

The Impacts of COVID-19 Pandemic on Sustainable Development

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ABSTRACT

The COVID-19 pandemic has had a severe impact on the Sustainable Development Goals (SDGs) that were approved by United Nations in the year 2015. The global crises occasioned by the COVID-19 pandemic since early 2020, can adversely affect the world commitment to the 2030 Agenda for Sustainable Development. In addition to its impact on public health, coronavirus affects the education system in the world. Schools, colleges and universities are closed to control the spread of the virus. School closure brings difficulties for students, teachers and parents. So, distance learning is a solution to continue the education system. However, the lack of network infrastructures, computers and internet access is challenging distance learning in developing countries. The global health crisis has had adverse effect on food security and nutrition around the world by triggering higher prices of some foods hence undercutting the right to food and hampering efforts to meet Sustainable Development Goal (SDG). Its negative impact on economy, enterprises and industries on all sizes has resulted in reduced incomes for vulnerable macro and micro economies and the risk of job losses and lost incomes for thousands of low paid workers. Hence, this review focuses on the COVID-19 pandemic impacts on sustainable development.

Keywords: Impact; COVID-19; Pandemic, Sustainable; Development

Introduction

Taken literally, sustainable development would simply mean “development that can be continued either indefinitely or for the given time period” [1,2]. Although, definitions abound with respect to sustainable development, the most often cited definition of the concept is the one proposed by the Brundtland Commission Report (Schaefer and Crane, 2005). The Report defines sustainable development as development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs.

Sustainable development is an approach to development which uses resources in a way that allows them (the resources) to continue to exist for others [3]. Sustainable development aims at achieving social progress, environmental equilibrium and economic growth [4]. Exploring the demands of sustainable development, Ukaga et al. [5] emphasized the need to move away from harmful socio economic activities and rather engage in activities with positive environmental, economic and social impacts.

It is argued that the relevance of sustainable development deepens with the dawn of every day because the population keeps increasing but the natural resources available for the satisfaction of human needs and wants do not. Hak et al. [6] maintains that, conscious of this phenomenon, global concerns have always been expressed for judicious use of the available resources so that it will always be possible to satisfy the needs of the present generation without undermining the ability of the future generations to satisfy theirs. It implies that sustainable development is an effort at guaranteeing a balance among economic growth, environmental integrity and social well being. This reinforces the argument that, implicit in the concept of sustainable development is intergenerational equity, which recognizes both short and long term implications of sustainability and sustainable development [1]. According to Kolk [7], this is achievable through

the integration of economic, environmental and social concerns in decision making processes.

An ongoing outbreak of pneumonia associated with a novel coronavirus, Severe Acute Respiratory Syndrome (SARS) coronavirus 2, was reported in Wuhan, Hubei Province in China on December, 2019. In the following weeks, infections spread across China and other countries around the world, resulting in a pandemic [8]. COVID-19 is a large group of viruses that creates illness. It ranges from the common cold to more severe diseases like Severe Acute Respiratory Syndrome [9]. Most health analysts predict that this virus will continue to circulate for at least one or two more years [10].

Africa is among the countries severely hit by coronavirus pandemic. There are now more than 60,000 confirmed cases of COVID-19 across Africa and growing warnings that the pandemic will cause major challenges for the continent's under resourced health services [11]. Similarly, predictions are showing that given the fact that almost all of Africa's 54 countries are reporting cases of COVID-19, it will have drastic consequences in Africa, especially in many countries that still have a poor public health infrastructure and inadequate social welfare system [12].

Nigeria has equally had her fair share of adverse effect of the COVID-19 pandemic. The index case of coronavirus started in Nigeria when an Italian national working in Lagos flew into the commercial

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city of Lagos from Milan, Italy, on February, 25, 2020. The Nigerian government has been making a great effort to stop the further spread of coronavirus within the country. Such efforts include a ban on social gatherings there are mechanisms to arrest and punish those who defy this; a shutdown of Lagos, Abuja, and Ogun States, which are regarded as the epicenter for the coronavirus pandemic and other preventive measures such as an increase in screening at border entry points, self isolation, social distancing of not less than 2 meters, use of hand sanitizer, and washing of hands frequently, all of which have been emphasized and publicized through formal and informal media outlets [13-15].

Throughout the world, every aspect of life has completely been altered with the spread of this virus. In such times, the prime aim of all the countries is to decrease the rapid spread of COVID-19 in the society [16-18]. Therefore, as a drastic measure to curtail mass infection, schools, colleges, universities, and other higher education institutions worldwide were closed due to the spread of the deadly COVID-19 [19]. As a result, policy makers adopted to the new normal as rapidly as they could, especially in the global educational sector. As of the current scenario as well, most of the educational institutions worldwide have adapted to the E-learning system, so as to continue the process of teaching and learning [20].

E-learning is a concept of delivering knowledge or education through the internet, satellite, interactive TV, intranet, or extranet among the learners [21]. The concept of E-learning includes applying modern technology, and the E-tools available, for an effective two way communication, so as to impart knowledge to all the relevant stakeholders in the education sector on a global level [22]. E-learning requires a significant amount of time and commitment, in order to create an environment that supports learners in both informal and formal resources [23]. In this regard, Crawford et al. [24] highlighted that a speedy conversion of face to face education to E-learning has given rise to several obstacles and issues during the COVID-19 pandemic across the world.

Before the outbreak of the pandemic, according to the latest state of Food Security and Nutrition report [25-28], some two billion people faced food insecurity at the moderate or severe level. The most recent estimates indicate that between 83 and 132 million additional people [25-28], including 38 million-80 million people in low income countries that rely on food imports [29] will experience

food insecurity as a result of the pandemic. There have been major disruptions to food supply chains in the wake of lockdown measures, which have affected the availability, pricing, and quality of food [30]. The closure of restaurants and other food service facilities led to a sharp decline in demand for certain perishable foods, including dairy products, potatoes and fresh fruits, as well as specialty goods such as chocolate and some high value cuts of meat [31,32].

Haider [33] mention the effect of coronavirus on health and economic crises. According to Hebert [34], COVID-19 affects socio economic circumstances because of declining global GDP, declining capital flows, fewer investment opportunities and decreased trading. Mukhtar [35] reports that an increase of about 420 million is projected to be living in extreme poverty. Findings gathered by the United Nations Industrial Development Organization (UNIDO) reflect that COVID-19 has resulted in a severe decline in human development for the first time since 1990 [36]. This review focuses on COVID-19 pandemic impacts on sustainable development.

Impacts of COVID-19 on Education System

The coronavirus (COVID-19) is a pandemic disease that affects the education system of different income level countries [37]. The United Nations Education, Scientific and Cultural Organization (UNESCO) has recognized that the coronavirus pandemic outbreak has impacted the education system in the world [38-40]. The governments focus on fulfilling equipment, organizing medical institutions, and laboratory centers, identification of the virus, training health workers, and creating awareness for their people [41]. The education system has been affected by several challenges ranging from changes in the education curriculum to closing down the education system due to widespread pandemic diseases [42].

As UNESCO [38-40] reports that 87% of the world's student population is affected by COVID-19 school closures. According to the UNESCO, over 1.5 billion students in 195 countries are affected by COVID-19 pandemic school closures (Table 1). Niranjan [43] reported that COVID-19 impacted not only the overall economy and our day to day life, but also emotional, mental, and physical health. Also, losses in national and international business, poor cash flow in the market, locked national and international traveling. Moreover, disruption of the celebration of cultural, and festive events, stress among the population, the closures of hotels, restaurants, religious and entertainment places [44].

SDG region	Pre-primary	Primary	Secondary	Tertiary	Total
Europe and Northern America	17.3	32.8	47.2	22.6	119.9
Central and Southern Asia	26.4	208.5	183.9	45.7	464.5
Eastern and South-Eastern Asia	63.6	175.0	139.1	68.2	445.8
Northern Africa and Western Asia	7.6	52.3	46.6	19.2	125.9
Sub-Saharan Africa	19.7	160.4	56.2	7.8	244.2
Latin America and the Caribbean	20.0	59.9	62.9	27.1	169.8
Oceania (Australia and New Zealand)	0.6	2.0	1.2	0.3	4.1

World	155.2	690.9	537.2	190.9	1574.3
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Source: UNESCO, 2020

Table 1: Learners not in school because of nationwide school closures (million), by Sustainable Development Goal region and level of education

In many countries, economic activities have been locked down by governments in order to reduce the spread of infection. As a result, developing countries are suffering their greatest economic decline and closures of their education and transportation system [41]. Due to lack of internet connectivity, information technology, educational materials, and digital technology skills, distance learning is difficult for teachers, students, and families in developing countries [45].

In the world, most countries have temporarily closed child cares, nursery, primary and secondary schools, colleges, and universities to control the spread of the COVID-19 pandemic [46]. Pujari [47] noted

that COVID-19 affects all over education system, examinations, and evaluation, starting of new semester or term and it may extend the school year.

Teachers, Students and Parents

In the survey conducted by Woday [48], the study finds during schools closure, the level of anxiety, depression disorders, and stress are high among students. Access to computers and access to the internet is basic to successful distance teaching. This is not guaranteed for all students in developing countries [49] (Table 2).

Region	Minimum Percentage of School-Age Children without Access to Distance Education (%)	Minimum Number of School-Age Children without Access to Distance Education (million)
Eastern and Southern Africa	49	67
West and Central Africa	48	54
East Asia and the Pacific	20	80
Middle East and North Africa	40	37
South Asia	38	147
Eastern Europe and Central Asia	34	34
Latin America and the Caribbean	9	13
World	31	463

Source: UNICEF, 2020

Table 2: Percentage of school-age children, pre-primary to upper secondary, without access to distance education by region

Unequal Access to Educational Resources and Technology

To control the coronavirus spread, most countries have been working to encourage parents and schools to help students continue to learn at home through distance learning [38-40]. The schools in urban areas are teaching their students from a distance by uploading assignments, books, and reading materials through Google Classroom, e-mail, social media, and other applications. In some urban areas, even if distance learning is provided due to a lack of monitoring strategies, some students may not use it properly. Also, public school teachers and students have limited or no access to the internet [50].

The children may have higher dependence than younger students on parents and they need guidance in their learning process, internet access, and usage of digital devices and applications [50]. There were already inequalities before coronavirus in access to quality education between students in urban and rural areas. School closures could further increase the inequalities between students [51,52].

Assessment and Evaluation

Zhu and Liu [53], developed actions such as introduced online learning platforms, use Blackboard, Zoom, TronClass, Classin, and Wechat group platforms, and conducted online training, and collected information about all courses. Online teaching and learning are not a new mode of delivery for developed countries and some developing countries. However, shifting from face-to-face class to online learning

is challenging for teachers, students, families, and the countries government due to lack of finance, skill, ICT infrastructure, internet access, and educational resources [54]. Furthermore, computers and other IT equipment at home are difficult for most parents, children, and students in developing countries [55].

The shift from face-to-face class to online class has a serious impact on assessments and evaluations. It is difficult to monitor the student on how they are taking courses online and difficult to ensure that students are not cheating during online exams [56]. More over, students who do not have internet access will suffer to take assignments and evaluations [55,57] reported that assessment and evaluation of students' performance in online learning is difficult for both instructors and students particularly teaching practicum, technical competencies, and the assessment of practical skills is difficult. Education inequalities are a threat to education system continuity at a time of unexpected educational system closures [38-40]. Because, there are a limited number of computers, internet access, mobile network access, and lack of ICT trained teachers in developing countries [38]. Therefore, even if online teaching and learning are a good opportunity to continue education during the pandemic, it is challenging for developing countries [58].

Impacts of COVID-19 on Food Security and Nutrition

According to UN reports, some 45 million people have become acutely food insecure between February and June 2020, mainly

located in Asia and Sub-Saharan Africa [38-40]. Food insecurity already disproportionately affects those people experiencing poverty and who face societal discrimination, and it is these very people who are at higher risk of contracting COVID-19 and who have less access to health care services [59]. People without access to these services, which are vital for health and safe food preparation, are more likely to contract the disease, compounding existing inequalities [60].

Many food system workers face precarious and unsafe work conditions, which have been exacerbated by the COVID-19 crisis. These workers are often paid low wages and lack protective equipment [59]. Migrant food system workers have experienced higher incidences of COVID-19 infection as compared to other populations [59].

Gender inequalities have also been exacerbated by the crisis, as women face additional burdens during COVID-19 – as frontline health and food system workers, unpaid care work, community work, which has been increased during lockdowns [61,62].

Supply Chain Disruptions

Food supply was affected by lockdown measures imposed by various governments to control the spread of coronavirus. In the early months of the outbreak of COVID-19, some food exporting countries also imposed export restrictions on key staple food items like rice and wheat, which led to some disruptions in the global movement of these staples as well as higher prices of these crops relative to others [63]. Certain countries, including those with high prevalence of food insecurity, are highly dependent on imported food and on commodity exports [25-28], which may make them particularly vulnerable to these types of supply chain disruptions.

Labour-intensive food production has also been especially affected by COVID-19 among food system workers, including production systems that rely on migrant farmworkers who face barriers to travel and who often work in cramped conditions on farms and in food production facilities, some of which had to close temporarily to contain outbreaks [64].

Altered Food Environments

As the COVID-19 pandemic unfolded, many countries moved to shut down informal food markets, which governments saw as spaces for potential disease transmission, reflecting a 'formality' bias in public health and food policy [65,66]. In South Africa, formal food retail outlets, which sell processed and packaged foods, were allowed to remain open while informal and open air food markets, which typically sell more fresh fruits and vegetables, were shut down even though open air markets are actually safer in terms of person to person transmission [66].

Other studies showed a shift towards consumption of more processed foods [67]. At the same time, in North America, there was a resurgence of interest in Community Supported Agriculture (CSA) subscriptions, as people increasingly grew concerned about the safety of shopping in supermarkets and desired more direct access to fresh fruits and vegetables [68], meat and fish products. There was also increased interest in home and community gardening as people sought to grow their own food to ensure their food security and nutrition [69].

Discussion

Disruptions of social protection programmes

The WFP estimates that 370 million children have lost access

to school meals due to school closures in the wake of the pandemic [70]. In some countries, governments and the WFP are developing alternative means by which to reach school-aged children with food assistance, including take-home rations, vouchers, and cash transfers [70]. While alternative school lunch arrangements such as in Cameroon [70] may close the gap in some instances, in other cases such options are not in place, adding to the financial burden of poor households struggling to feed their families [66].

The global economic recession that resulted from the pandemic and measures to contain it have also strained governments' capacities to provide social protection for those most affected by the crisis [25-28]. According to the UN Commission for Africa (ECA), Africa needs one hundred billion dollars to finance its health and safety net response, but unfortunately several countries are constrained in how much they can borrow by already high debt to GDP ratios [71].

The economic implications of COVID-19 pandemic

The coronavirus pandemic is having major consequences on the world economy, and experts have predicted that the virus will lower global gross domestic product growth by one-half a percentage point for 2020 from 2.9% to 2.4% [72]. The economic consequences of the pandemic have not fallen with equal severity on all shoulders. Existing vulnerabilities have not been exposed, and inequalities entrenched [73,74]. COVID-19 pandemic has threatened to become one of the most difficult tests faced by humanity in modern history with huge potentiality to take lives, overwhelm health systems and trigger lasting socio-economic change [75]. The Oxfam International in her 2020 report warned that half a billion people could be pushed into poverty as result of the COVID-19 pandemic [75].

The impact of COVID-19 on businesses

In addition to its impact on public health, coronavirus disease has caused a major economic shock. The pandemic had already caused massive dislocation among small businesses just several weeks after its onset, approximately 25% of businesses had temporarily closed and nearly all of these closures were due to COVID-19 [76]. According to Amuda [77], the outbreak of COVID-19 in Nigeria affected every facet of life: Education, social activities, political, governance, and economic dealings. In Nigeria, it was the same states that are major economic hubs were on lockdown as a result of the upsurge of the virus. This lockdown which featured the restriction on transportation of people and goods, significantly disrupted outputs and exports, and hindered the growth of private businesses by undercutting the investments due to the loss of investors' confidence in the market [78].

The global economic slowdown triggered by the pandemic, as well as the spread of the disease itself, has exacerbated existing societal inequalities in most countries [79]. The COVID-19 is likely to cause bankruptcy for many well known brands in many industries as consumers stay at home and economies shut down [80]. This is not only having consequences for the economy; all of society is affected, which has led to dramatic changes in how businesses act and consumers behave [81]. Most major industries faced large drops in the number of business owners with the only exception being agriculture. Construction, restaurants, hotels and transportation all faced large declines in the number of business owners due to COVID-19 [82].

The impact of COVID-19 on international trade and export

The economic damage is mounting across all countries, tracking the sharp rise in new infections and containment measures in place. As a result of the pandemic, the global economy is projected to

contract sharply by 3% in 2020 much worse than during 2008-2009 financial crisis [83].

Global Economic Recession and Associated Income Losses

The COVID-19 pandemic triggered a global economic recession which has resulted in a dramatic loss of livelihoods and income on a global scale [84]. In Latin America, for example, over 50 percent of employment is in the informal sector [25]. According to the International Labour Organization (ILO), more than the equivalent of 400 million full time jobs have been lost in the second quarter of 2020 with a number of countries enforcing lockdown measures [73].

Developing countries in particular have been deeply affected, as they were already entering recession by late 2019 [85,86]. Global growth is expected to fall dramatically in 2020, with various estimates

showing a drop for year [87-89]. Global remittances – a major source of finance in developing countries are expected to drop by around 20 percent [90].

According to World Bank estimates, an additional 71 to 100 million people are likely to fall into extreme poverty as a direct consequence of the pandemic by the end of 2020 [91] (Table 3). The World Food Programme estimates that an additional 130 million people will face acute hunger as a result of the crisis, nearly doubling the 135 million people already facing acute hunger [92].

Conclusion

The COVID-19 is a pandemic disease caused by a virus that affects the education system of both developing and developed

Continent	Changes in headcount ratio (percentage)	Change in number of poor (million)
East Asia and the Pacific	0.21	4.41
Europe and Central Asia	0.23	1.16
Latin America and the Caribbean	0.55	3.58
Middle East and North Africa	1.22	4.91
Other high income	0.01	0.07
South Asia	1.25	23.28
Sub-Saharan Africa	2.74	31.17
Least developed countries	3.16	33.4
World total	0.88	68.57

Source : Valensis, 2020

Table 3: Estimated changes in extreme poverty rates in 2020 due to the pandemic

countries. Education is the pillar of every country's development. In the world, most schools, colleges, and universities are closed to control the spread of the COVID-19. The school closure brings difficulties for students, families, and teachers. So, distance learning is a solution to continue the education system. However, distance learning is challenging in developing countries because of inadequate ICT infrastructures, computers, radio, and television. The poor and digitally-illiterate families with lower educational levels children with poor learning motivation are more affected in this situation and this increases inequality. The COVID-19 pandemic has made all the educational schools across the world to adopt teaching and learning online. So, governments should scale network infrastructure and internet connectivity across urban and rural areas.

The COVID-19 crisis threatens the food security and nutrition of millions of people, many of whom were already suffering. A large global food emergency is looming. In the longer term, we face possible disruptions to the functioning of food systems, with severe consequences for health and nutrition. With concerted action, we cannot only avoid some of the worst impacts but do so in a way that supports a transition to more sustainable food systems that are in better balance with nature and that support healthy diets and thus better health prospects for all.

COVID-19 is expected to have a severe impact on economy, enterprises and industries on all sizes, resulting in reduced incomes and the risk of job losses and lost incomes for thousands of low-paid

workers. The increasing spread of COVID-19 across countries has prompted many governments to introduce unprecedented measures to contain the pandemic.

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