

Perspectives on Sustainable Integrated Clean Environment for Human and Nature

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1. Introduction

The term “sustainability” is generally used to describe an ideal condition in which the Earth’s biosphere and human civilization can safely interact and coexist [1]. Accordingly, it is essential to have a comprehensive vision of the requirements for a clean environment sustainable by humans and nature. Such a vision can be useful as it encompasses all aspects related to human life that interact with nature, so that human civilization can develop while respecting and protecting nature.

However, there are limited scientific approaches to achieving this vision. To address this knowledge gap, in December 2019, the author proposed a Special Issue of the journal *Sustainability* (ISSN 2071-1050) entitled “Sustainable Integrated Clean Environment for Human & Nature”, to gather the missing pieces of this vision among multidisciplinary scientific–technical, economic, and social approaches over a one-year period. The Special Issue attempts to answer the following key questions:

1. What is the current condition of our environment? Is it clean and pollution-free?
2. How can we make our environment clean and suitable for humans and nature?
3. How can we sustainably keep our environment clean?

The articles in the Special Issue contribute to one or more of the following fields:

- Actions for developing countries;
- Clean technologies;
- Economic approaches;
- Environmental remediation;
- Global water security issues;
- Hazardous substances;
- Human–nature interactions;
- Nature-based solutions—from theories and laboratories to fields and actions;
- New policies;
- Public health;
- Risk assessment and modeling;
- Sanitation/hygiene;
- Social awareness/human rights—concepts of leaving no one behind, pilot social studies, reactions from different societies;
- Sustainable water, wastewater, and waste treatment, including pilot scaled case studies;
- Resource circulation—conservation and recycling.

2. List of Contributions

Over 30 manuscripts were submitted for consideration for the Special Issue, and all of them underwent the journal’s rigorous review process. In total, 19 papers, including 17 research articles and 2 review papers, were finally accepted for publication and inclusion in this Special Issue. These are listed below:



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1. Al-Gheethi, A.; Al-Sahari, M.; Abdul Malek, M.; Noman, E.; Al-Maqtari, Q.; Mohamed, R.; Talip, B.A.; Alkhadher, S.; Hossain, M.S. Disinfection Methods and Survival of SARS-CoV-2 in the Environment and Contaminated Materials: A Bibliometric Analysis. *Sustainability* **2020**, *12*, 7378. <https://doi.org/10.3390/su12187378>.
2. Amnuaylojaroen, T.; Inkom, J.; Janta, R.; Surapipith, V. Long Range Transport of Southeast Asian PM2.5 Pollution to Northern Thailand during High Biomass Burning Episodes. *Sustainability* **2020**, *12*, 10049. <https://doi.org/10.3390/su122310049>.
3. Blazy, R.; Hrehorowicz-Gaber, H.; Hrehorowicz-Nowak, A.; Płachta, A. The Synergy of Ecosystems of Blue and Green Infrastructure and Its Services in the Metropolitan Area—Chances and Dangers. *Sustainability* **2021**, *13*, 2103. <https://doi.org/10.3390/su13042103>.
4. Coccia, M. How (Un)sustainable Environments Are Related to the Diffusion of COVID-19: The Relation between Coronavirus Disease 2019, Air Pollution, Wind Resource and Energy. *Sustainability* **2020**, *12*, 9709. <https://doi.org/10.3390/su12229709>.
5. Gopalakrishnan, Y.; Al-Gheethi, A.; Abdul Malek, M.; Marisa Azlan, M.; Al-Sahari, M.; Radin Mohamed, R.M.S.; Alkhadher, S.; Noman, E. Removal of Basic Brown 16 from Aqueous Solution Using Durian Shell Adsorbent, Optimisation and Techno-Economic Analysis. *Sustainability* **2020**, *12*, 8928. <https://doi.org/10.3390/su12218928>.
6. Hashemi, S. Sanitation Sustainability Index: A Pilot Approach to Develop a Community-Based Indicator for Evaluating Sustainability of Sanitation Systems. *Sustainability* **2020**, *12*, 6937. <https://doi.org/10.3390/su12176937>.
7. Hassan, A.; G Almatar, M.; Torab, M.; Allen, C.D. Environmental Urban Plan for Failaka Island, Kuwait: A Study in Urban Geomorphology. *Sustainability* **2020**, *12*, 7125. <https://doi.org/10.3390/su12177125>.
8. Kärenlampi, P.P. Diversity of Carbon Storage Economics in Fertile Boreal Spruce (Picea Abies) Estates. *Sustainability* **2021**, *13*, 560. <https://doi.org/10.3390/su13020560>.
9. Li, Y.; Wang, X.; Dong, X. Delineating an Integrated Ecological and Cultural Corridor Network: A Case Study in Beijing, China. *Sustainability* **2021**, *13*, 412. <https://doi.org/10.3390/su13010412>.
10. Mofijur, M.; Rizwanul Fattah, I.M.; Saiful Islam, A.B.M.; Uddin, M.N.; Ashrafur Rahman, S.M.; Chowdhury, M.A.; Alam, M.A.; Uddin, M.A. Relationship between Weather Variables and New Daily COVID-19 Cases in Dhaka, Bangladesh. *Sustainability* **2020**, *12*, 8319. <https://doi.org/10.3390/su12208319>.
11. Muliadi, F.N.A.; Halmi, M.I.E.; Wahid, S.B.A.; Gani, S.S.A.; Mahmud, K.; Shukor, M.Y.A. Immobilization of Metanil Yellow Decolorizing Mixed Culture FN3 Using Gelling Gum as Matrix for Bioremediation Application. *Sustainability* **2021**, *13*, 36. <https://doi.org/10.3390/su13010036>.
12. Muliadi, F.N.A.; Halmi, M.I.E.; Wahid, S.B.A.; Gani, S.S.A.; Zaidan, U.H.; Mahmud, K.; Abd Shukor, M.Y. Biostimulation of Microbial Communities from Malaysian Agricultural Soil for Detoxification of Metanil Yellow Dye; a Response Surface Methodological Approach. *Sustainability* **2021**, *13*, 138. <https://doi.org/10.3390/su13010138>.
13. Nur-E-Alam, M.; Hoque, M.N.; Ahmed, S.M.; Basher, M.K.; Das, N. Energy Engineering Approach for Rural Areas Cattle Farmers in Bangladesh to Reduce COVID-19 Impact on Food Safety. *Sustainability* **2020**, *12*, 8609. <https://doi.org/10.3390/su12208609>.
14. Rahman, M.; Thill, J.-C.; Paul, K.C. COVID-19 Pandemic Severity, Lockdown Regimes, and People's Mobility: Early Evidence from 88 Countries. *Sustainability* **2020**, *12*, 9101. <https://doi.org/10.3390/su12219101>.
15. Roblek, V.; Thorpe, O.; Bach, M.P.; Jerman, A.; Meško, M. The Fourth Industrial Revolution and the Sustainability Practices: A Comparative Automated Content Analysis Approach of Theory and Practice. *Sustainability* **2020**, *12*, 8497. <https://doi.org/10.3390/su12208497>.

16. Scharf, M.; Heide, L.; Grahle, A.; Syré, A.M.; Göhlich, D. Environmental Impact of Subsidy Concepts for Stimulating Car Sales in Germany. *Sustainability* **2020**, *12*, 10037. <https://doi.org/10.3390/su122310037>.
17. Tanveer, M.; Hassan, S.; Bhaumik, A. Academic Policy Regarding Sustainability and Artificial Intelligence (AI). *Sustainability* **2020**, *12*, 9435. <https://doi.org/10.3390/su12229435>.
18. White, I.; Falkland, T.; Kula, T. National Versus Local Sustainable Development Plans and Island Priorities in Sanitation: Examples from the Kingdom of Tonga. *Sustainability* **2020**, *12*, 9379. <https://doi.org/10.3390/su12229379>.
19. Woo, B.L.; Lim, M.K.; Park, E.Y.; Park, J.; Ryu, H.; Jung, D.; Ramirez, M.J.; Yang, W. Characteristics of Non-Smokers' Exposure Using Indirect Smoking Indicators and Time Activity Patterns. *Sustainability* **2020**, *12*, 9099. <https://doi.org/10.3390/su12219099>.

3. Content and Significance of Contributions

Shortly after the Special Issue was announced, the world faced one of the most serious outbreaks of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [2]. In view of humanity's current lifestyle, the coronavirus disease (COVID-19) pandemic has shown the fragility of our concept of sustainability [3]. Consequently, the importance of the concept of "sustainable, clean environment" became clear to individuals around the world.

The COVID-19 pandemic has demonstrated the need for a crucial reconsideration of the need for a sustainable, clean environment for humans and nature. The provision of safe water, sanitation, hygiene, and waste management is essential for preventing virus transmission, and protecting human health has become increasingly critical. Understanding the technical, social, and economic concepts of the COVID-19 pandemic and recognizing challenges can lead to solutions and sustainable management approaches during and after the pandemic.

In response to the COVID-19 pandemic, contributions 1, 4, 10, 13, and 14 cover a wide range of topics related to the sustainability of an integrated clean environment. These contributions are useful in highlighting the novel meaning of sustainability after the COVID-19 pandemic.

Accordingly, the 4th Sustainability Webinar, "COVID-19 and the Sustainability of Clean Environment for Human & Nature: Visions, Challenges, and Solutions", was proposed to provide a global forum for ordinary individuals and decision-makers to understand the vision, challenges, and solutions for sustaining a clean environment for humans and nature during and after the COVID-19 pandemic. The webinar included presentations from four experts, including scholars who made relevant contributions to the Special Issue. A webinar recording is available online at <https://sustainability-4.sciforum.net/> (accessed on 29 March 2021) [4].

Along with the medical approaches for overcoming the COVID-19 pandemic, implementing appropriate green technologies may be considered among the highest priorities for sustainable development during and after the COVID-19 pandemic.

The Special Issue contains two contributions on the topic of sustainable sanitation. Contribution 6 introduces the Sanitation Sustainability Index, which is an integrated, community-based indicator for evaluating the sustainability of sanitation systems, which will be implemented in specific communities. The highlighted characteristics of this newly developed index are the consideration of a wider range of sanitation sustainability parameters, including acceptability and public health indicators, and the ability of the index to evaluate sanitation systems before implementation [5].

Another notable contribution is presented by White et al. (contribution 18), who discussed national versus local sustainable development plans and island priorities in sanitation. This article provides examples from the Kingdom of Tonga and presents an analysis of the priorities given to water and sanitation in top-down national sustainable development strategies and nation-wide, bottom-up, village-level community develop-

ment plans. This contribution has been commended by the editorial office of the journal *Sustainability* and has been recognized as a feature paper.

Contributions 3, 7, and 17 of the Special Issue present discussions on sustainable urban planning, green infrastructure, and academic policies. Contributions 2 and 19 discuss indoor and outdoor air quality from both technical and public health perspectives. In addition, contributions 15 and 16 present intriguing studies that discuss industrial concerns, including impacts on the environment and sustainable development policies. A significant number of studies, including contributions 5, 8, 9, 11, and 12, discuss different aspects of ecological concerns regarding environmental sustainability, including the technical approaches for the treatment or bioremediation of environmental contaminants.

4. Conclusions

The Special Issue “Sustainable Integrated Clean Environment for Human & Nature” is a collection of articles that investigate the technical, economic, and social shortcomings of the current approaches toward a sustainable integrated clean environment for humans and nature in developing countries; these articles also provide innovative solutions aimed at overcoming the challenges of balancing the current approaches to enhance their sustainability.

Consideration of these studies could be helpful for decision-makers seeking to develop efficient strategies leading to the provision of new and effective sustainability policies by considering both the social development of humans and the need to respect and protect nature sustainably.

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References

1. Kuhlman, T.; Farrington, J. What is Sustainability? *Sustainability* **2010**, *2*, 3436–3448. [CrossRef]
2. Gorbalenya, A.E.; Baker, S.C.; Baric, R.S.; de Groot, R.J.; Drosten, C.; Gulyaeva, A.A.; Haagmans, B.L.; Lauber, C.; Leontovich, A.M.; Neuman, B.W. The species Severe acute respiratory syndrome-related coronavirus: Classifying 2019-nCoV and naming it SARS-CoV-2. *Nat. Microbiol.* **2020**, *5*, 536–544.
3. Barbier, E.; Burgess, J. Sustainability and Development after COVID-19. *World Dev.* **2020**, *135*, 105082. [CrossRef] [PubMed]
4. Sustainability Webinar | COVID-19 and the Sustainability of Clean Environment for Human & Nature: Visions, Challenges, and Solutions. Available online: <https://sustainability-4.sciforum.net/> (accessed on 29 March 2021).
5. Narzetti, D.A.; Marques, R.C. Access to Water and Sanitation Services in Brazilian Vulnerable Areas: The Role of Regulation and Recent Institutional Reform. *Water* **2021**, *13*, 787. [CrossRef]