

A Review on Sustainable Development Goals and Current Global Trends

Sabih Fatima¹, Mohammad Muzammil Khan², Aqeel Khalique³, Imran Hussain⁴,
Tabrej A. Khan⁵

{arch.sabihfatima@gmail.com¹, mmkhan.sch@jamiahamdard.ac.in²,
aqeelkhalique@gmail.com³, ihussain@jamiahamdard.ac.in⁴, tabrejsmvdu@gmail.com⁵}

Faculty of Architecture and Ekistics, Jamia Millia Islamia – India¹, Department of Computer
Science and Engineering,
School of Engineering Sciences and Technology, Jamia Hamdard^{2, 3, 4, 5}

Abstract. Sustainability is the need of the hour to preserve global resources for future generation. As technologically, we are advancing in such a manner, where exploitation of natural resources has become obvious. Sustainance is required to live healthy and happily. Sustainable development is one the most trending topic globally and due to involvement of United Nations, Sustainable Development Goals (SDGs) were set up in 2015 by the United Nations General Assembly and are intended to be achieved by the year 2030. In this paper, a review has been conducted on sustainability, need and importance of sustainable development, SDGs, current global status of SDGs, application domain of SDGs. Further, a suggestive methodology has been proposed to be performed by humans in their workplace so that they as individuals can also contribute towards achieving these SDGs.

Keywords: Sustainable Development, Sustainable Development Goals, SDGs

1 Introduction

The key to a successful life is sustainability. Sustainability can be defined as a method of meeting current needs without jeopardizing the ability of future generations to meet their own needs. To put it another way, sustainability promotes the idea that development must be done in a way that maintains inter-generational equity, i.e., the current generation should use these resources while keeping future generations' needs in mind. With ever-increasing demands and ever-dwindling resources, we must shift to a more sustainable way of life for the sake of future generations, rather than consume more and more. Figure 1 describes sustainable development as shown. It is achieved by integrating planet, people, prosperity, peace and partnership.

The idea that the future should be better and healthier than the present is known as sustainable development. It is the understanding that nature and society should be considered connected as the same such that our lives are entities of a larger party, that is nature. In 2015, the United Nations with the mission of achieving a better and more sustainable future proposed goals known as Sustainable Development Goals (SDGs)

intended to be achieved by 2030, known as 2030 Agenda. 17 Sustainable Development Goals are shown in figure 2 [1].



Fig. 1. Sustainable Development

We are heading towards an era of feasible sustainability as the world becomes increasingly conscious of the irreversible implications of continued use of non-renewable resources, and as more countries and corporations seek to set objectives with sustainability in mind. We need to address this issue from all angles, from basic Internet of Thing (IoT) devices to zero-emission automobiles to entire smart cities.

The rest of the paper is categorized as in Section 2 need and importance of sustainable development is discussed. In Section 3, use of ICT for Sustainable Development is presented. In Section 4, current global status of SDGs is presented. In Section 5, application domains for sustainable development were discussed. In Section 6, methods to achieve sustainable development in different application domains (SDGs) are presented and lastly in Section 7, conclusion of the paper is done.



Fig. 2. Sustainable Development Goals. (Courtesy: The United Nations)

2 Need and Importance of Sustainable Development

The exponential increase of human economic expansion has impacted negatively on the environment and natural resources across the planet. Simultaneously, participation in social action to improve the situation is quite limited [2, 3]. Recent research has focused on the human factor's influence on resource preservation and sustainable development [4, 5]. Organizations have created new aims other than financial profit, such as a commitment to social and environmental consequences, as a result of the increased attention on social responsibility and sustainable performance.

We need to give due importance to sustainable development as environmental deterioration is ubiquitous and growing in our world. We all know that global warming is the most serious of the major environmental concerns. With the help of technological innovations, we have to ensure that these concerns get resolved, such as the use of EVs to promote zero-emission and achieve climate action goals. Sustainable development ensures prosperity and allows us to be efficient overall by utilizing the available resources.



Fig. 3. Three Pillars of Sustainable Development

Sustainable methods must take into account the basic interactions between activities that have an impact on the environment, society, and the economy. These are known as the Pillars of Sustainability (figure 3). If we merely achieve two of the three sustainability pillars, we end up with:

- Social + Economic Sustainability = Equitable
- Social + Environmental Sustainability = Bearable
- Economic + Environmental Sustainability = Viable.

Therefore, it is of utmost importance that we aim to achieve all three of the pillars to build a healthy and sustainable society.

3 Use of Information and Communications Technology for Sustainable Development

Information and Communications Technology (ICT), particularly mobile broadband, is a critical infrastructural platform for the SDGs and a key acceleration technology that may bring societies together. Future ICT breakthroughs, such as the Internet of Things (IoTs), sophisticated robots, artificial intelligence, big data, 3D printing, and others, will provide instruments for all new and exceptional improvements in healthcare and education services, energy, and environmental protection.

The United Nation Broadband Commission for Sustainable Development has also highlighted the critical role that Information technology can play in delivering integrated, creative, adaptable and holistic sustainable development outcomes. Aside from providing connectivity, creativity, and productivity, ICT may also strengthen the flexibility of critical infrastructure and aid in the successful management of social and economic exclusion [6][7].

The interplay and evolution of information and communication technologies, as well as the need for sustainability, is a new yet relatively untapped study subject. ICT for sustainability research occasionally overlaps with other disciplines such as sustainable Human-Computer Interaction, smart development such as smart agriculture and smart monitoring, and environmental informatics.

Today at the verge of massive urbanization, cities, metropolis and megapolis are becoming unsuitable places to live in due to several reasons. In developed and developing nations, several cities are being planned to be modified as smart cities. The term smart city represents a place where people can live sustainable, comfortable and secure life with the use of current ICT involvement.

4 Current Global Status of SDGs

In this section, study have been done showing the status of SDGs achieved at global level [8]. The result shown in figure 4 can be an eye-opener and to buckle up to resolve challenges in order to successfully achieve all the SDGs by different nations by 2030.

5 Application Domains for Sustainable Development

There are five application domains of sustainable development namely Environment, Social/Culture, Technology, Economics, and Public Policy. These domains are shown in figure 5. Further, these domains should be the organizing principles for urban administration, urban design and planning, urban growth management, and regional and urban sustainable development [9].

While most of the everyday ICT consumers are receptive to using ICT to help them in their daily lives, they are motivated by a variety of factors, including environmental

or financial concerns, health, convenience, efficiency, or novelty. However, for ICT to be beneficial to customers in lessening the climate effect, it must tackle the factors that influence their decision-making. And, while customers are too concerned about the environmental effect of their gadgets, recent research found that the greatest influence of ICT is in its application, whether it is employed for carbon reduction or to continue unsustainable habits [10][11].

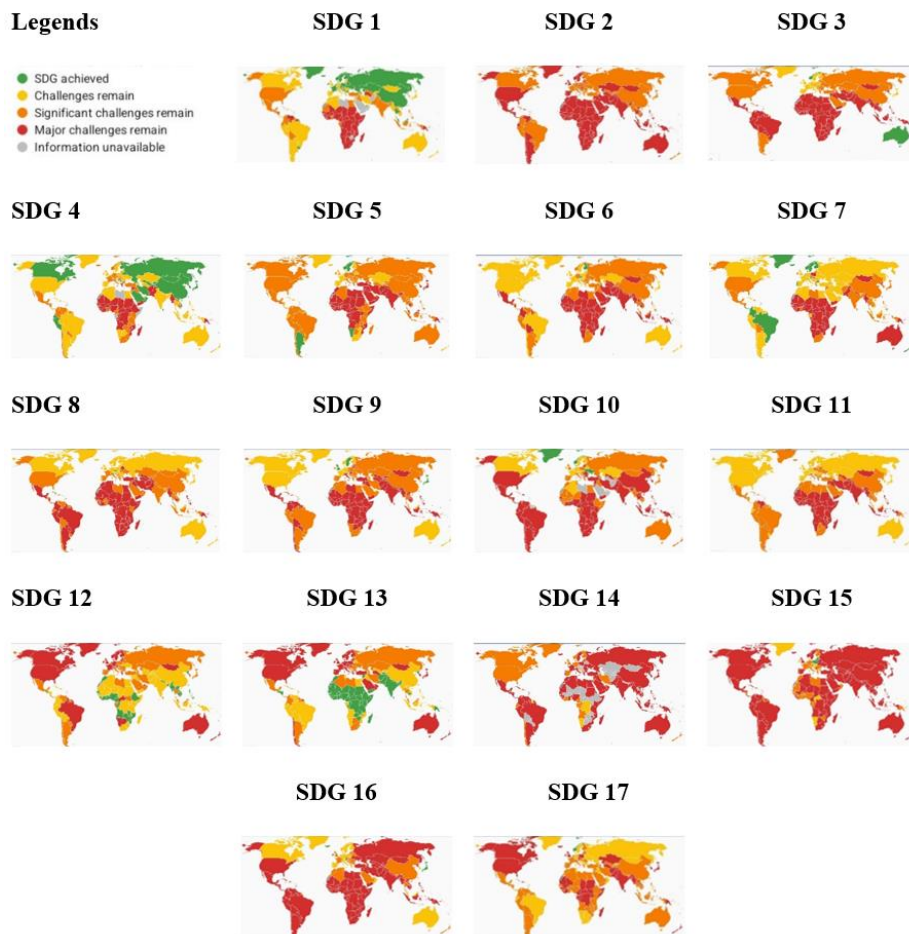


Fig. 4. Current Status of SDGs achieved globally

More fundamentally, how and what consumers do to reduce their effect must be part of a broader national sustainability plan that requires all levels of government, the corporate sector, and other non-governmental entities.

The integration of national policies and technology innovation, as well as consumer motivation and interest, not only provides a framework in which people can genuinely be part of a specific plan of action but also addresses the fundamental need for cooperation to safeguard the environment. Governments, businesses, and consumers

all across the world are dealing with the devastating human and economic consequences of the COVID-19 pandemic. As the globe prepares to return to normalcy following the pandemic, an opportunity for an economic and national recovery plan develops. Sustainable Development should aim to revitalise activities aimed at reducing average global warming to 1.5 degrees Celsius by exponentially scaling up worldwide efforts [12].



Fig. 5. Application Domains of Sustainable Development

6 Methods to achieve sustainable development in different application domains (SDGs)

In this paper, suggestions have been made after studying the need and impact of sustainable development. Hence, suggesting ways in which we all can support our favorite SDG(s) through different inspiring activities.

- For SDG 1 “No Poverty”, we should not overspend and try living on Rs. 200 a day.
- For SDG 2 “Zero Hunger”, food wastage should be minimized and we should work towards changing the world by feeding needy people.
- For SDG 3 “Good Health and Well-being” and SDG 8 “Decent Work and Economic Growth”, it is essential to ensure that people have a workplace contributing to maintaining good health.
- For SDG 6 “Clean Water and Sanitation”, WASH (water, sanitation, and hygiene) pledge should be practice in workplace and homes for ensuring access to safe water, sanitation and hygiene.
- For SDG 11 “Sustainable Cities and Communities”, it is the need of hour to invest in renewable energy resources such as solar, wind, and biofuel.

- For SDG 12 “Responsible Consumption and Production”, recognition and awarding responsible persons shall be done to motivate and inspire others.
- For SDG 13 “Life on Land” and SDG 14 “Life below Water”, usage of plastic waste should be reduced and hence, 3Rs, i.e., ‘REDUCE, REUSE, RECYCLE’ should be practiced.

7 Conclusion

Sustainable development is all about environmental resources, people, their well-being, and their relationships with each other. It ensures to create a balance of environmental, economic and social stability. Sustainable Development Goals (SDGs) are a call for action to change the flow in which the world is moving and to make a development benefit to all and preserving the planet for future generations. These SDGs were launched in 2015 with aim to achieve them by 2030. It will provide a unique opportunity for governments, citizens, businesses and various stakeholder groups to assess existing institutions and practices and to undertake necessary reforms. These SDGs are universal and ambitious and can bring transformative change. However, as discussed in the paper, current global status of SDGs is alarming and hence it is creating challenges to governments of different nations. As individuals, every citizen has a very important role to play in order to achieve these SDGs at national and global level. This includes global consultation among governments, experts and a wide range of other stakeholders and citizens of the nations.

References

1. Assembly, G. (2015). *Resolution adopted by the General Assembly on 11 September 2015*. A/RES/69/315 15 September 2015. New York: United Nations. Retrieved March 25, 2020, from https://www.unescwa.org/sites/www.unescwa.org/files/un_resolutions/a_res_69_315_e.pdf.
2. Bauman, Z. (2013). *Liquid modernity*. John Wiley & Sons.
3. Korten, D. C. (1998). When corporations rule the world. *European Business Review*.
4. Pfeffer, J. (2010). Building sustainable organizations: The human factor. *Academy of management perspectives*, 24(1), 34-45.
5. Speth, J. G. (2010). Towards a new economy and a new politics. *Solutions*, 1(5), 33-41.
6. UN Broadband Commission for Sustainable Development. (2021). *The State of Broadband*.
7. Paiva, S., Ahad, M.A., Zafar, S. et al. (2020). Privacy and security challenges in smart and sustainable mobility. *SN Appl. Sci.* 2(1175)
8. Sustainable Development Report: <https://dashboards.sdgindex.org/downloads>. Accessed November 13, 2021.
9. Siddiqui R., Muzammil Khan M., Khalique A., Hussain I. (2022) Smart Green Roof: A Prototype Toward Sustainable Smart Agriculture. In: Agarwal B., Rahman A., Patnaik S., Poonia R.C. (eds) *Proceedings of International Conference on Intelligent Cyber-Physical Systems*. Algorithms for Intelligent Systems. Springer, Singapore

10. Khaliq A., Hussain I., et. Al. (2020). Wearable Computing and Its Applications. In: Green Automation for Sustainable Environment. CRC Press
11. Ericsson. (February 2020). A quick guide to your digital carbon footprint.
12. Exponential Roadmap: <https://exponentialroadmap.org>. Accessed November 9, 2021.