



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Beyond building back better: imagining a future for human and planetary health

Emilia Aragón de León*, Amanda Shriwise*, Göran Tomson, Stephen Morton, Diogo Simão Lemos, Bettina Menne, Mark Dooris

COVID-19 is disrupting and transforming the world. We argue that transformations catalysed by this pandemic should be used to improve human and planetary health and wellbeing. This paradigm shift requires decision makers and policy makers to go beyond building back better, by nesting the economic domain of sustainable development within social and environmental domains. Drawing on the engage, assess, align, accelerate, and account (E4As) approach to implementing the 2030 Agenda for Sustainable Development, we explore the implications of this kind of radical transformative change, focusing particularly on the role of the health sector. We conclude that a recovery and transition from the COVID-19 pandemic that delivers the future humanity wants and needs requires more than a technical understanding of the transformation at hand. It also requires commitment and courage from leaders and policy makers to challenge dominant constructs and to work towards a truly thriving, equitable, and sustainable future to create a world where economic development is not an end goal itself, but a means to secure the health and wellbeing of people and the planet.

Introduction

COVID-19 is a defining global crisis, disrupting and transforming the world with profound consequences for governments, institutions, cities, communities, families, and individuals. Reflecting on the past 18 months, it is clear that COVID-19 and its containment measures have negatively affected the social, economic, and environmental domains of sustainable development and are threatening to reverse the progress on the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs).¹ However, the pandemic has also revealed possible scenarios of a more sustainable world. As noted in a World Business Council for Sustainable Development report:² “Like all crises, the COVID-19 pandemic has the potential to be a catalyst for positive change. Clearly, in the short term, its consequences are overwhelmingly negative...But precisely because it is so disruptive a shock to our economic and political systems, there is also the possibility that COVID-19 will help accelerate the emergence of...profound market shifts with exponentially positive consequences for people and planet.”

COVID-19 is a reminder that human health is inextricably connected to planetary, economic, and societal health and wellbeing. First, because this pandemic is believed to be zoonotic in origin,^{3,4} it spotlights the human exploitation of nature, driven by an unsustainable food system linked to habitat destruction and biodiversity decline.^{5,6} Second, it exposes the weaknesses in pandemic preparedness consequential to the interconnected global economy, travel, and trade,⁷ as well as gaps in social and health protection.⁸ Third, it reinforces that health crises can quickly become economic, social, humanitarian, and security threats.^{9,10} Fourth, COVID-19 can be more accurately understood in most contexts as a syndemic, characterised by synergistic interaction between biological and social conditions and requiring action on wider determinants of health.¹¹

At the same time, the disruption caused by COVID-19 has been transformative, showing how rapidly economic and social behaviours can change, providing glimpses of what a better world might look like and offering a window of opportunity to shape the future of sustainable development. Amid efforts to counteract the pandemic and prepare for recovery, at least three future scenarios

Key messages

- 1 Although disruption caused by COVID-19 has negatively affected the social, economic, and environmental domains of sustainable development, it has also created new opportunities for building a more sustainable future.
- 2 In the context of growing concerns about climate change, biodiversity loss, and other challenges, these opportunities for transformative change should be urgently harnessed to improve human and planetary health.
- 3 Such change requires going beyond building back better by nesting the economic domain of sustainable development within social and environmental domains, thereby challenging conventional economic thinking by viewing economic development not as an end goal itself, but as a means to improve the health and wellbeing of people and the planet.
- 4 The engage, access, align, accelerate, and account (E4As) approach to implementing the 2030 Agenda for Sustainable Development provides a framework to explore how the COVID-19 pandemic could stimulate this reconfiguration and facilitate radical transformative change, highlighting the centrality of strategic engagement, leadership, and political commitment.
- 5 Recovery from the COVID-19 pandemic is about much more than the ability to contain the disease. It is symbolic of the commitment and courage to challenge the status quo, envision what it means to thrive as people and planet, and go beyond building back better to deliver the future that humankind wants and needs.

Lancet Planet Health 2021; 5: e827–39

*Joint first authors

Health Policy Development and Implementation (E Aragón de León MD) and Health Emergencies Programme (D S Lemos MD), World Health Organization Regional Office for Europe, Copenhagen, Denmark; Political Economy of the Welfare State, Forschungszentrum Ungleichheit und Sozialpolitik, Research Centre on Inequality and Social Policy, Universität Bremen, Bremen, Germany (A Shriwise DPhil); Department of Sociology, University of Kansas, Lawrence, KS, USA (A Shriwise); President's Office, Karolinska Institutet, Stockholm, Sweden (Prof G Tomson MD); Swedish Institute for Global Health Transformation, Royal Swedish Academy of Sciences, Stockholm, Sweden (Prof G Tomson); Health and Sustainable Settings Unit (S Morton MSc) and Institute of Citizenship, Society, and Change (Prof M Dooris DPhil), University of Central Lancashire, Preston, UK; Office for Investment for Health and Development, World Health Organization Regional Office for Europe, Venice, Italy (B Menne MD)

Correspondence to: Amanda Shriwise, Forschungszentrum Ungleichheit und Sozialpolitik, Research Centre on Inequality and Social Policy, Universität Bremen, Bremen 28359, Germany amanda.shriwise@uni-bremen.de

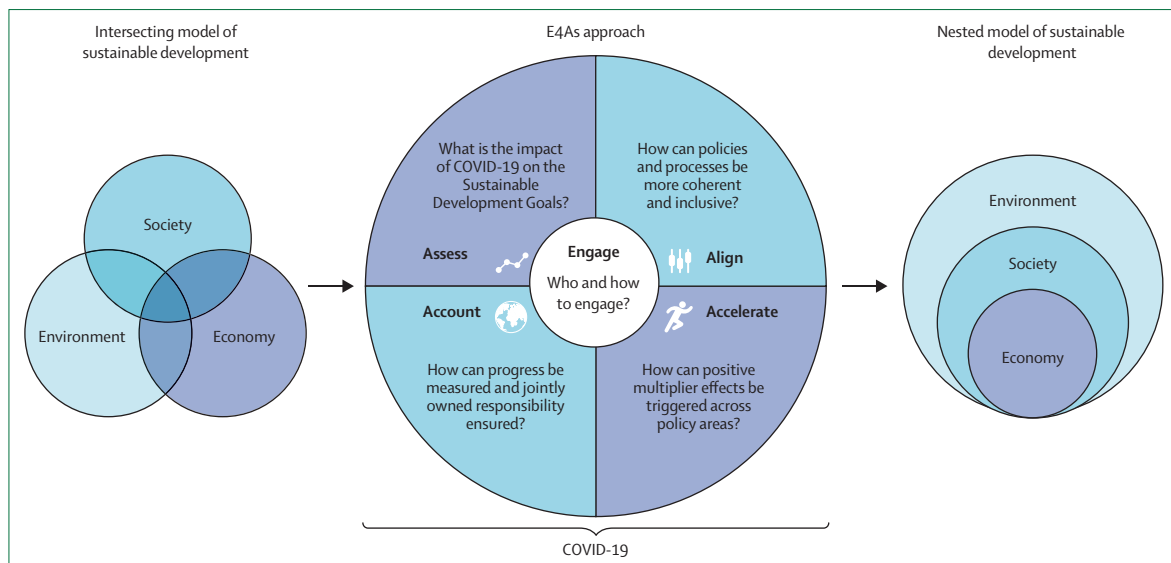


Figure 1: Transformative change from COVID-19 for human and planetary health
E4As=engage, assess, align, accelerate, and account.

are discernible. The first approach would be to simply build back by returning to traditional models of economic growth (eg, extraction, consumption, waste, and emissions).¹² Although this approach might produce short-term benefits for some, it will constrain progress towards many SDGs and threaten humankind's collective future. The second approach, in line with the 2030 Agenda for Sustainable Development, would be to build back better by increasing the resilience of countries and communities and reiterating the need to balance the social, economic, and environmental domains of sustainable development.¹³ However, this incremental approach, even when green and inclusive,¹⁴ depends on the continued championing of current forms of economic growth and globalisation that are inadequate for preventing and addressing the root causes of pandemics, climate emergencies, and social injustices.¹⁵ The third approach would be to choose a radically transformative change¹⁶ that goes beyond building back better by advocating and generating a consensus for a nested model of sustainable development. Such a model embeds the economic domain within the social and environmental domains, in contrast to the dominant sustainability model of intersecting circles, which implies that all three domains are of similar and equal importance to sustainable development.^{17,18} As opposed to more linear and incremental approaches, this scenario views the COVID-19 pandemic as an opportunity to transform or reconfigure the relationship between the three domains of sustainable development, instilling new norms that view the economy not as an end goal itself, but as a means to improve human and planetary health and wellbeing.^{16,19} This approach thus calls for a regenerative and distributed model committed to social and ecological justice²⁰ and appreciates that the "global economy services society, which lies within Earth's

life-support system...on which the welfare of current and future generations depends".²¹

Beyond building back better: using the E4As approach to progress human and planetary health

This Viewpoint builds on the third scenario, calling for a transformative change that goes beyond building back better. Through the use of the engage, assess, align, accelerate, and account (E4As) approach,^{22,23} we explore and illustrate how COVID-19 disruption could enable a reconfiguration of the dominant model of sustainable development, facilitating progress towards the SDGs and promoting human and planetary health (figure 1). Developed in the WHO European region, the E4As approach was chosen as an appropriate exploratory framework because it is one of the first, and to our knowledge, the most recent policy framework to integrate societal transformative change with systems-level policy implementation at the intersection of health and sustainable development.²² Although our analysis of both COVID-19 effects and policy areas with a scope for alignment was focused on the WHO European region, our aim has been to take the whole planet into consideration, and so this Viewpoint also draws on relevant global evidence. We also recognise that European actions have effects on a global scale and on planetary boundaries (eg, climate change, biodiversity loss, and air pollution), and that global decision making influences European policy and action.

See Online for appendix

Figure 2: COVID-19 effects on health and sustainable development
See the appendix (pp 5–7) for the references corresponding to these statements.

Social domain	Environmental domain	Economic domain	Institutions and partnerships
<p>1 No poverty</p> <p>2 Zero hunger</p> <p>3 Good health and wellbeing</p> <p>4 Quality education</p> <p>5 Gender equality</p> <p>Increase in poverty and extreme poverty for the first time after 20 years of decline, leaving households with fewer resources for health, food, and utilities.</p> <p>Increased demand for and expansion of social protection, including for informal workers.</p> <p>Increased food insecurity, disproportionately affecting poor and nutritionally vulnerable groups, as a result of upsurges in food prices, supply chain disruptions, and reduced household incomes.</p> <p>Increased excess mortality from COVID-19 disease and other health conditions.</p> <p>Increased emotional distress, anxiety, fear, sadness, loneliness, and mental health disorders due to new stress factors and social isolation.</p> <p>Fast mobilisation of additional funds for health to respond to COVID-19, but with reduced action and investment in public health priority areas other than COVID-19.</p> <p>Widespread persistent disruption of essential health services and other access barriers than the health system, such as disruptions in public transport services, resulting in higher unmet needs.</p> <p>Shortage of medicines, staff, and diagnostics.</p> <p>Health-care workers at a higher risk of infection and substantial increase in workload.</p> <p>Children kept home from schools, with adverse consequences beyond interrupted learning, exacerbating pre-existing inequalities.</p> <p>Reduced educational attainment and potential negative developmental effects in children, adolescents, and adults as well as across economies and society more broadly.</p> <p>COVID-19 incidence rates do not differ significantly between men and women, but mortality rates are higher among men.</p> <p>Women are disproportionately experiencing negative economic effects as they earn less, hold less secure jobs, and are more likely to be employed in the informal and care sectors.</p> <p>Increased harm from gender-based and domestic violence due to increased exposure to perpetrators and disrupted services to support survivors.</p>	<p>6 Clean water and sanitation</p> <p>13 Climate action</p> <p>14 Life below water</p> <p>15 Life on land</p> <p>Heightened awareness of gaps in access, reliability, and quality of water; sanitation; and hygiene.</p> <p>With a few exceptions, projected slowdown in investments in the water sector, derived from shifts in demand patterns, supply disruptions, and other emergency measures.</p> <p>Observed temporary reduction in carbon and greenhouse gases emissions during 2020 as a result of the slowdown of economic activity; however, this reduction is insufficient to limit global warming and reach climate goals and does not reflect structural changes in economic, transport, or energy systems. Emissions are predicted to rebound as countries prioritise economic recovery over climate considerations.</p> <p>Observed temporary reduction in water way traffic and fishery during lockdown periods.</p> <p>Increased plastic pollution from increased use in disposables.</p> <p>Temporary resurgence of wildlife, including the reappearance of wildlife in human settlements surroundings.</p> <p>Increased appreciation of and connection to nature.</p> <p>Heightened awareness of the need for a One Health approach to protect biodiversity, end deforestation, regulate animal trade, and to protect conservation areas and endangered species.</p>	<p>7 Affordable and clean energy</p> <p>8 Decent work and economic growth</p> <p>9 Industry, innovation and infrastructure</p> <p>10 Reduced inequalities</p> <p>11 Sustainable cities and communities</p> <p>12 Responsible consumption and production</p> <p>Unprecedented disruptions and changes in global energy production, distribution, and demand, which are predicted to accelerate changes in the sector and have substantial consequences for the energy transition.</p> <p>Wide-reaching and unevenly distributed global recession, with greater negative economic consequences than the 2008 global financial crisis and high levels of uncertainty regarding recovery.</p> <p>Increased wealth inequality driven by unequal effects among and within countries, regions, communities, families, and individuals.</p> <p>Increased unemployment and reduced incomes for some households, in contrast with increased savings for some and the option for increased flexibility in some sectors.</p> <p>Accelerated investment in research and development and delivery of COVID-19 immunisation and treatments. Interruptions and reduction of investment in research in other fields.</p> <p>Increased uptake of digital technologies in sectors like work, education, health, retail and legal, social, and civil service delivery. This increased uptake has also exposed the digital divide.</p> <p>Disproportionate negative effect of the crisis on segments of the population, including the economically disadvantaged, older adults, disabled people, people with underlying health conditions, people living in congregate residential settings, sex workers, people living in slums, unemployed people, migrants, refugees, those who cannot work from home, and those who live at subsistence levels.</p> <p>Cities host the majority of COVID-19 cases. People living in low-income neighbourhoods face a higher risk of exposure to health threats and harsh economic consequences.</p> <p>Increased use and appreciation of urban green space</p> <p>Observed change in consumption and production patterns with higher amounts of spending and consumption in some sectors than others and a greater polarisation of consumer spending.</p> <p>Increased accumulation of plastic waste caused by the increased use of disposables.</p> <p>Observed fall in industrial and commercial waste production because of the slowdown in manufacturing during lockdown periods.</p> <p>Containment measures have resulted in job losses, and rearrangements and reduced access to public services but also in record temporary reductions in noise, road accidents, and air pollution.</p>	<p>16 Peace, justice and strong institutions</p> <p>17 Partnerships for the goals</p> <p>Restricted freedom of movement because of necessary lockdown measures. Such measures can inadvertently affect people's livelihoods and security and their right to access health care, food, water and sanitation, work, education, and leisure, among others.</p> <p>Amid instability and fear, exacerbation of existing human rights concerns. Rising ethno-nationalism, populism, authoritarianism, and pushback against human rights have been observed in some countries.</p> <p>COVID-19 might further threaten global peace and security by exacerbating persistent political, social, and economic inequities that render some groups more vulnerable than others.</p> <p>Despite the introduction of new financial mechanisms, official development assistance, and third sector support, these have been insufficient to address differentiated needs throughout response and recovery.</p> <p>Decline in global foreign direct investment.</p> <p>Insufficient domestic resources and fiscal space to fund adequate COVID-19 response and recovery measures in some countries.</p>

To imagine how COVID-19 disruption could catalyse transformative change and take us beyond building back better, we used five key concepts. The first concept is assessment, which focuses on evaluating the progress towards achieving the SDGs, and understanding the effects of COVID-19 and opportunities in relation to these. The second concept is alignment, which concerns harmonising policies and processes related to the achievement of the SDGs, both within and between sectors and levels of governance, and considers how COVID-19 disruption could enable a coherent, normative shift towards a nested model of sustainable development. The third concept is acceleration, which considers how positive multiplier effects can be triggered across policy areas to enhance progress towards the SDGs, illustrated with references to three examples (wellbeing economies, social movements, and digital technological innovations) spotlighted by the pandemic. The fourth concept is accountability, which highlights the need for policy making to embed new metrics that can track progress towards human and planetary health, recognises that achieving the SDGs can be a jointly owned responsibility across sectors and levels, and emphasises that recovery and transition from the COVID-19 pandemic can likewise harness the tangible commitment of multiple actors. The fifth concept is engagement, which refers to the meaningful and systematic involvement of relevant stakeholders across all sectors and levels in the planning, conduct, dissemination, uptake, and evaluation of policies and interventions for human and planetary health, appreciating that sustained dialogue and participation is a prerequisite for the transformative change that enables going beyond building back better.

We sought to empirically ground this semi-structured exploration. First, guided by the policy responses in the WHO European region,²⁴ we conducted a rapid narrative review of academic and grey literature published between December, 2019, and October, 2020, that addressed COVID-19, human and planetary health, health governance, and the build back better policy discourse. We categorised the potential effects of COVID-19 on the SDGs according to the three domains of sustainable development: social (SDGs 1–5), economic (SDGs 7–12), and environmental (SDGs 6 and 13–15); and also considered the effects on institutions (SDG 16) and partnerships (SDG 17).^{25,26} Second, we identified three illustrative functional policy areas (food systems, transport and mobility, and work and incomes) to explore these effects in greater depth. These policy areas were chosen as illustrative examples because they had extensive disruption early on in the pandemic because of containment measures and were deemed to have a high amount of political importance because of their effect across all three domains of sustainable development. Third, building on findings from the rapid narrative review and an in-depth examination of these illustrative functional policy areas, we identified accelerators with

the potential to trigger multiplier effects and facilitate a shift towards a nested model of sustainable development. Fourth, we interpreted these findings in relation to the E4As approach, focusing on what is distinctive about going beyond building back better and on what will be required to shape recovery and transition planning to secure transformative change that aligns with the nested model.^{17,18} For further information on the rapid narrative review, search strategy and selection criteria, justification for our categorisation of the SDGs, and a justification for our selection of the illustrative functional policy areas and accelerators, see the appendix (pp 1–4).

Assess

Before the COVID-19 pandemic, projections indicated that no WHO European region country was on track to achieve the health-related SDGs and targets and that implementation needed to be strengthened and better coordinated to accelerate progress.^{27,28} Findings from our rapid narrative review (appendix pp 5–7) suggest that although catalysing some short-term positive changes and stimulating discourse about the potential for reimagining and reconfiguring the future,²⁰ COVID-19 has largely affected the SDGs negatively, spotlighting and exacerbating pre-existing inequalities and threatening development gains (figure 2).²⁹

In the social domain, COVID-19 has caused substantial excess morbidity and mortality in many countries,³⁰ and vaccination programmes, sexual and reproductive health services, and chronic disease management have been severely disrupted.³¹ The pandemic has also resulted in increased food insecurity, disproportionately affecting poor and nutritionally vulnerable groups.³² Children and students have been learning from home because schools and universities across Europe are closed, with adverse consequences beyond the immediate educational effects.³³ Although mortality rates are higher for men, women are more likely to bear the brunt of the pandemic's severe social and economic consequences.³⁴ Alongside these negative effects, countries showed how quickly health and social protection benefits can be universalised and made more comprehensive.^{8,35} Some population groups have also seen improvements in wellbeing linked to an increased appreciation of and connection to nature³⁶ and the option for increased flexibility through remote working.³⁷

In the environmental domain, the reduced industrial and commercial demand for fresh water and a decrease in anthropogenic greenhouse gas emissions (estimated at 6% for 2020)³⁸ were observed after stringent lockdowns and the almost total cessation of production in many countries.³⁹ However, such positive effects were short-lived. Countries, cities, and communities have faced difficulties in properly managing waste from the pandemic (eg, masks, gloves, and food packaging), resulting in its accumulation on beaches and in rivers and oceans.^{40,41} Negative longer term consequences are forecast, with

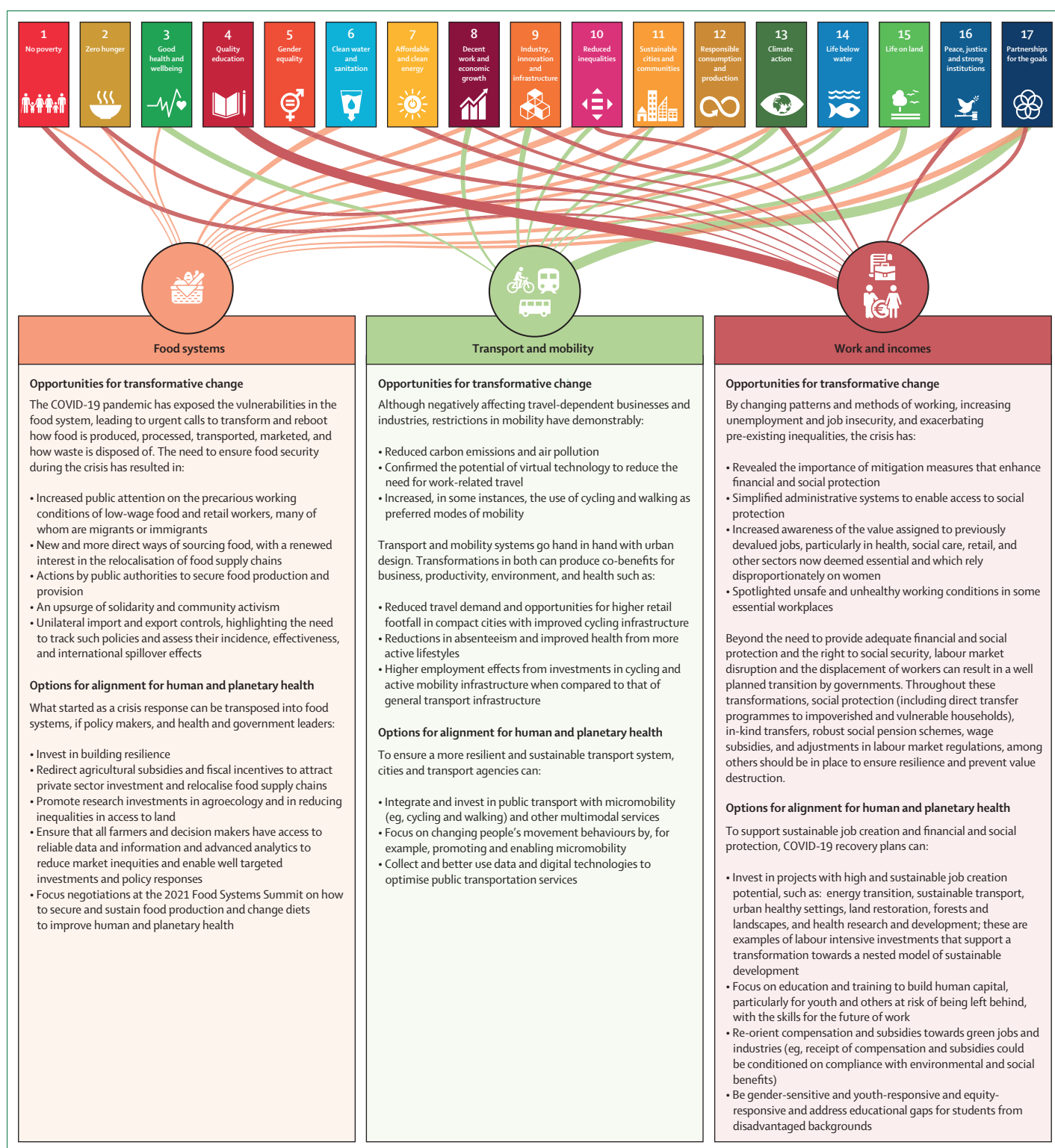


Figure 3: Illustrative examples of functional policy areas that have been disrupted by COVID-19, with the scope for alignment during recovery and transition
See the appendix (pp 8–9) for the references corresponding to these statements.

pressure for economic recovery encouraging the accelerated exploitation of the planet for shorter term gains.⁴¹

In the economic domain, the pandemic threatens progress towards equitable prosperity because the burden caused by COVID-19 and its containment measures are distributed unequally, more severely affecting vulnerable and marginalised groups and thus amplifying inequalities.²⁹ COVID-19 has severely affected existing infrastructures and services, limited mobility, and exacerbated unemployment and decreased productivity, with losses in working hours as high as the equivalent of 55 million full-time jobs in Europe and central Asia in the second quarter of 2020.^{8,42} Economic contractions might limit the fiscal space and decrease the confidence required for the prioritisation of long-term investments in and structural adjustments for human and planetary health. Alongside many negative effects, particularly for vulnerable groups, the disruption has influenced production patterns⁴⁰ and consumer behaviour,⁴³ and increased investments in research and development and the uptake of innovation and technology, showing what is possible for the future of health care and environmental innovation.^{44,45} These disruptions also present opportunities to change how economies function and to shape COVID-19 recovery for the wellbeing of people and the planet; for example, through the illustrative functional policy areas in figure 3 (appendix pp 8–9).

Align

Because countries use multiple policy actions to mitigate the negative effects of COVID-19, it cannot be assumed that an alignment of these policies towards human and planetary health will happen naturally, or even that it is a likely outcome of recovery and transition processes. Despite widespread recognition that health policy challenges are intersectoral, requiring crosscutting and integrated approaches, an analysis of the Voluntary National Reviews of the countries from the WHO European region revealed the minimal use of such approaches or of legal and regulatory frameworks to progress the SDGs.⁴⁶

Current narratives on building back better draw heavily from pre-COVID-19 UN resolutions; and, reflecting the traditional intersecting model of sustainable development, include discussions of mainstreaming⁴⁷ and balancing⁴⁸ the three domains. We contend that achieving the SDGs requires a commitment to going beyond this model through an alignment process that challenges the dominant conceptualisation of sustainable development by consciously nesting the economic within the social domain, which in turn sits within the life-supporting environmental domain. This framing reorients the recovery focus away from returning to business as usual,⁴⁹ and towards reconfiguring the economy to better support the health and wellbeing of people and the planet. Robins⁵⁰ reflected that, globally, there were “\$379 trillion trillion

dollars—more than enough to deliver a rapid transition to a resilient, just and zero emissions economy by the middle of this century”, but only if the incentives are changed that currently make it more profitable “to bet against the planet and ignore human development.” Normative assumptions about economic growth should be challenged alongside policy coordination and coherence across sectors and levels of governance, particularly with respect to fiscal strategy, regulatory responses, investments, and value creation.^{51,52} Governments and policy makers ought to invest in building capacities and capabilities from within, through transparent interactions with other value creators in society to design new social contracts based on the ideas of public value and long-term resilience, as argued by Mazzucato and colleagues.⁵³

The examination of a few illustrative functional policy areas that, in our assessment, have been extensively disrupted by COVID-19 shows the potential to facilitate meaningful and synergistic progress across the SDGs and towards a nested model that promotes human and planetary health (figure 3; appendix pp 8–9). For example, transport affects all domains of sustainable development and several health-related goals.⁵⁴ A strategically aligned approach would consider how to create positive incentives for modal shifts at the same time as raising revenues, creating jobs, directing innovation and investment towards more balanced and integrated transport systems, and achieving the full potential benefits of active travel. This approach might include: removing fossil fuel subsidies, introducing tax-exempt transit benefits, and prioritising location-efficient development and investment in innovative and high-quality green public transport and urban infrastructure, at the same time as resisting a harmful return to the unsustainable mass use of cars and aeroplanes.⁵⁵ This change also highlights intergenerational policy coherence: decisions made during the next decade will influence generations to come, and there are clear opportunities to connect policies on travel to those on climate change, green economies, equity, health and wellbeing, habitat protection, and biodiversity beyond 2030.⁵⁶

Accelerate

The complexity of the inter-relationships between SDGs requires systemic and transformative multipliers that reorient the economy towards human and planetary health.^{57,58} To make the most of the opportunity offered by COVID-19 to go beyond building back better, we highlight three illustrative accelerators (wellbeing economies, social movements, and digital technological innovations) that offer the potential to progress a nested model of sustainable development and activate change across multiple policy areas, including those in figure 3 (appendix pp 3–4). Although momentum in all three of these accelerators was present before the pandemic, COVID-19 has spotlighted their potential to trigger positive multiplier effects towards (or away) from a nested model.

The recognition that the dominant economic models “aggravate the climate and ecological crises, and they perpetuate vastly unequal distributions of power and wealth”, as noted by Büchs and colleagues,⁵² advocates for wellbeing economies, which are shown by Raworth’s Doughnut Economics model,⁵⁹ which embraces the nested vision of sustainable development advocated for in this paper. Drawing on the SDGs, this model combines planetary boundaries (eg, climate change, biodiversity loss, and air pollution) and social boundaries (eg, health, food, and work), portraying sustainability as being ecologically safe and socially just, because resource use enables human thriving within environmental limits. In envisioning new paths forward, Raworth’s model challenges the mantra of growth for growth’s sake, and proposes a shift from linear economies that take, make, use, and lose, to circular economies that restore, regenerate, and reconnect humanity with the biosphere.⁵⁹ Fanning and colleagues¹⁷ and O’Neill and colleagues¹⁸ illustrate how this shift in thinking and the adoption of wellbeing economies can activate and thereby accelerate action across policy areas such as transport, food, work, and health, and can be pursued through enhancing resource sufficiency to meet human needs and reduce overconsumption, where appropriate using degrowth and steady-state economy models,^{60,61} and improving interacting systems for physical (eg, decarbonising energy and transportation and increasing crop-based diets) and social (eg, prioritising income equity, and pursuing universal health coverage and social protection) provisioning.

Public engagement and social movements, which have been pivotal in challenging traditional models of sustainable development and the mantra of economic growth,⁶² provide a second means to accelerate beyond building back better. The pandemic has prompted societal action to complement and catalyse governmental action,⁶³ demanding better protection for essential workers, shifts in employer–employee relationships, and a healthy and green recovery strategy from COVID-19.^{64,65} These demands are exemplified in a WHO manifesto,⁶⁶ highlighting policy areas in need of radical change, such as food and transport, and calling for a global movement for health and the environment, as well as in a letter sent to G20 leaders from more than 350 organisations representing half of all medical professionals worldwide.⁶⁷ Activist movements, such as Extinction Rebellion⁶⁸ and School Strikes⁶⁹ for example, have produced the widespread mobilisation of people demanding a healthy and just future on a liveable planet, calling for action on a range of policy areas (including those elaborated on in figure 3). To convert this momentum into substantive policy change for human and planetary health, these social movements aim to show the redundancy of traditional models of sustainable development and to advocate for their reconfiguration across all sectors and levels of governance.

Acceleration can also be triggered through digital technological innovation, applied in multiple interconnected policy areas. Artificial intelligence, the internet of things, big data, and blockchain technology can help to avert a future pandemic by supporting epidemic prevention and control, increasing the efficiency, security, and transparency of outbreak reporting systems, and reducing the spread of health misinformation, among other benefits in public health, health research, and medical practice.^{44,45} More widely, the COVID-19 pandemic has highlighted the transformative role of digital innovation within education and work arenas. Digital technologies also have substantial potential for application in food, transport, and urban development systems: their use has been linked to more sustainable and effective agri-food systems, increased urban food security, improved logistics, greener transport solutions, and smart healthy cities.^{70–73} Although new technologies can accelerate progress towards better human and planetary health, they should be based on models and values that account for structural biases, anticipate risks, and distribute benefits fairly across society. So as not to reinforce and magnify socioeconomic vulnerabilities and inequities, technological developments should account for the growing digital divide: it is crucial to tackle the widening gap between those who can access and profit from technological innovations and those who cannot. For example, older and younger people, those with a disability, and minority ethnic communities might be at particular risk of not being able to benefit from technological innovations.⁷⁴ Orienting present and future technology access and use to move beyond building back better thus requires anticipatory and regulated policy making committed to closing the digital divide and to combating inequities within and across generations.^{75,76}

Account

The non-binding and complex nature of the 2030 Agenda requires strong commitment and accountability at the global, national, and subnational levels, as well as platforms or mechanisms that measure progress, increase transparency, address power asymmetries, and make institutions more responsive.⁷⁷ In addition to strengthening and using existing processes (eg, national, regional, and global accountability mechanisms, human rights instruments, and sanctions) in line with SDGs 16 (peace, justice, and strong institutions) and 17 (partnerships for the goals), *The Lancet*–University of Oslo Commission on Global Governance for Health⁷⁸ has proposed a UN Multi-stakeholder Platform on Global Governance for Health. Such a platform would enable action for human and planetary health and address persistent inequities and weaknesses in global institutions that, if left unaddressed, might reinforce tendencies to simply build back. The UN Regional Coordination Mechanism for Europe and Central Asia’s Issue-Based Coalitions focused on thematic areas such as health, social protection, gender equality,

For the Intergovernmental Panel on Climate Change see <https://www.ipcc.ch/>
 For the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services see <https://www.ipbes.net/>

youth and adolescents, environment and climate change, sustainable food systems, the large movements of people, displacement, and resilience that could be strengthened to enable a radically transformative COVID-19 pandemic recovery, promoting appropriate reforms as necessary.⁷⁹ Furthermore, intergovernmental coordinating mechanisms for environmental policy, such as the Intergovernmental Panel on Climate Change, established in 1988, and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, established in 2012, have provided platforms through which to advance environmental policy at increasingly high levels.

Nationally, all WHO European region countries have multisectoral coordination and accountability mechanisms in place to support the implementation of the 2030 Agenda.²⁷ After the pandemic, these mechanisms could be used to prevent a siloed recovery driven predominantly by economic concerns, promoting instead a more transparent, participatory, and multisectoral transition that strengthens and institutionalises the reorientation of economic actors to social objectives and a respect for planetary limits.

Accountability mechanisms should also address inequities and leave no one behind. Individuals in vulnerable groups often face risks spanning multiple policy areas and sustainable development domains (figures 2, 3). A start to strengthening accountability is to actually measure what matters. COVID-19 pandemic recovery and transition plans can consider how these groups might be negatively affected and should systematically adopt equity-sensitive and equity-responsive policies and mitigation measures.⁸⁰ Measuring progress towards human and planetary health that goes beyond building back better not only requires comparable and disaggregated data, but also demands the reassessment and revision of concepts underlying existing measures of progress. As Costanza and colleagues⁸¹ reflect, critiques of and calls to change gross domestic product as a signpost of economic and societal performance have proliferated since the 2008 crisis. In highlighting the disadvantages of its use to measure either human progress or social wellbeing, alternatives proposed include adjusted economic measures, subjective wellbeing measures, and weighted composite measures.⁸¹ Exploring the pathways between sustainable development and human wellbeing, de Neve and Sachs⁸² highlight income, social support, generosity, freedom, trust in government, and health as key determinants, and also advocate for research and policy related to both the SDGs and subjective wellbeing to be combined to accelerate sustainable development and ensure an integrated focus on people and planet.

New measures of progress have already been proposed. The Happy Planet Index (which is calculated using life expectancy × life satisfaction × equity factor) has been proposed as one way forward,⁸³ measuring sustainable wellbeing for all with a focus on human and planetary health per unit of ecological footprint.⁸⁴ The Organisation

for Economic Co-operation and Development's Better Life Index has also been proposed, based on 11 topics identified as essential in the areas of material living conditions and quality of life.⁸⁵ As shown by leadership in countries such as Iceland, New Zealand, and Scotland, who launched the Wellbeing Economy Governments Alliance at the 2018 Organisation for Economic Co-operation and Development's World Forum,⁸⁶ health stakeholders have a role to play in measuring what matters and advocating for corresponding shifts in conceptualising and measuring wellbeing, progress, and economic and social performance.

Engage

Engagement is required throughout the four As (assess, align, accelerate, and account), which serve as entry points for transformative change that goes beyond building back better. The COVID-19 pandemic has disrupted the ideational and institutional rigidity that often constrains engagement. This disruption offers the potential to reform and generate new structures and approaches to policy making that nest the economic within the social and environmental domains and accelerate progress for human and planetary wellbeing (figure 4).

Across all sectors and levels, the disruption caused by the COVID-19 pandemic has also created a window of opportunity for transformation in the actor constellations (the group of key actors and relationships between them) shaping recovery and transition, with examples of previously peripheral actors taking up central roles in policy and governance (appendix pp 8–9). For example, key actors from the health sector now have a strong and central voice in recovery planning after being sidestepped in relation to the financial crisis after 2008, and population displacement crises of 2015 and after, which have had substantive effects on health across Europe and other regions.⁸⁷ Given its new and indisputably central role in responding to the pandemic, the health sector should use its influence to engage in and champion COVID-19 pandemic recovery and transition that is radically transformative. This goal “requires changes in social structures and relations, including addressing the growing economic and political power of elites and patterns of stratification related to class, gender, ethnicity, religion or location that can lock people (including future generations) into disadvantage and constrain their choices and agency” as well as “changing norms and institutions, both formal and informal, that shape the behaviour of people and organizations in the social, economic, environmental and political spheres”.¹⁶ Together, these quotes imply a focus on mechanisms that are themselves transformative, advocating whole-of-government and whole-of-society governance mechanisms⁸⁸ and exploring the effective use of participatory and deliberative democratic processes.⁸⁹

Many questions related to transformative engagement for human and planetary health should be urgently addressed to ensure that there is a move to beyond

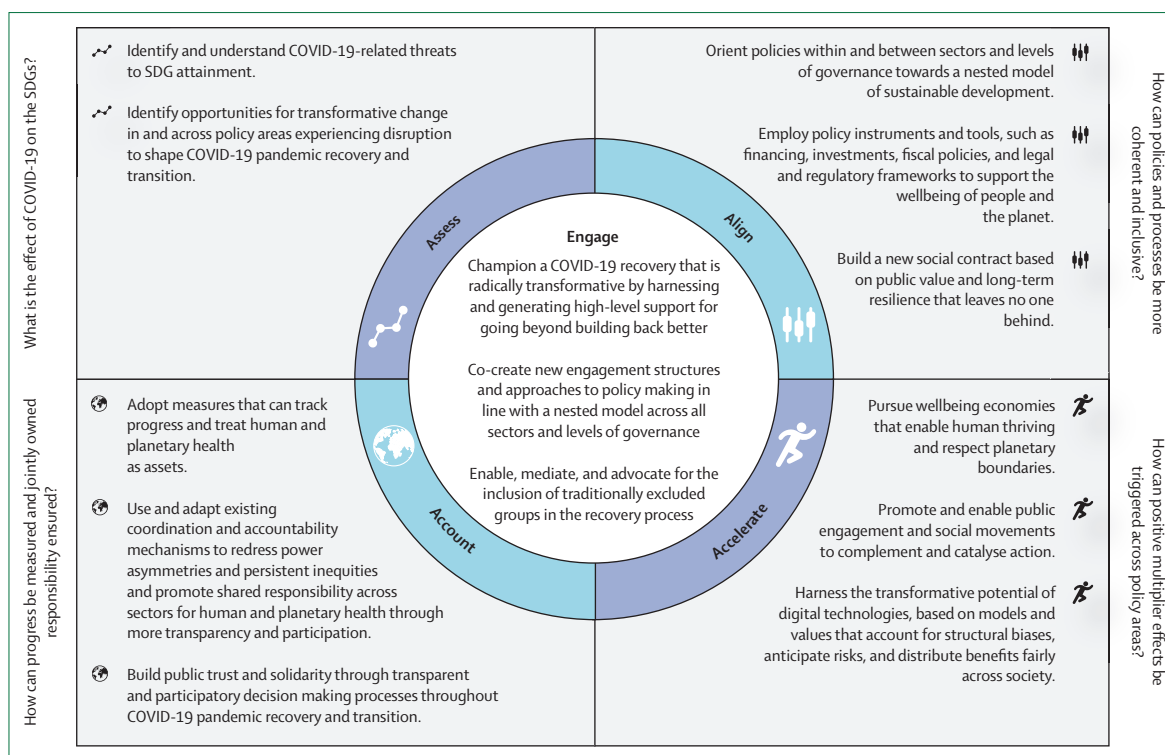


Figure 4: Beyond building back better through the E4As approach

E4As=engage, assess, align, accelerate, and account. SDG=sustainable development goals.

building back better. For example, what role will the health sector have in allocating financial and other resources to support COVID-19 pandemic recovery and transition? How will the health sector engage in conversations with the International Monetary Fund, World Bank, other financial institutions, parliaments, and private sector bodies to transform the notion of building back better into a process that delivers a more healthy, just, equitable, and sustainable future? Will the health sector be brought into direct conversation with governments, employers, and education systems to help children whose learning suffered during the pandemic, support families who have lost breadwinners, and ensure the safety of workers and students as countries attempt to reopen and recover without exacerbating health inequities? Will the health sector leverage its potential and renewed position in central decision making to advocate for a proper environmental and social focus throughout the recovery and transition, including by engaging vulnerable and marginalised groups in the decision making process? Will these engagements be done in a way that builds public trust and solidarity as well as a new social contract for human and planetary health? The nature of these political engagements and their outcomes have consequences not only for recovery, but also for ensuring that no one is left behind and for institutionalising the development framework that emerges from the crisis.

65% of the SDG targets will not be achieved unless there is effective coordination with subnational governments, highlighting the crucial role of local authorities in establishing and delivering social and environmental objectives.⁹⁰ The health sector should enable, mediate, and advocate for the promotion of health and wellbeing and ensure that communities, particularly those that have historically been excluded, have a voice and are informed and engaged in the recovery process, and benefit from mitigation measures proportionate to need. To engage effectively and strengthen long-term accountability, health stakeholders should use the disruption caused by the COVID-19 pandemic as a window of opportunity to facilitate action by strengthening community engagement for health and public health and emergency preparedness and response capacities in local agencies. A continuity in political commitment to the SDGs, steered from the highest level of government and supported by subnational and local governmental and societal actors, is crucial to support participation and to inform future multilevel approaches to governance and policy implementation.^{91,92}

Conclusion

In this Viewpoint, we have argued that the COVID-19 pandemic offers a transformative opportunity to hasten progress for human and planetary health. However, this potential will only be realised if calls to simply build back

are rejected and calls to build back better are recognised to be, for the most part, a green-tinged version of the same calls, rooted in the outdated and unsustainable belief that economic growth alone equates to progress. We have therefore focused on going beyond building back better, contending that this approach of necessity nests the economic within the social and environmental domains of sustainable development, viewing the economy not as an end goal itself but as a means to secure and improve the health and wellbeing of people and the planet.^{17,18}

Evidence and support for a pursuit of a nested model of sustainable development has only been furthered by the COVID-19 pandemic. The effect of the pandemic has increased awareness of the vulnerability of human health to zoonoses, at a time when there is increasing evidence of the imminent risks to human and planetary health and wellbeing from ecological threats such as climate change and biodiversity loss. It is, therefore, crucial that research and development activities on the prevention of future catastrophes are accelerated, as well as those on timely and effective responses. This change also requires continued academic engagement on the nature of transformative change and the changes required to go beyond building back better. For example, Scoones and colleagues⁹³ have illustrated how “different ways of understanding what we mean by transformations can affect what actions follow”. Furthermore, social scientists have long recognised that transformations are not inherently good, and hence, they require “deliberate normative steering”.⁹³ In other words, how recovery and transition from the COVID-19 pandemic are approached and considered matters, not least because a transformation towards a nested model of sustainable development will not naturally happen of its own accord.

Moving forward, it is therefore crucial to ensure that opportunities to reconfigure the relationship between the three sustainable development domains are not missed,⁹⁴ obscured by all-consuming reactive efforts to address immediate economic needs. Even during more normal conditions for policy making, politically strategic approaches to health policy analysis and implementation tend to be neglected in favour of a search for technical solutions.⁹⁵ In the same way that policies will not naturally align towards improving human and planetary health, the severity of the crises resulting from COVID-19 will neither naturally build a consensus on a vision for a better future, nor incentivise engagements to build it. Furthermore, Scoones and colleagues⁹³ recognise that addressing immediate economic needs and moving towards a nested model of sustainable development need not be mutually exclusive and can instead be “complementary and reinforcing”.⁹³ Moreover, the work of Meadows⁹⁶ on leverage points to intervene in a system might have a renewed relevance in triggering multiplier effects and devising specific ways to activate transformations towards a nested model of sustainable development.

Strategic engagement, leadership, and political commitment are required to deliver on this shared vision of the post-COVID-19 world. To maximise its potential role in moving beyond building back better, the health sector should view engagements related to COVID-19 recovery and transition as opportunities to assess the effects and opportunities arising from the crisis; align policies across sectors towards a nested model of sustainable development; promote interventions to accelerate progress towards human and planetary health; challenge and reform pre-existing institutional coordination and accountability mechanisms at all levels of governance to prioritise equity, participation, and transparency; and to normalise new measures of progress that embrace holistic wellbeing.

Reflecting findings of *The Lancet*–University of Oslo Commission on Global Governance for Health,⁷⁸ commissions and advisory bodies such as the Pan-European Commission on Health and Sustainable Development,⁹⁷ the Independent Panel for Pandemic Preparedness and Response,³ *The Lancet* COVID-19 Commission,⁹⁸ and the Council on the Economics of Health for All⁹⁹ can play key roles, first as knowledge brokers, communicating independent and transparent multidisciplinary evidence to the UN and other actors for global governance for health; and, second, in activating transformations in financial and technical support for human and planetary health. These forums provide crucial support to policy makers to advocate, develop, and implement radically transformative policy agendas to be applied in global, regional, national, and local contexts. Recovery and transition beyond the COVID-19 pandemic are thus inextricably linked not only to investment and resource mobilisation for health and sustainable development, but also to inequality and the contentious nature of redistributive politics. From this viewpoint, COVID-19 pandemic recovery is about much more than the ability to contain and control the disease; it is symbolic of the commitment and courage to challenge the status quo, envision what it means to thrive as people and planet, and go beyond building back better to deliver the future that is wanted and needed.

Contributors

All authors contributed to the conceptualisation and design of this study. BM had the original idea for the article, which was conceptually developed further by DSL. AS and EAdL wrote the first draft of the manuscript, with written contributions from DSL, SM, GT, and MD. GT, BM, and MD provided editorial revisions and guidance. DSL first collected and synthesised the essential data related to the COVID-19 effect, with support and guidance from SM and GT. AS and EAdL managed successive versions of the manuscript with critical intellectual contributions from all authors. MD and GT provided guidance and coordination throughout the execution of the project, as well as mentoring and advising first authors throughout the publication. All authors have access to the data underlying the article, have provided substantive input and feedback throughout the drafting process, and the final manuscript has been approved for submission by all authors.

Declaration of interests

EAdL reports grants from Bundesgesundheitsministeriums für Gesundheit, Germany, outside the submitted work. AS reports grants

from the European Research Council, during the conduct of the study; personal fees from the Sustainable Development and Health Programme, WHO Regional Office for Europe, and the Office for Investment for Health and Development, WHO Regional Office for Europe, outside the submitted work. All other authors declare no competing interests.

Acknowledgments

We thank Amine Lotfi for his input during the early conception and design of this project, Eberechukwu Igbojekwe for her research assistance in the project's final phase, and Mark Pellegrini and his colleagues for producing the figures. We also thank the three anonymous reviewers for their constructive comments, which helped to strengthen this paper. The authors affiliated with WHO are responsible for the views expressed in this publication and they do not necessarily represent the decisions or policies of WHO.

References

- United Nations General Assembly. Draft omnibus resolution on the COVID-19 pandemic. Sept 10, 2020. <https://www.un.org/pga/74/2020/09/10/draft-omnibus-resolution-on-the-covid-19-pandemic-2/> (accessed Dec 6, 2020).
- World Business Council for Sustainable Development. The consequences of COVID-19 for the decade ahead. Vision 2050 issue brief. May 7, 2020. https://docs.wbcsd.org/2020/05/WBCSD_V20501B_COVID19.pdf (accessed June 14, 2021).
- Independent Panel for Pandemic Preparedness and Response. COVID-19: make it the last pandemic. May, 2021. https://theindependentpanel.org/wp-content/uploads/2021/05/COVID-19-Make-it-the-Last-Pandemic_final.pdf (accessed June 14, 2021).
- WHO. Report of the WHO-China joint mission on coronavirus disease 2019 (COVID-19). Feb 16–24, 2020. <https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf> (accessed Dec 6, 2020).
- World Wide Fund for Nature. COVID 19: urgent call to protect people and nature. June 17, 2020. <https://cdn2.hubspot.net/hubfs/4783129/WWF%20COVID19%20URGENT%20CALL%20TO%20PROTECT%20PEOPLE%20AND%20NATURE.pdf> (accessed Oct 20, 2021).
- Whitmee S, Haines A, Beyrer C, et al. Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation-Lancet Commission on planetary health. *Lancet* 2015; **386**: 1973–2028.
- WHO. Implementation of the International Health Regulations (2005): report of the Review Committee on the role of the International Health Regulations (2005) in the Ebola outbreak and response: report by the Director-General. A69/21. May 13, 2016. https://apps.who.int/iris/bitstream/handle/10665/252676/A69_21-en.pdf (accessed Dec 6, 2020).
- United Nations Regional Coordination Mechanism, United Nations Sustainable Development Group. COVID-19 and social protection in Europe and central Asia: a moment of opportunity to expand and strengthen social protection mechanisms to safeguard health, well-being and livelihoods, leaving no one behind. July 16, 2020. <https://www.social-protection.org/gimi/RessourcePDF.action?id=56790> (accessed Dec 6, 2020).
- Lambert H, Gupte J, Fletcher H, et al. COVID-19 as a global challenge: towards an inclusive and sustainable future. *Lancet Planet Health* 2020; **4**: e312–14.
- United Nations Economic Commission for Africa. Socio-economic impacts of ebola on Africa. January, 2015. <https://repository.uneca.org/ds2/stream/?#/documents/09a21e00-79cc-5a93-ada6-3d76384eb649/page/1> (accessed Oct 20, 2021).
- Horton R. Offline: COVID-19 is not a pandemic. *Lancet* 2020; **396**: 874.
- Mazzucato M. Capitalism's triple crisis. March 30, 2020. <https://www.project-syndicate.org/commentary/covid19-crises-of-capitalism-new-state-role-by-mariana-mazzucato-2020-03> (accessed Dec 6, 2020).
- UN. Sendai framework for disaster risk reduction 2015–2030. March 18, 2015. https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf (accessed Dec 6, 2020).
- Organisation for Economic Co-operation and Development. Focus on green recovery. <http://www.oecd.org/coronavirus/en/themes/green-recovery> (accessed Dec 6, 2020).
- Naidoo R, Fisher B. Reset Sustainable Development Goals for a pandemic world. *Nature* 2020; **583**: 198–201.
- United Nations Research Institute for Social Development. Policy innovations for transformative change: implementing the 2030 Agenda for Sustainable Development. Oct 17, 2016. [https://www.unrisd.org/80256B42004CCC77/\(httpInfoFiles\)/2D9B6E61A43A7E87C125804F003285F5/\\$file/Flagship2016_FullReport.pdf](https://www.unrisd.org/80256B42004CCC77/(httpInfoFiles)/2D9B6E61A43A7E87C125804F003285F5/$file/Flagship2016_FullReport.pdf) (accessed Dec 6, 2020).
- Fanning AL, O'Neill DW, Büchs M. Provisioning systems for a good life within planetary boundaries. *Glob Environ Change* 2020; **64**: 102135.
- O'Neill DW, Fanning AL, Lamb WF, Steinberger JK. A good life for all within planetary boundaries. *Nat Sustain* 2018; **1**: 88–95.
- Hall P. Policy paradigms, social learning, and the state: the case of economic policymaking in Britain. *Comp Polit* 1993; **25**: 275–96.
- Forum for the Future. From system shock to system change – time to transform. The future of sustainability. October, 2020. https://www.thefuturescentre.org/wp-content/uploads/2020/10/Future-of-Sustainability_Time_to_transform.pdf (accessed Dec 6, 2020).
- Griggs D, Stafford-Smith M, Gaffney O, et al. Policy: sustainable development goals for people and planet. *Nature* 2013; **495**: 305–07.
- Menne B, Aragon de Leon E, Bekker M, et al. Health and well-being for all: an approach to accelerating progress to achieve the Sustainable Development Goals (SDGs) in countries in the WHO European region. *Eur J Pub Health* 2020; **30** (suppl 1): i3–9.
- WHO Regional Office for Europe. E4As Guide for Advancing Health and Sustainable Development. Resources and tools for policy development and implementation. July, 2021. <https://apps.who.int/iris/bitstream/handle/10665/342345/9789289055772-eng.pdf> (accessed Oct 20, 2021).
- WHO. COVID-19 operationalization of the global response strategy in the WHO European region. September, 2020. <https://apps.who.int/iris/bitstream/handle/10665/334167/WHO-EURO-2020-1073-408190-55167-eng.pdf> (accessed Dec 6, 2020).
- Folke C, Biggs R, Norström AV, et al. Social-ecological resilience and biosphere-based sustainability science. *Ecol Soc* 2016; **21**: 41.
- Morton S, Pencheon D, Squires N. Sustainable Development Goals (SDGs), and their implementation: a national global framework for health, development and equity needs a systems approach at every level. *Br Med Bull* 2017; **124**: 81–90.
- WHO Regional Office for Europe. Progress report on the roadmap to implement the 2030 Agenda for Sustainable Development, building on Health 2020, the European policy for health and well-being. Aug 8, 2019. https://www.euro.who.int/__data/assets/pdf_file/0011/410006/69wd08e_E_RoadmapImplementation2030Agenda_190380.pdf (accessed Dec 6, 2020).
- Lozano R, Fullman N, Abate D, et al. Measuring progress from 1990 to 2017 and projecting attainment to 2030 of the health-related Sustainable Development Goals for 195 countries and territories: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet* 2018; **392**: 2091–138.
- Marmot M, Allen J, Goldblatt P, et al. Build back fairer: the COVID-19 Marmot Review. The pandemic, socioeconomic and health inequalities in England. December, 2020. <http://www.instituteofhealthequity.org/resources-reports/build-back-fairer-the-covid-19-marmot-review/build-back-fairer-the-covid-19-marmot-review-full-report.pdf> (accessed Dec 18, 2020).
- Aron J, Muellbauer J, Giattino C, et al. A pandemic primer on excess mortality statistics and their comparability across countries. June 29, 2020. <https://ourworldindata.org/covid-excess-mortality> (accessed Dec 6, 2020).
- WHO. Pulse survey on continuity of essential health services during the COVID-19 pandemic. Aug 27, 2020. https://www.who.int/publications/i/item/WHO-2019-nCoV-EHS_continuity-survey-2020.1 (accessed Dec 6, 2020).
- Food and Agriculture Organization of the United Nations. Europe and central Asia: regional food market situation and policy bulletin in response to the COVID-19 pandemic. April 29, 2020. <http://www.fao.org/3/ca8869en/CA8869EN.pdf> (accessed Dec 6, 2020).
- United Nations Educational, Scientific, and Cultural Organization. Adverse consequences of school closures. <https://en.unesco.org/covid19/educationresponse/consequences> (accessed Dec 6, 2020).
- Burki T. The indirect impact of COVID-19 on women. *Lancet Infect Dis* 2020; **20**: 904–05.

- 35 European Observatory on Health Systems and Policies. How are countries removing financial barriers to accessing health services in the context of COVID-19? April 27, 2020. <https://analysis.covid19healthsystem.org/index.php/2020/04/27/how-are-countries-removing-financial-barriers-to-accessing-health-services-in-the-context-of-covid-19/> (accessed Dec 6, 2020).
- 36 O'Brien L, Foster J. Engagement with nature and COVID-19 restrictions. Quantitative analysis 2020. Oct 24, 2020. https://www.forestresearch.gov.uk/documents/7973/FR_Nature_and_Covid-19_-_O'Brien_and_Forster_2020.pdf (accessed Oct 20, 2021).
- 37 Ipsen C, van Veldhoven M, Kirchner K, Hansen JP. Six key advantages and disadvantages of working from home in Europe during COVID-19. *Int J Environ Res Public Health* 2021; **18**: 1826.
- 38 UN. The Sustainable Development Goals Report. 2020. <https://unstats.un.org/sdgs/report/2020/The-Sustainable-Development-Goals-Report-2020.pdf> (accessed Dec 6, 2020).
- 39 Giani P, Castruccio S, Anav A, Howard D, Hu W, Crippa P. Short-term and long-term health impacts of air pollution reductions from COVID-19 lockdowns in China and Europe: a modelling study. *Lancet Planet Health* 2020; **4**: e474–82.
- 40 International Finance Corporation. COVID-19's impact on the waste sector. June, 2020. <https://www.ifc.org/wps/wcm/connect/dfbcda0-847d-4c16-9772-15c6afdc8d85/202006-COVID-19-impact-on-waste-sector.pdf?MOD=AJPERES&CVID=na-eKpI> (accessed Oct 20, 2021).
- 41 United Nations Conference on Trade and Development. Growing plastic pollution in wake of COVID-19: how trade policy can help. July 27, 2020. <https://unctad.org/news/growing-plastic-pollution-wake-covid-19-how-trade-policy-can-help> (accessed Dec 6, 2020).
- 42 International Labour Organization. ILO Monitor: COVID-19 and the world of work. 6th edn. Sept 23, 2020. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/briefingnote/wcms_755910.pdf (accessed Dec 6, 2020).
- 43 European Data Portal. Shedding light on changing consumer behaviour with economic data. May 19, 2020. <https://www.europeandataportal.eu/en/impact-studies/covid-19/shedding-light-changing-consumer-behaviour-economic-data> (accessed Dec 6, 2020).
- 44 Ting DSW, Carin L, Dzau V, Wong TY. Digital technology and COVID-19. *Nat Med* 2020; **26**: 459–61.
- 45 Hernández-Quevedo C, Scarpetti G, Webb E, et al. Effective contact tracing and the role of apps: lessons from Europe. *Eurohealth (Lond)* 2020; **26**: 40–44.
- 46 Bickler G, Morton S, Menne B. Health and sustainable development: an analysis of 20 European voluntary national reviews. *Public Health* 2020; **180**: 180–84.
- 47 United Nations General Assembly and Economic and Social Council. Mainstreaming of the three dimensions of sustainable development throughout the United Nations system. March 27, 2019. <https://digitallibrary.un.org/record/3800940?ln=en> (accessed Oct 20, 2021).
- 48 United Nations General Assembly. Political declaration of the high-level political forum on sustainable development convened under the auspices of the General Assembly. A/RES/74/4. Oct 21, 2019. <https://undocs.org/pdf?symbol=en/A/RES/74/4> (accessed Dec 6, 2020).
- 49 Kuruville S, Hinton R, Boerma T, et al. Business not as usual: how multisectoral collaboration can promote transformative change for health and sustainable development. *BMJ* 2018; **363**: k4771.
- 50 Robins N. Earth Day 50 sustainable finance: the road ahead. April, 2020. <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2020/04/Earth-Day-50-Sustainable-Finance-The-Road-Ahead.pdf> (accessed Dec 6, 2020).
- 51 Hancock T. Beyond science and technology: creating planetary health needs not just 'head stuff', but social engagement and 'heart, gut and spirit' stuff. *Challenges* 2019; **10**: 31.
- 52 Büchs M, Baltruszewicz M, Bohnenberger K, et al. Wellbeing economics for the COVID-19 recovery. Ten principles to build back better. May 8, 2020. https://wellbeingeconomy.org/wp-content/uploads/2020/05/Wellbeing_Economics_for_the_COVID-19_recovery_10Principles.pdf (accessed Dec 6, 2020).
- 53 Mazzucato M, Kattel R, Quaggiotto G, Begovic M. COVID-19 and the need for dynamic state capabilities. April, 2021. https://www.ucl.ac.uk/bartlett/public-purpose/sites/public-purpose/files/54241_-_undp_wp-covid-19_state_ressilience-v51.pdf (accessed June 14, 2021).
- 54 Mindell J. International recognition of the links between transport, health and sustainability. *J Transp Health* 2017; **6**: 5–6.
- 55 United Nations Economic Commission for Europe. Mobility management – a guide of international good practices. April, 2020. https://thepep.unec.org/sites/default/files/2020-04/Mobility%20Management_WEB.pdf (accessed Dec 7, 2020).
- 56 United Nations Development Programme. Beyond recovery: towards 2030. June 22, 2020. <https://www.undp.org/content/undp/en/home/librarypage/hiv-aids/beyond-recovery--towards-2030.html> (accessed Dec 7, 2020).
- 57 Nilsson M, Griggs D, Visbeck M. Policy: map the interactions between Sustainable Development Goals. *Nature* 2016; **534**: 320–22.
- 58 Pham-Truffert M, Metz F, Fischer M, Rueff H, Messerli P. Interactions among Sustainable Development Goals: knowledge for identifying multipliers and virtuous cycles. *Sustain Dev (Bradford)* 2020; **28**: 1236–50.
- 59 Raworth K. Doughnut Economics: seven ways to think like a 21st-century economist. London: Random House Business Books, 2017.
- 60 Hickel J. Less is more: how degrowth will save the world. London: Penguin, 2020.
- 61 Kallis G, Paulson S, D'Alisa G, et al. The case for degrowth. Cambridge: Polity Press, 2020.
- 62 Demaria F, Schneider F, Sekulova F, Martinez-Alier J. What is degrowth? From an activist slogan to a social movement. *Environ Values* 2013; **22**: 191–215.
- 63 Fernández de Losada A, Abdullah H, eds. Cities on the frontline: managing the coronavirus crisis. June, 2020. https://www.cidob.org/en/publications/publication_series/cidob_report/cidob_report/cities_on_the_frontline_managing_the_coronavirus_crisis (accessed Dec 12, 2020).
- 64 International Labour Organization. Social protection responses to the COVID-19 crisis: country responses and policy considerations. Social Protection Spotlight. April 23, 2020. https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---soc_sec/documents/publication/wcms_742337.pdf (accessed Dec 12, 2020).
- 65 Alderman L, Satariano A. Amazon's showdown in France tests its ability to sidestep labor. May 14, 2020. <https://www.nytimes.com/2020/05/14/technology/amazon-unions-france-coronavirus.html> (accessed Dec 12, 2020).
- 66 WHO. WHO manifesto for a healthy recovery from COVID-19: prescriptions and actionables for a healthy and green recovery. May, 2020. <https://www.who.int/docs/default-source/climate-change/who-manifesto-for-a-healthy-and-green-post-covid-recovery.pdf> (accessed Dec 12, 2020).
- 67 Healthy Recovery. In support of a #HealthyRecovery. May 26, 2020. <https://healthyrecovery.net/> (accessed Dec 12, 2020).
- 68 Horton R. Offline: Extinction or rebellion? *Lancet* 2019; **394**: 1216.
- 69 Hope M. Contagious youth. *Lancet Planet Health* 2019; **3**: e376–77.
- 70 Klerkx L, Rose D. Dealing with the game-changing technologies of Agriculture 4.0: how do we manage diversity and responsibility in food system transition pathways? *Glob Food Secur* 2020; **24**: 100347.
- 71 Maye D. 'Smart food city': conceptual relations between smart city planning, urban food systems and innovation theory. *City Cult Sc* 2019; **16**: 18–24.
- 72 Winkelhaus S, Grosse EH. Logistics 4.0: a systematic review towards a new logistics system. *Int J Prod Res* 2020; **58**: 18–43.
- 73 Nejad MF, Haghaddi N, Bruce A, et al. Climate policy and intelligent transport systems: application of new transport technologies to reduce greenhouse emissions. 2020 National Conference on Emerging Trends on Sustainable Technology and Engineering Applications; Durgapur; Feb 7–8, 2020.
- 74 Tomson G, Causevic S, Ottersen OP, et al. Solidarity and universal preparedness for health after COVID-19. *BMJ* 2021; **372**: n59.
- 75 Bayram M, Springer S, Garvey CK, Özdemir V. COVID-19 digital health innovation policy: a portal to alternative futures in the making. *OMICS* 2020; **24**: 460–69.
- 76 Office of the High Commissioner for Human Rights. World stumbling zombie-like into a digital welfare dystopia, warns UN human rights expert. Oct 17, 2019. <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=25156> (accessed Dec 12, 2020).

- 77 Engebretsen E, Heggen K, Ottersen OP. The Sustainable Development Goals: ambiguities of accountability. *Lancet* 2017; **389**: 365.
- 78 Ottersen OP, Dasgupta J, Blouin C, et al. The political origins of health inequity: prospects for change. *Lancet* 2014; **383**: 630–67.
- 79 United Nations General Assembly and Economic and Social Council. Report of the Secretary-General. Implementation of General Assembly resolution 71/243 on the quadrennial comprehensive policy review of operational activities for development of the United Nations system (QCPR). A/75/x-E/2020/7. April 24, 2020. https://www.un.org/ecosoc/sites/www.un.org.ecosoc/files/files/en/qcpr/Secretary-General_report_on_QCPR_implementation-24%20April.pdf (accessed Dec 17, 2020).
- 80 WHO Regional Office for Europe. Factsheet - vulnerable populations during COVID-19 response. Addressing vulnerability upfront in the WHO European Region. October, 2020. https://www.euro.who.int/__data/assets/pdf_file/0007/466108/Factsheet-October-2020-vulnerable-populations-COVID-19.pdf (accessed Dec 13, 2020).
- 81 Costanza R, Kubiszewski I, Giovannini E, et al. Development: time to leave GDP behind. *Nature* 2014; **505**: 283–85.
- 82 De Neve J-E, Sachs JD. Sustainable development and human well-being. March 20, 2020. https://happiness-report.s3.amazonaws.com/2020/WHR20_Ch6.pdf (accessed Dec 13, 2020).
- 83 Hancock T, Capon A, Dooris M, Patrick R. One planet regions: planetary health at the local level. *Lancet Planet Health* 2017; **1**: e92–93.
- 84 New Economics Foundation. Happy Planet Index 2016, methods paper. 2016. https://static1.squarespace.com/static/5735c421e321402778ee0ce9/t/578dec7837c58157b929b3d6/1468918904805/Methods+paper_2016.pdf (accessed Dec 13, 2020).
- 85 Organisation for Economic Co-operation and Development. Better Life Index. <https://www.oecdbetterlifeindex.org/#/111111111111> (accessed June 15, 2021).
- 86 Fisher D. Wellbeing worldbeaters: New Zealand, Scotland and Iceland. Oct 30, 2019. <https://www.iwa.wales/agenda/2019/10/wellbeing-worldbeaters-new-zealand-and-scotland/> (accessed Dec 13, 2020).
- 87 Bozorgmehr K, Saint V, Kaasch A, Stuckler D, Kentikelenis A. COVID and the convergence of three crises in Europe. *Lancet Pub Health* 2020; **5**: e247–48.
- 88 Kickbusch I, Gleicher D. Governance for health in the 21st century. 2012. https://www.euro.who.int/__data/assets/pdf_file/0019/171334/RC62BD01-Governance-for-Health-Web.pdf (accessed June 14, 2021).
- 89 Bua A, Escobar O. Participatory-deliberative processes and public policy agendas: lessons for policy and practice. *Policy Pract* 2018; **1**: 126–40.
- 90 Kanuri C, Revi A, Espey J, et al. Getting started with the SDGs in cities. A guide for stakeholders. July, 2016. <https://irp-cdn.multiscreensite.com/be6d1d56/files/uploaded/9.1.8.-Cities-SDG-Guide.pdf> (accessed Dec 13, 2020).
- 91 European Commission. Delivering the Sustainable Development Goals at local and regional level. Recommendations to the European Commission by the subgroup on “SDGs at local and regional level” of the Multi-Stakeholder Platform on the Implementation of the Sustainable Development Goals in the EU. June 8, 2018. <https://ec.europa.eu/info/sites/info/files/delivering-sdgs-local-regional-level.pdf> (accessed Dec 13, 2020).
- 92 Geels FW. Disruption and low-carbon system transformation: progress and new challenges in socio-technical transitions research and the multi-level perspective. *Energy Res Soc Sci* 2018; **27**: 224–31.
- 93 Scoones I, Stirling A, Abrol D, et al. Transformations to sustainability: combining structural, systemic and enabling approaches. *Curr Opin Environ Sustain* 2020; **42**: 65–75.
- 94 Herrfahrdt-Pähle E, Schlüter M, Olsson P, Folke C, Gelcich S, Pahl-Wostl C. Sustainability transformations: socio-political shocks as opportunities for governance transitions. *Glob Environ Change* 2020; **63**: 102097.
- 95 Walt G, Gilson L. Reforming the health sector in developing countries: the central role of policy analysis. *Health Policy Plan* 1994; **9**: 353–70.
- 96 Meadows D. Leverage points: places to intervene in a system. 1999. https://donellameadows.org/wp-content/userfiles/Leverage_Points.pdf (accessed June 15, 2021).
- 97 WHO Regional Office for Europe. Pan-European Commission on Health and Sustainable Development. 2020. <https://www.euro.who.int/en/health-topics/health-policy/european-programme-of-work/pan-european-commission-on-health-and-sustainable-development> (accessed Dec 13, 2020).
- 98 Sachs J, Karim SA, Akinin L, et al. *Lancet* COVID-19 Commission Statement on the occasion of the 75th session of the UN General Assembly. *Lancet* 2020; **396**: 1102–24.
- 99 WHO. WHO establishes Council on the Economics of Health for All. Nov 13, 2020. <https://www.who.int/news/item/13-11-2020-who-establishes-council-on-the-economics-of-health-for-all> (accessed Dec 13, 2020).

Copyright © 2021 This is an Open Access article published under the CC BY 3.0 IGO license which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. In any use of this article, there should be no suggestion that WHO endorses any specific organisation, products or services. The use of the WHO logo is not permitted. This notice should be preserved along with the article's original URL.