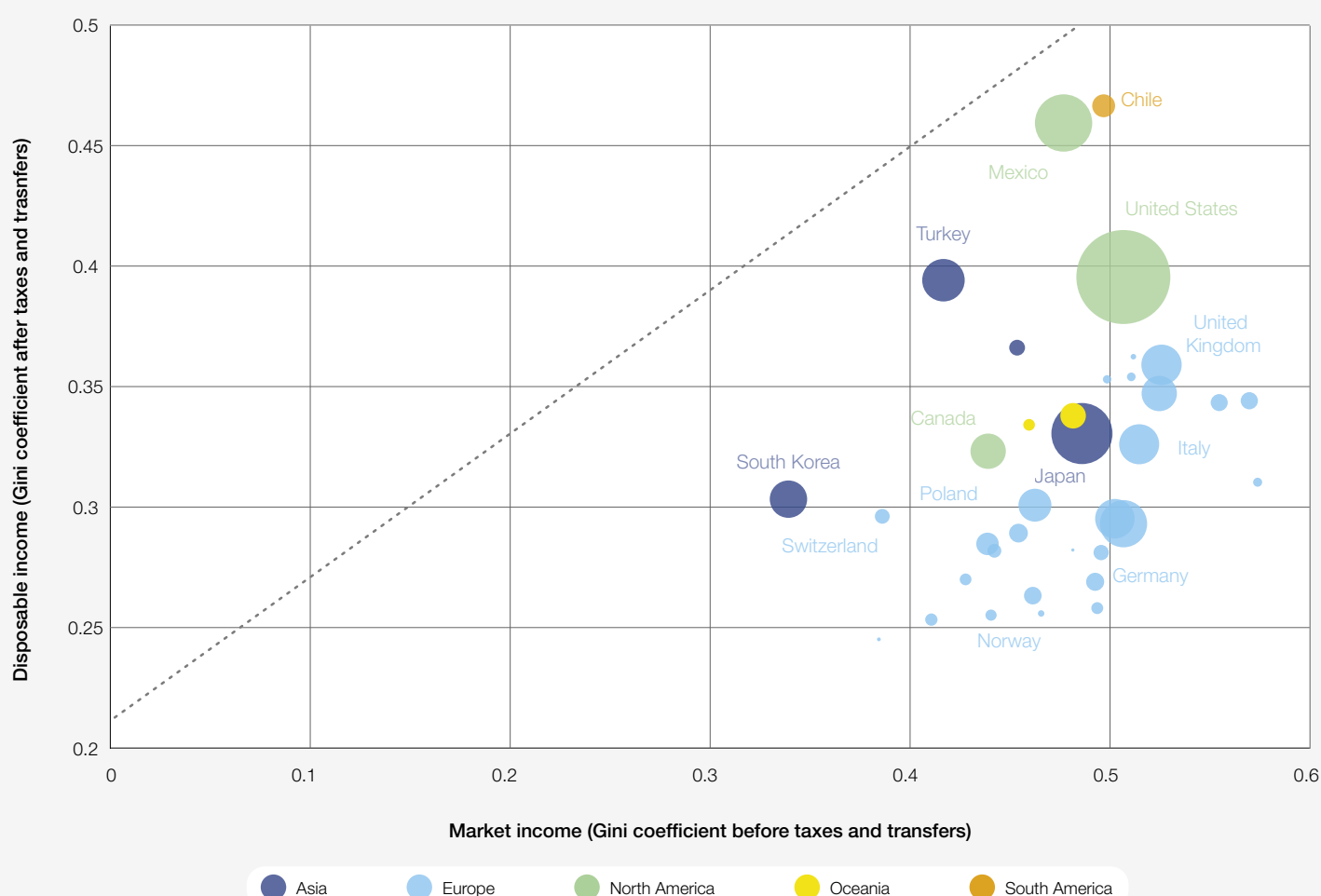
Income inequality can have a profound social impact. It also hampers long-term economic growth by causing human capital to develop below its potential. In the context of growing income inequalities, redistributive tax and transfer policies — in a careful balancing act with individual economic incentives — can therefore serve as growth policies, as well as being ethically and socially the “right thing to do.” Tax and transfer policies have a net redistributive impact in all countries for which the data is available, but in some countries far more than in others (see Figure 3). In OECD countries, the average level of redistribution was 16% of the mean income before taxes and transfers in the mid-2010s. In about one-third of these economies, inequality was cut by more than 20%; in others, by less than 5%.⁶⁴

As part of the broader effort to tackle inequality and build healthier, more inclusive societies there should be a reassessment of the progressivity of tax and income support/transfer policies.⁶⁵ Depending on the starting points and specific institutional

features of each country, the focus might be on aligning taxation of capital gains with that of personal incomes, easing payroll-related taxes, closing loopholes that disproportionately benefit the rich or adjusting progressivity for different income brackets. It will also be necessary to reassess the nature and targeting of transfer programmes as the labour market changes (unemployment insurance, for example, is linked to traditional employment models and doesn’t fit the needs of the growing gig economy) and as societies age.

Novel forms of taxation can help to fiscally balance these reforms — and indeed those in the previous sections). They include revenues from carbon taxes or other carbon pricing schemes (see also section 2.5 below) and reforms to the international corporate tax regime which are expected to be implemented by 2023.⁶⁶ The phasing out of subsidies for fossil fuels, which represent some \$180 billion in budgetary outlays in the OECD alone, would be a further and significant funding source.

FIGURE 3 Income inequality before and after taxes and transfers, 2014, selected economies, by region



Source: [OECD Income Distribution Database 2016](#), downloaded from [Our World in Data](#)

Note: The x-axis presents the inequality of market income while the y-axis measures inequality of disposable income. Both are measured by the Gini coefficient before or after taxes and transfers. Market income includes gross wages and salaries, self-employment income in addition to capital and property income. Disposable income is composed of market income and social security cash transfers with tax applied.

Implementing a stakeholder approach to business

The fourth component of a more inclusive growth model — in addition to tackling social risks, ensuring equal access to opportunity and redistributing incomes — is the broadening responsibility of businesses to society. Under the old growth model, short-term managerial incentives have tended to be biased against the build-up of capital (physical, human, natural and social).

There is hope for change, with the rise of the double bottom line, impact investing and, in particular, the gathering consensus on an enhanced purpose of the firm (by the World Economic Forum's International Business Council led efforts on aligning ESG [environmental, social and governance] metrics, the U.S. Business Roundtable, and others). The rethink on the part of business aligns with views in academia that have been taking the corporation to task. As Colin Mayer emphasizes, profit is not itself a business purpose, but a condition for — and result of — achieving a purpose. If a business substitutes making money for purpose, it will fail at both.⁶⁷ The accountability of businesses — and remuneration schemes — need to be rebalanced towards their broader purpose and footprint, and towards longer-term results. A stakeholder approach can leverage partnerships with communities and philanthropies on shared challenges.

This hope springs also from deeper shifts in both social and investment attitudes among younger generations, which differ radically from

their older counterparts and are beginning to influence business and finance. Though their wealth share remains small, it is growing rapidly. Eighty-seven percent of millennials want to work for a company that engages in corporate responsibility and 65% only buy from responsible companies. Further, 43% already engage in impact investing, a far-higher rate than for their elders — just 12% of boomers invest for impact.⁶⁸

Shifting attitudes and practices towards diversity, equity and inclusion are a key practical area of change for businesses. A World Economic Forum report highlights the moral, legal and economic imperative for companies to give equal access and opportunities to all people to work under fair and equitable conditions.⁶⁹

Economically, there is by now a range of studies that document the competitive advantages of drawing fully on the talents of a diverse workforce. Diverse, equal and inclusive companies outperform on profitability, innovation, decision-making and employee engagement. A comprehensive study of the link between financial returns and gender diversity shows that private equity and venture capital funds with gender-balanced senior investment teams generated 10% to 20% higher returns compared with funds that have a majority of male or female leaders.⁷⁰ Achieving diversity, equity and inclusion requires an organization-wide effort from the most senior leaders who can set the tone and lead by example.⁷¹



2.5 Building a better economy — combining growth, climate and biodiversity

“ Companies are aligning their strategies and investments with the climate goals by developing green business strategies.

The SDGs and the Paris Agreement goals are critical to realizing an equitable, sustainable and climate-resilient economy. A growing number of countries have announced net-zero emissions targets for the middle of this century. These commitments are broadly consistent with the Paris Agreement temperature ambition, provided they are achieved globally.

While setting targets in line with the Paris Agreement is fundamental, so is their implementation. According to the United Nations Environmental Programme (UNEP),⁷² the G20 countries collectively — which account for 78% of global GHG emissions — are not on track to achieve their previous NDC commitments. To ensure that the climate goals are met, both 2050 and 2030 targets should be accompanied by clear strategies and transition pathways that detail the transformations required in each sector to meet the medium and long-term climate targets and avoid increasing the costs and risks associated with the transition.⁷³

Targets, pathways and policies can provide strong signals to markets and businesses. An increasing number of companies are aligning their strategies and investments with the climate goals and SDGs by developing green business strategies or promoting investments in green/sustainable products and supply chains. Green finance is also growing quickly, supported by a yield advantage over non-green alternatives. Nevertheless, today's investment levels are insufficient to realize an effective transformation to a sustainable, equitable, net-zero and climate-resilient economy. It is critical to establish policy frameworks that unlock investments and innovation, create market opportunities for private-sector investment and finance, and support a just transition.

Five types of action will be required for driving the necessary investments and innovation:

1. **Scaling up the level of investments globally** — including a big push on public investments
2. **Changing the composition of investments** through structural policies that set clear market expectations — including carbon pricing, the phasing out of fossil-fuel subsidies, and regulatory measures
3. **Accelerating innovation in low-carbon technologies** through incentives and public support
4. **Aligning financial decisions** to shift towards low-carbon investments and minimise the risks associated with climate change impacts and transition policies
5. **Addressing distributional issues** arising from the transition to a net-zero economy to ensure an equitable, just transition and build public support

These actions should form the basis for a comprehensive policy package that can harness the combined efforts of both the public and private sectors. The actions should be coordinated globally, making finance and technology available and accessible to developing countries through international cooperation.

Beyond policies targeting individual projects, prices or markets there is also the importance of affecting broad-based change in key systems, including in cities and in areas such as land use, transport and logistics, and, of course, energy. Together, these systems account for a large majority of GHGs. Change would require vision, a strategic approach involving multiple public policy tools as well as comprehensive and coordinated action by the public and private sectors.

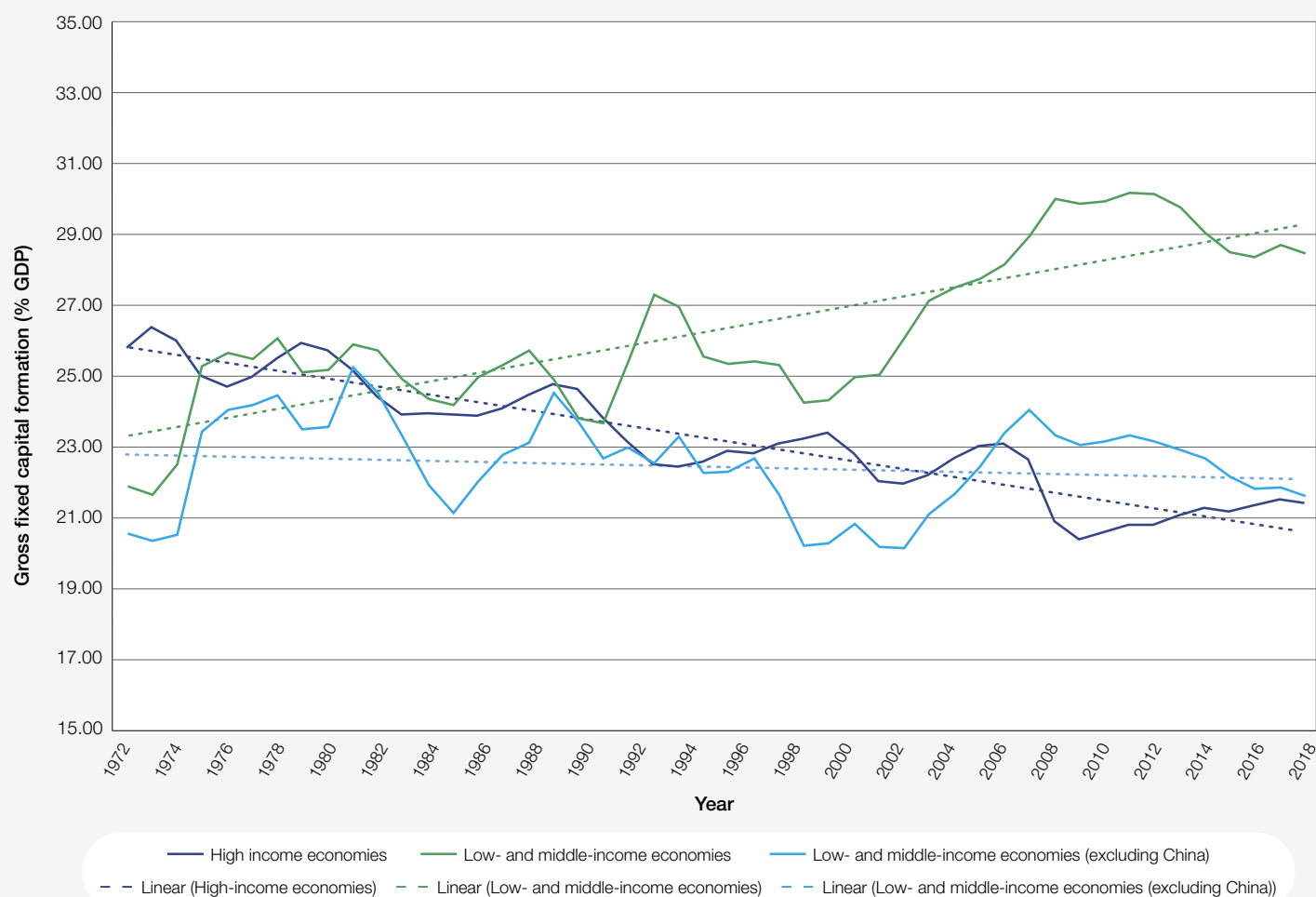
1. Economy-wide and lasting step-up in investments: lifting the global investment ratio by at least 2 percentage points of GDP

The future of people and the planet will be heavily determined by the capital investments realized over the next 10-20 years. Investments and innovation in low-carbon energy assets, the built environment, transport infrastructure and agriculture, as well as the protection and restoration of forests, ocean and biodiversity will all be critical in delivering a strong recovery from the COVID-19 pandemic and sustainable growth over the coming decades.

As a share of GDP, investment has been on a downward trend since the 2008 global financial crisis, in both advanced economies and emerging market and developing economies

(EMDEs) (see Figure 4). In advanced economies, investment declined by 4.5% of GDP between the 1970s and the late 2010s, including a 1.5% drop in the decade following the global financial crisis.⁷⁴ In 2020, investments collapsed by a further 6.4% in advanced economies and by 4.5% in EMDEs. COVID crisis caused a further steep collapse. Excluding China, investments in EMDEs fell by an even steeper 10.6% in 2020.⁷⁵ The According to the World Bank, based on the experience of past epidemics, investment is likely to remain weak for several years following the COVID-19 pandemic unless decisive action is taken to reverse its effects.⁷⁶

FIGURE 4 | Gross fixed capital formation as a share of GDP, by income level, 1972-2018



Source: [World Development Indicators Database, World Bank](#). Accessed, 15 September 2021.

To promote strong and sustainable economic growth beyond the pandemic recovery phase and accelerate the transition to a net-zero and climate-resilient economy, global investment must be increased above pre-pandemic levels by around 2% of GDP per year over this decade and beyond.⁷⁷

As shown in Table 2, many of these investments can be implemented rapidly, can mobilize significant private finance, are labour-intensive in the short term, and can drive innovation. While the private sector would be the main source of investment, public investments will be crucial in the early period for creating high-return assets, particularly in sustainable infrastructure (see section 2.3). When supported by appropriate policies, these investment areas can generate significant market opportunities for private investments.⁷⁸

While significant investment opportunities can be found across all sectors, the seven investment areas identified in Table 2 are particularly important for delivering strong and sustainable growth, protecting the environment and biodiversity and supporting an effective transformation to a net-zero and climate-resilient economy.

The range of areas includes examples of the contribution that each investment area can make to recovery and growth, climate goals and sustainability, as well as other social, environmental and economic co-benefits. The complete estimates of investment opportunities are included in a report commissioned by the UK Presidency of the G7 and published in June 2021 ahead of the G7 summit held in Carbis Bay.⁷⁹

Cross-sectoral actions will also play a major role. Developing a circular economy and digital infrastructure to support digitalization can contribute to reducing emissions and deliver cost savings across the investment areas outlined above. For example, material efficiency and greater circularity could reduce CO₂ emissions by 40% in heavy industry by 2050.⁸⁰ Cross-sectoral action in cities will also be key to the achievement of the SDGs and provide a broad range of opportunity in terms of economic and environmental impact. Recent analysis across the nearly 100 cities of the C40 network estimates that a green and just recovery from COVID-19 could create over 50 million jobs, reduce greenhouse gas emissions by more than half, decrease air pollution by as much as 29% and prevent over 270,000 premature deaths over the next decade.⁸¹

TABLE 2 Investment opportunities for green recovery and transformational growth

Key investment areas			Jobs	Climate	Productivity/ economy	Social/other
01	Electricity generation, storage and networks Global investment estimate: 1.5-1.6 \$ tn p.a., mostly coming from private finance	i) Building solar and wind plants with the necessary storage; ii) upgrading distribution networks; iii) extending transmission networks to areas of high renewable resource.	Projects are currently ready to deploy or in development and can deliver three times more jobs per dollar invested than fossil fuels. ⁸²	Low-carbon electricity underpins decarbonization for 60–80% of the energy system.	Renewable energy already provides lower cost energy than fossil fuels. Solar and wind are already the lowest-cost new bulk generation in countries representing 70% of GDP. ⁸³	Solar can improve electricity access. Improved air quality will benefit in particular lower-income households, as more exposed to air pollution.
02	Energy efficiency Global investment estimate: 0.6-0.8 \$ tn p.a., coming from private and public finance	i) Improving energy efficiency of buildings and shifting to net-zero buildings (\$0.4-\$0.5 trillion p.a.); ii) enhancing energy efficiency in heavy industry (\$0.2-\$0.3 trillion p.a.).	An estimated 9 to 30 jobs are created per \$1 million investment in building retrofits, new builds and installation of energy efficient and connected appliances. ⁸⁴	Investments in energy efficiency and low-carbon heating could reduce emissions by around 25% by 2030 (vs. no investment). ⁸⁵ Energy efficiency improvements in heavy industry can reduce emissions linked to this sector by 15% in 2030 (vs. no investment). ⁸⁶	Energy efficiency retrofits can deliver energy savings of around 50%. Highly energy-efficient new buildings have little additional cost (6–16% in residential), or even lower costs (-10% in commercial). ⁸⁷	Efficiency gains can benefit lower-income households by helping to reduce fuel poverty.
03	Transport Global investment estimate: 0.1 \$ tn p.a., coming from private and public finance	<div>a Electric vehicles for light and heavy road transport: estimated to require a global investment of \$70 billion p.a. in charging infrastructure.</div> <div>b Aviation: estimated to require a global investment of \$10 billion p.a. in scaling Sustainable Aviation Fuel production (Energy Transitions Commission analysis, based on World Economic Forum⁹¹), and at least \$15 billion in R&D (e.g. e-aviation, hydrogen).</div> <div>c Shipping: estimated to require a global investment of \$20–\$40 billion p.a. between 2020-2030.⁹³ The majority of the investments are in green hydrogen production. This is therefore a subset of the investment estimates for green hydrogen provided in the next investment area, rather than incremental.</div>	Charging infrastructure could create around 6 million new direct jobs by 2030 [jobs are in EV charging infrastructure, construction, installation, maintenance, grid connections, civil and road work]. ⁸⁸	<div>EVs could reduce light road transport emissions globally by up to 15% and trucking emissions by 8% by 2030 (versus BAU, with no investment).⁸⁹</div> <div>Potential to reduce 10% of the aviation emissions by 2030 (vs. 2020 baseline) and the majority of those by 2050.⁹²</div> <div>These investments could reduce emissions associated with shipping by 5–10% by 2030 (vs. BAU with no investment)⁹⁴ and up to 100% by 2050 (assumes 5% green shipping fuel in international shipping and 25% zero-emissions vessels for domestic shipping by 2030).⁹⁵</div>	<div>EVs are three to four times cheaper to fuel per kilometre. EVs sticker price is expected to reach parity with petrol/ diesel cars by 2024.</div> <div>Short-haul flights could be cost-competitive with jet-fuelled planes by mid-2030s.</div>	<div>EV scale-up can reduce \$3 trillion in annual healthcare costs linked to air pollution globally.⁹⁰</div> <div>An investment of €1 billion in greening Europe's inland waterway fleet could save €7 billion in external costs linked to nitrous oxides and particulate matter between 2020-2030.⁹⁶</div>

TABLE 2 | Investment opportunities for green recovery and transformational growth (Continued)

Key investment areas			Jobs	Climate	Productivity/ economy	Social/other
04	Innovation: green hydrogen (H2) and carbon capture, utilization and storage (CCUS) Global investment estimate: 0.06-0.07 \$ tn p.a., coming from private and public finance	<div>a Hydrogen: key investment areas include hydrogen production facilities and backbone H2 pipes and storage.</div> <div>b Carbon Capture Utilization and Storage (CCUS): the investment required to develop CCUS capacity is estimated at \$160–\$190 billion p.a. between 2020-2050 and \$40–\$50 billion p.a. over the next decade.⁹⁸</div>	<div>The H2 industry and upstream solar/wind energy used to feed electrolyzers are expected to create longer-term jobs.</div> <div>In Europe, 150,000 jobs could be directly or indirectly linked to the development of a CCUS sector by 2050.⁹⁹</div>	<div>Hydrogen can play a key role in decarbonising steel, chemicals, shipping and aviation. Together these sectors account for 12% of current emissions (6 Gt CO₂e in 2018).⁹⁷</div> <div>CCUS can contribute to the decarbonization of the steel, cement and chemicals sectors, which together account for nearly 20% of current CO₂ emissions.¹⁰⁰</div>	<div>The cost of green hydrogen is projected to decline from \$3–\$6/kg H2 today to less than \$2/kg H2 or below before 2030.</div>	<div>Hydrogen can improve energy security, as it can be used to store energy locally, thus making power systems less exposed to supply chain disruptions.</div>
05	Adaptation and resilience Global investment estimate: >0.1-0.3 \$ tn p.a., coming from private and public finance	A comprehensive global estimate of investment opportunities for adaptation and resilience is not available. Nevertheless, most of the financing gap is to be found in developing countries at an estimated \$140–\$300 billion p.a. by 2030. ¹⁰¹			<div>Investment of \$1.8 trillion in five key areas is estimated to deliver \$7.1 trillion returns over the next decade, with benefits ranging from 2 to 10 times greater than original cost. The five key areas include: i) strengthening early warning systems; ii) making new infrastructure resilient; iii) improving dry land agriculture crop production; iv) protecting mangroves; and v) making water resources management more resilient.</div>	<div>Investments in adaptation and resilience can help reduce poverty and risk of climate-induced displacement.</div>
06	Nature protection and restoration Global investment estimate: 0.1-0.25 \$ tn p.a., coming mostly from public finance	Key investment areas include: \$44–\$200 billion p.a. to protect and restore forests and peatlands (low estimate taken from FOLU ¹⁰² , high estimate taken from UNEP, World Economic Forum and ELD ¹⁰³) and \$30–\$40 billion p.a. to restore mangroves, seagrasses and saltmarshes. ¹⁰⁴	<div>The allocation 5% of stimulus into nature-based solutions could create 7% more jobs globally than the BAU scenario.¹⁰⁵</div>	<div>Halting deforestation and restoring 450 million ha of natural land and forests would reduce annual net greenhouse gases by over 5Gt by 2030.</div>	<div>The three largest sectors (agriculture, food and beverages, and construction) that are highly dependent on nature generate an estimated \$8 trillion gross value added.¹⁰⁵</div>	<div>The improved air quality and reduced exposure to disease can reduce health costs.</div>
07	Productive, sustainable and efficient agriculture Global investment estimate: 0.15 \$ tn p.a., coming from private and public finance	Key investments include: \$90 billion p.a in sustainably enhancing agricultural yields and transitioning to regenerative agriculture practices; \$30 billion p.a. in reducing food loss and waste; \$20–\$30 billion p.a. in shifting to more plant-based diets.		<div>A transition to plant-based healthy diets could reduce food- and agriculture-related emissions (including imported emissions) by ~50% globally.¹⁰⁷</div>		<div>Improving agricultural yields can enhance the livelihoods of hundreds of millions of farmers worldwide by boosting incomes and food security.</div>

Source: various. See notes 82 to 107.

2. Changing the composition of investments

However, increasing the level of investments alone is not enough. The composition of the entire economy must shift and all new investment decisions should be made consistent with a zero-carbon pathway. As some physical capital has a long lifetime, investment decisions made today will have long-lasting effects. As outlined in the recent IPCC AR6, the world must act now to avoid catastrophic consequences from climate change. To account for the urgency of climate action, the alignment of investments to net-zero targets must happen very quickly.¹⁰⁸

Such rapid and comprehensive change can only be achieved through shifts in price signals and economic incentives. This involves the implementation of a comprehensive policy package, combining carbon pricing, regulation and redistributive measures:

- **Carbon pricing and subsidies.** Implementing a price on carbon, in the form of a tax or emissions trading system, is an economically efficient mechanism to shift production and consumption towards lower-carbon sources and to promote the adoption of low-carbon industrial processes and energy savings practices – directly and through innovation. In the case of a carbon tax, it can also generate additional fiscal revenues during the transition. As of May 2021, 37 national and 27 subnational jurisdictions had introduced a price on carbon.¹⁰⁹ Carbon pricing has also been endorsed by companies and industry bodies worldwide. In 2020 over 2,000 companies stated that they either use or anticipate using carbon pricing in the next two years.¹¹⁰ The Carbon Pricing Leadership Coalition launched a Task Force on Net Zero Goals and Carbon Pricing to contribute to a deeper understanding of the role of carbon pricing in achieving net zero. Despite all these important initiatives, carbon prices remain far below necessary levels.¹¹¹ We need far more ambition, guided by the CPLC pricing schedule. To ensure alignment of investment decisions to climate goals and the SDGs, carbon pricing should be complemented by the phasing out of fossil fuel subsidies, which in practice act as a negative carbon price. Eliminating these subsidies, including externalities through fiscal measures, would generate a fiscal gain of around 4% of global GDP.¹¹² Unfortunately, according to the OECD, “there is little evidence that governments are

using COVID-19 recovery efforts and current [oil] market conditions as a spur for fossil-fuel subsidy reform. Many countries are funnelling the bulk of stimulus funding to support fossil-fuel and related industries, often with no climate change or pollution-reduction requirements attached.”¹¹³ Continuation of such policies, which could, of course, significantly undermine a sustainable recovery, would be a matter of serious concern.

- **Regulation.** While carbon pricing is an effective market mechanism to shift investments towards low-carbon solutions, in some sectors — such as coal and gasoline — a rapid change could require unacceptably steep hikes in carbon prices due to supply and demand inertia. In these cases, a more effective approach would be regulatory action and a schedule for phasing them out. Regulatory limits can also provide a strong signal for private-sector investment decisions and can boost innovation. Commitments to phase out coal have been made in various fora — including the [Leaders' Summit on Climate](#) in April 2021. Disappointingly, as a group this commitment was lacking at both the G20 and the G7 in 2021. Governments must show more political will in this direction and make concrete pledges with clear time horizons attached, such as phasing out unabated coal power generation by 2030. Another sector where regulatory action would be more effective than market mechanisms is fossil fuel use in the transport sector. Some countries, like the EU Member States, the United Kingdom and Japan, have established sunsets for internal combustion engines (ICE). Other countries should follow those examples and set clear strategies to phase out ICE vehicles.
- **Redistributive measures.**¹¹⁴ Pricing and regulation will need to be complemented by measures that address their distributive effects. This might include the use of revenues from carbon pricing to compensate affected households for higher energy costs during the transition—such as Canada's Climate Action Incentive Payments.¹¹⁵ Other measures may have to be taken to level the competitive playing field in energy-intensive tradable sectors if higher carbon prices are introduced unevenly across countries.¹¹⁵

“Rapid and comprehensive change can only be achieved through shifts in price signals and economic incentives.”

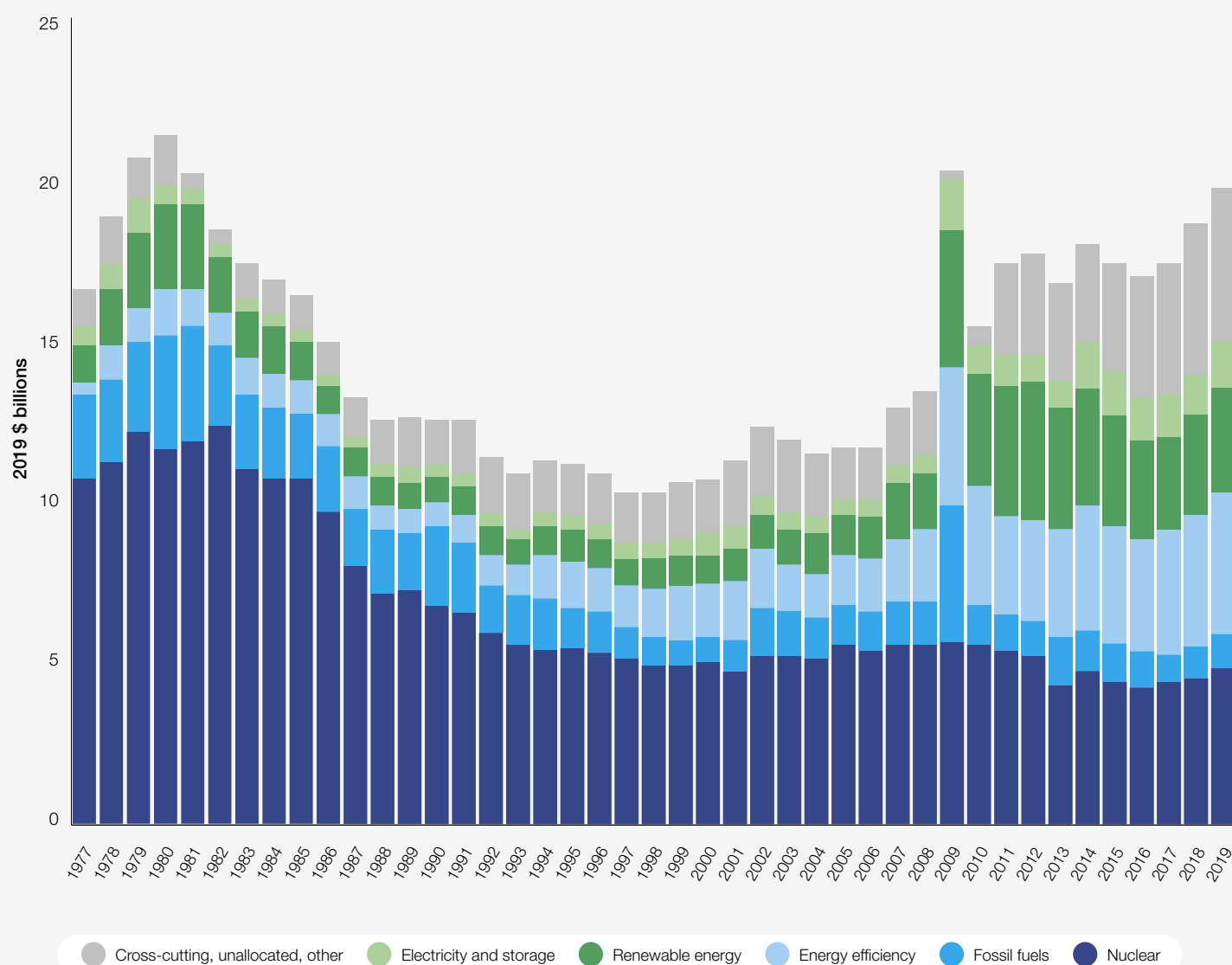
3. Accelerating innovation in low-carbon technologies

Technology-driven innovation, and its supporting policies, will be central to reaching deep decarbonization goals in line with the Paris Agreement. In the pathway to net-zero emissions laid out by the International Energy Agency, almost half of the annual CO₂ emissions reductions by 2050 would come from technologies that currently are in the prototype or demonstration phase. In hard-to-abate sectors — such as heavy industry and long-distance transport — the share of emissions reductions from technologies that are still under development today is even higher.¹¹⁶

Nevertheless, while investors are already taking advantage of the growing market potential for low-carbon technologies, the pace of innovation is still lagging far behind what it needs to be to reach climate goals.

The share of public energy R&D spending relative to GDP in OECD countries has shown no increase over the last decade, while other research objectives, like defence, receive around five times more R&D funding than energy.¹¹⁷ Companies investing in renewable energy showed a remarkable 74% growth in R&D spending between 2010 and 2019. Nevertheless, their share remains below one-tenth of total corporate R&D.¹¹⁸ The COVID-19 crisis further reduced private R&D spending. Company research spending in energy-related fields fell by around 2% in 2020.¹¹⁹ Global energy investment is set to rebound by around 10% in 2021, but this remains far short of what will be required to avoid severe climate impacts, while investment in EMDEs is set to remain below pre-crisis levels in 2021.¹²⁰

FIGURE 5 Global spending on public energy by technology, 1977-2019



Source: International Energy Agency (IEA), [Clean Energy Innovation, 2020](#).

Note: Figures are for IEA members. They include both R&D and demonstration spending.

There will be a need for major efforts over the next 10 years to bring key new technologies to market in time. The biggest innovation opportunities are in advanced batteries, green hydrogen, sustainable bioenergy, and carbon capture, utilization and storage (CCUS). Together, these technology areas could make vital contributions to the reduction in CO₂ emissions between 2030 and 2050 required for a net-zero path.¹²¹ For instance, innovations in hydrogen technologies have the potential for reducing emissions, including using hydrogen-based fuels for ships and planes as well as in heavy industries. Producing hydrogen from low-carbon energy is relatively expensive now, but costs are projected to decline by 30% by 2030.¹²² The United States is allocating \$100 million for R&D in hydrogen and fuel cells, and the European Union will invest \$430 million in green hydrogen by 2030 as part of the EU Green Deal. Other countries — such as Chile, Japan, Germany, Saudi Arabia and Australia — are also making major investments in green hydrogen.¹²³

Innovation in electric vehicles (EVs) needs to focus on battery efficiency and density improvements, as batteries are currently a major cost component. In 2020, the average sales-weighted lithium battery price fell 13% from 2019 and, according to Bloomberg, EVs will start to reach price parity with ICE vehicles globally in 2023.¹²⁴ Half of the battery cell production for EVs is concentrated in China, with the rest divided among the United States, Republic of Korea and Japan. Large private-sector stakeholders are at the core of automotive battery development.¹²⁵

CCUS will be especially important in reducing emissions in the heavy-industry sector, where commercially available mitigation options are

currently limited. Innovation is needed in several areas — including for improving post-combustion capture technologies; optimizing the use of captured CO₂ for chemical, fuel and concrete production; and reducing the cost of CO₂ transport and storage. The CEMCAP project, funded by the European Commission's Horizon 2020 programme, aims to lay the groundwork for large-scale CO₂ capture in the European cement industry.¹²⁶

Public-sector financial support is crucial for R&D — through government funding of research projects and tax credits for private sector R&D — as well as for mitigating risks associated with investing in early-stage technologies. Direct support can be particularly effective through initiatives bringing together government and industry, such as [Mission Innovation](#) and the [International Solar Alliance](#). The [World Economic Forum's Climate Action Platform](#) aims to build public-private initiatives to turn ambition into action as well as to provide a platform for innovators to scale solutions. Standards and regulations can be crucial in complementing public support for innovation.

There will certainly be a need for international cooperation to ensure that the right technologies are made available and are affordable for all countries. Developed economies can support a global and inclusive recovery through trade reforms, green trade liberalization and reform of trade-related measures that may restrict the diffusion of clean technologies to developing countries.¹²⁷ Options to enhance technology transfers include de-risking mechanisms like loan guarantees, public equity co-investments and political risk insurance for private investments in developing economies.¹²⁸

4. Aligning financial-sector decisions with the net-zero path

Transforming the financial system and mobilizing finance towards climate and development objectives will be critical to scale up and shift the composition of investments. The aim must be for all financial institutions to align their portfolios with sustainable and equitable growth, climate action and protection of the environment and biodiversity.

The private sector is already moving in this direction, allocating finance towards low-carbon solutions, thanks to a combination of declining capital costs and favourable investment conditions. A growing number of banks and investors are committing to align their portfolios with net-zero objective by 2050. Over 160 firms that are, together, responsible for assets over \$70 trillion joined the Glasgow Financial Alliance for Net Zero (GFANZ) when it launched in April 2021. Ninety-five central banks and financial supervisors have joined the [Network for Greening the Financial System \(NGFS\)](#) to better manage the risks posed by climate change to financial and monetary stability. Recommendations have been made to central banks to align their own portfolios to the net-zero target.¹²⁹

Despite these improvements, more effort is required to accelerate the shift within the financial system. Both the private and the public sectors should work together to ensure that every financial decision takes climate change into account, through the application of the '3Rs' — reporting, risk and returns (COP26 Private Finance Strategy).¹³⁰

- **Reporting.** Companies should provide reliable and comparable information about the exposure of portfolios and balance sheets to high-carbon assets and to physical climate impacts. Existing initiatives in this area include the [Task Force on Climate-related Financial Disclosures \(TCFD\)](#) and the [EU Taxonomy for Sustainable Finance](#). Building on the TCFD, the World Economic Forum has developed a set of Climate Governance Principles for boards of directors, with a view to enabling climate considerations in businesses decision-making.¹³¹ The recommendations of the TCFD should be made mandatory and complemented with a new regulatory focus on climate transition plans.

- **Risk.** Appropriately considering climate-related risks in financial decisions will also be key to ensure that financial institutions and markets are aligned with climate goals. There has been significant progress in this area supported by the recent work on climate scenarios by the NGFS. Systematic accounting for climate risks should become mandatory for all financial institutions. The analytical tools currently available to assess climate risks should be further developed — including climate, macroeconomic and financial models; appropriate accounting for tail risks and tipping points; stress tests; and scenarios. To better assess and manage nature-related risks derived from biodiversity loss and ecosystem degradation, more support should be given to the [Task Force on Nature-related Financial Disclosures \(TFND\)](#).
- **Returns.** Identifying opportunities for returns arising from the transition to a net-zero and climate-resilient economy will be key to attracting investments. This process is well underway. Demand for sustainable bonds is growing rapidly — 2020 marked \$1 trillion in cumulative green issuance.¹³² In recent years the range of sustainable bond products has expanded to include green, blue, SDG,

transition and sustainability-linked bonds. The EU has already confirmed plans to issue €225 billion in green bonds to support its recovery plan and the implementation of the European Green Deal. Bank of America has committed to investing an additional \$300 billion in capital by 2030 in sustainable energy and transportation, climate resiliency and clean water. Banco Santander aims to facilitate €220 billion of financing linked to the SDGs by 2030.¹³³

Throughout, international cooperation will have a crucial role in ensuring that financial flows are directed towards the dual objectives of net zero and development. With over half of the 70 low-income countries at high risk of or already in debt distress and many emerging markets facing fiscal and financing constraints, the role of grants, concessional finance and bilateral climate finance will be particularly important. Emerging markets currently represent less than 15% of the sustainable debt universe, underscoring high growth potential.¹³⁴ Developed countries should make a collective commitment to double climate finance to deliver on and go beyond the Paris Agreement target of \$100 billion per year by 2020 and commit to providing adequate support for a green recovery in developing countries.



5. Managing the distributional impacts of climate change policies

“ The post-pandemic recovery and the transition to a net-zero and climate- resilient economy must be, and must be seen to be, just.

The post-pandemic recovery and the transition to a net-zero and climate- resilient economy must be, and must be seen to be, ‘just’, fair and inclusive, contributing to a decline in inequality and ensuring that the benefits and opportunities of the transition are shared widely, while helping those most affected by economic losses. Taking appropriate actions to support a just transition will lead to greater social acceptance of the necessary socio-economic transformations. It will also be important to tackle inequalities between countries, particularly to ensure that poor and fragile states are not left behind.

Recovery packages aligned with climate goals can have a net-positive employment effect. Net job creation is the first and most important element of a just transition. However, some workers may not be able to move on from carbon-intensive industries and ‘brownier’ industries will not benefit proportionately from a green recovery. Dislocation arising from these rapid structural changes must be carefully managed, especially when concentrated in specific geographies. Programmes for a just transition should be country-specific, taking account of local circumstances and based on social dialogue. See, for example, the [ILO Climate Actions for Jobs Initiative, 2019](#). Measures should include facilitating the reallocation of labour and capital through, for example, targeted hiring subsidies, wage-loss insurance programmes, and re-training and the learning of new skills.¹³⁵ A just transition may also require action at the local level, such as restructuring existing housing stock. Programmes should consider directing public investment towards economically lagging locations, where justified by expected economic rates of return.

As part of the European Green Deal, the European Commission has created a [Just Transition Mechanism](#), which provides targeted support to help mobilize at least €65-75 billion over the period 2021-2027 in the regions most affected by the transition. The mechanism consists of three pillars: 1) a Just Transition Fund of nearly €17.5 billion to support the coal and carbon-intensive regions most affected by the low-carbon transition, with Poland set to be the largest recipient, 2) a dedicated transition scheme under [InvestEU](#), which is expected to crowd in €10-15 billion in private-sector investments, and 3) a public-sector loan facility provided by the European Investment Bank, to mobilize €25-30 billion of public investment.

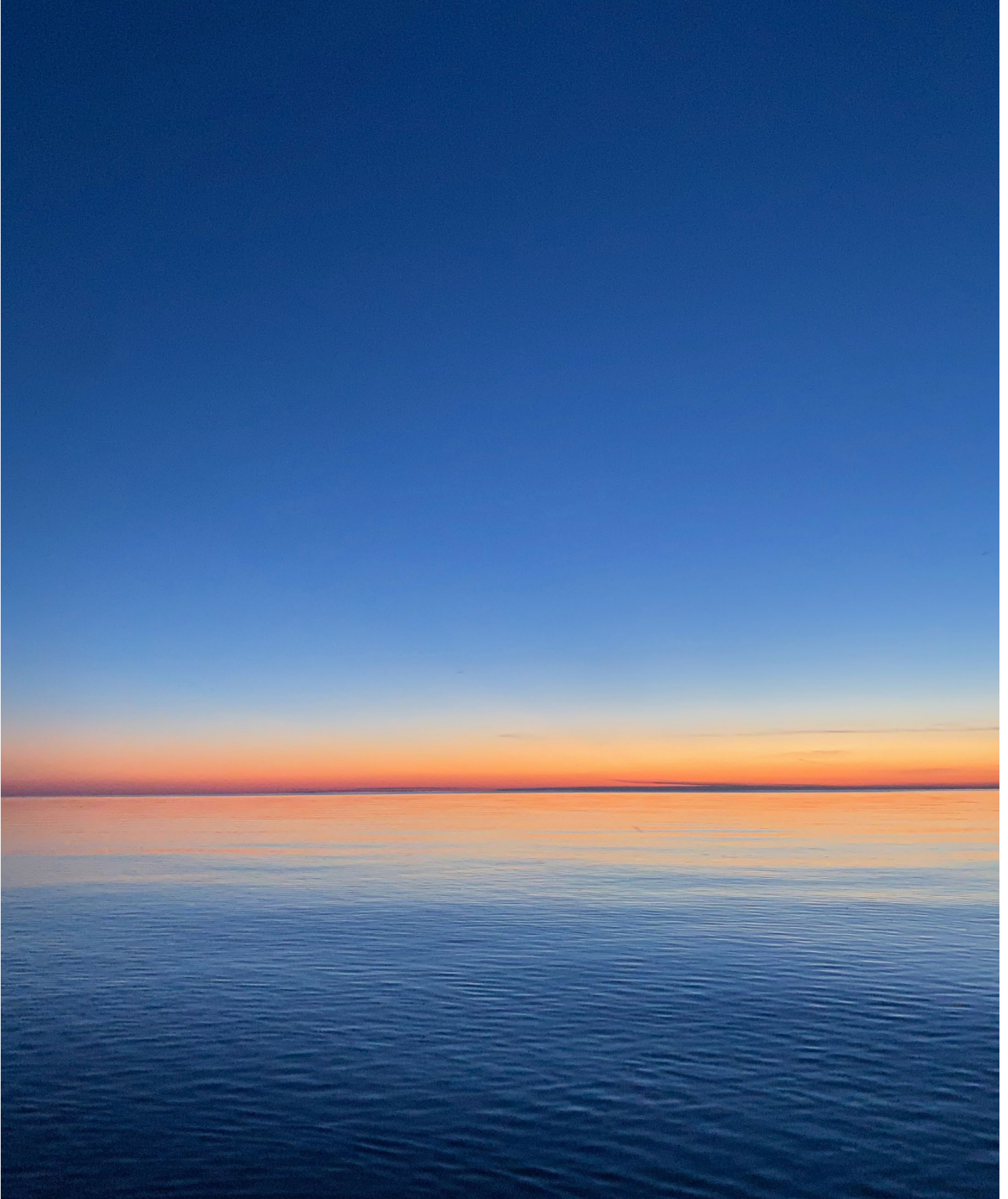
In 2019, Spain outlined a Just Transition Strategy that includes a participatory process to protect workers in coal regions. In 2019 Scotland established a Just Transition Commission to provide recommendations on a fair transition process. The German plan for phasing out coal has included building new industry in coal-mining areas to provide new job opportunities.

Carbon prices and subsidy withdrawal will also impact consumers differentially. Much of the burden of adjustment tends to fall on urban middle-class households on fixed incomes, or those who no longer function in the labour market, such as the elderly or disabled who rely on government benefits. Possible adjustments in benefit payments will need to be addressed on a country-by-country basis and might include adjustments in pensions, unemployment insurance and child benefits, depending on the social security arrangements in place in different countries. International finance institutions often recommend conditional cash transfers (CCTs) in emerging market countries to accompany carbon price adjustments.

3

Conclusion—a Shared Responsibility, Acting Now

The need for public-private collaboration



The thrust of the programme for change and its core elements are clear and not reasonably disputed. But there is a need to move to action, with much greater urgency and at much greater scale. Action by stakeholders is complementary and mutually reinforcing, so all must act. The overall goals for “building back better”, encapsulated in the SDGs, should be embodied in the strategies of all actors. They should answer direct and simple questions: who must act and how?; what must we invest in to “build back better”?; how to assess progress?. But the details are of great importance, will not always be simple, and must be worked out together.

There are numerous ways to build an organizing framework to drive a coherent set of actions for change — around issues, strategies, policies and institutions, economic sectors or systems. These ways carry their own insights. But organizing around actors may be an effective perspective for “making things happen”. The groups of actors described are individuals and communities; firms; financial institutions; governments/states; labour movements, NGOs, and faith groups; and international institutions.

Individuals and communities

In the recent months of the pandemic individuals, and the communities within which they live and work, have been reflecting on and discussing their values and what is important. We have seen the deep humanity and social commitment of many. These reflections and the wish to change society will be fundamental to “building back better”. It is individuals and communities who will ask whether

and how we can create a better world. And they actively contribute to the change by shifting behaviours, such as in transport modes and diets. Keeping that discussion going and empowering communities will be crucial to success. Young people should be at the core of this discussion. It is their future. And it is their employment and training that is at particular risk.

Firms

The purpose of the firm is increasingly and rightly understood as being beyond simple profit maximization and maximization of the value of the firm, narrowly defined. A more modern and enlightened definition of its purpose is “to find profitable solutions to the problems of people and the planet”. Firms should adopt such a definition, build their strategies and behaviours on it, and embrace the SDGs.

We have seen that firms that act in this way also perform better in relation to conventional criteria. Firms following sustainable strategies have seen their value do relatively well both in the years up to the COVID-19 crisis and during the COVID-19 crisis. Such firms attract the best employees, patient capital and loyal customers.

Firms should set a time-bound target with milestones and actions for net-zero emissions (and many are already doing this). They should invest still more strongly in their employees to equip them for the skills of the future and resilience to crises. They should look at their supply chains in terms of sustainability, well-being of workers and their communities, and resilience. They must take climate

change and climate-related risks into account in their business strategies. And they must play the key role in realizing the innovations we need.

Firms can work together by industry to set targets and exchange ideas on how to “build back better”, be more sustainable and resilient and to set targets for zero-carbon. More and more firms are, indeed, doing this. Yet, even more firms should participate, and targets and strategies could be further strengthened.

There is much more that firms can and should do to build a better world, and the World Economic Forum has played a leading role in driving this agenda forward.

Yet there is more to the universe of firms than the major companies. The group with the most numerous firms is that which includes the hundreds of millions of small farms and enterprises across the world. Much of the world’s economic activity consists of the informal sector, which is the largest employer in, for example, India. “Informal is normal” and careful thought and emphasis should be given to the participation and interests of this group.

Finance

Finance is more than just a tool – the evolution of finance over the past decades has introduced financial imperatives into every aspect of economic decision-making, empowering firms, households

and ideas but also dramatically shortening economic horizons and contributing to iniquities.

Finance now has an opportunity to drive change. It can contribute leadership in defining a new, resilient and sustainable path and at the same time enable the necessary expansion of investments. Financial firms have coalesced in the [Climate Finance Leadership Initiative \(CFLI\)](#) and the Glasgow Financial Alliance for Net Zero (GFANZ) and are helping to push the envelope on climate action.

Assessment and disclosure of climate risks and setting net-zero targets and pathways anchors expectations and gives direction to all actors in the economy. But there is a long way from targets to action. There is a need for innovative designs to help channel far more finance into the transition and into sustainable investments. This will require dialogue and cooperation with public bodies and philanthropies — for instance in creating funding platforms and asset classes for sustainable investments. And financial technologies, if oriented to the needs of smaller firms and the general population, can help to democratize access to finance and make financial systems more inclusive.

Government and states

The crisis has taught us of the vital role of the state in protecting people from and sustaining them in a crisis. We have seen how critical it can be in building better societies and the importance of investing within public administrations to develop dynamic capabilities and capacity.¹³⁶ Throughout the COVID-19 crisis, states have taken a much stronger role in financing activities, and some of this is likely to turn into equity.

All this underlines the importance of a review of the role of the state. Many countries will be looking to learn from others in “building back better.” The World Economic Forum’s platform could greatly enhance that process of mutual learning and deepening understanding.

The climate crisis is a significant market failure. A central subject in the review of the role of the state would therefore be its role in regulation, from market power to utilities to environment to transparency and governance. A narrow view of a bonfire of regulations makes little sense here. It is not a matter of more versus less regulation. On the contrary, we need more good regulations, and less bad regulation.

It surely does make sense to see government and the private sector in partnership to build a better world, rather than in conflict or in a client-servant relationship. The state can help build a stronger investment climate. It can put into practice the key elements of the Sustainable Markets Initiative proposed by HRH Prince Charles at World Economic Forum Annual Meeting in January 2020.

A key example could be the reform of agricultural and fossil-fuel subsidies. The principles of “public money in support of public goods” and “polluter pays” are fundamental. The world’s agricultural subsidies of around half a trillion dollars per annum work to degrade land, poison water, and destroy forests. A similar sum could lead to much more productive, sustainable and equitable outcomes. There should be carbon prices not fossil-fuel subsidies. There are many more examples where we can see how change we can identify and understand would help us “build back better”.

Many sustainable investments can be enacted quickly, are labour intensive and have strong economic multipliers. We know we should do many of them anyway so we should bring them forward for implementation at a time of unemployment. These are basic areas for public-private collaboration. The young and the poor have been hit hardest by this crisis and supporting them through it and investing in their health and skills is of vital importance.

Cities and regional government are integral components of the challenge of re-thinking the role of the state. C40 and other gatherings could have a crucial role to play. More than any other actor, they will define the future of sustainability. There is growing understanding of how to create much better functioning, clean and compact cities, including the advantage of being able to move and breathe.

Labour movements, NGOs and faith groups

Non-private, non-government actors are critical to building a better world. Many unions have been playing a very constructive role in climate change (for example, through the [International Trade Union Confederation \(ITUC\)](#)). They have played a major role in organizing the emergence from lockdown. They recognize the importance of the long-term view and of skilling and re-skilling for a changing world.

NGOs are, of course, very varied. Philanthropic foundations such as [Wellcome](#), [Gates Foundation](#) and others have been very influential in discovering and funding ways forward for development, particularly around health. [The World Resources](#)

[Institute](#) has done outstanding research and campaigning on sustainability. Local philanthropic institutions in developing economies have been central to sustaining poor people through the COVID-19 crisis. For example, the [International Committee of the Red Cross](#) is doing vital humanitarian work.

Faith groups around the world have been leaders on sustainability, equity and humanitarian action, with Pope Francis being an outstanding example. Their voices are being heard on “building back better.” They will be central to any discussion on underlying values and principles.

International institutions

Internationalism will be fundamental in building the new world. We have, in large measure, the necessary institutions in the United Nations, the International Financial Institutions (IFIs), the World Health Organization (WHO) and so on. The challenge now is to get behind them and use them much better.

The current debt crisis, together with the climate crisis requires a greatly enhanced role for the IFIs, including their policy and implementation expertise, their ability to mobilize private funding alongside their own, as well as boosting their capital. Rebooting public action around the SDGs is a vital task for the UN. And the role of the WHO will be crucial to the management of future pandemics and in many other ways.

Internationalism and globalization are not the same. The latter may recede, but we need much more of the former. The World Economic Forum can provide outstanding leadership in building that internationalism.

International relations and the ability to collaborate and work together depends on countries and political and community leadership. The last years have been a time of tension between major powers. Working together to ease or resolve those tensions will be a key element in building a more cohesive world and strengthening the international institutions through which the world can collaborate. A key part of that will not only be the global groupings and institutions but also regional ones.



Contributors

The views expressed in this briefing do not necessarily represent the views of the World Economic Forum nor those of its Members and Partners. This briefing is a

contribution to the World Economic Forum's insight and interaction activities and is published to elicit comments and further debate.

London School of Economics, Grantham Research Institute on Climate Change

Lord Nicolas Stern,
Chair

Hans Peter Lankes,
Visiting Professor in Practice

Roberta Pierfederici
Senior Fellow

The World Economic Forum would like to thank Saadia Zahidi, Attilio di Batista and Vesselina S. Ratcheva for their contributions to the review and publication of this report. We are further grateful

to Mike Fisher for his editorial services, to Floris Landi for his leadership of the design process and to Laurence Denmark and Alistair Millen for their support with design and layout.

Endnotes

1. Intergovernmental Panel on Climate Change, “Summary for Policymakers”, in Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, 2021, https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf.
2. Foa, R.S., A. Klassen, M. Slade, A. Rand and R. Collins, The Global Satisfaction with Democracy Report 2020, Bennett Institute for Public Policy at the University of Cambridge, 2020, https://www.bennettinstitute.cam.ac.uk/media/uploads/files/DemocracyReport2020_nYqqWi0.pdf. The data refer to the pooled (population-weighted) average for 77 developed and developing country democracies.
3. Schwab, K., “Davos Manifesto 2020: The Universal Purpose of a Company in the Fourth Industrial Revolution”, World Economic Forum Agenda blog, 2 December 2019, <https://www.weforum.org/agenda/2019/12/davos-manifesto-2020-the-universal-purpose-of-a-company-in-the-fourth-industrial-revolution/>. A similar statement was made by the United States Business Roundtable in 2019: <https://purpose.businessroundtable.org/>.
4. Energy and Climate Intelligence Unit and University of Oxford Net Zero, Taking Stock: A Global Assessment of Net Zero Targets, 23 March 2021, https://ca1-eci.edcdn.com/reports/ECIU-Oxford_Taking_Stock.pdf.
5. See <https://www.c40.org/cities> for more details.
6. Ferreira, F.G., “Inequality in the Time of COVID-19”, IMF Finance & Development Blog, Summer 2021, 2021, <https://www.imf.org/external/pubs/ft/fandd/2021/06/inequality-and-covid-19-ferreira.htm>.
7. Ibid.
8. Organisation for Economic Co-operation and Development (OECD), The OECD Green Recovery Database: Examining the Environmental Implications of COVID-19 Recovery Policies, 19 April 2021, <https://www.oecd.org/coronavirus/policy-responses/the-oecd-green-recovery-database-47ae0f0d/>.
9. Center for Global Commons, The Global Commons Stewardship Framework, The University of Tokyo Institute for Future Initiatives, forthcoming in 2021.
10. Sachs, J. G. Traub-Schmidt, C. Kroll, G. Lafortune and G. Fuller, Sustainable Development Report 2021, Cambridge University Press, 2021, <https://sdgindex.org/reports/sustainable-development-report-2021/>.
11. World Economic Forum, Measuring Stakeholder Capitalism: Towards Common Metrics and Consistent Reporting of Sustainable Value Creation, 2020, <https://www.weforum.org/reports/measuring-stakeholder-capitalism-towards-common-metrics-and-consistent-reporting-of-sustainable-value-creation>, and World Economic Forum, Dashboard for a New Economy Towards a New Compass for the Post-COVID Recovery, 2020, <https://www.weforum.org/reports/dashboard-for-a-new-economy-towards-a-new-compass-for-the-post-covid-recovery>.
12. Here, “sustainable” is understood in the narrow, environmental sense. But one can make the case that the social, ecological and economic aspects of growth should all be judged through a sustainability lens. A more fundamental definition of sustainability is for each generation to offer to the next generation opportunities at least as good as the ones they benefited from. These opportunities depend on the assets created and left from one generation to another. It is helpful to think of these assets in terms of physical, human, natural and social capital. Human capital is focused on health and education; natural capital on environment, climate and biodiversity; and social capital on the strength and quality of institutions, trust, social cohesion and (in)equalities.
13. The COVID-19 pandemic is expected to increase the average Gini index value for emerging market and developing economies by more than 6%. See: United Nations, Progress towards the Sustainable Development Goals Report of the Secretary-General, April 2021, <https://undocs.org/en/E/2021/58>.
14. International Monetary Fund (IMF), World Economic Outlook Update July 2021: Fault Lines Widen in the Global Economy, 2021, <https://www.imf.org/en/Publications/WEO/Issues/2021/07/27/world-economic-outlook-update-july-2021>.
15. Ferreira, Inequality in the time of COVID-19.
16. Using the extreme poverty threshold of \$1.90 per day. See: World Bank, “Financing Human Capital”, Human Capital Project Ministerial Conclave, 5 April 2021.
17. Ibid.
18. Kristalina Georgieva, Tedros Ghebreyesus, David Malpass and Ngozi Okonjo-Iweala, A New Commitment for Vaccine Equity and Defeating the Pandemic, 31 May 2021, estimate that an investment of \$50 billion in the global vaccine roll-out in 2021/22 would generate some \$9 trillion in additional global output by 2025.
19. Ibid.
20. World Bank, “Financing Human Capital.”
21. European Bank for Reconstruction and Development (EBRD), the International Finance Corporation (IFC), and CDC Group, Addressing Gender-Based Violence and Harassment: Emerging Good Practice for the Private Sector, 2020, https://www.ifc.org/wps/wcm/connect/f1645167-7eff-439b-922b-7656c75320ab/GPN_AddressingGBVH_July2020.pdf?MOD=AJPERES&CID=nddokiS.

22. I. Goldin, I. and R. Muggah, "COVID-19 is Increasing Multiple Kinds of Inequality: Here's What We Can Do About It", World Economic Forum Agenda blog, 9 October 2020, <https://www.weforum.org/agenda/2020/10/covid-19-is-increasing-multiple-kinds-of-inequality-here-s-what-we-can-do-about-it/>.
23. World Economic Forum, Global Gender Gap Report 2021, 2021, <https://www.weforum.org/reports/ab6795a1-960c-42b2-b3d5-587eccda6023>.
24. International Finance Corporation (IFC), Childcare in the COVID-19 Era: A Guide for Employers, 2020, https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/gender+at+ifc/resources/childcare+and+covid+guidance+for+employers.
25. World Bank, "Financing Human Capital."
26. International Monetary Fund (IMF), Fiscal Monitor Database of Country Fiscal Measures in Response to the COVID-19 Pandemic, June 2021
27. International Monetary Fund (IMF), Fiscal Monitor Database of Country Fiscal Measures in Response to the COVID-19 Pandemic, July 2021.
28. Growth in low-income economies this year is anticipated to be the slowest in the past 20 years other than 2020, partly reflecting the very slow pace of vaccination. See World Bank, Global Economic Prospects, June 2021, <https://reliefweb.int/report/world/world-bank-global-economic-prospects-june-2021>.
29. The lesson from the global financial crisis of 2008–2009 is that fiscal policy that focuses initially on the demand and growth conditions for economic recovery is more likely to bring debt ratios under control over the medium term than a focus on sharp immediate reductions in the deficit itself. See N. Stern and D. Zhengel, Fiscal responsibility in advanced economies through investment for economic recovery from the COVID-19 pandemic, LSE/Grantham Institute policy publication, March 2021.
30. See Section 2.5 for more details on investment needs for recovery and growth.
31. For instance, publicly-funded green grids or charging for infrastructure would unblock markets and raise returns to private investment in renewable power generation and electric vehicles, respectively.
32. The IMF concludes that the multiplier in those circumstances could be above 2 over two years, larger than in normal times, if investments are well-governed and -managed (International Monetary Fund (IMF) (2020) Fiscal Monitor: Policies for the Recovery, October 2020).
33. IMF, World Economic Outlook, 2020, <https://www.imf.org/en/Publications/WEO/Issues/2020/09/30/world-economic-outlook-october-2020>.
34. International Monetary Fund (IMF), Fiscal Monitor April 2021, 2021, <https://www.imf.org/en/Publications/FM/Issues/2021/03/29/fiscal-monitor-april-2021>.
35. While measured inflation in the United States has increased, following record-low prices for key commodities one year ago, that base effect is likely to be short-lived. Despite heightened sensitivity and discussion, 10-year inflation expectations in the United States, as measured by the Federal Reserve Bank of Cleveland in August 2021, were below 1.6%. For more details, see: <https://www.clevelandfed.org/our-research/indicators-and-data/inflation-expectations.aspx>.
36. Excess desired global savings, which are a factor explaining low-for-long real interest rates, may also diminish as a result of demographic change (Goodhart, C. and M. Pradhan, The Great Demographic Reversal, Palgrave Macmillan, 2020). But change will be gradual and leave a long window of opportunity for the kind of fiscal action described in this report.
37. IMF, World Economic Outlook Update July 2021.
38. Bughin, J. and J. Woetzel, Navigating A World of Disruption, briefing note prepared for the 2019 World Economic Forum in Davos Switzerland, McKinsey Global Institute (MGI), <https://www.mckinsey.com/featured-insights/innovation-and-growth/navigating-a-world-of-disruption>.
39. This is due primarily to rapid income growth in China and India, which, together, account for 40% of the world's population.
40. The timeseries for the Russian Federation is less reliable given the country's change in economic model in the early 1990s.
41. Peterson Institute for International Economics (PIIE), How to Fix Economic Inequality: An Overview of Policies for the United States and Other High-Income Economies, 2020, <https://www.piie.com/microsites/how-fix-economic-inequality>.
42. OECD, Under Pressure: The Squeezed Middle Class, 2019, <https://www.oecd.org/social/under-pressure-the-squeezed-middle-class-689afed1-en.htm>.
43. World Economic Forum, Global Social Mobility Index 2020: Why Economies Benefit from Fixing Inequality, World Economic Forum, 2019, <https://www.weforum.org/reports/global-social-mobility-index-2020-why-economies-benefit-from-fixing-inequality>.
44. Edelman, Edelman Trust Barometer, 2020, <https://www.edelman.com/trust/2020-trust-barometer>.
45. OECD, Under Pressure: The Squeezed Middle Class, and Foa, et al., The Global Satisfaction with Democracy Report 2020.
46. OECD, Under Pressure: The Squeezed Middle Class.
47. World Economic Forum, Future of Jobs Report 2020, 2020, <https://www.weforum.org/reports/the-future-of-jobs-report-2020>.
48. Edelman, Edelman Trust Barometer. These fears are attributed to the gig economy, a looming recession, a lack of skills, cheaper foreign competitors, immigrants who will work for less, automation or jobs being moved to other countries.

49. World Economic Forum, Future of Jobs Report 2020.
50. OECD, Preventing Aging Unequally, 2017, <https://www.oecd.org/health/preventing-ageing-unequally-9789264279087-en.htm>. For an analysis, see also: Goodhart, C. and M.Pradhan, The Great Demographic Reversal, Palgrave Macmillan, 2020. There are currently estimated to be over 50 million people worldwide living with dementia, and the number of people affected is set to rise to 152 million by 2050, with the greatest increases in low and middle-income countries. See Alzheimer Disease International, Dementia Statistics: <https://www.alzint.org/about/dementia-facts-figures/dementia-statistics/>.
51. Shafik, M., What We Owe Each Other: A New Social Contract, Princeton University Press, 2021. See also IMF, Finance & Development Blog, April 2021, <https://www.imf.org/external/pubs/ft/fandd/2021/04/what-we-owe-each-other-book-minouche-shafik.htm>.
52. Ibid.
53. World Economic Forum, Global Social Mobility Index 2020: Why Economies Benefit from Fixing Inequality.
54. World Bank, Financing Human Capital.
55. Mourshed, M., The Opportunity in Aging, Project Syndicate, 20 August 2021, <https://www.project-syndicate.org/onpoint/mid-career-older-workers-promise-savings-productivity-gains-by-mona-mourshed-2021-08>. Mourshed reports, for instance, that for Brazil, India, Italy, Singapore, Spain, the United Kingdom and the United States, 63% of the unemployed over the age of 45 have been out of work for more than a year, compared to just 36% of those ages 18-34.
56. Shafik, What We Owe Each Other.
57. World Economic Forum, Upskilling for Shared Prosperity, 2021, <https://www.weforum.org/reports/66f2ea7f-4fd3-4e05-8313-888196373558>.
58. This follows Shafik, What We Owe Each Other.
59. See IFC's Tackling Childcare program, https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/gender+at+ifc/priorities/employment/tackling_childcare_the_business_case_for_employer_supported_childcare.
60. OECD, A Broken Social Elevator? How to Promote Social Mobility, 2018, <https://www.oecd.org/social/broken-elevator-how-to-promote-social-mobility-9789264301085-en.htm>, and PIIE, How to Fix Economic Inequality.
61. World Bank, Financing Human Capital.
62. Batchelder, L., Leveling the Playing Field Between Inherited Income and Income from Work Through an Inheritance Tax, New York University (NYU) Law and Economics Research Paper No. 20-11, 28 January 2020.
63. World Economic Forum, Markets of Tomorrow: Pathways to a New Economy, 2020, <https://www.weforum.org/reports/markets-of-tomorrow-pathways-to-a-new-economy>.
64. OECD, "Redistribution of Income", in Government at a Glance 2017, OECD, https://www.oecd-ilibrary.org/governance/government-at-a-glance-2017_gov_glance-2017-en.
65. For further discussion, see PIIE, How to Fix Economic Inequality.
66. More than 130 countries and jurisdictions have agreed to a two-pillar plan that will reallocate the rights to profit taxes from multinational corporations and set a floor of 15% for corporate income taxes across countries. Taxing rights on more than \$100 billion in profits are expected to be reallocated each year, while the global minimum tax is estimated to generate around \$150 billion in additional global tax revenues annually. See OECD, 130 Countries and Jurisdictions Join Bold New Framework for International Tax Reform [Press release], 7 January 2021, <https://www.oecd.org/newsroom/130-countries-and-jurisdictions-join-bold-new-framework-for-international-tax-reform.htm>
67. Quoted in: Wolf, M, "We Must Rethink the Purpose of the Corporation", Financial Times, 11 December 2018, <https://www.ft.com/content/786144bc-fc93-11e8-ac00-57a2a826423e>.
68. Tett, G., "Millennial Philanthropy May Forever change Finance", Financial Times, 6 May 2021, <https://www.ft.com/content/bb84572b-89bc-4cc3-9d0c-5e6121b04191>. The survey data refer to private wealth management clients, not to the population at large.
69. World Economic Forum, Diversity, Equity and Inclusion 4.0: A Toolkit for Leaders to Accelerate Social Progress in the Future of Work, 2020, <https://www.weforum.org/reports/diversity-equity-and-inclusion-4-0-a-toolkit-for-leaders-to-accelerate-social-progress-in-the-future-of-work>.
70. IFC, Oliver Wyman and RockCreek, Moving Toward Gender Balance in Private Equity and Venture Capital, 2019, https://www.ifc.org/wps/wcm/connect/79e641c9-824f-4bd8-9f1c-00579862fed3/Moving+Toward+Gender+Balance+Final_3_22.pdf?MOD=AJPERES&CVID=mCJBFra.
71. World Economic Forum, Diversity, Equity and Inclusion 4.0.
72. United Nations Environment Programme (UNEP), Emissions Gap Report 2020, 2020, <https://www.unep.org/emissions-gap-report-2020>. Estimates are based on pre-COVID-19 projections.
73. These include stranding of assets, challenges in reallocating capital and labour to the new low-carbon industries as well as over-reliance on negative emissions technologies.
74. World Bank, World Development Indicators database. The data refer to high-income countries.
75. World Bank, Global Economic Prospects 2021, <https://www.worldbank.org/en/publication/global-economic-prospects>.
76. Ibid.

77. Stern N, G7 leadership for sustainable, resilient and inclusive economic recovery and growth: An independent report requested by the UK Prime Minister for the G7, 2021. London: London School of Economics and Political Science. This calculation accounts for several factors, including the long-term decline in investment-to-GDP ratio, all of which point to increases of similar orders of magnitude (see Stern, 2021).
78. See similar results in a recent report from the International Finance Corporation (IFC), which estimates that COVID-19 recovery funding focused on 10 low-carbon investment areas in 21 emerging markets could generate investment opportunities of \$10.2 trillion, creating 213 million jobs and reducing greenhouse gas emissions by 4 billion tons by 2030 (IFC, Ctrl-Alt-Delete: A Green Reboot for Emerging Markets, 2021, https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/climate+business/resources/a+green+reboot+for+emerging+markets). Investment areas cover the decarbonization of existing and future infrastructure, support to climate-smart cities and the transition of key industries to greener production.
79. Stern N, 2021.
80. Energy Transitions Commission, Making Mission Possible: Delivering a Net-Zero Economy, 2020, <https://www.energy-transitions.org/publications/making-mission-possible/>.
81. C40 Cities, The Case for a Green and Just Recovery, C40 Knowledge Hub, 2021, https://www.c40knowledgehub.org/s/article/The-Case-for-a-Green-and-Just-Recovery?language=en_US.
82. Garrett-Peltier, H., "Green versus brown: Comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input-output model", Economic Modelling, vol. 61, 2017, pp. 439-447, <https://www.sciencedirect.com/science/article/abs/pii/S026499931630709X?via%3Dihub>.
83. Bloomberg New Energy Finance (NEF), New Energy Outlook 2020: Executive Summary. Bloomberg NEF, 2020, <https://about.bnef.com/new-energy-outlook-2020/#toc-download>.
84. International Energy Agency (IEA), Sustainable Recovery – Buildings – World Energy Outlook Special Report, 2020, <https://www.iea.org/events/world-energy-outlook-special-report-on-sustainable-recovery>.
85. Turner J., M. Meldrum, V. Haagh, O. Ibsen and J. Oppenheim, Investments for Green Recovery and Transformational Growth 2020–30: Technical Note, SYSTEMIQ and London School of Economics and Political Science, 2021, <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2021/06/G7-Leadership-Technical-Note-Investments-for-Green-Recovery-and-Transformational-Growth.pdf>.
86. Ibid.
87. Lucon O., D. Ürge-Vorsatz, A. Zain Ahmed, H. Akbari, P. Bertoldi, L.F. Cabeza, et al., "Buildings", in Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, edited by O. Edenhofer, R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, et al., Cambridge University Press, 2014.
88. Goldman Sachs, Carbonomics: The Green Engine of Economic Recovery, Equity Research, 2020, <https://www.goldmansachs.com/insights/pages/gs-research/carbonomics-green-engine-of-economic-recovery-f/report.pdf>.
89. Turner, et al., Investments for Green Recovery and Transformational Growth 2020–30: Technical Note.
90. Farrow A., K.A. Miller and L. Myllyvirta, Toxic Air: The Price of Fossil Fuels, Greenpeace Southeast Asia, 2020, <https://www.greenpeace.org/southeastasia/publication/3603/toxic-air-the-price-of-fossil-fuels-full-report/>.
91. World Economic Forum in collaboration with McKinsey and Company, Clean Skies for Tomorrow: Sustainable Aviation Fuels as a Pathway to Net-Zero Aviation, 2020, <https://www.weforum.org/reports/a356c865-311e-45ca-845d-efe5f762a820>.
92. Turner, Investments for Green Recovery and Transformational Growth 2020–30: Technical Note.
93. UMAS, Shipping: Potential for zero-emission fuel adoption by 2030: A short-term roadmap to reduce emissions in line with Paris targets (not available online), 2020.
94. Turner, Investments for Green Recovery and Transformational Growth 2020–30: Technical Note.
95. Energy Transitions Commission, Mission Possible Sectoral Focus: Shipping, 2019, <https://www.energy-transitions.org/publications/mission-possible-sectoral-focus-shipping/>.
96. European Commission and Prominent, D6.3 Business economic and financing options for greening innovations in IWT; D6.5 Financial impact Greening IWT for Europe, 2018, https://www.prominent-iwt.eu/wp-content/uploads/2018/07/2018_04_30_PROMINENT_D6.3_D6.5_Combined_Deliverable.pdf.
97. Energy Transitions Commission, Mission Possible: Reaching Net-Zero Carbon Emissions from Harder-to-Abate Sectors, 2018, <https://www.energy-transitions.org/publications/mission-possible/>.
98. Energy Transitions Commission, Making Mission Possible: Delivering a Net-Zero Economy, 2020, <https://www.energy-transitions.org/publications/making-mission-possible/>.
99. European Commission, The Potential for CCS and CCU in Europe. Report to the Thirty-Second Meeting of the European Gas Regulatory Forum 5-6 June 2019, 2019, https://ec.europa.eu/info/sites/default/files/iogp_-_report_-_ccs_ccu.pdf.
100. Energy Transitions Commission, Mission Possible: Reaching Net-Zero Carbon Emissions from Harder-to-Abate Sectors.
101. United Nations Environment Programme (UNEP), Adaptation Gap Report 2020, 2021, <https://www.unep.org/resources/adaptation-gap-report-2020>.
102. Food and Land Use Coalition (FOLU), Growing Better: Ten Critical Transitions to Transform Food and Land Use System. The Global Consultation Report of the Food and Land Use Coalition, 2019, <https://www.foodandlandusecoalition.org/wp-content/uploads/2019/09/FOLU-GrowingBetter-GlobalReport.pdf>.

103. United Nations Environment Programme (UNEP), World Economic Forum and Economics of Land Degradation Initiative (ELD), State of Finance for Nature: Tripling Investments in Nature-Based Solutions by 2030, 2021, <https://www.unep.org/events/publication-launch/state-finance-nature-tripling-investments-nature-based-solutions-2030>.
104. Deutz A., G.H. Heal, R. Niu, E. Swanson, T. Townshend, Z. Li, et al., Financing Nature: Closing the Global Biodiversity Financing Gap, Paulson Institute, TNC Cornell Institute, 2020, <https://www.paulsoninstitute.org/key-initiatives/financing-nature-report/>.
105. Vivid Economics, Greening the Stimulus: Investing in Nature, 2020, https://www.vivideconomics.com/wp-content/uploads/2020/01/210119-Greening-the-stimulus_clean.pdf.
106. World Economic Forum, Future of Nature and Business: New Nature Economy Report II, 2020, <https://www.weforum.org/reports/new-nature-economy-report-ii-the-future-of-nature-and-business>.
107. Clark, M.A., N.G.G. Domingo, K. Colgan, S.K. Thakrar, D. Tilman, et al., "Global food system emissions could preclude achieving the 1.5 and 2.5C climate change targets", Science, vol. 370, no. 6517, 2020, pp. 705-708, <https://www.science.org/doi/10.1126/science.aba7357>.
108. IPCC, AR6 Climate Change 2021: The Physical Science Basis, contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press (currently in press).
109. For details on the Carbon Pricing Leadership Coalition, see: <https://www.carbonpricingleadership.org/who>.
110. For details on the CDP, see: <https://www.cdp.net/en/reports/downloads/5651>.
111. Modelling suggests that a step-by-step increase in carbon prices, even by a modest 7% annually, starting at \$6–\$20/tCO₂e if part of a broader policy package, could be effective at placing economies on a path to net-zero by 2050. See: IMF, G-20 Background Note: Reaching Net Zero Emissions, 22 June 2021, <https://www.imf.org/external/np/g20/pdf/2021/062221.pdf>.
112. Coady D., I. Parry, N-P Le and B. Shang, Global Fossil Fuel Subsidies Remain Large: An Update Based on Country-Level Estimates, IMF Working Paper WP/19/89, 2019, <https://www.imf.org/en/Publications/WP/Issues/2019/05/02/Global-Fossil-Fuel-Subsidies-Remain-Large-An-Update-Based-on-Country-Level-Estimates-46509>.
113. OECD, OECD Companion to the Inventory of Support Measures for Fossil Fuels 2021, 2021, https://www.oecd-ilibrary.org/environment/oecd-companion-to-the-inventory-of-support-measures-for-fossil-fuels-2021_e670c620-en.
114. A more detailed discussion of the Just Transition is in sub-section 2.5.5.
115. See <https://www.canada.ca/en/departement-finance/news/2020/12/government-announces-climate-action-incentive-payments-for-2021.html>. Eventually, carbon pricing should be synchronized across countries. A coordinated approach would increase effectiveness by preventing "tax dodging", i.e. shifting carbon-intensive activities into low-tax jurisdictions.
116. International Energy Agency (IEA), Net Zero by 2050: A Roadmap for the Global Energy Sector, 2021, <https://www.iea.org/reports/net-zero-by-2050>.
117. IEA, Clean Energy Innovation, 2020, <https://www.iea.org/reports/clean-energy-innovation>.
118. Ibid.
119. IEA, Energy Technology RD&D Budgets: Overview, 2021, <https://www.iea.org/reports/energy-technology-rdd-budgets-overview>.
120. IEA, World Energy Investment 2021, 2021, <https://www.iea.org/reports/world-energy-investment-2021>.
121. IEA, Net Zero by 2050.
122. IEA, The Future of Hydrogen, 2019, <https://www.iea.org/reports/the-future-of-hydrogen>
123. Ibid.
124. See: Bloomberg New Energy Finance (BloombergNEF), 2020 Battery Price Survey, <https://about.bnef.com/blog/battery-pack-prices-cited-below-100-kwh-for-the-first-time-in-2020-while-market-average-sits-at-137-kwh/>.
125. IEA, Innovation Gaps: Key Long-term Technology Challenges for Research, Development and Demonstration, 2019, <https://www.iea.org/reports/innovation-gaps>
126. Ibid.
127. World Bank, Background Note: Development Committee, Spring Meetings, 2021, <https://www.devcommittee.org/sites/dc/files/download/Documents/2021-03/DC2021-0004%20Green%20Resilient%20final.pdf>.
128. IMF, G-20 Background Note: Reaching Net Zero Emissions.
129. Robins, N., S. Dikau and U. Volz, Net-Zero Central banking: A New Phase in Greening the Financial System, Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science, and Centre for Sustainable Finance, SOAS, University of London, 2021, <https://www.lse.ac.uk/granthaminstitute/publication/net-zero-central-banking-a-new-phase-in-greening-the-financial-system/>.
130. Carney, M., Building a Private Finance System for Net Zero, UKCPO26.org, 2021, https://ukcop26.org/wp-content/uploads/2020/11/COP26-Private-Finance-Hub-Strategy_Nov-2020v4.1.pdf.
131. World Economic Forum, How to Set Up Effective Climate Governance on Corporate Boards: Guiding Principles and Questions, 2019, http://www3.weforum.org/docs/WEF_Creating_effective_climate_governance_on_corporate_boards.pdf.

132. Jones, L., \$1 Trillion Mark Reached in Global Cumulative Green Issuance: Climate Bonds Data Intelligence Reports: Latest Figures, Climate Bonds Initiative, 15 December 2020, <https://www.climatebonds.net/2020/12/1trillion-mark-reached-global-cumulative-green-issuance-climate-bonds-data-intelligence>.
133. World Economic Forum, The Net-Zero Challenge: Fast-Forward to Decisive Climate Action, 2020, <https://www.weforum.org/reports/the-net-zero-challenge-fast-forward-to-decisive-climate-action>.
134. Institute of International Finance (IIF), Sustainable Debt Monitor: A Record-Breaking Year, 2021, <https://www.iif.com/Research/Capital-Flows-and-Debt/Global-Debt-Monitor>.
135. 135. IMF, G-20 Background Note: Reaching Net Zero Emissions.
136. 136. World Economic Forum, Building Back Broader: Policy Pathways for an Economic Transformation, 2021, <https://www.weforum.org/whitepapers/building-back-broader-policy-pathways-for-an-economic-transformation>.



COMMITTED TO
IMPROVING THE STATE
OF THE WORLD

The World Economic Forum, committed to improving the state of the world, is the International Organization for Public-Private Cooperation.

The Forum engages the foremost political, business and other leaders of society to shape global, regional and industry agendas.

World Economic Forum
91–93 route de la Capite
CH-1223 Cologny/Geneva
Switzerland

Tel.: +41 (0) 22 869 1212
Fax: +41 (0) 22 786 2744
contact@weforum.org
www.weforum.org