



# Recovering from COVID-19 Environment and Social Impacts in Sub-Saharan Africa: The Role of Social Engagement

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## Abstract

The Coronavirus disease (COVID-19), which has spread globally, originated from Wuhan City of Hubei Province in China in December 2019 and has become the most significant contagious disease in the health sectors worldwide. This has affected more than 241.87 million people globally, with nearly 4.92 million deaths in October 2021. All governments have suffered both negative and positive effects on the COVID-19 pandemic. Most countries' lockdowns and border restrictions have positively impacted the environment, but they resulted in dramatic consequences at the social level, negatively contributing to achieving

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the Sustainable Development Goals (SDGs), increasing poverty (SDG1) and inequality (SDG10) in the poorer countries, severely affecting unemployment (SDG8) and education (SDG4), particularly in the Sub-Saharan Africa (SSA). In this specific context, social actions (SA) through the public and innovative private initiatives are being used locally to produce personal protective equipment and other logistics materials, aimed to reduce foreign dependence and also to assist in food and medicines supply to alleviate people in this region. Also, to fully achieve SDGs, particularly in developing countries, a requirement on collaboration across many sectors, organizations, and individuals dedicated to improving the human experience is truly necessary, namely led by SA initiatives. This chapter will focus on how social engagement has impacted the COVID-19 crisis from the standpoint of the environment and social dimensions in the SSA. The discussion is expected to promote and increase social awareness to the need for further investment in SA towards sustainable development in developing countries.

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**Keywords**

COVID-19 · Global changes · Environmental and social crises · Social actions (SA) · Sub-Saharan Africa (SSA)

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## 1 Introduction

COVID-19, mainly a health pandemic issue, has created 114 million jobs lost globally only in 2020 (ILO 2021), which has deeply worsened the already existing social, economic, and political issues globally, especially in Africa. Furthermore, this pandemic has created poverty, lack of education, unemployment, hunger, poor governance and lack of trust from leaders, and stigmatization, revealing the fragilities of health systems within the globe and affecting the implementation and achievement of United Nations sustainable development (Filho et al. 2020) in the developing world, especially the sub-Saharan Africa (SSA).

The COVID-19 has also exposed the vulnerabilities of the logistics supply chain in Africa, Asia, Europe, and America (Mahnken 2020), disrupting the health supply chain of pharmaceutical raw materials, affecting the production of finished products, which involved pharmaceutical products, personal protective equipment (PPE), and ventilator equipment in African countries.

To reduce the economic and social effects caused by the COVID-19 and the supply chain problem from production to shipping, most governments financially assisted public and private initiatives. Most African countries used local materials to produce PPE materials and other government and private initiatives. This study explains how some African leaders used the initiatives to address the economic and social problems from COVID-19 pandemic. The initiatives aimed to reduce foreign dependence and assist in food and medicines supply to alleviate people in this region and achieve SDGs through collaboration with all sectors, organizations, and

individuals dedicated to improving the human experience through social action (SA). Within the context of SA, individual actors are motivated for a common purpose to benefit wider society (Pedler 2020). The SA brings individuals together to improve their lives by finding a solution to a common problem that is affecting the community or society.

The study describes the originating source of COVID-19 and the prevention measures and effects in Africa. An integrative methodological approach was used to collect primary and secondary sources for analyses. The discussion for the findings of the study focused on how social engagement has impacted the COVID-19 crisis from sub-Saharan Africa's environment and social dimensions and how it will further help promote and increase investment and awareness in SA to achieve sustainable development in developing countries. According to Thomas et al. (2012), social engagement is the degree of participation in a social group within the society, which depends on the societal role and the participant's relationship (Piškur et al. 2014), involving functional activities that cognitively stimulate the engagement (Zhang et al. 2018), and the COVID-19 pandemic has highlighted the importance of social engagement within society or community for a common purpose to reduce and promote societal goals.

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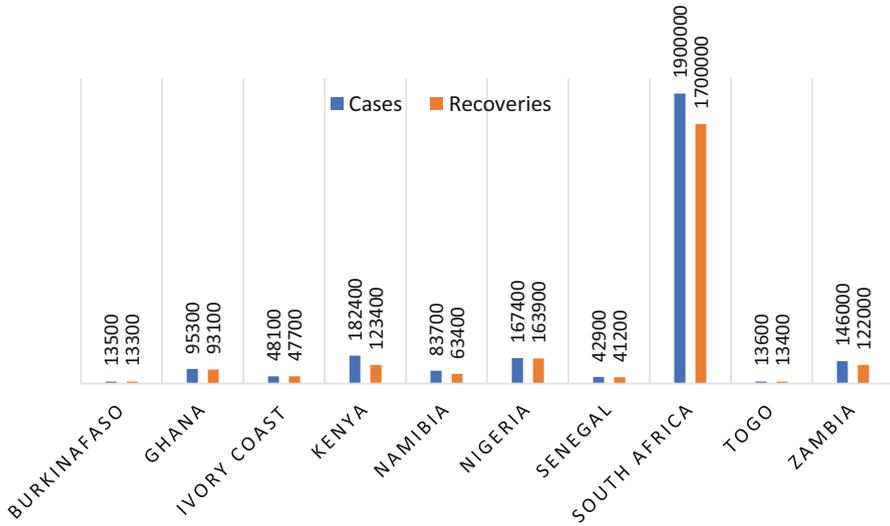
## **2 Literature Review**

### **2.1 COVID-19: The Originating Source**

COVID-19, which originated a year ago in Wuhan, Hubei Province, China (Huang et al. 2020; Wang et al. 2020), is considered one of the long strings of coronaviruses that broke out in recent decades. It is believed to be caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (Lu et al. 2020), with varied clinical symptoms such as fever, cough, fatigue, dyspneal, and kidney failure (Chen et al. 2020). It is aggressively infected through droplets, contact with people, or surfaces contaminated with the virus, which made WHO (2020) to constitute it as a global pandemic. By 5 July 2021, over 3.975 million deaths since the inception of COVID-19 globally occurred (WHO 2021).

### **2.2 COVID-19: Prevention Measures and the Effect in Africa**

Africa recorded its first COVID-19 case in February 2020 in Egypt (OECD 2020). United Nations estimated 300,000 deaths, 122.8 million infections, and 2.3 million hospitalized in Africa (UN 2020). Due to inadequate waste facilities, poor sanitation, and hygiene (Godfrey et al. 2019; Debrah et al. 2021a, b), a high population in most urban settlements within Africa would create a conducive environment for the virus to spread quickly (Dzinamarira et al. 2020). But due to the swift action against the spread of COVID-19 within the SSA, the virus has been controlled in terms of infection rate, mortality, and disease severity (Dong et al. 2020; Moulds 2020). As a



**Fig. 1** Examples of COVID-19 cases and recoveries in selected SSA. (Adapted from Africa Centers for Disease Control and Prevention (Africa CDC 2021))

result, Africa has less than 97,000 deaths as of 1 July 2021 (WHO-Africa 2021), with a drastic reduction in infection rates and with high recoveries from the affected. Figure 1 represents COVID-19 cases and recoveries in selected SSA.

Most countries took appropriate actions to reduce the global threat to public health caused by the spontaneous spread of the COVID-19 pandemic (Bai et al. 2020; Sohrabi et al. 2020). For example, SSA leaders instituted measures such as social distancing, border and travel restrictions, compulsory wear of nose masks, school closures, bans on large gatherings, and lockdowns to prevent the spread of the virus. These restricted measures and lower age group and hot and humid climate conditions are also probable socio-ecological factors contributing to the lower pandemic effect in Africa (Moeti 2020). These have reduced the spread of the infection rate, resulting in less death in most African countries.

The restricted measures taken by most of the African leaders have showcased the vulnerabilities of Africa society (OECD 2020). Notwithstanding that outbreak disease primarily impacts human health, the effect of COVID-19 has worsened the Africans' environmental and public health condition. Furthermore, COVID-19 has negatively affected the African economy and social settings since several COVID-19 problems are entwined, dynamic and unpredictable. As a result, the gross domestic product (GDP) growth in SSA is estimated to have dropped from 2.4% in 2019 to between  $-2.1\%$  and  $-5.1\%$  in 2020 (World Bank 2020), contributing to the difficulty of achieving the most sustainable development goals (SDGs) in Africa (Berchin and Andrade 2020; Fenner and Cernev 2021). In SSA, the impact of the COVID-19 has been attributed to the loss of about 45 million full-time jobs were within the second quarter of 2020 (Rafalimanana and Sherif 2021), which led to an

increase in poverty (SDG1), inequality (SDG10), unemployment (SDG8), and a negative impact in education (SDG4). According to the ECA (2021), the economic meltdown of the COVID-19 crises has negatively affected SDG1 within Africa by adding between 5 and 29 million people to the already existing poverty level in Africa. It is expected that about 59 million people will be added to the extreme poverty level in 2021 if the impact of the COVID-19 is not shortened (ECA 2021). This is expected to increase the extreme poverty level in Africa to an estimated value of about half a billion by 2021 (ECA 2021).

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### 3 Methodology

The study was conducted using both Whitemore and Knafl (2005) and Souza et al. (2010) integrative research methods through the use of experimental and non-experimental data information for analyses to allow a better understanding of a phenomenon. Thus, it combines theoretical and evidence-based data (Soares et al. 2014; Saunders and Vehvila 2015) to solve a problem by bringing consistent knowledge of complex health problems significant to healthcare workers and society. In integrative methodological research, data collected are used to generate new knowledge that is reviewed, critiqued, and analyzed in an integrated manner to formulate and present further information for a better conclusion. In this study, a problem formulation consists of how the role of social engagement through innovation has socially impacted the recovery of COVID-19 within sub-Saharan Africa to make the study clear to both the authors and the target readers. According to Broome (1993), the integrative research method summarized past empirical events to better understand a particular occurrence or public health issue for solutions. Therefore, to find answers to how social engagement has impacted COVID-19 environmentally and other social dimensions in SSA, secondary data was collected from some government agencies in some of the SSA countries like Ghana and Nigeria, Kenya, South Africa, Senegal, Burkina Faso, or Namibia. The data was collected and reviewed from articles, press releases, and conferences of recognized agencies such as the World Health Organization, United Nations International Children's Emergency Fund, International Monetary Fund, World Bank, United Nations, Organisation for Economic Co-operation and Development, and Economic Commission of Africa, helping the fight against COVID-19 in SSA. Also, peer-reviewed journal articles within 2020–2021 including the keywords, "COVID-19"; "Global changes"; "Environmental and social crises"; "Social actions" and "Sub-Saharan Africa," were considered and reviewed to understand the current existing research and present better-informed knowledge. The data collected was assessed and analyzed using a descriptive method to discuss the findings considering the current knowledge about social engagement of impact COVID-19 pandemic and to draw conclusions from the researched information in SSA.

## 4 Findings and Discussion

### 4.1 Social Engagement Impacts of COVID-19 Crisis in Sub-Saharan Africa

The findings from this study reveal that the issues associated with COVID-19 have revealed the economic inequalities globally, exposing the vulnerabilities especially in the SSA, concerning the logistics supply chain (Mahnken 2020). Moreover, due to the pandemic, the short flow of logistics in most SSA leaders introduces policies, SA, and social engagement programs to reduce poverty and protect and sustain the environment in all aspects of life (Dadzie and Raju 2020; Ug et al. 2020).

To minimize the socioeconomic impacts of COVID-19 in SSA, most of the leaders economically supported both small and medium businesses that were creative and innovative to sustain their work (Schneidman et al. 2020; Ngatjiheue 2020). It was required to equip companies to produce some of the shortfalls of goods due to the pandemic. The intervention helped reduce foreign dependency on foreign products, such as PPE (Baker 2020), and food and reduce workers' layoffs. Also, it minimized the increasing inequalities and poverty levels within the region due to the COVID-19. Furthermore, this activity reduced the social risk from some old age, disable, and poor people who might have a challenge accessing social support.

#### 4.1.1 Social Protection Engagement: Cushioning Actions

By analyzing the information collected, it appears that some of the leaders of African countries provided citizens with protection, i.e., cushion action (Learned 2021; Warmath et al. 2021), to minimize the spread and the negative impacts of COVID-19.

To reduce the spread of COVID-19 during the lockdowns, some governments in SSA postponed payment of both water and light bills of citizens. In Ghana, water supplied to its citizenry free of charge continues for 9 months. An amount of USD 34.8 million was spent by the Government of Ghana's free water initiative in the first 3 months of April 2020 to June 2020, which continued until the end of 2020 (Ministry of Finance 2020). The governments' free water appeared to have helped reduce pandemic spread compared to other countries that did not get free water (Deep and Report 2021). The areas or communities without piped water were supplied by the government using the water tanker trucks. These SA were engaged to ensure that citizenry in various households gets access to water for appropriate hygienic conditions in all activities to prevent the spreading of viruses and other diseases (Smiley et al. 2020). Also, about USD 178.8 million were spent as a subsidy for every Ghanaian who uses electricity (Ministry of Finance 2020). This subsidy by the Ghana government was necessary to reduce the pressure of payments of utility bills due to the loss of jobs by many people. Because most African people are within the informal sector, such as selling (Verick 2006; ILO 2018), the lockdown and other restrictions affected their work and increased the poverty level within the SSA (Ngameni 2020). Therefore, engaging in SA measures reduced the inequalities and

gender issues resulting from nonpayment of the utility bills for other country sections where the COVID-19 did not reach.

The government and other social groups such as churches, political parties, companies, and individuals also supplied food to the most lacking and needed people within the various countries. This was necessitated to reduce the number of people who might go out during the lockdowns searching for food to prevent overcrowding and unnecessary movement within the community. However, aside from inadequate medical facilities used to predict the high death and infections within SSA (World Bank 2020), the overcrowding nature of people in urban cities in regions was also considered (Chirisa et al. 2020; Von Seidlein et al. 2020). While most governments provided free food for the less privileged and self-employed people due to the measurement taken to curb the spread of the COVID-19, most government sector workers and some private workers have paid salaries with no work done. In Ghana, the government paid all government sector workers wages while some private sectors managed to paid total wages in the entire COVID-19 lockdowns (Ministry of Finance 2020). Also, frontlines workers, such as health professions, were exempted from paying taxes on the salaries for 3 months (ISSER 2020). All these activities help reduce poverty levels, hunger, and inequalities that the COVID-19 has caused to the people and the environment in SSA.

Though some African countries' social engagement measures like free water, a subsidy of light bills, supply of foods, tax reductions/reliefs, suspension of bank loan interest, and others were temporary, they have effectively impacted the spread and death of COVID-19 by reducing and preventing the factors contributing to the spread of the virus in the environment. Therefore, implementing some of the social intervention measures by most SSA leaders as social protection tools for its citizen within Africa will help reduce the economic hardship created by COVID-19 for sustainable development.

#### **4.1.2 Impact of Business on COVID-19**

This study's integrative research revealed that COVID-19 has negatively affected business in Africa. It has shrunk the economy, which has increased the already huge unemployment situation, inequalities, and other SDGs. The border restrictions, lockdowns, and closure of countries lead to inaccessible production and distribution of goods. These issues aided the rush for PPE from China to delay, tilting the delivery of the PPE to developed countries such as United States, France, and others who had money to buy it at a higher price (Reuters 2020). This action made it difficult for various African countries to access PPE to their health professionals and population. Given that, the African government invested in its inhabitants to reduce the foreign dependency on some logistics. The PPE shorting coming from China comprises face shields, gloves, mouth-nose protection equipment, and protective (Bown 2020).

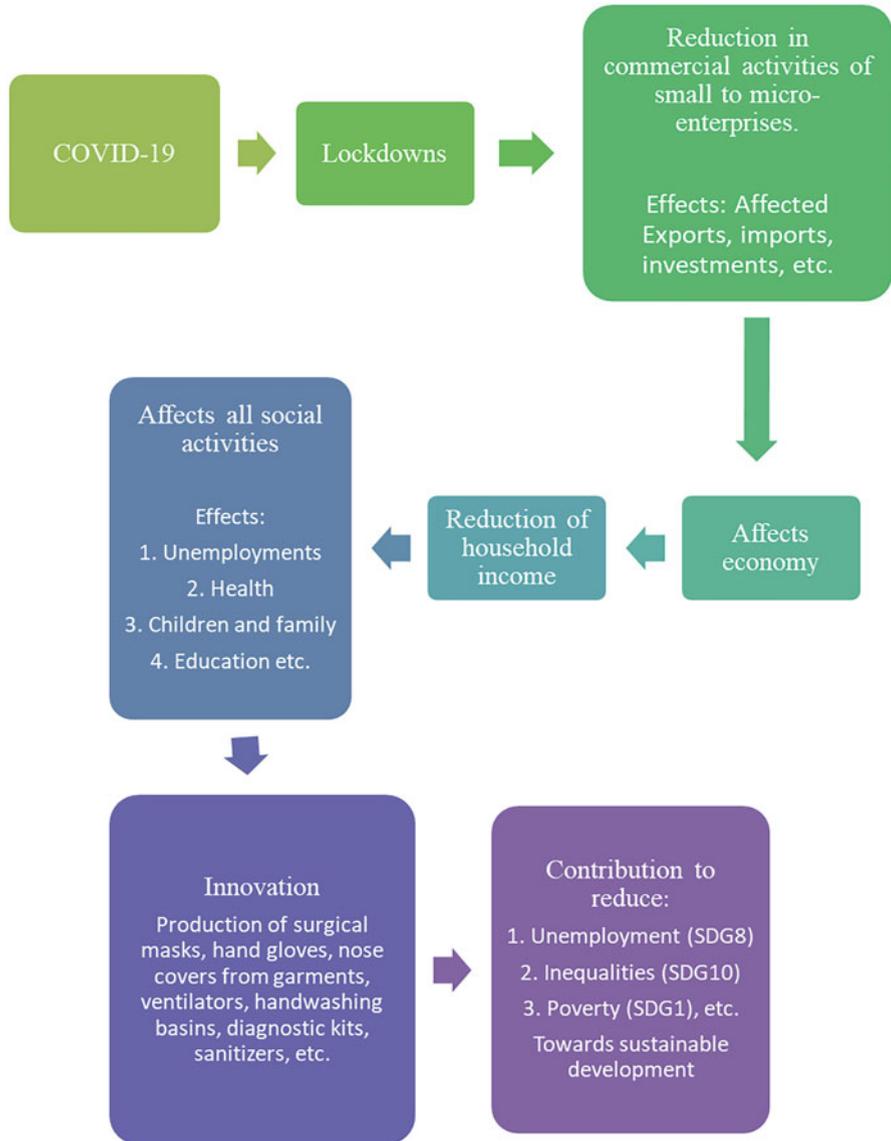
Ensuring the availability of PPEs in SSA, most of the leaders have engaged citizens to produce some of the PPEs and other innovations. Some of the innovative products made in some of the African countries include a touch-free solar-powered handwashing basin to enhance personal hygiene (Ghana) or COVID-19 robotic

equipment used to enforce lockdown restrictions to prevent the spread of the virus (Tunisia). Other examples are COVID-19 diagnostic kits (Ghana, Nigeria, and South Africa), COVID-19 awareness apps for communication and educational sensitization (Kenya, Nigeria, Egypt, Eritrea, and Namibia) and surgical masks (Kenya, Nigeria, and Ghana). However, virtually all the SSA countries produced hand gloves, face shields, and hand sanitizers. In Ghana, the government set aside about USD 104.4 million for micro and small enterprises with innovative ideas to produce some of the PPEs, sanitizers, and pharmaceutical products needed to fight the COVID-19 (Ministry of Finance 2020). The same occurred in some of the SSA countries like Ethiopia, Uganda, Kenya, Nigeria, Senegal, Ivory Coast, or South Africa, where the governments supported the local companies to produce garment nose masks, medical scrubs, headgears for health professionals, and the citizenry using local fabric from textile industries. Also, some local beverage companies changed their production line to hand sanitizer, with the help of the food and drug authority (FDA) in each country for technical assistance. The reason for engaging local people to produce items is to cover the gap created by the shortfalls of PPEs from China, America, and Europe for COVID-19 frontlines and the citizen. These activities helped to ensure the availability of PPEs for health workers. The locally produced PPEs certified by FDA in Ghana and other African countries have created numerous employment opportunities for citizens. This has helped reduce poverty, inequalities, and the different social and economic effect caused by COVID-19, with implications in sustainable development. Also, the local PPEs manufactured in Ghana and other SSA countries helped reduce or minimize the waste created by some of the foreign logistics materials. The foreign PPEs contain plastics that significantly impact both the land and marine environment (Selvaranjan et al. 2021) and cause environmental sustainability impacts (Debrah et al. 2021b). Hence, the made-in Africa protective garments are fabricated from local textile materials, easily degradable, and environmentally friendly, thus contributing to protect the environment. Figure 2 shows a summary of COVID-19 happening in SSA.

### 4.1.3 Impact of Covid-19 Crises on Children

During this study, some questions are raised. When today's children and adolescents grow up, how will they see themselves? Is it a "lost generation" whose lives will forever fall in the shadow of a global pandemic? Unfortunately, that will probably be a yes for the psychological and physiological problems children will undergo due to the COVID-19 pandemic. Although the death rate of infected children with COVID-19 is less than adults (Milani et al. 2021; Zimmermann and Curtis 2021), some children are hard hit due to the loss of parents and caretakers. In addition, the closure of schools and home quarantines has also affected the well-being of children.

According to UNICEF (2020a), about 1.6 billion pupils in 190 countries' education has so far been affected by the closure of schools, which is 90% of the world's school-age children. In addition, about 250 million children were affected by the pandemic lockdowns in Africa, adding over 100 million out-of-school children (UNICEF 2020a). School closure combined with psychological stress under



**Fig. 2** Global COVID-19 effects on sub-Saharan Africa collected during the study

quarantine may have significantly increased children’s poverty level, food insecurities, abuse, and violence exposure (UNICEF 2021), which is expected to affect children’s cognitive structure and emotional and social development. This may lead to an increase in mental illness for most critical adolescent ages (Sahakian et al. 2021). According to Armitage and Nellums (2020), children are most disadvantaged

in the COVID-19 because they pay the most significant price due to falling further behind in academics and having the fewest resources available to catch up once the pandemic threat is over.

The COVID-19 has widened the existing inequalities between developed and developing countries and the rich and poor children in schools within SSA. Though the schools' lockdown prompted various governments to encourage home-schooling, the absence of dependable internet connectivity in most African countries made it impossible for some children to access the school's resources for studies. Also, parents' lack of computers and insufficient educational knowledge to help children in lessons widened the inequalities between the affluent and low-income families. To reduce the impact of COVID-19 on children and minimized the inequalities and the psychological effect on children, most African leaders helped to reopen schools to close the wider educational inequality gaps existing in the continent. The schools were reopened in collaboration with agencies such as the ministry of education, ministry of health, gender and children, and others like nongovernmental organizations, important SA actors, and influential people within the community. In Ghana, due to social engagement between the citizenry and the government agencies such as the ministry of health, Ghana education service, and SA groups, children at all levels of education are in school since 15 January 2021 (UNICEF 2021), to help reduce the educational inequalities in the country. In addition, most children or students in schools within the rural communities or most deprived areas are fed once a day to reduce hunger arising from poverty due to the COVID-19.

#### **4.1.4 Trust in Government and Stigmatization for Sustainability**

This study also showed that since the inception of COVID-19, African governments have poorly managed the pandemic, leading to the perception of the nonexistence of the virus and low trust in vaccines. For instance, the Tanzania government announced being free from COVID-19 in June 2020. Therefore, the vaccine was considered unnecessary (BBC 2020). Furthermore, most African leaders' low communication attitudes have created the belief that COVID-19 does not exist, giving the impression that the vaccination is harmful and unnecessary. This has resulted in the use of herbal medicine and steam inhalation without any scientific approval by WHO. In addition, the acceptance of traditional treatment against COVID-19 by some people within the African continent contributes to low vaccine trust. Another mistrust of the vaccine by some African citizenry is the inconsistent communication from African governments, media, and vaccine efficacy due to the variants of the virus (Dzinamarira et al. 2021). In the SSA, most governments are not getting the drugs as scheduled for its citizen for vaccination. Therefore, governments' attitude is gaining gravity of mistrust by the citizenry since African governments are not getting the COVID-19 vaccine from the western world and WHO as promised. Therefore, out of 690 million COVID-19 vaccine doses were administered globally, with African countries having received less than 2% of the entire doses available worldwide (WHO for Africa 2021).

Furthermore, the nonuniform pace of the vaccine rollout between some developing countries and developed countries that produce the vaccine due to limited stocks

has created inequality between African governments and the rest of the world. This act has worsening already existing mistrust in the vaccine for various African leaders to manage. Hence, some African countries like Kenya are experiencing third-wave and upwards infections arising in countries like Mali, Ethiopia, Tunisia, and others (WHO for Africa 2021). The mistrust caused due to the government's inability to deliver its promises is gradually increasing poverty (SDG1) and unemployment (SDG8) levels in the African continent, creating severe inequalities (SDG10) in SSA.

Apart from mistrust, stigmatization is another pandemic issue that affects families in most developing countries. According to Schormans (2014), stigmatization is the act of devaluing or discredit individuals or groups with the associated judgment that taint and lesser individual identity. It is believed that stigmatization can cause mental health problems if not well managed. A study conducted in Liberia indicated that the 2014–2016 West Africa Ebola epidemic survivors suffered high levels of stigmatization after returning to their communities (Overholt et al. 2018). The current COVID-19 pandemic has also caused social stigma against people perceived to have been in contact with the virus (UNICEF 2020b), limiting social cohesion and promoting social isolation, affecting government business and life in these countries. A study conducted by Jarolimova et al. (2021) in South Africa showed that most people affected by the COVID-19 pandemic were stigmatized, with the majority female.

Similarly, stigmatization is also happening in most African countries, where communities and landlords evict residents and tenants affected by the COVID-19 from their communities and houses. For example, in Cameroon, landlords evicted a tenant who tested positive for COVID-19, and husbands either forcedly separated or divorced their wives who were nurses, driving them out of their homes because they work in coronavirus units (Mariam and Abayneh 2020). Similarly, there are several examples of this problem within the SSA countries. This stigmatization attitude contributed so that some people would not show the illness at healthcare centers, delaying Medicare assistance (American Psychological Association 2020; Nyblade et al. 2019). Accordingly, this stigmatization attitude becomes a barrier for contact tracing and testing for immediate treatment in many African countries, including Ghana, Nigeria (Agyemang-Duah et al. 2020; Dirisu et al. 2020; Dubey et al. 2020). The delay in Medicare due to stigmatization contributes to the spread of COVID-19, affecting SDG1 (poverty), SDG10 (inequalities), and other SDGs for environmental sustainability.

Most SSA governments, in collaboration with WHO, child rights, and other SA bodies, are raising public awareness through constant communication using all available media to disseminate information about the COVID-19, aiming to curb the stigmatization and mistrust attached to the virus perception. According to Debrah et al. (2021b), raising awareness through education and constant communication changes the attitude and behavior towards sustainable development, essential in this COVID-19 pandemic. For instance, WHO is helping the Nigerian government to inform the public by asking people who tested positive with COVID-19 to tell their stories. A similar thing is done in Ghana. The government gives regular accounts of

the COVID-19 cases, vaccine information, encouraging people to share testimonies of what they have gone through after they have recovered from the COVID-19. In addition, Ghana has also set up COVID-19 ambassadors made up of television presenters, film actors and actresses, musicians, and other famous personalities for leading the campaign of all aspects of COVID-19, including stigmatization and mistrust and prevention education.

#### **4.1.5 Social Engagement for Sustainability**

Though COVID-19 has highly affected Africa economically, the lesson learned is of enormous importance to allow a better future. The global trade inequalities shown in this COVID-19 pandemic have created more social initiatives within African and shown why Africans must invest and trade among themselves. For Africa to advance significant SDGs such as SDG1, SDG10 within a limited period, all the SA and innovative ideas created during COVID-19 must be persist. For example, the mentioned solar-powered handwashing equipment used to wash hands and encourage personal hygiene, diagnostics test kits, sewing of protective garments, manufacturing hand sanitizers, education, and communication platforms to reduce stigmatization and mistrust, must financially be funded to provide employment opportunities to expand Africa's economy within SA context. Improved trade and industry sector in SSA continent will commercialize the innovations and ideas for production and scale-up employment. According to Songwe (2019), United Nations Economic Commission for Africa, about USD 14 billion is used to import only pharmaceuticals products outside Africa, creating over 16 million jobs for the youth if those products were made within the continent.

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## **5 Conclusions**

The limiting actions such as lockdowns and restrictions from SSA leaders to confront COVID-19 have contributed to fewer infections and deaths, as it changed the estimate of death and infections by some international organizations. Those lockdowns and restrictions have seriously affected Africa's entire economy. The negative impact on the economy has worsened already existing poverty, increased unemployment, and widened existing inequalities. Although COVID-19 has revealed some gaps such as food security, health, trade, and production, it has also brought innovations to the SSA social context.

Through COVID-19, innovative African enterprises can produce PPEs for their health professionals and inhabitants, helping to reduce foreign dependency. Some innovative products include hand gloves, nose masks, face shields, hand sanitizer, handwashing equipment operated manually, solar power, diagnostic kits, or technological apps for educational awareness.

The innovative ideas and other social interventions were mainly financed by SSA governments and other international organizations, intending to help reduce unemployment level, poverty, and some inequality, easing some of the effects of the pandemic within the continent. African leaders in collaboration with SA, financial,

and nonfinancial institutions around the globe must support SSA in industrialization for sustainable development. These same leaders must also collaborate with international organizations and research development centers for sustainable innovations. These SA initiatives will uplift local manufacturing capacities and strengthen African internal trades to reduce the COVID-19 painful economics effect, aiming to contribute to achieve important SDGs such as SDG1 (no poverty), SDG10 (reduced inequalities), SDG8 (work and economic growth), and SDG4 (quality education).

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