# COVID-19 vaccine equity for the Global South: Vaccination challenges and opportunities for small and poor countries

### Dastan Bamwesigye, PhD

Department of Forest and Wood Products Economics and Policy, Faculty of Forestry and Wood Technology, Mendel University in Brno. Department of Landscape Management, Faculty of forestry and Wood Technology, Mendel University in Brno, Zemědělská 1, 613 00 Brno, Czechia. *Seval Ozbalci, PhD, MBA* European Scientific Institute (ESI) Postdoctoral Program *J. S. Jayawickrama, PhD* 

Centre for Community Wellbeing, Department of History, College of Liberal Arts, Shanghai University, China

Doi:10.19044/elp.v9no4a57

URL:http://dx.doi.org/10.19044/elp.v9no4a57

Submitted: 30 September 2022 Accepted: 10 March 2023 Published: 31 March 2023 Copyright 2022 Author(s) Under Creative Commons BY-NC-ND 4.0 OPEN ACCESS

#### Abstract:

The effects of COVID-19 have significantly interrupted countries and the social order across the globe. However, the developing countries which could not manufacture or even buy the most wanted commodity: COVID-19 Vaccine, looked on as the situation got worse even in the wealthy nations. Diplomacy seems a ray of hope among developing countries as wealthy nations have used almost all the vaccines themselves. The goal of this study was to critically analyze the challenges and opportunities around the COVID-19 pandemic, especially vaccine distribution and access, and the role of diplomacy in this process in selected countries in Africa. We used the narrative literature review approach. We examined the cases of Uganda, Ghana, and South Africa on the COVID-19 vaccine distribution. We found minimal accessibility and affordability of vaccines in developing nations. Affordability makes it challenging for wealthy countries to lend a hand while ensuring their population and market needs are catered for. We propose that nationals in the Global South must strengthen their diplomatic systems and negotiation skills with wealthy countries while reinforcing public health systems. Developing countries must build alliances to engage with high-income countries as equal partners.

Keywords: COVID-19 Vaccine inequity, public health, diplomacy, economic accessibility.

# Introduction

The impacts of the COVID-19 pandemic have affected many facets of human life globally. There have been deaths of more than 5 million people with more than 600

infections across the globe (Worldometer, 2022, Bamwesigye D, et al. 2021, Yamada, Y., et al. 2021). While there are individual impacts, the social, political, cultural, economic, and environmental effects are creating many challenges to the health and wellbeing of people. Scholars such as (Worldometer, 2022, Bamwesigye D, et al. 2021, Yamada, Y., et al. 2021, Lieberoth, A., et al. 2021, Cooke, S. J. et al. 2021) argued that the pandemic had caused a dramatic change in human behaviors, economies, and societies. It also focuses the attention on the important role of public health diplomacy, including its international dimensions (Tinh, L. D., 2022). One of the significant impacts of COVID-19 is the economic decline in both the Global North and South. According to Cooke et al. (2021), the COVID-19 is responsible for causing challenges in production processes. Global travel restrictions to local transport challenges have influenced slow economic recovery (Varghese, H. S. 2020). According to IMF (2020), although the COVID-19 has increased a substantial level of mortality, it also causes national economies to plummet into deep recessions. This means that the countries in the Global South may become more vulnerable.

The fact that as a public health pandemic, the COVID-19 can be prevented through physical distancing, hand washing, face covering, and testing and tracking. However, without administering effective vaccines to a large proportion of the global population, the halt of the transmission of the virus cannot be achieved (Wouters, O. J., et al. 2021). Therefore, populations must have access to safe and effective COVID-19 vaccines. However, Wouters et el. (2021) argue that the vaccine will not be helpful to populations if they cannot get vaccinated on time. They further point out that this needs accessible, affordable and available vaccines to all the countries. Which rely on administrative, logistical, and political capacities of national governments to implement or provide them. However, this article argued that geopolitical and geo-economic issues influence global, regional, and national decision-making processes (Wouters, O.J., et al. 2021) with public health politics.

This article critically discusses the observed challenges and opportunities around the COVID-19 pandemic, especially vaccine production and distribution, and the role of diplomacy in this process. The discussion taking the cases of Uganda, Ghana, and South Africa were examined to understand the challenges and opportunities in COVID-19 vaccination, especially vaccine access and vaccine process for the Global South. Global South as a term does not identify the geographical distribution of the world's countries. Because those countries are defined as poor or low-income economies by the World Bank with a GNI per capita (World Bank, Worldometer, inance Center for South-South Cooperation).

In this article the authors attempted to point towards realistic and practical determinations that low-income countries can employ within global platforms to deal with the COVID-19 pandemic and future challenges and similar issues. Moreover, this paper is paramount with the rise of Omicron (B.1.1.529): SARS-CoV-2 variant given the developing nations' low vaccination levels in the Global South. The severe and acute implications of the Omicron (B.1.1.529): SARS-CoV-2 Variant (Karim, S.S.A. and Karim, Q.A., 2021, Gu, H., et al. 2021, Kannan, S.R., et al. 2022, Chen, J., 2021) infection could devastate the non-vaccinated population in many developing countries. Besides, the recent variants can even infect the vaccinated, especially in the developed nations (S.R., et al. 2022, Chen, J., 2021, Gardner. J.B and Kilpatrick. A. M. 2021). We discussed

the situation that could lead to vaccine inequity for being distributed by income levels not only in Africa but also globally.

#### Methods

This article employed qualitative methods (Creswell, J. W. 2009, Creswell, J. W. 2011, Creswell JW and Clark VL. 2017, Creswell JW, Creswell JD., 2017, Nachmias, D. & Nachmias, C. 1976). Qualitative research procedures have the core essentials of exploration, case studies, ethnography, narrative research, and phenomenology. Precisely, we used literature, exploratory technique, and secondary data analysis (Creswell, J. W. 2009, Creswell, J. W. 2011, Creswell JW and Clark VL. 2017, Creswell JW, Creswell JD., 2017, Nachmias, D. & Nachmias, C. 1976, Bamwesigye D, 2020). Furthermore, to showcase the vaccination developments in Africa, challenges, and opportunities the authors obtained materials from major scientific databases, and web pages such as the World Health Organization (WHO), World Bank, Worldometers and ReliefWeb.

This article critically examined the literature from databases with a narrative literature review approach. As defined by Green et al. (2006) and Ferrari (2015), the narrative literature review is a far-reaching, analytical, and objective analysis of the current knowledge on a topic. This article adapted the narrative literature review approach to establish a theoretical framework and focus on the context of the topic at hand. This approach has helped the authors to identify patterns and trends in the existing literature.

This article is based on the general debates, appraisal of previous studies, and the current lack of knowledge, which points towards future and further research in this subject.

#### Results

As the globe continues to deal with the Pandemic, the COVID-19 Vaccines Global Health Facility (COVAX), co-led by CEPU, Gavi under the WHO was created to ensure fair access to vaccines for 92 low- and middle-income countries through donations (Lee S. T. 2021, Jennings, M. 2021, Gavi, 2021a., Gavi, 2021b., Gavi, 2021c.). So far, COVAX has secured 2.8 billion vaccines through contracts with manufacturers and aims to have about 5 billion vaccines available through 2021 and 2022 (Gavi, 2021c.). However, developing nations in the African continent are not necessarily receiving enough vaccines. The 1.4 billion population of the African continent had only 46.79 million COVID-19 vaccines administered to them (Gavi, 2021c.).

Against this backdrop, this article attempts to critically analyze COVID-19 diplomacy by examining the cases of Uganda, Ghana, and South Africa to understand the challenges and opportunities. The authors are trying to point towards a positive and practical framework for low-income countries where they turn their vulnerabilities to strength. The idea is to take the pandemic as an opportunity to deal with global challenges through diplomacy beyond COVID-19.

This article analyzes the current efforts in the given countries, i.e., the promises made by the end of 2020 versus the deliveries by August 2021 by both Governments of studied nations and the COVAX facility. COVAX has played a great role in coordinating the availability of excess vaccines from the wealthy nations and the willingness to be donated to the poor nations, especially in the Global south. Herein we capture vaccines

delivered to the selected countries of Uganda, Ghana, and South Africa. Delivered vaccines and the number of vaccinated percentages for both one-shot and full vaccination percentages. Below are the findings. It is self-evident that there are many challenges in securing these vaccine donations to the poorest nations and mostly the global south.

# Vaccination in Uganda

As one of the low income countries (World Bank, 2022) in Uganda, the vaccination process kicked off on the 10<sup>th</sup> of March 2021 at the national referral hospital in Mulago. After securing 864,000 doses of AstraZeneca through the COVAX initiative, the country outlined a schedule for this first batch. According to the ministry of health of Uganda, Uganda was allocated 3,552,000 doses by COVAX, and the remaining dose was expected by June 2021. Doctor Jane Ruth Aceng outlined that administering the vaccine will start with public and private facilitated health workers with the support personnel making 150,000 (Buwembos, J. 2021). Starting with health workers is to ensure that protected individuals support the national roll-out of the vaccine. The next category included all security personnel totaling 250,000 teachers and education institution staff from public, private, and not-for-profit entities estimated at 550,000 (Buwembos, J. 2021). The ministry of health of Uganda intended to vaccinate all essential workers in the service industry with multiple interactive levels due to the nature of their work. These would be followed by people above 50 years, whose number was estimated at 3.3 million (Buwembos, J. 2021). The tasking is challenging, but the ministry has promised to ensure that it transparently takes care of its people.

According to a press release from the Ministry of Health, Uganda ordered 18 million doses from the Serum Institute of India, and mid-March 2021 expected 400,000 doses (Table 1). The second source is a donation of 3,552,000 of COVAX under a program by WHO from AstraZeneca that is expected in full by June 2021. Part of this donation has already been received and distributed for vaccination, amounting to 864,000 doses. The country also expects 17,872,037 doses from COVAX to cover 20% of the population. More so, Uganda had received 100,000 doses of AstraZeneca from the Government of India and 300,000 doses of CoronaVac from China (Buwembos, J. 2021).

Country	Doses Received	Donor	Total doses administered
Uganda	647,080	United States of America (USA)	1,436,264 (People fully vaccinated
	299,520	United Kingdom (UK) AstraZeneca (AZD1222)	367,000 [0.8%])
	864,000	India-AstraZeneca- COVISHIELD COVAX (WHO)	
	175,200	France (AstraZeneca (AZD1222)	
	286,080	Norway (AstraZeneca (AZD1222)	

Table 1. Some of the Vaccination received by Uganda

1,725,280	Total COVAX s (15/8/2021)	scheme
-----------	------------------------------	--------

Sources: Gavi, 2021a., Reliefweb, 2021a., Reliefweb, 2021b.

According to Uganda's vaccination projects, it is projected that 21,936,011 people representing 49.6% of the population, will be vaccinated. The process is likely to be in phases covering 20% of the population (4,387,202), with eligibility starting from 18 years and above. According to the ministry, the vaccination process is reconciled with the national identification and registration authority to prevent outsiders from benefiting ("Update on COVID-19 Vaccination in Uganda," 2021).

Although EU member states have suspended the vaccination of people with AstraZeneca due to alleged clot concerns, the Government of Uganda has not taken drastic steps to follow in the same direction [44]. Moreover, the Government of Uganda's target shifted from 482,000 to 964,000 people who were to be vaccinated given the available vaccines (The Independent. 2021). There is potential to administer the two eight-day apart doses while waiting for another batch. Further, the tabloid reports that over 100,000 people have received the vaccine nationwide. Uganda is in a position to receive the second shipment in May 2021. There is hope that the current vaccination process can cover more people because the second round can commence after 90 days following the first jab. Minister Aceng expects increasing the number of people vaccinated will handle the infection level to limit further spreading. Overall, the exercise has not faced any concerns among the vaccinated groups, and more people are anticipated to be served (Buwembos, J. 2021).

Most of the above promises seem to come true. The COVAX facility has so far delivered on most of these promises making the dream of vaccination come true before the economy can fully open, given the fact that for almost a year and more, there were several lockdowns among other restrictions (Gavi, 2021a., Gavi, 2021c., Buwembos, J. 2021, Reliefweb, 2021a., Reliefweb, 2021b., UNICEF 2021). It was clear that the Government has not been able to purchase any vaccines and the current efforts rely on donations by richer countries through the Gavi COVAX facility.

# Vaccination in Ghana

As a lower middle income economy (World Bank, 2022) Ghana was one of the first African countries to receive COVID-19 vaccines through WHO's COVAX initiative (Gavi, 2021b.). According to Quakyi et al. (2021), Ghana plans to vaccinate 20 million people from a total population of 32 million residents by October 2021. Part of acquiring the COVID-19 vaccine will be through bilateral deals and multilateral agreements. The country received its first batch of the Oxford-AstraZeneca 600,000 doses from the COVAX facility (Quakyi, N. K., 2021).

Ghana started its vaccination program by administering the dose to frontline healthcare workers, security personnel, government officials, and persons over 60 with comorbidities. The goal has been first to target priority groups essential in providing services to people. However, the limited number of doses being received by the country does not represent the current situation since financing vaccination acquisition cannot compare with other countries without donor financing (Megiddo, I., et al. 2020). The level

of Vaccination in Ghana has been in phases, with the respective vaccine batches covering the rest of the supposed population.

Nachega et al. (2021), established that the interference of outside forces in the health institutions compromises the possibility of implementing interventions that extend to the lower levels. The cost of vaccines has remained a concern for countries like Ghana, which has to compete with wealthy countries that have made more orders than their counterparts. Megiddo et al. (Megiddo, I., et al. 2020) explained that vaccination's impact will allow many sectors to open, leading to national recovery. The plan initiated in Ghana proposes to help people return to a new normal with the hope that the pandemic can be stopped from affecting more people. Therefore, Ghana has adopted a vaccination program alongside the COVAX initiative to deal with the virus (Table 2). Moreover, the nation has received numerous vaccine donations through the facility, among others.

Country	Doses Received	Country Of Origin/Donor	Total doses administered
Ghana	600,000	COVAX facility (WHO)	1.270,000 (People fully vaccinated
	950,000	SII-AstraZeneca (COVISHIELD)	406,000)
	249,600	AstraZeneca (AZD1222) UK)	
	1,229,620	Moderna vaccine (USA)	

Table 2. Some of the COVID-19 vaccine donations to Ghana

Sources: Gavi, 2021b., Reliefweb, 2021b.

From the numbers of vaccines so far received, a simple analysis showed a similar situation as in Uganda, with the Government of Ghana having vaccinated people approximately an equivalent number to the donated vaccines. Already this showed that there is a problem, and this can be either there are no vaccines to be bought on the market or the Government does not have the resources or not willing to purchase the vaccines. This is observed in the figures of the fully vaccinated people by the end of August 2021 of less than half a million (Gavi, 2021b., Reliefweb, 2021b.). On the other hand, the number of vaccinated seems to correlate with the donated vaccines (Table 2).

# Vaccination in South Africa

The vaccination process has been essential to South Africa after reporting two variants of the coronavirus in the country with overwhelming deaths (Bangalee, V., & Suleman, F. 2020, Powell, A. 2021, Venter, W. D. F., et al. 2021). As an upper middle income country (World Bank, 2022) and one of the most affected African countries, discovering a vaccine came as good news to two-tiered healthcare. This is because, by the end of 2020, South Africa suffered severe new cases and COVID-19 deaths. The health sector was stretched beyond its capacity to treat the sick and take care of the dead bodies (Bangalee, V., & Suleman, F. 2020, Powell, A. 2021, Venter, W. D. F., 2021).

Funding the vaccination process threatened to create an opportunity cost to forego one health program to accommodate the COVID-19 dose (Bangalee, V., & Suleman, F. 2020, Powell, A. 2021, Venter, W. D. F., 2021). It is essential to consider that poverty levels in South Africa impact community awareness about the pandemic. However, South Africa has embarked on the continent's most extensive vaccination program to target 40 million people of its 59 million (Powell, A. 2021). Unlike many of its African counterparts, South Africa has taken drastic steps towards addressing the vaccination program because of a more dangerous variant (Powell, A. 2021).

The country's top researchers praised the Government for ending the use of the AstraZeneca vaccine since it was not effective against the most recent contagious variant (Powell, A. 2021). In some dire situations, a combination of more than one vaccine was recommended to curb the spread of the new deadly variants, which had a high mortality rate. The various developments made by vaccine producers such as Moderna, Pfizer/BioNTech had been cited as showing signs of effectiveness alongside vaccines from Russia and China (Powell, A. 2021). The Government discontinued the use of AstraZeneca while referring to the dose from Johnson & Johnson because it offered a strong immune against the latest variants (Powell, A. 2021).

The challenges of having a poor healthcare system have affected the vaccination process in the country. With over one million cases reported, South Africa had been a leading member in acquiring doses to vaccinate her people. Bangalee & Suleman (Bangalee, V., & Suleman, F. 2020), explained that the overwhelming pressure on the public health sector paints a different picture for the private sector as access to vaccines was high due to demand. The country needed the contribution of private sector institutions to address people's concerns in accessing the vaccine because this could increase efforts in fighting the virus. Moreover, transferring the vaccine payment to co-payments is an opportunity that can see more people get the jab from accredited private hospitals. Bangalee & Suleman (Bangalee, V., & Suleman, F. 2020) suggested that the Government make changes in its patent law to allow partners such as Global Alliance for Vaccines and Immunization (GAVI) to find distribution solutions.

The existing threshold of the virus in South Africa has made it essential for the Government to seek available vaccines. Due to the low efficacy levels of AstraZeneca, the Government gave away one million doses to the African Union, a decision that prevented the country from safeguarding over one million people (Powell, A. 2021). This means that the vaccination process had to rely on acquiring the vaccine from Johnson & Johnson. Yet, Russia's Sputnik and Sinopharm, and Moderna vaccines had not been tested to determine the effectiveness against the new variant. South Africa had to move quickly to vaccinate more people because the effect of lockdowns and other SOPs does not provide adequate safety (Powell, A. 2021).

GAVI and other development partners donated over 3 million doses of the vaccine to fight the Pandemic in South Africa (Gavi, 2021c., U.S. Embassy Pretoria press team. 2021). According to the current vaccination rate in South Africa, it is evident that the vaccination donations have been a perfect addition to the country's efforts to increase their vaccination rate and process (Table 3).

Country	Doses Received	Country Of Origin/Donor	Total doses administered
South Africa	2,200,000	USA	15,700,000 (People fully
	1,000,000	India	vaccinated 7,730,000 [13.2%])

Table 3. Some of the vaccination received by South Africa

Source: Gavi, 2021c., U.S. Embassy Pretoria press team. 2021

The role played by the diplomatic partners in availing the vaccination in the heat of COVID-19 cases and death to the deadly pandemic cannot be underestimated. However, regarding the South African COVID-19 problem, and given her financial strength, the nation ought to have even bought more vaccines for the population. Again, this shows a problem either in the production capacity, supply, or availability.

# Discussion

African countries have received most vaccines under the United Nations and the World Health Organization COVAX facility. Each African country is expected to receive doses covering 20% of the population. In Ghana, the first to receive the COVAX package of 600,000 doses, the vaccination process has received more batches as plans to provide a second shot are in progress. The impact of COVID-19 on different sectors reinforces the prospect of receiving vaccine donations to help communities impacted by the pandemic. Ghana has received more vaccine donations from other nations and other sources, such as South African telecom company MTN, which donated 165,000 doses under the COVAX program. It intends to provide similar packages to other nations. The country continues to focus on the promised doses from COVAX for its national vaccination plan as more vaccines are received (Gavi, 2021a., Gavi, 2021b., Gavi, 2021c., Buwembos, J. 2021, Reliefweb, 2021a., Reliefweb, 2021b.).

In Uganda, multiple donations have been received from foreign countries. Through bilateral relations (Gavi, 2021a., Buwembos, J. 2021, Reliefweb, 2021a., Reliefweb, 2021b., The Independent. 2021, UNICEF 2021). Under the ministry of health, the Government of Uganda has received over 1.7 million doses from various countries under the COVAX Facility (Gavi, 2021a., Buwembos, J. 2021, Reliefweb, 2021a., Reliefweb, 2021b., The Independent. 2021, UNICEF 2021). These doses have already been rolled out on a national plan targeting over four million people starting with essential individuals. According to Richman (Richman D. D. 2021), countries focus on vaccines with high efficacy in dealing with the virus following an outbreak of another unsuspecting variant. However, these are not the final packages because the facility expects to provide more packages, while efforts to procure additional doses have been promised (Richman D. D. 2021).

The efforts of South Africa rolling out a large-scale vaccination program were curtailed by the low efficacy levels of the Oxford-AstraZeneca vaccine against the deadly variant of COVID-19 found in the country. Although South Africa received over one million doses from the UK drugmaker, it was sold to the African Union with the prospect

of distributing it to other countries that were yet to encounter the new variant. The South African Government received 80,000 Johnson & Johnson vaccine doses from the US. The Government of South Africa had received approximately 8million or even more vaccines, given that over 7.7million are fully vaccinated by the end of October 2021. About 15million people (Table 3) had received their first vaccine shot (Gavi, 2021c., U.S. Embassy Pretoria press team. 2021) by the end of the same period.

The situation in other African countries is similar as many wait for donations from COVAX, foreign governments, and the African Union. Samarasekera (Samarasekera U. 2021) noted that variation in the willingness to receive the COVID-19 vaccine among African countries is a challenge that must be addressed too. There remain skeptical individuals about the vaccine's effect, affecting plans to acquire vaccines. Due to past vaccination experiences in Africa, the continent is ready to ensure sustainable vaccine uptake to lower household effects caused by the pandemic (Afolabi, A. A., & Ilesanmi, O. S. 2021). The challenge of procuring vaccines by African countries underscores efforts to fight the pandemic without the help of donations and facilitation from international organizations and other development partners.

#### Challenges of COVID-19 Vaccine Diplomacy: Uganda, Ghana, and South Africa

The success in eradicating COVID-19 lies in accessing vaccines equally by all countries globally alike (Khan MI, et al. 2021). It is challenging to fund vaccine development programs because of the costs involved in administration and revenue generation. In the process of producing and distributing COVID-19 vaccines, it is a daunting experience in mass drug development because finding financial support requires a collective approach (Wouters, O. J., et al. 2021, Wouters, O.J., et al. 2021, Khan MI, 2021). The situation has come when the pandemic has caused economic crises in every country, increasing financial pressure. In resource-constrained countries, diverting healthcare budgets from other programs to cover vaccine development can have long-term adverse effects on the health care setting. Manufacturing a vaccine is a lengthy and complex process with challenges in producing medicines when resources are channeled to deal with current issues (El Bagoury, M., et al. 2021). It is problematic if all aspects of healthcare are shifted to addressing COVID-19 and leaving other matters outside. Therefore, funding is a challenge that threatens the stability of the healthcare system globally. It is demonstrated in Table 4 for the countries in the case study.

Country	Doses	Administ ered	Vaccina ted	Perce ntage	Popula tion	GDP	HDI	GINI
Uganda	1.725.280	1.436.264	367.000	0,8%	42 M	46,4 B	0,544	42,0
Ghana	3.029.220	1.270.000	406.000	0,13 %	30 M	73,6 B	0,611	43,5
South Africa	3.200.000	15.700.00 0	7.730.00 0	13,2 %	60 M	419 B	0,709	63,0

Table 4.	Comparison	of countries in the Case Study	
1 and	companison	of countries in the cuse study	

The affordability of the vaccine is a challenge that should be addressed to ensure equitability in accessing COVID-19 drugs. Due to the enormous investment in vaccines, it is expensive for economically constrained countries to compete with wealthy nations. According to Wouters et al. [9], the income disparity in many countries poses a threat to acquiring vaccines because companies charge no relative to the income levels. The questions about the affordability of the vaccines make it challenging for wealthy countries to lend a hand while ensuring that prices are not hiked. In distributing the vaccine, the obstacle of receiving more than one dose is a concern many countries are likely to encounter in terms of logistics as travel restrictions continue to pose a challenge (Wang, J., 2020). The prospect of having vaccine roll-out programs to help countries in need presents the best solution to concerns about production and distribution. Hence, COVID-19 remains a challenge as countries seek vaccines to ensure accessibility at all national levels. This is long overdue given Omicron (B.1.1.529): SARS-CoV-2 Variant and the developing nations' low vaccination levels.

The African nations have not shown any efforts towards purchasing the scarce vaccines, and this is also evidenced by relying on vaccination donation ceteris paribus. The other challenge is the production and availability, whereby the cost of production is also very high, affecting the supply chain due to limited production versus high demand across the globe.

# **Opportunities of COVID-19 Vaccine Diplomacy: Uganda, Ghana, and South Africa**

Relying on foreign aid for COVID-19 vaccine donation is one enormous problem for the African continent (Mahase, E. 2021). The current vaccination process has been largely achieved with the WHO's COVAX initiative to help countries access the vaccine. However, this is both a challenge and an opportunity. There is a problem with access to the vaccines; however, through the COVAX system, developing countries could access some vaccines (Gavi, 2021a., Gavi, 2021b., Gavi, 2021c., Buwembos, J. 2021, Reliefweb, 2021a., Reliefweb, 2021b., The Independent. 2021, UNICEF 2021). This gives hope as some older adults and adults have been vaccinated through these donations, including health workers.

Different governments have collaborated on developing a vaccine and distributing them in many of the ongoing discoveries. In a report by El Bagoury et al. (2021), healthcare professionals from different countries such as Germany, China, the UK, the USA, and many others had collaborated on the current vaccines, making them more efficient in building the immune system to fight the virus. Through approaches that focus on resource utilization fostering mass production of vaccines from different manufacturers. Creating an international initiative to distribute vaccines without restrictions is an opportunity.

The WHO started the COVAX initiative to help countries access the vaccine, which has provided opportunities for easing distribution. Companies seeking to build global trust are keeping prices low to ensure affordability, and this is an opportunity for many countries to acquire large doses of the vaccine (Burki, T. 2021). In this case, keeping the costs low allows wealthy countries to donate excess vaccines to developing countries. Herzog et al. (Herzog, L. M., et al. 2021) posited that ensuring efficient vaccine distribution can reduce mortality rates in the healthcare sector. Opportunities should be explored to ensure that production and distribution remain cost-effective to allow

economically affected countries to access the same vaccines. Thus, the vaccination process has created opportunities for equitability among countries in the scramble for vaccines.

#### **Towards a Practical Solution**

The idea that poor nations are disadvantaged in COVID-19 vaccine diplomacy must be critically thought through. Small and developing countries in the Caribbean, Pacific, Asia and Africa are essential to the international community with similar social, economic, cultural, political, and environmental aspirations as more prominent and wealthy countries. Roughly about two-thirds of the member states of the United Nations come under this category, which is a more significant amount. Needless to mention that these smaller and developing countries aim to promote the security, economics, and overall well being of their citizens. They use the same diplomatic methods as larger and wealthy nations.

This article suggests that COVID-19 is an opportunity for the countries in the Global South to strengthen their diplomatic skills and establish more substantial diplomatic processes to negotiate. In Africa, no country is poor. They are rich with resources; therefore, negotiating well is needed. In a global context, the wealthy and powerful nations cannot survive without the resources from the Global South. This is considerable power and opportunity.

Second, the countries in the Global South have to strengthen their public health policies and practices based on the Alma Ata Declaration (1979). As COVID-19 is a public health crisis, which many countries in Europe and North America ignore, this is an opportunity for the countries in the Global South.

Third, the most significant opportunity is that Africa, Asia, and Latin America should consider creating alliances and coalitions. This can be like the Non-Aligned Movement during the Cold War period. That way, they can negotiate better trade and COVID-19 vaccine programs in their countries.

#### **Politics of COVID-19 Pandemic**

The COVID-19 has created a global pandemic, facilitating social, political, economic, cultural, and environmental disruptions unlike anything experienced for roughly a century. Compared to many other infectious diseases, such as Tuberculosis, Avian Influenza, and Ebola, COVID -19 is less lethal. Our daily behaviors have not been affected but also had to change to the advice of experts and politicians' rules (Alyanak, O., 2020, Callaway, E. 2020, Fancourt, D., et al. 2020, Greer, S.L., et al. 2020, Mukhtar, S., 2021). However, the COVID -19 has spread rapidly due to global transport networks. It has become very clear that although health experts should deal with this disease, politics have taken over the science and expert knowledge (Fancourt, D., et al. Mukhtar, S., 2021, Hale, T. 2020). Over the year 2020 and most of 2021, the global experience has shown that low-income countries are more vulnerable to the impacts of the pandemic and the nationalization and politics of the vaccines (Lipscy, P.Y., 2020, Dearden, N. 2021, Sabahelzain, M.M., et a. 2021). The COVID-19 has increased inequalities between countries. The high-income nations have created a situation where it was predicted that nearly 70 lower-income countries would be able to vaccinate only one in ten people (Lipscy, P.Y., 2020, da Fonseca, E.M., et al. 2021, Sabahelzain, M.M., et al., 2021, Mwai,

P. 2021, Cohen, R. 2021). According to Cohen (2021), various European and North American nations have stocked vaccinations more than their populations over the past year. What does this mean for the low-income countries regarding production, affordability, allocation, and deployment? While there are no direct answers to this question, the authors of this article want to examine the challenges and opportunities the COVID-19 pandemic has created, especially for low-income countries. Moreover, lowincome countries do not have the technology and resources to produce their own vaccinations. To make the matter worse, most high-income countries signed contracts with production companies, which meant that they would receive all the benefits of the vaccine production before any low-income country could access them (Lipscy, P.Y., 2020, da Fonseca, E.M., et al. 2021, Sabahelzain, M.M., et al. 2021). This is the lack of economic accessibility, and the necessities and circumstances of vaccination distribution needs to be analyzed from a political perspective. Because in this condition high-income countries have already started to use the pandemic and vaccine for their political gain by using financial packages, vaccines, and other aid mechanisms to gain political allies by monopolizing developing nations' health and economic vulnerabilities seen over the past 12 months (Lipscy, P.Y., 2020, da Fonseca, E.M., et al. 2021, Sabahelzain, M.M., et al. 2021). However, this article argues that the deadly threat of COVID-19 has created new opportunities for low-income countries to build new horizontal collaborations and establish innovative actions on the global political stage for health emergencies.

# **Health Diplomacy**

The term of diplomacy correlates with the prospect of countries sharing mutual understanding on specific entities. Brown (Brown, S. 2001) defined diplomacy as art used in obtaining agreements among countries with the potential of cooperating to produce results in which they have shared interests. Diplomacy is considered a solution to war, conflict, and failure to reach a consensus lead to war. Brown (2001) claimed that diplomacy could be served in non-adversarial interaction situations to gain the best results in a shared project. Although diplomacy condones violence during bargaining, it involves additive and coercive approaches, with the target being to influence decision-making by another participating party. This comes with benefits and costs in discussed arrangements to ensure that each participating country obtains results (Brown, S. 2001). Modern diplomacy uses dialogue, negotiations, and other non-violent methods to influence foreign governments' decisions and actions. According to Freeman (2020), diplomacy aims to support the nation or organization it serves to promote interests without risking using force and instead without offending countries. However, Freeman (2020) argues that diplomacy may use intimidating tactics of social, and economical, or other retaliatory tactics against another nation.

Diplomacy is a political process by which political entities conduct official relations in an international environment (Hart, D., & Siniver, A. 2020). This definition considers the changing environment in which different situations force state players to review the causes and radical changes. For instance, the rise in terrorism and other activities serves as reasons for diplomacy's importance in avoiding violence. It remains certain for better political, economic, and social output, and countries must find common ground to benefit from shared activities (Hart, D., & Siniver, A. 2020). These changes to the typology of diplomacy remain significant to necessitating all countries' mutual

inclusion in finding solutions towards global pandemic health issues. Therefore, health diplomacy is defined from a global perspective to understand its role in ensuring safety and compliance for the world by the World Health Organization (WHO) (Cohen, R. 2021): "Global health diplomacy focuses on those health issues that need the cooperation of many countries to address issues of common concern, but health diplomacy can also play a central role at the regional, bilateral and national level." As globalization and geopolitical shifts continue to create new dimensions of the links between health and security, global public health has focused on diseases, care, prevention and research and monitoring in recent decades. It is stated by WHO that all countries, regardless of income or level of development, face systemic risks, such as disease outbreaks, with the potential for very significant impact on health, tourism, trade, exports and international relations.

### **COVID-19 Vaccination Diplomacy**

While the world continues to struggle with the ongoing impacts of the Pandemic, COVID-19 vaccinations have become the only methods to establish normalcy and recovery. In many ways, producing and distributing vaccines create an opportunity for high-income nations to develop soft power within the global system. In this, COVID-19 vaccines are emerging as a public diplomacy tool to compete to establish influence through donations or loans (Lee S. T. 2021). According to Jennings (Jennings, M. 2021), vaccine diplomacy has also engaged in efforts to undermine trust regarding the purpose and effectiveness of rival nations.

The development of a COVID-19 vaccine presents vulnerable countries with an opportunity to recover from the high infection rates. When a vaccine was absent, countries were less involved in diplomatic affairs, making it challenging to build relationships. However, with over two million deaths and one hundred million people affected worldwide, it is expected that interest in the distribution of COVID-19 vaccines will focus on diplomatic interests. Balasubramanian (Balasubramanian, S. 2021) claimed that poorer countries are at a disadvantage because they cannot develop their vaccines, and acquiring purchasing rights may be difficult, thus pushing them to focus on diplomacy. Countries like India and China have undertaken diplomatic means to help low income economies with vaccine roll-outs since it is one of the world's leading drug makers. For example, the Government of India has received requests for its manufactured vaccine from partner states and neighbors, making it a leading country in vaccine donations (Balasubramanian, S. 2021). In such cases, having a cordial relationship with another country proves significant in acquiring the vaccine on goodwill terms. Hence, diplomatic affairs between countries remain essential in the struggle to ensure COVID-19 vaccination (Balasubramanian, S. 2021).

The role of coalitions and alliances manifests during COVID-19 vaccines as a sign of diplomacy. In countries where vaccinations started due to manufacturing abilities, sharing vaccines with fellow members has become essential. The number of global infections is reducing due to mass vaccination due to the promising strategy between countries sharing the vaccine. In weak diplomatic relationships, governments focus on national vaccination before sharing their vaccines. The delay in helping low-income countries by the high-income nations has left many allies questioning their intentions for low income economies' life emergencies (Mwai, P. 2021, Cohen, R. 2021). **Conclusion**  The COVID-19 pandemic has presented many challenges to poor and small nations across the globe. However, in this article, the key argument is that opportunities came with this pandemic. The key opportunity is for the poor and small nations to rethink their engagement strategies with wealthy and powerful nations. Examining the case of vaccine diplomacy, it is evident that educating future diplomats and strengthening diplomatic approaches are vital in negotiations, especially between poor and wealthy nations. Keeping in line with the modern diplomatic approaches of dialogue, negotiations, and other non-violent methods, small and developing countries can demand what they need from wealthy and powerful nations.

This article observed that even though some African countries, among other developing nations, would have been able to afford the COVID-19 vaccines, there were still hardships with access to the suppliers and or producers. Some wealthy countries have been able to vaccinate up to 70% of their populations, whereas Africa could not vaccinate more than 5% of its people (Lipscy, P.Y., 2020, da Fonseca, E.M., et al. 2021, Dearden, N. 2021, Sabahelzain, M.M., 2021, Euronews. 2021, UNAIDS, 2021). Dearden (2021) referred to this kind of vaccine inequality as an "apartheid", he calls on global leaders to negotiate fairer distribution with the Global South (Dearden, N. 2021). The authors agree with Dearden's (2021) conclusions as similar conclusions can be drawn through the examination within this article.

This article also recommends that developing nations strengthen their diplomatic skills and relations to achieve their people's best trade and social needs. Secondly, the governments in the Global South must improve their health systems to mitigate any pandemic of such magnitude.

Instead of pointing at high-income countries, this article attempts to suggest some practical solutions to low-income countries to deal with the current pandemic and future crises. Of course, as the WHO Director-General (WHO 2021) mentioned, low-income countries have become second and third priorities in the vaccination process. According to the UDHR (United Nations, 1948), Article 1, all human beings are born free and equal in dignity and rights. However, some countries must take responsibility for their destinies. This needs alliance-building and collaborating with like-minded nations across the globe. Of course, as an idea, this may be a possibility; however, in practice, there are many social, political, and economic challenges. A famous African proverb says, "*if you want to go fast, go it alone. If you want to go long, go with others*". We see this situation with the Omicron (B.1.1.529): SARS-CoV-2 Variant given the developing nations' low vaccination levels and the dangers it presents globally.

#### **References:**

Afolabi, A. A., & Ilesanmi, O. S. 2021. Dealing with vaccine hesitancy in Africa: the prospective COVID-19 vaccine context. The Pan African Medical Journal, 38(3). https://doi.org/10.11604/pamj.2021.38.3.27401

Alyanak, O., 2020. Faith, Politics and the COVID-19 Pandemic: The Turkish Response: Op-Ed. *Medical anthropology*, *39*(5), pp.374-375.

Balasubramanian, S. (2021). *Vaccine diplomacy: A new frontier in international relations*. Forbes. https://www.forbes.com/sites/saibala/2021/02/24/vaccine-diplomacy-a-new-frontier-in-international-relations/?sh=479d740a22bc

Bamwesigye D, Fialová J, Kupec P, Łukaszkiewicz J, Fortuna-Antoszkiewicz B. Forest Recreational Services in the Face of COVID-19 Pandemic Stress. Land. 2021; 10(12):1347. https://doi.org/10.3390/land10121347

Bamwesigye D, Kupec P, Chekuimo G, Pavlis J, Asamoah O, Darkwah SA, Hlaváčková P. 2020. Charcoal and Wood Biomass Utilization in Uganda: The Socioeconomic and Environmental Dynamics and Implications. *Sustainability*. 12(20):8337. https://doi.org/10.3390/su12208337

Bangalee, V., & Suleman, F. 2020. Access considerations for a COVID-19 vaccine for South Africa. *South African Family Practice: Official Journal of the South African Academy of Family Practice/Primary Care*, 62(1), e1–e4. https://doi.org/10.4102/safp.v62i1.5152

Bonful, H. A., Addo-Lartey, A., Aheto, J., Ganle, J. K., Sarfo, B., & Aryeetey, R. 2020. Limiting spread of COVID-19 in Ghana: Compliance audit of selected transportation stations in the Greater Accra region of Ghana. *PloS one*, *15*(9), e0238971. https://doi.org/10.1371/journal.pone.0238971

Brown, S. 2001. Diplomacy. *International Encyclopedia of the Social & Behavioral Science*, 3695-3697. https://doi.org/10.1016/B0-08-043076-7/01260-2

Burki, T. 2021. Equitable distribution of COVID-19 vaccines. *The Lancet*, 21(1), 33-34. https://doi.org/10.1016/S1473-3099(20)30949-X

Buwembos, J. 2021. *Uganda launches first phase of COVID-19 vaccination exercise*. UNICEF. https://www.unicef.org/uganda/stories/uganda-launches-first-phase-covid-19-vaccination-exercise

Callaway, E. 2020. The race for coronavirus vaccines: a graphical guide. https://www.nature.com/articles/d41586-020-01221-y

Cohen, R. 2021. COVID vaccines: rich countries have bought more than they need – here's how they could be redistributed. The Conversation. https://theconversation.com/covid-vaccines-rich-countries-have-bought-more-thanthey-need-heres-how-they-could-be-redistributed-153732

Cooke, S. J. et al. 2021. A global perspective on the influence of the COVID-19 pandemic on freshwater fish diversity. *Biological Conservation*, 253, 108932. https://doi.org/10.1016/j.biocon.2020.108932

Creswell JW, Clark VL. 2017. *Designing and conducting mixed methods research*. Sage publications; 2017 Aug 31.

Creswell JW, Creswell JD. Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications; 2017 Nov 27.

Creswell, J. W. 2009. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (3rd ed.). Thousand Oaks, CA: Sage.

Creswell, J. W. 2011. *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research* (4th ed.). Upper Saddle River, NJ: Pearson Education.

da Fonseca, E.M., Shadlen, K.C. and Bastos, F.I., 2021. The politics of COVID-19 vaccination in middle-income countries: Lessons from Brazil. *Social Science & Medicine*, p.114093.

Dearden, N. 2021. Vaccine apartheid: The Global South fights back. *Aljazeela*. https://www.aljazeera.com/opinions/2021/9/30/vaccine-apartheid-the-global-south-fights-back

El Bagoury, M., Tolba, M. M., Nasser, H. A., Jabbar, A., Elagouz, A. M., Aktham, Y., & Hutchinson, A. 2021. The find of COVID-19 vaccine: Challenges and opportunities. *Journal of Infection and Public Health*, *14*(3), 389-416. https://doi.org/10.1016/j.jiph.2020.12.025

Euronews. 2021. *Global COVID vaccine inequality 'becoming more grotesque every day,' WHO warns*. https://www.euronews.com/2021/03/22/global-covid-vaccine-inequality-becoming-more-grotesque-every-day-who-warns

Fancourt, D., Steptoe, A. and Wright, L., 2020. The Cummings effect: politics, trust, and behaviors during the COVID-19 pandemic. *The Lancet*, *396*(10249), pp.464-465. Ferrari, R. 2015. Writing narrative style literature reviews. *Medical Writing*, *24*(4), pp.230-235.

Finance Center for South-South Cooperation, 2022. List of South Countries. http://www.fc-ssc.org/en/partnership\_program/south\_south\_countries

Freeman, C. W. and Marks, S. 2020. Diplomacy". Encyclopedia Britannica, 14 Dec. 2020, https://www.britannica.com/topic/diplomacy . Accessed 9 August 2021.

Gardner. J.B., Kilpatrick. A. M. 2021. Estimates of reduced vaccine effectiveness against hospitalization, infection, transmission and symptomatic disease of a new SARS-CoV-2 variant, Omicron (B.1.1.529), using neutralizing antibody titers. https://doi.org/10.1101/2021.12.10.21267594

Gavi, 2021a. COVAX vaccine roll-out UGANDA. https://www.gavi.org/covax-vaccine-roll-out/uganda

Gavi, 2021b. COVAX vaccine roll-out GHANA. https://www.gavi.org/covax-vaccine-roll-out/ghana

Gavi, 2021c. COVAX VACCINE ROLL-OUT: COUNTRY UPDATES. https://www.gavi.org/covax-vaccine-roll-out

Green, B.N., Johnson, C.D. and Adams, A. 2006. Writing narrative literature reviews for peer-reviewed journals: secrets of the trade. *Journal of chiropractic medicine*, *5*(3), pp.101-117.

Greer, S.L., King, E.J., da Fonseca, E.M. and Peralta-Santos, A., 2020. The comparative politics of COVID-19: The need to understand government responses. *Global public health*, *15*(9), pp.1413-1416.

Gu, H., Krishnan, P., Ng, D.Y., Chang, L.D., Liu, G.Y., Cheng, S.S., Hui, M.M., Fan, M.C., Wan, J.H., Lau, L.H. and Cowling, B.J., 2021. Probable Transmission of SARS-CoV-2 Omicron Variant in Quarantine Hotel, Hong Kong, China, November 2021. *Emerging infectious diseases*, 28(2).

Hale, T. 2020. An Immune System for the Body Politic: Using Social Science to Control COVID-19," Campaign Social Science, 8 July 2020, https://campaignforsocialscience.org.uk/news/an-immune-system-for-the-body-

politic-using-social-science-to-control-COVID-19/ accessed 08 August 2021

Hart, D., & Siniver, A. 2020. The meaning of diplomacy. *International Negotiation*, 26, 1-25.

https://www.researchgate.net/publication/344339208\_The\_Meaning\_of\_Diplomacy Herzog, L. M., Norheim, O. F., & Emanuel, E. J. 2021. Covax must go beyond proportional allocation of covid vaccines to ensure fair and equitable access. *BMJ*, *372*. https://doi.org/10.1136/bmj.m4853

Chen, J., Wang, R., Gilby, N.B. and Wei, G.W., 2021. Omicron (B. 1.1. 529):

Infectivity, vaccine breakthrough, and antibody resistance. ArXiv.

International Monetary Fund 2020. A crisis like no other, an uncertain recovery. https://www.imf.org/en/Publications/WEO/Issues/2020/06/24/WEOUpdateJune202 0. Date: June, 2020

Jennings, M. 2021. Vaccine diplomacy: How some countries are using COVID to enhance their soft power? The Conversation. https://theconversation.com/vaccine-diplomacy-how-some-countries-are-using-covid-to-enhance-their-soft-power-155697

Kannan, S.R., Spratt, A.N., Sharma, K., Chand, H.S., Byrareddy, S.N. and Singh, K., 2022. Omicron SARS-CoV-2 variant: Unique features and their impact on preexisting antibodies. *Journal of Autoimmunity*, *126*, p.102779.

Karim, S.S.A. and Karim, Q.A., 2021. Omicron SARS-CoV-2 variant: a new chapter in the COVID-19 pandemic. *The Lancet*.

Khan MI, Ikram A, Hamza HB. Vaccine manufacturing capacity in low-and middleincome countries. Bulletin of the World Health Organization. 2021 Jul 1;99(7):479.

Lee S. T. 2021. Vaccine diplomacy: nation branding and China's COVID-19 soft power play. Place Branding and Public Diplomacy, 1–15. Advance online publication. https://doi.org/10.1057/s41254-021-00224-4

Lieberoth, A., Lin, S. Y., Stöckli, S., Han, H., Kowal, M., Gelpi, R., ... & Covidistress Global Survey Consortium. 2021. Stress and worry in the 2020 coronavirus pandemic: relationships to trust and compliance with preventive measures across 48 countries in the COVIDiSTRESS global survey. *Royal Society open science*, 8(2), 200589. https://doi.org/10.1098/rsos.200589

Lipscy, P.Y., 2020. COVID-19 and the Politics of Crisis. *International Organization*, 74(S1), pp.E98-E127.

Mahase, E. 2021. Covid-19: Where are we on vaccines and variants? *BMJ*, *372*(597), 1-5. doi: https://doi.org/10.1136/bmj.n597

Megiddo, I., Nonvignon, J., Owusu, R., Chalkidou, K., Colson, A., Gad, M., Klepac, P., Ruiz, F., & Morton, A. 2020. Fairer financing of vaccines in a world living with COVID-19. *BMJ global health*, *5*(7), e002951. https://doi.org/10.1136/bmjgh-2020-002951

Mukhtar, S., 2021. Psychology and politics of COVID-19 misinfodemics: Why and how do people believe in misinfodemics?. *International Sociology*, *36*(1), pp.111-123.

Mwai, P. 2021. *Covid-19 Africa: Who is getting the vaccine?* BBC. https://www.bbc.com/news/56100076

Nachega, J. B., Sam-Agudu, N. A., Masekela, R., van der Zalm, M. M., Nsanzimana, S., Condo, J., Ntoumi, F., Rabie, H., Kruger, M., Wiysonge, C. S., Ditekemena, J. D., Chirimwami, R. B., Ntakwinja, M., Mukwege, D. M., Noormahomed, E., Paleker, M., Mahomed, H., Tamfum, J. M., Zumla, A., & Suleman, F. 2021. Addressing challenges to rolling out COVID-19 vaccines in African countries. *The Lancet. Global health*, S2214-109X(21)00097-8. Advance online publication. https://doi.org/10.1016/S2214-109X(21)00097-8

Nachmias, D. & Nachmias, C. 1976. Content analysis. In Research methods in the social sciences (pp.132-139), *UK: Edward Arnold.* 1976.

Powell, A. 2021. South Africa Surges with Continent's Largest Vaccine Campaign.

VOA News. https://www.voanews.com/covid-19-pandemic/south-africa-surges-continents-largest-vaccine-campaign

Quakyi, N. K., Agyemang Asante, N. A., Nartey, Y. A., Bediako, Y., & Sam-Agudu, N. A. 2021. Ghana's COVID-19 response: the Black Star can do even better. *BMJ global health*, 6(3), e005569. https://doi.org/10.1136/bmjgh-2021-005569

Reliefweb, 2021a. On the occasion of the UK donated COVID-19 vaccines to Uganda under the COVAX Facility. https://reliefweb.int/report/uganda/occasion-uk-donated-covid-19-vaccines-uganda-under-covax-facility

Reliefweb, 2021b. UK-donated COVID-19 vaccine doses reach African countries. https://reliefweb.int/report/malawi/uk-donated-covid-19-vaccine-doses-reach-african-countries

Rich nations vaccinating one person every second while majority of the poorest nations are yet to give a single dose. 2021. UNAIDS. https://www.unaids.org/en/resources/presscentre/featurestories/2021/march/2021031 0\_covid19-vaccines

Richman D. D. 2021. COVID-19 vaccines: implementation, limitations and opportunities. *Global Health & Medicine*, *3*(1), 1–5. https://doi.org/10.35772/ghm.2021.01010

Sabahelzain, M.M., Hartigan-Go, K. and Larson, H., 2021. The politics of Covid-19 Vaccine Confidence. *Current Opinion in Immunology*.

Samarasekera U. 2021. Feelings towards COVID-19 Vaccination in Africa. *The Lancet. Infectious diseases, 21*(3), 324. https://doi.org/10.1016/S1473-3099(21)00082-7

The Independent. 2021. Uganda alters Covid-19 vaccine roll-out plan to cover more people. https://www.independent.co.ug/uganda-alters-covid-19-vaccine-roll-out-plan-to-cover-more-people/

Tinh, L. D., Thanh, T. H., 2022. "Promoting health diplomacy in the fight against COVID-19: the case of Vietnam", Special Section: Beyond COVID-19: Global Health in the spotlight • Rev. Bras. Polít. Int. 65 (1), https://doi.org/10.1590/0034-7329202200102

U.S. Embassy Pretoria press team. 2021 U.S. Government Delivers an Additional 2.2 Million Vaccine Doses to South Africa. https://za.usembassy.gov/u-s-government-delivers-an-additional-2-2-million-vaccine-doses-to-south-africa/

UNICEF 2021. United States donated 647,080 COVID-19 vaccines to Uganda. https://www.unicef.org/uganda/stories/united-states-donated-647080-covid-19-vaccines-uganda

United Nations 1948. Universal Declaration of Human Rights. https://www.un.org/en/about-us/universal-declaration-of-human-rights

Varghese, H. S. 2020. Current review on COVID-19 Pandemic: A global perspective. *International Journal of Basic & Clinical Pharmacology*, *9*(7), 1157-1166. https://www.ijbcp.com/index.php/ijbcp/article/view/4202/2942

Venter, W. D. F., Madhi, S. A., Nel, J., Mendelson, M., van den Heever, A., & Moshabela, M. 2021. South Africa should be using all the COVID-19 vaccines available to it – urgently. *South African Medical Journal*, 1-3. http://www.samj.org.za/index.php/samj/article/view/13238/9713

Wang, J., Peng, Y., Xu, H., Cui, Z., & Williams, R. O. 2020. The COVID-19 vaccine

race: Challenges and opportunities in vaccine formulation. *AAPS PharmSciTech*, 21(6), 225. https://doi.org/10.1208/s12249-020-01744-7

WHO 2021. WHO Director-General's opening remarks at the media briefing on COVID-19. World Health Organization. https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---8-september-2021

WHO, 2022. Global health needs global health diplomacy, http://www.emro.who.int/health-topics/health-diplomacy/about-health-diplomacy.html

World Bank, 2022. World Bank Country and Lending Groups, https://datahelpdesk.worldbank.org/knowledgebase/articles/906519

Worldometer, 2022. Countries in the world by population (2022). https://www.worldometers.info/world-population/population-by-country/

Worldometer. COVID-19 Coronavirus Pandemic. Available online: ttps://www.worldometers.info/coronavirus/ (accessed on 1 December 2021).

Wouters, O. J., Shadlen, K. C., Salcher-Konrad, M., Pollard, A. J., Larson, H. J. et al. 2021. Challenges in ensuring global access to COVID-19 vaccines: production, affordability, allocation, and deployment. *Health Policy*, *397*(10278), 1023-1034. https://doi.org/10.1016/S0140-6736(21)00306-8

Wouters, O.J., Shadlen, K.C., Salcher-Konrad, M., Pollard, A.J., Larson, H.J., Teerawattananon, Y. and Jit, M., 2021. Challenges in ensuring global access to COVID-19 vaccines: production, affordability, allocation, and deployment. *The Lancet*. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)00306-8/fulltext

Yamada, Y., Ćepulić, D. B., Coll-Martín, T., Debove, S., Gautreau, G., Han, H., ... & Lieberoth, A. 2021. COVIDiSTRESS Global Survey dataset on psychological and behavioral consequences of the COVID-19 outbreak. *Scientific data*, 8(1), 1-23.

# Acknowledgments (optional)

A part of this research was presented at 10th Eurasian Multidisciplinary Forum, EMF, 1-2 September 2022, Batumi, Georgia.

# Conflicts of interest. Please select one of the following statements (and delete the other one):

The authors of this paper certify that they have NO affiliations with or involvement in any organization or entity with any financial or non-financial interest (such as honoraria; educational grants; membership, employment; affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.