

Editorial

Borrowing the Earth from the Next Generation: Appropriate Wisdom, Technology, and Management toward Environmental Sustainability for Development

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1. Introduction

Technological advancements, combined with rapid population growth, have led to an increase in environmental resource consumption. Accordingly, there are concerns regarding managing environmental interventions in social developments to protect and maintain resources for future generations.

Environmental sustainability can be defined as a sense of responsibility in consuming environmental resources, so that the next generation can have access to them. As a result, safe consumption and the protection of natural resources in a way that supports the ecosystems and the prosperity of the next generation, to ensure that they have at least an equal quality of life in the future, should be considered the foundation of developing communities [1–3]. Regardless of how a community approaches environmental sustainability, the goal remains the same: to provide responsible interactions with the environment through the appropriate wisdom, technology, and management [4].

This Special Issue of the journal *Sustainability* (ISSN 2071–1050), entitled “Appropriate Wisdom, Technology, and Management toward Environmental Sustainability for Development”, was proposed to collect the most recent contributions regarding the appropriate wisdom, technology, and management in developing different aspects of a community that can retain environmental sustainability during the period 2022–2023.

Accordingly, the articles in the Special Issue cover at least one of the following subjects:

1. Appropriate wisdom, including:
 - Resource valorization: valuing water, wastes, and other resources;
 - Development of mathematical, theoretical, and computational models;
 - Scientific hypothetical approaches;
 - Analyzing historical approaches and ancient wisdom.
2. Appropriate technology, including:
 - Nature-based solutions;
 - Clean technologies;
 - Resource circulation: conservation and recycling.
3. Appropriate Management, including:
 - Human and nature interactions: simulation and optimization;
 - Economic management: life cycle assessment (LCA) and the circular economy;
 - Social awareness and human rights: concepts of leaving no one behind;
 - Sanitation, hygiene, and public health;
 - Risk assessment;
 - New policies.



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2. List of Contributions

Up to 31 December 2021, 30 contributions were submitted for possible publication in this Special Issue. Contributions of a higher quality were subjected to the journal's precise review process, following an initial evaluation by the editor and the editorial office. Eighteen papers (15 research articles and 3 review papers) were finally accepted for publication and inclusion in the Special Issue. These papers' references are sorted in alphabetical order according to the first author.

1. Aderemi, B.A.; Olwal, T.O.; Ndambuki, J.M.; Rwanga, S.S. A Review of Groundwater Management Models with a Focus on IoT-Based Systems. *Sustainability* **2022**, *14*, 148. <https://doi.org/10.3390/su14010148>
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5. Eshete, Y.; Alamirew, B.; Bishaw, Z. Yield and Cost Effects of Plot-Level Wheat Seed Rates and Seed Recycling Practices in the East Gojam Zone, Amhara Region, Ethiopia: Application of the Dose–Response Model. *Sustainability* **2021**, *13*, 3793. <https://doi.org/10.3390/su13073793>
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7. Kang, C.-W.; Kim, M.K.; Jang, E.-S. An Experimental Study on the Performance of Corrugated Cardboard as a Sustainable Sound-Absorbing and Insulating Material. *Sustainability* **2021**, *13*, 5546. <https://doi.org/10.3390/su13105546>
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9. Kumar, A.; Kumar, S.; Komal; Ramchiary, N.; Singh, P. Role of Traditional Ethnobotanical Knowledge and Indigenous Communities in Achieving Sustainable Development Goals. *Sustainability* **2021**, *13*, 3062. <https://doi.org/10.3390/su13063062>
10. Mohammed, M.; Shafiq, N.; Elmansoury, A.; Al-Mekhlafi, A.-B.A.; Rached, E.F.; Zawawi, N.A.; Haruna, A.; Rafindadi, A.D.; Ibrahim, M.B. Modeling of 3R (Reduce, Reuse and Recycle) for Sustainable Construction Waste Reduction: A Partial Least Squares Structural Equation Modeling (PLS-SEM). *Sustainability* **2021**, *13*, 10660. <https://doi.org/10.3390/su131910660>
11. Quiliche, R.; Rentería-Ramos, R.; de Brito Junior, I.; Luna, A.; Chong, M. Using Spatial Patterns of COVID-19 to Build a Framework for Economic Reactivation. *Sustainability* **2021**, *13*, 10092. <https://doi.org/10.3390/su131810092>
12. Qv, D.; Duan, X.; Wang, J.; Hou, C.; Wang, G.; Zhou, F.; Li, S. Issues and Potential Solutions to the Clean Heating Project in Rural Gansu. *Sustainability* **2021**, *13*, 8397. <https://doi.org/10.3390/su13158397>
13. Shehata, A.M. Current Trends in Urban Heritage Conservation: Medieval Historic Arab City Centers. *Sustainability* **2022**, *14*, 607. <https://doi.org/10.3390/su14020607>
14. Song, N.V.; Ha, T.V.; Thuan, T.D.; Hanh, N.V.; Tien, D.V.; Tiep, N.C.; Phuong, N.T.M.; Tu, P.A.; Uan, T.B. Development of Rice Husk Power Plants Based on Clean Development Mechanism: A Case Study in Mekong River Delta, Vietnam. *Sustainability* **2021**, *13*, 6950. <https://doi.org/10.3390/su13126950>

15. Sunny, A.R.; Mithun, M.H.; Prodhan, S.H.; Ashrafuzzaman, M.; Rahman, S.M.A.; Billah, M.M.; Hussain, M.; Ahmed, K.J.; Sazzad, S.A.; Alam, M.T.; Rashid, A.; Hossain, M.M. Fisheries in the Context of Attaining Sustainable Development Goals (SDGs) in Bangladesh: COVID-19 Impacts and Future Prospects. *Sustainability* **2021**, *13*, 9912. <https://doi.org/10.3390/su13179912>
16. Supriyanto, E.; Sentanuhady, J.; Dwiputra, A.; Permana, A.; Muflikhun, M.A. The Recent Progress of Natural Sources and Manufacturing Process of Biodiesel: A Review. *Sustainability* **2021**, *13*, 5599. <https://doi.org/10.3390/su13105599>
17. Tanveer, M.; Ahmad, A.-R.; Mahmood, H.; Haq, I.U. Role of Ethical Marketing in Driving Consumer Brand Relationships and Brand Loyalty: A Sustainable Marketing Approach. *Sustainability* **2021**, *13*, 6839. <https://doi.org/10.3390/su13126839>
18. Tao, Y.-J.; Lin, Y.-S.; Lee, H.-S.; Gan, G.-Y.; Tu, C.-S. Using a Product Life Cycle Cost Model to Solve Supplier Selection Problems in a Sustainable, Resilient Supply Chain. *Sustainability* **2022**, *14*, 2423. <https://doi.org/10.3390/su14042423>

3. Content and Significance of Contributions

3.1. Contributions to the Appropriate Wisdom Topic

There were six contributions related to the appropriate wisdom topic, including contributions 4, 9, 11–13, and 17.

In contribution 4, the authors reported on the application of blockchain-enabled solutions to achieving the Sustainable Development Goals (SDGs). In addition, the authors considered the knowledge gaps and introduced requirements for the provision of an appropriate blockchain technology that aims to accelerate global actions, particularly after the COVID-19 pandemic.

Based on an extensive and systematic literature review, the authors of contribution 9 explained that, among the 17 SDG goals, at least 7 of them, including SDGs 1–3, 12, 13, 15, and 17, are associated with traditional ethnobotanical knowledge (TEK). In order to achieve these goals, it is necessary to have a sufficient level of understanding of the indigenous wisdom of TEK.

In contribution 11, the authors proposed using humanitarian logistics theory to suggest an appropriate framework for economic reactivation in vulnerable communities during COVID-19. To accomplish this, the authors identified and analyzed factors related to COVID-19 mortality in Peru.

In contribution 12, the challenges were introduced regarding the applicability of the Rural Clean Heating Project (RCHP) in Gansu, China. The RCHP objects to making rural energy systems more flexible, enhancing the integration and distribution of green energy, and controlling the environmental impacts. The authors discussed appropriate policy solutions to major technical, economic, and ecological concerns regarding the application of the RCHP in Gansu.

In contribution 13, the current trends in Urban Heritage Conservation (UHC) in historical Arab cities were investigated, and the conservation parameters were identified. The author used these parameters to investigate the forthcoming changes in urban conservation, and provided useful suggestions for decision-makers and conservation authorities.

In contribution 17, a study was conducted on the impact of ethical marketing practices, looking at the sustainability of the value-adding products and customer–brand relationships in Pakistan. The authors also observed a positive association between brand loyalty, the sustainability of the value-added product and the customer value–brand relationship.

3.2. Contributions to the Appropriate Technology Topic

There were five contributions related to the appropriate technology topic, including contributions 2, 7, 8, 14, and 16.

In contribution 2, the authors reported results of improvements in the mechanical properties of self-compacting concrete by adding fly ash, crumb rubber, and silica fume.

In contribution 7, the applicability of corrugated cardboard for noise reduction was investigated. Based on the results, the authors suggested using perforated corrugated cardboard with multi-frequency resonators (PCCM) as an eco-friendly and sustainable noise-reduction material.

In contribution 8, the authors discussed the correlation among industry 4.0 technologies, COVID-19 pandemic, environmental regulation policies, and circular economy practices. Based on this study, while industry 4.0 technologies and environmental regulation policies have a significant impact on circular economy practices, even during the COVID-19 breakout, there is no evidence that COVID-19 was a major obstacle to the adoption of the circular economy.

In contribution 14, the authors demonstrated the Clean Development Mechanism (CDM) project for the Vietnamese electricity and energy sectors, with a focus on the use of rice husks for power generation in the Mekong Delta. The results demonstrated the possibility of using rice husk power to develop energy plants of up to 11 megawatts, along with other environmental benefits, such as a reduction in CO₂ emissions.

In contribution 16, a review of the recent advances in natural resources and manufacturing processes of biodiesels is presented. According to the authors, transesterification is currently the most sustainable biodiesel production method.

3.3. Contributions to the Appropriate Management Topic

There were seven contributions related to the appropriate technology topic, including contributions 1, 3, 5, 6, 10, 15, and 18.

Contribution 1 provides a review of the current groundwater management models, along with the systems that are enhanced by utilizing the Internet of Things (IoT).

In contribution 3, the authors used the data collected from the Department of Statistics Malaysia and the World Bank during 1970–2019 to determine the Malaysian construction sector's relationship with other sectors through complex linkages with significant contributions to the economy and gross domestic product (GDP). Based on the results, the authors proposed a sustainable conceptual framework for global sustainable development, which includes major factors affecting the growth in the construction industry.

Contribution 5 presented a case study, applying the dose–response model to evaluate the effects of seed rates and seed-recycling practices on wheat yield in Ethiopia using 450 sample respondents. The authors provided a cost–benefit analysis to prove that the farmers can cover seed costs through seed recycling. However, farmers' yields and net income can be significantly improved by utilizing unrecycled certified bread wheat seeds (CBWS).

In contribution 6, the authors analyzed solid samples from eight opencast wells to determine the presence of heavy metals and arsenic in the closed dump of Morelia. The results demonstrated the presence of heavy metals, including Pb, Cu, Ni, Zn, Cr, and Fe, as well as a high concentration of As. These findings can be used to support the requirement of essential improvements in territorial plans to enhance public and environmental health.

In contribution 10, the authors investigated the major challenges regarding construction waste in Malaysia. They suggested a model for the sustainable reduction in construction waste based on reducing, reusing, and recycling principles after identifying significant improvements and policy-related factors. The results showed a significant correlation between the improving factors, policy-related factors, and the amount of generated and reduced waste.

Contribution 15 reported on primary fieldwork and provided a secondary data analysis to obtain a clear overview of the performance and challenges in the fisheries sector in Bangladesh. In this paper, the authors evaluated the impact of the COVID-19 pandemic, as well as the effect of the fisheries sector in Bangladesh, on achieving SDGs.

Contribution 18 presents a report on the development of a product life-cycle cost model to support Taiwanese light-emitting diode (LED) manufacturers in capacity planning for sustainable and resilient supply chain management. In addition, the authors presented their decision-making tool, which was developed to assess sustainable procurement management

in high-tech Taiwanese LED companies. The decision-makers can use the developed model to minimize the product life-cycle costs.

4. Conclusions

The Special Issue “Appropriate Wisdom, Technology, and Management toward Environmental Sustainability for Development” aimed to be a multidisciplinary one and collected relevant studies on approaches to environmental sustainability. It appealed for original and novel studies on the provision of responsible consumption, reasonable recycling, and sustainable development of natural resources in different environments. As a result, it can be regarded as a useful source, allowing for decision-makers and policy-makers in different environmental fields to be introduced to the latest advances and approaches to developing communities with environmental sustainability.

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Conflicts of Interest: The author declares no conflict of interest.

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