

Editorial

How COVID-19 Redefines the Concept of Sustainability

Marko Hakovirta *  and Navodya Denuwara 

Department of Forest Biomaterials, North Carolina State University, Raleigh, NC 27695, USA;
hddenuwa@ncsu.edu

* Correspondence: mjhakovi@ncsu.edu

Received: 24 April 2020; Accepted: 29 April 2020; Published: 4 May 2020



Abstract: In January 2020, the World Health Organization (WHO) declared the outbreak of a new coronavirus disease, COVID-19, to be a public health emergency of international concern. Currently, in several countries globally, this pandemic continues to enforce the temporary closure of all nonessential shops and services aside from supermarkets and pharmacies. Workers in countries that are at a high risk of infection have been asked to work from home, as cities have been placed under lockdown. Even curfews to combat the spread of the virus have been imposed in several countries, with all this signaling an unprecedented disruption of commerce. Companies are facing various challenges regarding health and safety, supply chain, labor force, cash flow, consumer demand and marketing. People in the thousands are dying every day from the virus's symptoms, while a public health issue has forced the world to come to a halt and rethink what a sustainable future for our planet and existence is. These drastic recent events have raised the deliberation by the authors to redefine the concept of sustainability.

Keywords: COVID-19; coronavirus; sustainability; public health; human health; definition

1. Redefining Sustainability

Prior to COVID-19, the world was highly focused on increasing environmental problems and social issues that many believe arose from controversial economic policies and the global trade. Sustainability has been a term and concept used to bring balance and create responsibility for economic activity and development. The current definition came from the 2005 World Summit on Social Development, in which three pillars of sustainability development were identified [1]. The three goals—economic development, social development and environmental protections—have ever since served as the foundation to several standards and certifications in sustainability. The concept is well adopted by all stakeholders in various areas of private and public sectors [2]. As sustainability discussion and awareness advanced, the UN, in 2015, developed 17 Sustainable Development Goals that are meant to ensure no one is left behind in the success of our society. These include: 1. No poverty; 2. Zero hunger; 3. Good health and wellbeing; 4. Quality education; 5. Gender equality; 6. Clean water and sanitation; 7. Affordable and clean energy; 8. Decent works and economic growth; 9. Industry, innovation and infrastructure; 10. Reduced inequalities; 11. Sustainable cities and communities; 12. Responsible consumption and production; 13. Climate action; 14. Life below water; 15. Life on land; 16. Peace, justice and strong institutions; and 17. Partnerships for the goals [3,4].

The general and most used definition of sustainability is “meeting the needs of the present without compromising the ability of future generations to meet their needs” [4]. In this article, we are proposing to rethink and redefine sustainability as the intersection of the economy, environment, society and human health. The significance of adding human health as one of the sustainability development goals can be seen through the results of the current COVID-19 pandemic. It is practically impossible

for life to go on as usual when the health of the society quite dramatically crumbles down due to a human health risk of global magnitude. Earlier, the sustainability pillars had been addressing issues that touch all of us and connect us globally. Economic, social and environmental issues are such, and the role of human health has been seen more as a local, individual-level topic. Interestingly, in the sustainable development goals, it can be seen that the third goal is ‘Good Health’ [3]. This obviously includes the human health aspect that we desire to include in our definition of sustainability. However, it is important to distinguish the difference between the UN’s sustainability definition, and the three pillars. The three pillars, as stated above, are the most widely used definition of sustainability, with health not being an aspect of it. From a conceptual perspective, we strongly feel that adding human health as the fourth pillar or dimension to the overall definition of sustainability is a logical and valid redefinition step, evidenced by the overwhelming importance of health, and the fear of losing it, as depicted by the current COVID-19 crisis. Looking at some examples of UN sustainable development goals (SDGs), SDG 2—no hunger—is an important requirement for every individual to have access to. However, with the increase in overall wealth that the economic pillar is responsible for, most humans will not experience hunger. Further, in the countries where a majority of people experience hunger, it is mostly due to a struggling economy and corrupt political environment, which the social pillar accounts for. ‘No Hunger’ is an important goal for a society to aim towards, but it does not need to be a separate pillar due to the fact that two other pillars—economy and society—include it in their actions. However, physical and mental health needs to be a separate fourth pillar and not stand under any of the other three, because of its importance in human survival and the sustainability of civilization.

It can be articulated that the term ‘society’ includes the human health aspect, but in everyday use, society has become a term that defines only the social wellbeing of humans. “Socially sustainable communities are considered to be equitable, diverse, connected and democratic and provide a good quality of life” [5]. As such, none of these terms include the physical and mental wellbeing of humans. COVID-19 affects physical health most directly, but the impact on mental health also exists [6]. Factors that affect mental health through COVID-19 include economic instability, domestic violence, substance use, derailment from regular schedule, and even insignificant things, like lack of sunlight [7–9]. These have a great impact, but the above factors only consider the general population and not the toll on mental health for health care workers. Not only are healthcare workers in constant fear for their lives, they are also scared that they could potentially infect a family member they closely interact with [10]. This takes a toll on their mentality that is unmeasurable in the current circumstances. Physical and mental health are closely related, and one taking a considerable hit will greatly impact the other.

2. Sustainability Impact of COVID-19

The pandemic we are facing has not only affected the physical health of hundreds of thousands of people. With its spread, the economy has plummeted to record lows, social issues such as domestic violence have increased, and global animal species have started to become threatened from the decrease in conservation efforts by conservationists who are quarantining themselves from COVID-19 [11]. Additionally, conservation funding is seeing one of the largest funding downfalls in history from events being canceled that were supposed to raise money for conservation efforts [12]. On social media, countless pictures and videos of animals roaming the streets are emerging due to decreased of human activity. Many applaud this freedom for animals as a positive impact of COVID-19 - however, this is a fallacy because species that are in most danger of eradication are ones that constantly need human intervention to survive. These animals are now being left uncared for. For example, in Africa, a massive ecotourism business supports wide conservation efforts toward protected lands near Mount Kilimanjaro [11]. While most consider human activity to be a detriment to environmental flourishing, in reality, non-harmful human activity can be seen as important as food and water for the survival of certain species.

The global economic fallout from COVID-19 has been devastating, with people having lost jobs, and employers now having no means to support their employees while they are losing business

and not able to pay their business's rent. Wall Street set a lot of records recently, and the spread of coronavirus has brought a dramatic end to America's longest bull market when the Dow Jones Industrial Average (DJIA) suffered record losses mid-March [13]. Large industries, such as the airline industry, have begun to suffer insurmountable losses—so much so that they are now asking for governmental support in the form of bailouts [14]. The coronavirus pandemic will also create more pressure on corporations to weigh the efficiency and costs/benefits of a globalized supply chain system against the robustness of a domestic-based supply chain. Switching to a more domestic supply chain would reduce dependence on an increasingly fractured global supply system [15]. However, while this would better ensure that people get the goods they need, this shift would likely also increase costs to corporations and consumers.

The toll that society has taken is mostly related to the inequality gap. The wealthiest fifth of Americans have made greater income gains than those below them in the income hierarchy in recent decades. As high-salaried professionals, they live in Internet-ready homes that will accommodate telecommuting, and in this crisis, most will earn steady incomes while having necessities delivered to their front doors [16]. The bottom 80% of Americans lack that financial cushion. Many will struggle with job losses and family burdens. They are less able to work from home, and more likely to be employed in the service or delivery sectors—jobs that put them at greater danger of coming into contact with the virus [15]. Furthermore, the economic inequality gap and political power have always had an inverse relationship with each other; when economic inequality goes down, the more voiceless an individual gets. The widening income gap has also fueled a class-based social disconnect, which has produced inequitable results in education [16]. The new reality for the education system that COVID-19 has created involves the use of online learning, but it can be said that only the wealthy have access to a stable internet connection and technology that enables this type of learning. As such, economic inequality—fueled by the rise of a public health crisis—is now contributing to the collapse of one of the three pillars: society.

3. Conclusions and Recommendation

The authors of this article propose the introduction of a fourth pillar of sustainability: human health. The emergence of public health issues, that remain on the rise, has reprioritized the sustainable development goals that the UN listed. The UN currently has an individual goal (SDG 3) that includes the health of a society in sustainable development. However, its separation from all the other goals implies that it is one of many, and not an essential part of the survival and sustainability of mankind. The fact that health is no longer only a demographic or an individual-level issue, but rather a global pandemic, shows the true nature of its importance, and its impact helps create a fourth pillar of global sustainability.

Author Contributions: Conceptualization, M.H.; methodology, M.H. and N.D.; formal analysis, N.D. and M.H.; investigation, N.D. and M.H.; resources, M.H.; data curation, N.D. and M.H.; writing—original draft preparation, N.D. and M.H.; writing—review and editing, M.H. and N.D.; visualization, N.D. and M.H.; supervision, M.H.; project administration, M.H.; funding acquisition, M.H. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by North Carolina State University.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. UN General Assembly. Resolution adopted by the UNGA on 16 September. Report, A/RES/60/1. 2005. Available online: https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_60_1.pdf (accessed on 12 April 2020).
2. Muñoz-Pascual, L.; Curado, C.; Galende, J. The Triple Bottom Line on Sustainable Product Innovation Performance in SMEs: A Mixed Methods Approach. *Sustainability* **2019**, *11*, 1689. [CrossRef]

3. Ioannou, I.; Serafeim, G. Yes, Sustainability Can Be a Strategy. *Harvard Business Review*. 11 February 2019. Available online: hbr.org/2019/02/yes-sustainability-can-be-a-strategy (accessed on 12 April 2020).
4. About the Sustainable Development Goals—United Nations Sustainable Development. United Nations. Available online: www.un.org/sustainabledevelopment/sustainable-development-goals/ (accessed on 15 April 2020).
5. El Hagggar, S.; Samaha, A. *Roadmap for Global Sustainability—Rise of the Green Communities*; Springer International Publishing: Berlin/Heidelberg, Germany, 2019; ISBN 978-3-030-14583-5.
6. Pfefferbaum, B.; North, C.S. Mental Health and the Covid-19 Pandemic. *N. Engl. J. Med.* **2020**. [[CrossRef](#)] [[PubMed](#)]
7. Michalos, A.C. *Encyclopedia of Quality of Life and Well-Being Research*, 14th ed.; Springer: Berlin/Heidelberg, Germany, 2014; ISBN 978-94-007-0752-8.
8. Xu, Y.; Qi, J.; Yang, Y.; Wen, X. The Contribution of Lifestyle Factors to Depressive Symptoms: A Cross-Sectional Study in Chinese College Students. *Psychiatry Res.* **2016**, *245*, 243–249. [[CrossRef](#)] [[PubMed](#)]
9. Neuman, S. Global Lockdowns Resulting in ‘Horrible Surge’ in Domestic Violence, U.N. Warns. NPR. 6 April 2020. Available online: www.npr.org/sections/coronavirus-live-updates/2020/04/06/827908402/global-lockdowns-resulting-in-horrifying-surge-in-domestic-violence-u-n-warns (accessed on 14 April 2020).
10. Fichtel, C.; Kaufman, S. Fearing COVID-19 Spread to Families, Health Care Workers Self-Isolate at Home. NBCNews.com, NBC Universal News Group. Available online: www.nbcnews.com/health/health-news/fearing-covid-19-spread-families-health-care-workers-self-isolate-n1171726 (accessed on 14 April 2020).
11. Simon, M. The Coronavirus Lockdown Is a Threat for Many Animals, Not a Blessing. *Wired*, Conde Nast. Available online: www.wired.com/story/coronavirus-lockdown-conservation/ (accessed on 12 April 2020).
12. “Supporting Conservation While Under Quarantine.” *2% For Conservation*, Fish and Wildlife, 26 March 2020. Available online: fishandwildlife.org/blogs/2-blog/supporting-conservation-while-under-quarantine (accessed on 17 April 2020).
13. Schneider, A. The Dow Has Lost Nearly 14% in A Volatile Month. NPR. Available online: www.npr.org/sections/coronavirus-live-updates/2020/03/31/824407063/the-dow-has-lost-12-in-a-volatile-month (accessed on 11 April 2020).
14. Slotnick, D. American Airlines, United, and Other Carriers Have Agreed to Bailout Terms with the US Treasury That Will Avoid Layoffs until October. *Business Insider*. Available online: www.businessinsider.com/american-airlines-delta-united-jetblue-reach-agreement-on-coronavirus-bailout-2020-4 (accessed on 15 April 2020).
15. Coronavirus Will Change the World Permanently. Here’s How. POLITICO. Available online: www.politico.com/news/magazine/2020/03/19/coronavirus-effect-economy-life-society-analysis-covid-135579 (accessed on 13 April 2020).
16. Pazzanese, C. The Costs of Inequality: Increasingly, It’s the Rich and the Rest. *Harvard Gazette*. 20 December 2017. Available online: news.harvard.edu/gazette/story/2016/02/the-costs-of-inequality-increasingly-its-the-rich-and-the-rest/ (accessed on 12 April 2020).



© 2020 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).