

Communication

COVID-19 and the UN Sustainable Development Goals: Threat to Solidarity or an Opportunity?

Walter Leal Filho ^{1,*}, Luciana Londero Brandli ^{2,*}, Amanda Lange Salvia ²,
Lez Rayman-Bacchus ³ and Johannes Platje ⁴

¹ Department of Natural Sciences, European School of Sustainability Science and Research, Hamburg University of Applied Sciences and Manchester Metropolitan University, Chester Street, Manchester M1 5GD, UK

² Faculty of Engineering and Architecture (FEAR), Postgraduate Program in Civil and Environmental Engineering (PPGEng), University of Passo Fundo (UPF), Passo Fundo 99052900, Brazil; amandasalvia@gmail.com

³ The Business School, University of Winchester, Winchester SO22 5HT, UK; lez.rayman-bacchus@winchester.ac.uk

⁴ Faculty of Finance and Management, WSB University in Wrocław, ul. Fabryczna 29-31, 53-609 Wrocław, Poland; Johannes.platje@wsb.wroclaw.pl

* Correspondence: w.leal@mmu.ac.uk (W.L.F.); brandli@upf.br (L.L.B.)

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Abstract: COVID-19, as a pandemic, is impacting institutions around the world. Its scope and economic dimensions also mean that it poses a major threat towards achieving the UN Sustainable Development Goals (SDGs). This article discusses how the coronavirus pandemic may influence the SDGs and could affect their implementation. The methods used entail an analysis of the literature, observations and an assessment of current world trends. The results obtained point out that, while COVID-19 has become a priority to many health systems in developing nations, they still need to attend to many other existing diseases such as malaria, yellow fever and others. Further, the study shows that strong concerns in dealing with COVID-19 are disrupting other disease prevention programs. As a result, problems such as mental health are also likely to be overlooked, since the isolation of social distancing may mask or lead to an increase in the percentage of sufferers. The paper suggests that, due to its wide scope and areas of influence, COVID-19 may also jeopardize the process of the implementation of the SDGs. It sends a cautious warning about the need to continue to put an emphasis on the implementation of the SDGs, so that the progress achieved to date is not endangered.

Keywords: SDGs implementation; COVID-19 pandemic economic impact; UN Sustainable Development Goals

1. Introduction

The Sustainable Development Goals were approved by the United Nations in 2015. They have been in place for five years, and already many nations seem to be falling behind in meeting their targets [1]. There are signs that the impacts of COVID-19 on the global economy will be more intense and long-lasting than those felt during the 2008–2009 global financial crisis [2]. These impacts pose a serious threat to the development prospects of less industrialized nations, and to the realization of the UN SDGs by 2030. Nevertheless, the UN remains optimistic, as it launches a plan to “defeat the virus and build a better world” [3]. The plan calls for international solidarity, for the leading economies to develop “coordinated, decisive, inclusive and innovative policy action” especially financial and technical support to the world’s most vulnerable and poor [3]. The UN has also launched an appeal to

raise USD 2 billion to fight COVID-19 [4]. This is necessary as the pandemic can, for example, lead to a “famine of biblical proportions” [5].

The pandemic of the Spanish flu in 1918–1920 shows that after a sharp economic decline in the initial phase in the USA, the early reaction and strict policy reduced the death toll and prevented the negative effects to persist over time [6]. In hindsight, the economic effects of SARS-1 may have been lower than was predicted or presented in the media [7]. Very often, the effects of a pandemic are most strongly felt by the weakest, such as people who are in a lockdown without paid leave, and thus having difficulties with buying the daily necessities. In particular, women, low-wage employees and part-time workers are hurt [8]. The problems in the management of pandemics are not only limited to the late reaction of policy makers due to the ignorance of threats. In the case of the Spanish flu and SARS-1, the potential threat of these pandemics was ignored or not taken seriously [8,9]. Further, in the case of the current pandemic, there were signs of potential trouble already in November 2019, while only in January 2020, action was undertaken in China [10]. Thus, even with experience of SARS-1, and the relatively quick action in China, Taiwan, etc. [11], the reaction was delayed. Downplaying the threat of COVID-19 by comparing it to a “normal flu” could be widely observed in politics and the media during the first months of 2020 [9].

This paper explores how the coronavirus pandemic may affect addressing societal issues at the heart of some of the SDGs. The rationale behind the decision of not to examine all SDGs in this paper is because the focus is on those more directly affected by COVID-19, and where there is a pressing need for urgent action. This is the case for SDGs such as 1 (No poverty), 2 (Zero hunger), 3 (Good health), 4 (Quality education), 5 (Gender equality), 8 (Decent work), 10 (Reduce inequalities) and 16 (Peace, justice and strong institutions). There are other SDGs whose relevance to COVID-19 are not as pressing, such as 7 (Affordable and clean energy), 14 (Life below water) or 15 (Life on land), hence they were not considered in this study.

It first outlines the origins of the virus in Wuhan, an industrialized city in China. The paper then presents the approach, materials and methods used in organizing and constructing the arguments presented. It highlights the approach of combining (a) impact as the phenomenon under study, (b) the economy as an ecosystem and (c) a critical reflection on economic development. The first two parts provide insight, while the third draws on this insight to call for action in order to better achieve the SDGs. Following this methodological framework, and by way of providing a wider contemporary context for exploring the impact, Section 3 outlines some of the immediate economic impacts of the virus, touching on international trade, financial markets, air travel and employment. This is followed by a discussion of the likely unfolding direction of impact of COVID-19, drawing on recent analyses, research and informed observations about the future world economy and possible consequences for implementing the SDGs.

COVID-19: The Origins of the Problem

The coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. The infection originated in the Hubei province of Wuhan, China, in December 2019. Reports of a pneumonia-like condition were issued in the first week of December 2019. During the initial stages of the pneumonia-like condition, patients often suffer from severe acute respiratory infection symptoms, while other patients may experience respiratory failure [12].

On 7 January 2020, the Chinese Centre for Disease Control and Prevention (CDC) successfully identified and classified the novel COVID-19 from a throat swab of a patient [1]. COVID-19 has a coronavirus-specific nucleic acid sequence that is different from previously known human coronaviruses, and is similar to those found in bats [13].

The virus is highly infectious and is mostly transmitted in droplets emitted from an infected individual’s mouth or nose. COVID-19 induces multiple effects on its human host, with respiratory tract infections such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) being more prominent. Most symptoms are mild, whereas other patients experience more

severe symptoms such as pneumonia, pulmonary edema and organ failure, which may lead to death [12].

The virus was initially confined to China, but it quickly spread to other parts of the world. The first countries to report cases of COVID-19 were Japan, South Korea and Thailand [12]. Most cases out of China were initially a result of international travel rather than local transmission. As of 30 January 2020, the World Health Organization (WHO) declared a global health emergency after an extensive assessment of the epidemic [14].

Following the official WHO warning, the number of global cases rose rapidly, with over 100,000 confirmed cases in 114 countries by early March 2020. The incidence of local transmissions is still increasing at an alarming rate. The severity of the problem led WHO to characterize the situation as a pandemic as of 11 March 2020 [15]. Since then, the epicenter of COVID-19 shifted to Europe and to the United States, with more reported cases and deaths than the rest of the world. The United Kingdom has, so far, recorded the most cases and deaths in Europe [16].

As of 19 March 2020, approximately 176 countries and across all regions have been affected by COVID-19 with over 6.2 million confirmed cases worldwide, and over 380,000 deaths [16]. Alternatively, China has managed to reduce the spread of the disease within its borders [17], and the current epicenter of the problem is in Europe and in the Americas, though it is expected that the African continent will soon be affected, with South Africa having the most cases on the continent so far.

2. Conceptual Approach, Method of Data Collection and Materials

In order to better understand the unfolding economic and social impacts of COVID-19, including the impacts on the SDGs, and potential strategic responses, a critical, evidence-based assessment was performed. First, this exploratory study, employs a critical contextual approach grounded in a systems theoretic, in order to examine, and respond to, the macro impacts (economic, social and environmental) in context [18,19]. Impact here means the effects an event (i.e., COVID-19) has on trade and employment, social and public health and the environment. The approach combines (a) a constructed focus on impact (economic, social, environmental), (b) set in context (the contemporaneous economy as ecosystem), and (c) a critical reflection on the notion of economic development. From a systems theory perspective: first, the phenomenon under investigation, impact, always exists within a context, and the latter inherently influences the former; second, the modern industrial economy (i.e., capitalism) is arguably humanity's largest socially constructed ecosystem, and which shapes our entire way of life [20]; and third, as an ecosystem, the global economy self-organizes through learning, but suffers structural irreversibility and a tendency for growth to slow down, leading to the loss of continuity and uncertainty in the future [21].

This approach helps organize the understanding of the pervasive influence of, and unreflective commitment to, a singular paradigmatic notion of economic growth (i.e., GDP), and the general economic impact assessment below (Section 3) asserts this observation. Going further, critical reflection helps raise awareness of potential alternative paradigms of growth, such as one that includes equity and well-being. This critical reflection also invites engagement with an alternative paradigm, in order to better realize the achievement of SDGs. A critical awareness helps everyone, from policy makers to individuals, become more accountable and to secure the social influences and resources needed to promote positive change (i.e., achieve the SDGs) [19].

The data collection method involved the collection and review—both rapid and scoping [22]—of online sources between March and May 2020. In the review, we juxtaposed a wide range of materials, including policy and media reports, and blogs, in the search for patterns on emerging economic impacts, as well as on potential policy responses to the crisis. We also reviewed published research on fundamental social themes (including collateral harm from the crisis, including the specter of rising poverty, the vulnerability of health care systems, the threat of (nationalist) patriotism to global solidarity, and calls for a new capitalism). In addition, an online search for “COVID-19 and impact” was carried

out in June 2020, in order to assess any pattern of search showing interest in economic, social and environmental issues.

The review categorized references to COVID-19 into (a) economic, (b) social and (c) environmental. We identified three key stakeholder groups attached to all references: concerned policy makers (e.g., UNCTAD), market share-dealing participants (e.g., S&P 500) and informed observers (e.g., Forbes). A content analysis of these published materials identified overlapping concerns and arguments, representing a convergence of thinking among stakeholders about the nature of (a) the economic impact (in particular financial size of impact and scope, sectors facing immediate collapse, including impact on international supply chains), and (b) the social impact (including public health and public health systems, loss of employment and poverty, education, gender). These analyses were mapped to the SDGs, highlighting which SDGs would be adversely affected. The review also identified potential challenges to overcoming the pandemic (unlikelihood of an early vaccine) and possible technological solutions (tracing using electronic surveillance).

3. General Economic Impacts of COVID-19

The initial concerns among key stakeholders confirm their preoccupation with the impact of COVID-19 on economic growth. Reports highlight that the social and economic impacts of COVID-19 are unprecedented, and continue to unveil themselves.

The expected global recession is expected to be worse than the 2007–2009 financial crisis, while the longer-run effects depend on when the virus peaks [23]. The UN Trade and Development Agency (UNCTAD) estimates the cost to the global economy in 2020 will be around USD 1 trillion [24]. However, this may be optimistic due to the uncertainty of the length of the epidemic, its spread and impact and differing government policy responses.

In the first quarter of 2020, global financial markets collapsed, due to—or accelerated by—a global economic shutdown, fear and uncertainty about the future. During February 2020, the USA S&P 500 fell over 30% [25]. Contributing factors include: interruptions to international supply chains and reduced trade due to business closures in China, Europe and elsewhere as the virus spreads; and disruption to economic activity through removal of the labor force (infection, mortality, social distancing, lockdown), aimed at interrupting the transmission of the virus. This forced jump to remote working may herald positive and permanent change for some, but not all work can be done remotely, e.g., in travel, agriculture and manufacturing.

International travel has enabled the rapid spread of the epidemic, highlighting the interconnectedness of economies. Travel restrictions have grown significantly, with many governments imposing either a total or partial border closure, while airlines are grounding flights, further reducing international trade and tourism. Indeed, many airlines may face bankruptcy [26]. Unprecedented levels of unemployment loom, and the need for government support may force governments to take on uncomfortably high levels of debt, as many sectors in the economy require support. A pandemic causes huge uncertainty, and makes the vulnerabilities and fragilities of the current economic system visible. The high uncertainty makes it difficult to predict what the long-term effects of the pandemic will be [27,28]. Since the emergence of the virus approximately six months ago, the economic impacts of COVID-19 have received by far the greatest concentration of attention to date (to June 2020). An online search for “COVID-19 and impact” returned 4,280,000,000 hits. Among the first 100 hits, 68 (68%) referred to impacts on the economy and business, with some sources focused on sector impacts, including aviation, tourism and retail, among others (Table 1). Of the first ten hits, eight were economic/business/financial. From a systems theoretical perspective, this concentration of attention to economic and business concerns in relation to other factors confirms the centrality of the economy as the ecosystem of everyday life, and the context for any assessment of impact thereon. Further noteworthy is the complete absence of the ecological environment from the top 100 hits.

Table 1. Top 100 online hits for “COVID-19 and impact”: non-economic impacts.

Top 100 Online Hits for “COVID-19 and Impact”: Non-economic Impacts (Google), 9 June 2020				
		1–50	51–100	
Economic + Business	Economy	0.5, 0.5		
	Business	0.5		
	Labor/work	1		
Social	Health/medical	1,1	1, 1, 1, 1	
	Education	1	1, 1	
	Individual mobility	0.5		
	Gender	Women	0.5, 1	0.5
		Children	1, 1	
Environmental				
Administrative and Other	Air traffic (Europe)	1		
	Legal services	1	1	
	EU projects admin	1		
	Weather forecast infrastructure	1		
Info + Research	Aggregator (Wiki)	1	1	
	Mass media	1		
	Socio-econ	Socio-econ	1, 1	1, 1, 1
		Social	1	
		Global poverty	1	
TOTAL (1-50 + 51-100)				
Non-econ: 32% (14 + 18)/100		14/50		18/50
Econ only: 68% (36 + 32)/100		36/50		32/50

Note: A score of 0.5 means a particular hit straddles two categories: impact on women in small fishing businesses; econ impact on women; econ impact on individual mobility; econ impact on women entrepreneurs.

4. Findings and Discussion: Non-financial Impacts

In addition to the aforementioned economic impacts of COVID-19, the pandemic poses a threat to sustainable development. In particular, it may endanger the implementation of the UN Sustainable Development Goals (SDGs), which are set to be reached by 2030. Such impacts are already negative to rich countries, so they are likely to be felt more strongly across developing nations, which do not have the capacity or the resources to cope with the many economic and social challenges inflicted by the disease. A recently published working paper [29] estimates that the COVID-19 economic shutdown will push 420–580 million people into poverty, causing global poverty to rise for the first time since 1990. Based on this report, Oxfam is calling on world leaders to agree an economic rescue package to support vulnerable economies and their communities [30]. There can be little doubt that this “poverty tsunami ... in developing countries” [31] is intimately bound up with other social ills, including health, conflict, loss of livelihood and inequality. Nevertheless, the first direct reference to (global) poverty in the top 100 hits was at number 97. Some of the potential impacts of COVID-19 on the SDGs are summarized in Figure 1.

The impacts of the coronavirus disease on the social aspects of sustainability are not only limited to SDG 1 (No poverty) and SDG 2 (Zero hunger). Moreover, pandemics in the past teach us they can leave a significant psychological impact [8], which is undoubtedly amplified by embedded socio-economic inequalities and uncertainty of the future. Millions of people around the world have no income security, no unemployment insurance or sick pay [32] and often very limited savings, whose living conditions will be worsened by the pandemic. The lockdown in many countries has been preventing people from going to work, and this will persist for an unknown length of time, potentially the rest of 2020 and beyond.

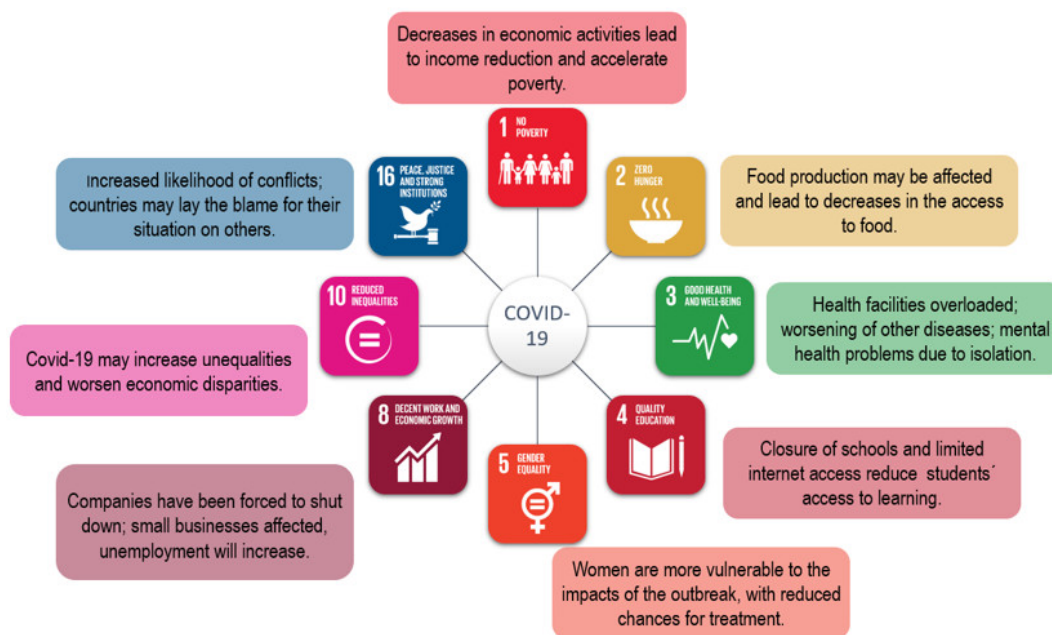


Figure 1. Some of the main impacts of COVID-19 on the Sustainable Development Goals.

As any other disease, the first effects are felt in the health systems, posing a threat to SDG 3 (Good health and well-being): hospitals and other health facilities in many countries are overloaded and people may not seek medical care (in case of real need) for being afraid of getting infected in these places. The lack of equipment and infra-structure in weak health systems means that the level of mortality may be high.

Further, while COVID-19 has become a priority to many health systems in developing nations, they still need to attend to many other existing diseases such as malaria, yellow fever and others. Indeed, there is strong concern that dealing with COVID-19 is disrupting other disease prevention programs [33]. The healthcare systems of most developing countries are ill-equipped to cope with an array of public health problems, due to lack of funding, equipment and qualified personnel. Mental health problems are also likely to be overlooked, since the isolation of social distancing may mask or lead to an increase in the percentage of sufferers.

Companies around the world have been forced to shut down and suspend activities. Even though examples from countries which already experienced the worst phase (as China) show that activities progressively return to normality, many small businesses may not survive this difficult period. Additionally, employees may be furloughed (temporarily suspended) while the economy recovers, or be made unemployed [34]. The current pandemic not only depresses the economy (and consequently the scope of SDG 8 (Decent work and economic growth)) but also increases the likelihood of conflicts (within and across borders) and therefore jeopardizes the goal of global peace and justice (SDG 16: Peace, justice and strong institutions).

According to [35], more than 130 countries have implemented nationwide closures of schools and universities, impacting over 80% of the world's student population (i.e., schools and universities). Many educational institutions are attempting to maintain programs through online education. However, equity is a major constraint on access to distance learning. In developing countries, many students do not have access to the internet, or do not possess personal computers or tablets, or a safe and supportive learning environment appropriate for e-learning. The pandemic will therefore harm education in all spheres (SDG 4—Quality education), driving up the need for childcare, and causing higher economic costs, increased pressure on schools and a rise of dropout rates.

Gender equality (SDG 5) tends to get more uneven with the impoverishment of nations. Although numerous women are making essential contributions as leaders and frontline responders during

the COVID-19 pandemic, they are also more affected by the health, economic and social impacts of the outbreak. Some impacts are expected for SDG 5 [36] such as exacerbated burdens of unpaid care work for women and girls, rise of domestic violence due to heightened tensions in the household, decline in women's economic empowerment, exclusion from leadership roles and interrupted access to sexual and reproductive health. Similarly, inequalities in income and wealth are severe and can be expected to widen globally with the pandemic (SDG 10); those not dependent on employment will be marginally affected, while those on low income will probably fall into poverty. The wide range of resources available in the rich world will not fully reach the poor, who will be even more affected by the forthcoming economic crisis, especially in Africa [37]. The COVID-19 pandemic also highlights the link between clean water and health, especially because a large percentage of the global population does not have access to proper sanitation and drinking water (SDG 6).

A recent review of scenarios of the future of the USA economy, put forward by various think tanks (the right-leaning American Enterprise Institute, the left-leaning Center for American Progress, Harvard University's Safra Center for Ethics) and Nobel Prize-winning economist Paul Romer, identified similarities in their projections [38]. These scenarios see economic recovery as (1) requiring the control of COVID-19 to be established quickly, which in turn requires an effective vaccine to be developed (but which may be 18 months away), (2) coupled with mass testing and mass surveillance and (3) significantly lower rates of infection such that national healthcare systems will have the capacity to manage. In terms of mass surveillance, Google and Apple have formed a partnership to enable the tracking of Android and iOS devices, providing information that health authorities will be able to use to map the spread of COVID-19 infection [39]. Communication technology is not a silver bullet as access is not universal, but it seems to promise cost-effective penetration of populations and user identification. More than 60% of the globe has access to either a mobile or smart phone [40], though this masks that in developed economies, 75% of the population has access to mobile internet connectivity, while only 40% of the lower- and middle-income population has access. Moreover, in South Asia and sub-Saharan Africa, there remains persistent gaps in gender usage and between rural and urban take-up [41].

There is already a valuable historical precedent for this surveillance strategy, in the form of a developed framework for managing the contagion of the Ebola disease [42], and detecting those with latent tuberculosis infection [43]. Still, civil liberty and privacy advocacy groups see danger in this development as Big Tech and governments may misuse such information. While the political dangers are real, this technological and strategic approach may turn out to be an unexpected enabler of SDG implementation, in particular towards improving public health (SDG-3), with spillover effects that contribute to other SDGs. For example, there is evidence that pro-growth government spending during a recession carries "significant positive multipliers in social protection, health and education sectors" [44]. The same can be said about the positive effects of seeking green public procurement (GPP), which can not only contribute to economic development but also promote environmental benefits and even focus on the non-environmental part of the Sustainable Development Goals [45]. GPP can also be seen as a valuable resource especially for small and medium enterprises to reduce their risks and be prepared in times of crisis, promoting marketing growth and green networks [46].

The IMF (International Monetary Fund) expects low-income countries to suffer most, through growing capital outflows [47] and flight into the dollar and euro, while the strengthening of the dollar could be damaging to economies dependent on the export of natural resources. The poor, not only in emerging and low-income economies, with low savings and less access to health care are expected to suffer disproportionately more [47]. Many developing nations will become poorer. The higher unemployment rates and the expected difficulties in servicing debt obligations means that chronic problems such as limited food supplies (SDG2), reduced access to health care (SDG3) and disruption to school education (SDG4), among others, will worsen. Developing nations, especially in Africa and Latin America, will also take longer to recover from these damages, and will need much support in respect of aid and subsidies, before they can get back on their feet. It is no exaggeration to suggest

that the impacts of COVID-19 on the global economy will be more intense and long-lasting than those felt during the 2008–2009 global financial crisis. It therefore poses a serious threat to the development prospects of less industrialized nations, which will now need more time to implement the SDGs.

All nations have been caught unprepared for a pandemic. In anticipation of a demand for assistance, on March 3 2020, the World Bank allocated USD 12 billion emergency funding to help developing countries strengthen their health systems against COVID-19 [48]. The COVID-19 crisis is revealing chronic underinvestment in healthcare systems over the last decade among developed economies (in governance, financing, service delivery, medicines and equipment, health workers and information communication) [49], and a critical lack of resilience in these systems [50,51]. Further, addressing such failings may pose a serious danger to global investments in social and healthcare systems, both directly and indirectly. Some developed nations are likely to prioritize investing in national emergency and economic recovery programs, potentially further undermining an existing need for investment in developing countries' healthcare systems [52,53]. The crisis is also fueling populism and nationalism via patriotism [54,55], potentially undermining international solidarity. For example, President Donald Trump (USA) has signed a USD 2 trillion relief bill, 99% of which is tied to emergency and economic initiatives [56]. Fox News questions why some USD 12 billion of this fund has been allocated to projects not directly related to the US epidemic. In contrast, the British government has pledged GBP 200 million to WHO and NGOs (non-governmental institutions) in order to fight coronavirus [57]. Indeed, there is evidence of societal stakeholders around the world taking a shared responsibility: by 2 May 2020, some 1191 donors have pledged USD 15.8 billion to fight COVID-19 (Figure 2). Major world leaders met at a virtual summit to pledge EUR 7.4 billion, with the notable absence of the USA [50].

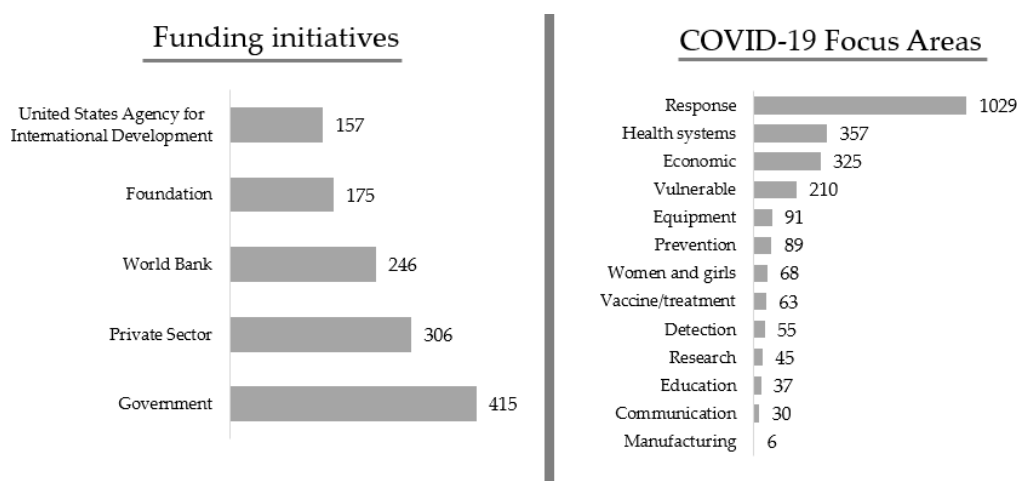


Figure 2. Funding response to the COVID-19 threat. Source: Based in [58].

Moreover, as Wintour of *The Guardian* notes, “in a sign of the fractured state of global health diplomacy”, India and Russia, among others, were absent, and a separate summit was convened for Iran, India and other leaders [50]. Why is solidarity wanting? The UN is asking the rich world to come together with the poor world in an act of solidarity in order to overcome COVID-19 and address the SDGs. However, international solidarity is mercurial; while having a global quality (as a movement), as the behavior of individual world leaders shows, it also involves voluntary choices and strategic behavior [59,60]. Further, seeking solidarity towards a relatively abstract idea (the SDGs) is difficult to maintain. COVID-19 presents an emergency (clear and present danger), which can galvanize a patriotic and collective response, while the SDGs are relatively abstract (out of sight, out of mind) with no immediately clear consequences (climate change notwithstanding).

Nevertheless, the international development community fears that COVID-19 foreshadows reduced political support for aid, where other significant development and health priorities may be marginalized, and there could be some form of rationing of work among NGOs and implementers [61].

While national priorities must be addressed, there is a danger of divergent positions undermining the solidarity of which the UN speaks and underpins the SDGs being realized, with consequences for the recipient developing economies. Further, many countries are appealing to national patriotism to fight COVID-19 [62–64], potentially undermining international solidarity, though the Chinese media speak of the country's desire to help the rest of the world [65].

In contrast with these social adverse impacts, the shutdown of entire economies around the world has led to significant reductions in CO₂ emissions, as the demand for fossil fuel plummeted; air travel all but ceased and industrial operations stopped [66]. Indeed, the world's population has been experiencing cleaner air, beaches and much reduced noise pollution. However, alongside these benefits, waste has risen as recycling and waste management facilities closed down [67], and packaging from surging online shopping accumulates [68]. These improvements are temporary; when economic activity returns we can expect a return to former levels of environmental degradation.

A further positive change is that enforced social isolation is stimulating the digital economy, including greater demand for streaming services, video conferencing and e-commerce. Business, governments and educational services are all exploring these developments. Indeed, the establishment of more online education promises a more inclusive educational framework [68]. Looking ahead, some permanent change in working practices seems likely, as organizations institute some greater proportion of remote/home-based working, for both its economic and environmental benefits.

Post-Lockdown: Business as Usual, or Opportunity for Change?

More broadly, the preceding discussion of impact in context highlights the immediacy and primacy of concerns being centered on adverse impacts on the economy, with social and environmental impacts emerging as additional concerns. The commentary on the consequences of the economic slowdown quickly widens and deepens, taking in unemployment and poverty and other forms of social distress, as represented in Figure 1. Nevertheless, alongside the commentary on the spread of the virus and its ongoing impact, close monitoring by governments of daily fatalities rates are accompanied by projections about when the economy might be restarted. There remains resistance among some government leaders to shut down economic activity [69,70], and impatience by at least one to reopen its economies (USA), reflecting an unstated acceptance among some leaders of the risks to health this would involve, though none have specified or quantified what level of potential harm is acceptable [71]. Indeed, the world seems divided—between the “cautious East” and the “wild West”—on when to recommence normal economic activity [72].

The positive impact on environmental health (of reduced emissions) is generally recognized, and according to Ipsos MORI, there is a clear appetite among the public around the world for action on climate change (SDG 13) [73]. Concomitantly, the European Union, and some individual economies, see this crisis as an opportunity to add impetus to moving to a low-carbon future [74,75]. However, other large economies seem less interested in such a move [73]. Taking action against climate change will contribute to many of the other goals, but this will not be sufficient. Calls to remain focused on achieving specific SDGs or the SDGs in general [76] mean the SDGs remain important, but world leaders have so far not reaffirmed their commitments. The pandemic has thrown a light on the struggle for survival among those millions living in the shadow of poverty, and such uneven responses and equivocal commitments to change are discouraging.

Perhaps the moment is not lost for transforming our current economic ecosystem away from the narrow pursuit of economic growth and towards a framework of more inclusive growth [77]. This is not a call for major ideological shifts, but for governments of representative democracies to lead through trustee (rather than delegate) representation: to lead, not based on populism, but on having the capability of, and freedom to, exercise informed judgement in the interests of future generations [78,79]. Indeed, there is clear historical evidence that societies advance primarily through embracing technological, more than ideological, change [80]. Such evidence, combined with a professed

broad readiness for change among the world's population, and the pandemic's stark reminder of our vulnerability, should reaffirm, and add impetus to, a more inclusive form of development.

5. Conclusions and Long-Term Outlook

The manifold damages posed by the COVID-19 epidemic to the world economy, and the social well-being of millions of people, means that it will take many years to recover. Even so, it may only reach 80% of the pre-COVID-19 levels [81], due to the uncertainty ahead. Without an effective vaccine in place, economic activity will continue to be hampered. It is thus important that further efforts in the field of public health are pursued. In particular, investments should be directed towards the measures aimed at reducing exposure to SARS-COV-2, the virus behind the COVID-19 pandemic.

It should be acknowledged that, even though some countries have managed to curb the spread of the virus, the COVID-19 pandemic still currently poses a major threat to the well-being of people and nations worldwide. Indeed, the fact that health security capacities in the context of the outbreak are rather fragile means that many countries are not able to handle it effectively.

Against this background, it is not possible to generalize about national strategies for restarting economic activity, as these are likely to be as varied as the responses to COVID-19. Moreover, there is overall a danger that the developed economies will turn their attention inwards and overlook the fact that there is not only an economic interdependence but that they also share public health challenges with the developing world. In the latter, the COVID-19 crisis poses a burden to already stretched health systems, which struggle to cope with many diseases such as malaria, AIDS or tuberculosis, among others.

Critically, there needs to be more international solidarity, in the form of a greater political commitment across all nations, towards ensuring an even access to equipment and materials, so that developing countries are not disadvantaged.

Current trends suggest that the process of the implementation of the SDGs might be delayed: the many socio-economic pressures and set-backs are lowering the level of priority given to the SDGs. Further, the potentials and opportunities offered by the SDGs, such as fighting poverty or eradicating hunger, may be at least partly undermined by COVID-19. It is thus wise to issue a note of caution, warning about the need to continue to put an emphasis on the implementation of the SDGs, so that the progress achieved to date is not endangered.

Indeed, the global crises triggered by COVID-19 mean that pursuing and implementing the SDGs are more important now than they were before, since they represent some of the means via which quality of life can be restored and the many problems associated with the lack of water, food or poor health conditions may be addressed. In doing so, the momentum created by the pandemic may lead to a transformation from what currently is regarded as a global threat, to a global opportunity, providing a new impulse leading to the realization of the UN Agenda 2030 as a whole, and of the SDGs in particular.

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References

1. Sachs, J.; Schmidt-Traub, G.; Kroll, C.; Lafortune, G.; Fuller, G. *Sustainable Development Report 2019*; Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN): New York, NY, USA, 2019.
2. Behraves, N.; Rocha, E.W. *Interim Global Economic Forecast*; IHS Markit: London, UK, 2020.
3. UN Launches COVID-19 Plan that Could 'Defeat the Virus and Build a Better World'. Available online: <https://news.un.org/en/story/2020/03/1060702> (accessed on 16 June 2020).

4. UN Dept of Global Communications, Funding the Fight Against COVID-19 in the World's Poorest Countries. Available online: <https://www.un.org/en/un-coronavirus-communications-team/funding-fight-against-covid-19-world%E2%80%99s-poorest-countries> (accessed on 16 June 2020).
5. Harvey, F. Coronavirus Pandemic 'will Cause Famine of Biblical Proportions'. Available online: <https://www.theguardian.com/global-development/2020/apr/21/coronavirus-pandemic-will-cause-famine-of-biblical-proportions> (accessed on 16 June 2020).
6. Correia, S.; Luck, S. How Can We Save Lives and the Economy? Lessons From the Spanish Flu Pandemic. Available online: <https://www.weforum.org/agenda/2020/04/pandemic-economy-lessons-1918-flu/> (accessed on 12 May 2020).
7. Keogh-Brown, M.R.; Smith, R.D. The economic impact of SARS: How does the reality match the predictions? *Health Policy* **2008**, *88*, 110–120. [CrossRef] [PubMed]
8. Taylor, S. *The Psychology of Pandemics: Preparing for the Next Global Outbreak of Infectious Disease*; Cambridge Scholars Publishing: Newcastle upon Tyne, UK, 2019.
9. Tieleman, R.; Tieleman-Gu, Y.; Shi, A.-J. Hollandse Nuchterheid of Dutch Ignorance? Available online: <https://www.linkedin.com/pulse/hollandse-nuchterheid-dutch-ignorance-robert-tieleman> (accessed on 15 March 2020).
10. Ford, N. Hunt and Morrison were Warned about Coronavirus in Late November and did Nothing-an Important Letter to the Editor. Available online: <https://medium.com/@narelleford/wednesday-post-da60561dfa40> (accessed on 26 March 2020).
11. Chinazzi, M.; Davis, J.T.; Ajelli, M.; Gioannini, C.; Litvinova, M.; Merler, S.; Piontti, A.P.; Mu, K.; Rossi, L.; Sun, K.; et al. The effect of travel restrictions on the spread of the 2019 novel coronavirus (COVID-19) outbreak. *Science* **2020**, *368*, 395–400. [CrossRef] [PubMed]
12. Chen, N.; Zhou, M.; Dong, X.; Qu, J.; Gong, F.; Han, Y.; Qiu, Y.; Wang, J.; Liu, Y.; Wei, Y.; et al. Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: A descriptive study. *Lancet* **2020**, *395*, 507–513. [CrossRef]
13. Lu, H.; Stratton, C.W.; Tang, Y.W. Outbreak of Pneumonia of Unknown Etiology in Wuhan China: The Mystery and the Miracle. *J. Med. Virol.* **2020**, 401–402. [CrossRef] [PubMed]
14. WHO. Novel Coronavirus (2019-nCoV) Situation Report-11. Available online: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200131-sitrep-11-ncov.pdf?sfvrsn=de7c0f7_4 (accessed on 21 March 2020).
15. WHO. Coronavirus Disease 2019 (COVID-19) Situation Report-51. Available online: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200311-sitrep-51-covid-19.pdf?sfvrsn=1ba62e57_10 (accessed on 21 March 2020).
16. WHO. Coronavirus Disease 2019 (COVID-19) Situation Report-135. Available online: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200603-covid-19-sitrep-135.pdf?sfvrsn=39972feb_2 (accessed on 4 June 2020).
17. WHO. Coronavirus Disease 2019 (COVID-19) Situation Report-60. Available online: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200320-sitrep-60-covid-19.pdf?sfvrsn=d2bb4f1f_2 (accessed on 21 March 2020).
18. Knight, S.A.; Cross, D. Using contextual constructs model to frame doctoral research methodology. *J. Dr. Stud.* **2012**, *7*, 39–62. [CrossRef]
19. Garcia, M.; McDowell, T. Mapping social capital: A critical contextual approach for working with low-status families. *J. Marital Fam. Ther.* **2010**, *36*, 96–107. [CrossRef]
20. Cole, A.; Ferrarese, E. How capitalism forms our lives. *J. Cult. Res.* **2018**, *22*, 105–112. [CrossRef]
21. Foster, J. The analytical foundations of evolutionary economics: From biological analogy to economic self-organization. *Struct. Chang. Econ. Dyn.* **1997**, *8*, 427–451. [CrossRef]
22. Grant, M.J.; Booth, A. A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Inf. Libr. J.* **2009**, *26*, 91–108. [CrossRef]
23. Martin, E. Coronavirus Economic Impact 'Will be Severe,' at Least as Bad as Great Recession, Says IMF. Available online: <https://fortune.com/2020/03/23/coronavirus-economic-impact-predictions-great-recession-2020-markets-imf/> (accessed on 23 March 2020).
24. UN News. Coronavirus Update: COVID-19 Likely to Cost Economy \$1 Trillion During 2020, Says UN Trade Agency. Available online: <https://news.un.org/en/story/2020/03/1059011> (accessed on 9 March 2020).

25. Li, Y. This was the Fastest 30% Sell-off Ever, Exceeding the Pace of Declines during the Great Depression. Available online: <https://www.cnn.com/2020/03/23/this-was-the-fastest-30percent-stock-market-decline-ever.html> (accessed on 23 March 2020).
26. Leigh, G. The Latest on Which Airlines Are Still Flying and Why. Available online: <https://www.forbes.com/sites/gabrielleigh/2020/03/23/the-latest-on-which-airlines-are-still-flying-and-why/#1b0164f71ffc> (accessed on 23 March 2020).
27. Platje, J.; Harvey, J.; Bacchus, L.R. COVID-19-reflections on the surprise of both an expected and unexpected event. *Cent. Eur. Rev. Econ. Manag.* **2020**, *4*, 149–162. [[CrossRef](#)]
28. Van Dam, Y.; Webbink, J. Reflecting on reflections on COVID-19. *Cent. Eur. Rev. Econ. Manag.* **2020**, *4*, 7–10. [[CrossRef](#)]
29. Sumner, A.; Hoy, C.; Ortiz-Juarez, E. Estimates of the Impact of COVID-19 on Global Poverty. In *WIDER*; UNU-WIDER: Helsinki, Finland, 2020.
30. Oxfam International, Dignity Not Destitution. Available online: <https://www.oxfam.org/en/research/dignity-not-destitution> (accessed on 9 April 2020).
31. Shipp, T. Press Release: COVID-19 Fallout Could Push Half a Billion People into poverty in Developing Countries. Available online: <https://www.wider.unu.edu/news/press-release-covid-19-fallout-could-push-half-billion-people-poverty-developing-countries> (accessed on 8 April 2020).
32. International Labour Organization (ILO). Most of World Lacks Unemployment Insurance. Available online: https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_007901/lang--en/index.htm (accessed on 16 June 2020).
33. Oxford. Safeguarding the Malaria Endgame in the Midst of the COVID-19 Pandemic. Available online: <https://www.tropicalmedicine.ox.ac.uk/news/safeguarding-the-malaria-endgame-in-the-midst-of-the-covid-19-pandemic19> (accessed on 16 June 2020).
34. McCloskey, B.; Zumla, A.; Ippolito, G.; Blumberg, L.; Arbon, P.; Cicero, A.; Endericks, T.; Lim, P.L.; Borodina, M. Mass gathering events and reducing further global spread of COVID-19: A political and public health dilemma. *Lancet* **2020**, *395*, 1096–1099. [[CrossRef](#)]
35. UNESCO. COVID-19 Educational Disruption and Response. Available online: <https://en.unesco.org/themes/education-emergencies/coronavirus-school-closures>. (accessed on 21 March 2020).
36. UN-WOMEN. The COVID-19 Outbreak and Gender: Key Advocacy Points from Asia and the Pacific. Available online: <https://www.unwomen.org/> (accessed on 21 March 2020).
37. Gilbert, M.; Pullano, G.; Pinotti, F.; Valdano, E.; Poletto, C.; Boëlle, P.Y.; D’Ortenzio, E.; Yazdanpanah, Y.; Eholie, S.P.; Altmann, M.; et al. Preparedness and vulnerability of African countries against importations of COVID-19: A modelling study. *Lancet* **2020**, *395*, 871–877. [[CrossRef](#)]
38. They’re Scary. There is No Plan to Return to Normal. Available online: <https://www.vox.com/2020/4/10/21215494/coronavirus-plans-social-distancing-economy-recession-depression-unemployment> (accessed on 10 April 2020).
39. Khalid, M. Apple and Google Are Teaming Up to Fight Covid-19 With Contact Tracing. Available online: <https://qz.com/1836299/apple-and-google-team-up-to-fight-covid-19-with-contact-tracing/> (accessed on 10 April 2020).
40. How Many Smartphones Are in the World. Available online: <https://www.bankmycell.com/blog/how-many-phones-are-in-the-world> (accessed on 20 April 2020).
41. Bahia, K.; Suardi, S. *Connected Society: The State of Mobile Internet Connectivity*; GSMA: London, UK, 2019.
42. WHO. Emergency Guideline: Implementation and Management of Contact Tracing for Ebola Virus Disease. Available online: https://apps.who.int/iris/bitstream/handle/10665/185258/WHO_EVD_Guidance_Contact_15.1_eng.pdf?sequen (accessed on 17 June 2020).
43. Nair, N. Childhood tuberculosis: Public health and contact tracing. *Paediatr. Respir. Rev.* **2001**, *2*, 97–102. [[CrossRef](#)] [[PubMed](#)]
44. Reeves, A.; Basu, S.; McKee, M.; Meissner, C.; Stuckler, D. Does investment in the health sector promote or inhibit economic growth? *Global Health* **2013**, *9*, 43. [[CrossRef](#)]
45. Cheng, W.; Appolloni, A.; D’Amato, A.; Zhu, Q. Green Public Procurement, missing concepts and future trends—A critical review. *J. Clean. Prod.* **2018**, *176*, 770–784. [[CrossRef](#)]
46. Rizzi, F.; Frey, M.; Testa, F.; Appolloni, A. Environmental value chain in green SME networks: The threat of the Abilene paradox. *J. Clean. Prod.* **2014**, *85*, 265–275. [[CrossRef](#)]

47. Shalal, A.; Lawder, D. *IMF Sees Pandemic Causing Global Recession in 2020, Recovery in 2021*. Available online: <https://www.reuters.com/article/us-health-coronavirus-imf/imf-sees-pandemic-causing-global-recession-in-2020-recovery-in-2021-idUSKBN21A33O> (accessed on 23 March 2020).
48. World Bank Group Announces Up to \$12 Billion Immediate Support for COVID-19 Country Response. Available online: <https://www.worldbank.org/en/news/press-release/2020/03/03/world-bank-group-announces-up-to-12-billion-immediate-support-for-covid-19-country-response> (accessed on 16 June 2020).
49. Legido-Quigley, H.; Mateos-García, J.T.; Campos, V.R.; Gea-Sánchez, M.; Muntaner, C.; McKee, M. The Resilience of the Spanish Health System Against the COVID-19 Pandemic. *Lancet* **2020**, *5*, 251–252. Available online: [https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667\(20\)300608/fulltext](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(20)300608/fulltext) (accessed on 1 May 2020). [CrossRef]
50. Wintour, P. World Leaders Pledge €7.4bn to Research Covid-19 Vaccine. Available online: <https://www.theguardian.com/world/2020/may/04/world-leaders-pledge-74bn-euros-to-research-covid-19-vaccine> (accessed on 16 June 2020).
51. Francesca, C. Resilient Health Systems: What We are Learning from the COVID-19 Crisis. Available online: <https://www.oecd-forum.org/users/382555-francesca-colombo/posts/64973-resilient-health-systems-what-we-are-learning-from-the-covid-19-crisis> (accessed on 16 June 2020).
52. Handley, E.; Walsh, M. What Happens If the US Stops Funding the WHO in the Middle of the Coronavirus Pandemic? Available online: <https://www.abc.net.au/news/2020-04-16/coronavirus-who-explainer-what-does-trump-funding-decision-mean/12151080> (accessed on 16 June 2020).
53. Mills, A. Health Care Systems in Low- and Middle-Income Countries. *N. Engl. J. Med.* **2014**. Available online: <https://www.nejm.org/doi/full/10.1056/NEJMra1110897> (accessed on 18 June 2020). [CrossRef]
54. Audi, R. Nationalism, Patriotism, and Cosmopolitanism in an Age of Globalization. *J. Ethics* **2009**, *13*, 365–381. [CrossRef]
55. Keller, S. Patriotism as Bad Faith. *Ethics* **2005**, *115*, 563–592. [CrossRef]
56. Lott, M. Coronavirus Relief Bill Contains Nearly \$12 Billion in Questionable Spending. Available online: <https://www.foxnews.com/politics/coronavirus-relief-bill-contains-nearly-12b-in-questionable-spending> (accessed on 27 March 2020).
57. UK Pledges Extra Coronavirus Funds for WHO, NGOs. Available online: <https://www.barrons.com/news/uk-pledges-extra-coronavirus-funds-for-who-ngos-01586646307?tesla=y> (accessed on 11 April 2020).
58. Cornish, L. Who's Funding the COVID-19 Response and What are the Priorities? Available online: <https://www.devex.com/news/interactive-who-s-funding-the-covid-19-response-and-what-are-the-priorities-96833> (accessed on 21 June 2020).
59. Vaster, E. The controllability of difference: Social cohesion and the new politics of solidarity. *Ethnicities* **2010**, *10*, 503–521.
60. Komter, A.E. *Social Solidarity and the Gift*; Cambridge University Press: Cambridge, UK, 2005.
61. Kumar, R. For the Global Development Community, COVID-19 Poses Big Questions. Available online: <https://www.devex.com/news/for-the-global-development-community-covid-19-poses-big-questions-96899> (accessed on 11 April 2020).
62. Mishra, S. No Greater Patriotism Than Being Part of Fight Against COVID-19: Sonia Gandhi. Available online: <https://www.theweek.in/news/india/2020/04/14/no-greater-patriotism-than-being-part-of-fight-against-covid-19-sonia-gandhi.html> (accessed on 16 June 2020).
63. Thomas, M. Why Wear White When You Can Get Patriotic in the Fight Against COVID-19. Available online: <https://www.thedubrovniktimes.com/news/croatia/item/8688-why-wear-white-when-you-can-get-patriotic-in-the-fight-against-covid-19> (accessed on 16 June 2020).
64. Godfery, A.M. Strict Covid-19 Lockdown Gave New Zealand a Key Ingredient to Recover-solidarity. Available online: <https://www.theguardian.com/world/2020/apr/21/a-strict-covid-19-lockdown-gave-new-zealand-a-key-ingredient-to-recover-solidarity> (accessed on 16 June 2020).
65. Larby, F. From Patriotism to Humanity: China Leading the Fight of the COVID-19. Available online: <https://www.chinadaily.com.cn/a/202003/03/WS5e5def49a31012821727bea8.html> (accessed on 3 March 2020).
66. NASA Probes Environment, COVID-19 Impacts, Possible Links. Available online: <https://www.nasa.gov/feature/nasa-probes-environment-covid-19-impacts-possible-links> (accessed on 16 June 2020).
67. Zambrano-Monserrate, M.A.; Ruano, M.A.; Sanchez-Alcalde, L. Indirect effects of COVID-19 on the environment. *Sci. Total Environ.* **2020**, *728*, 1–4. [CrossRef] [PubMed]

68. Ingilizian, Z. Is Staying in the New Going Out? How the COVID-19 Pandemic is Fuelling the Stay-at-home Economy. Available online: <https://www.weforum.org/agenda/2020/05/covid19-coronavirus-digital-economy-consumption-ecommerce-stay-at-home-online-education-streaming/> (accessed on 16 June 2020).
69. Tih, F. 'Economy Comes Before Virus,' Says Tanzanian President; Anadolu Agency: Ankara, Turkey; Available online: <https://www.aa.com.tr/en/africa/economy-comes-before-virus-says-tanzanian-president/1844572> (accessed on 18 May 2020).
70. Paraguassu, L. Bolsonaro Fires Brazil's Health Minister, Calls to Reopen Economy. Available online: <https://www.reuters.com/article/us-health-coronavirus-brazil/bolsonaro-fires-brazils-health-minister-calls-to-reopen-economy-idUSKBN21Y338> (accessed on 16 June 2020).
71. Tankersley, J.; Haberman, M.; Rabin, R.C. Trump Considers Reopening Economy, Over Health Experts' Objections. Available online: <https://www.businesstimes.com.sg/government-economy/trump-considers-reopening-us-economy-over-health-experts%E2%80%99-objections> (accessed on 16 June 2020).
72. Steven, B.; Michelle, C.; Peter, G. Exits from Coronavirus Lockdown Split 'wild' West from 'Cautious' East. Available online: <https://asia.nikkei.com/Spotlight/Cover-Story/Exits-from-coronavirus-lockdown-split-wild-West-from-cautious-East> (accessed on 16 June 2020).
73. Harrabin, R. Climate Change: Could the Coronavirus Crisis Spur a Green Recovery? Available online: <https://www.bbc.co.uk/news/science-environment-52488134> (accessed on 16 June 2020).
74. Website: Paul Davies and Michael Green, 'Do European Commission Ambitions Signal a New, More Sustainable Direction of Travel for the EU and Globally?' IN SECTION 'The EU Recovery Fund: "Building Back Better" in a Post-COVID-19 World'. Available online: <https://www.globalelr.com/2020/05/the-eu-recovery-fund-building-back-better-in-a-post-covid-19-world/> (accessed on 16 June 2020).
75. Air France Must Cut Emissions, Domestic Flights for Aid: Minister. Available online: <https://www.reuters.com/article/us-health-coronavirus-france-economy/air-france-must-cut-emissions-domestic-flights-for-aid-minister-idUSKBN22B2EL> (accessed on 16 June 2020).
76. Solberg, E. Prime Minister of Norway and Nana Addo Dankwa Akufo-Addo, President and Co-chair, Republic of Ghana, UN Secretary-General's SDG Advocates. World Economic Forum, Published in Collaboration with Thomson Reuters Foundation Trust. Available online: <https://www.weforum.org/agenda/2020/04/coronavirus-pandemic-effect-sdg-un-progress/> (accessed on 23 April 2020).
77. World Bank Group. Ending Poverty Requires More Than Growth, Says WBG. Available online: <https://www.worldbank.org/en/news/press-release/2014/04/10/ending-poverty-requires-more-than-growth-says-wbg> (accessed on 16 June 2020).
78. Matthew, S. Are MPs Elected to Exercise Their Own Judgement or Do Their Constituents' Bidding? Available online: <https://yougov.co.uk/topics/politics/articles-reports/2019/08/13/are-mps-elected-exercise-their-own-judgement-or-do> (accessed on 16 June 2020).
79. Chris, B. Sorry, The Role of an MP is to be a Representative, Not a Delegate. Available online: <https://www.newstatesman.com/politics/elections/2015/12/sorry-role-mp-be-representative-not-delegate> (accessed on 16 June 2020).
80. Gerhard, L. *Ecological Evolutionary Theory: Principles and Applications*; Paradigm Publishers: Boulder, CO, USA, 2005.
81. Transcript: Scott Gottlieb, Former FDA Commissioner, Discusses Coronavirus. Available online: <https://www.cbsnews.com/news/transcript-scott-gottlieb-discusses-coronavirus-on-face-the-nation-april-5-2020/> (accessed on 5 April 2020).

