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Research Article

BALANCING RECOVERY AND RESILIENCE: ECONOMIC CRISIS MANAGEMENT DURING COVID-19

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Abstract

In early 2020, the global health landscape was dramatically altered by the emergence of a novel respiratory illness—Coronavirus Disease 2019 (COVID-19)—caused by the SARS-CoV-2 virus. Initially identified in Wuhan, China, the virus quickly spread across international borders, facilitated by global travel and asymptomatic transmission. Particularly lethal to the elderly and individuals with pre-existing health conditions, COVID-19 posed an unprecedented challenge to public health systems and demanded urgent governmental responses.

Governments worldwide reacted with varying degrees of urgency and intensity, implementing strategies ranging from selective travel bans to nationwide lockdowns. The virus's aerosolized transmission, long incubation period, and ability to spread asymptomatically made it especially difficult to contain, with enclosed environments such as nursing homes and cruise ships proving highly vulnerable. Italy emerged as an early epicenter in March 2020, particularly in Lombardy, where initial containment efforts failed to prevent internal migration and the further spread of the virus both within and outside the country.

The World Health Organization officially named the virus SARS-CoV-2 and the associated illness COVID-19, recognizing it as a severe acute respiratory syndrome. This identification clarified the threat's global nature and spurred coordinated, although not always effective, international responses. As the pandemic evolved, it highlighted stark differences in preparedness, health infrastructure, and crisis communication among nations.

This study explores the early phase of the COVID-19 pandemic, with a focus on the virus's transmission dynamics, the susceptibility of high-risk populations, and the diverse public health responses implemented globally. Understanding the initial reactions to COVID-19 is critical to evaluating policy effectiveness and preparing for future pandemics.

Keywords: COVID-19, SARS-CoV-2, Pandemic Response, Public Health Policy, Virus Transmission

Introduction: A New Virus, New Transmission Pathways and Initial Reactions

In the early days of 2020, the first cases of a new flu-like illness began to permeate emergency rooms in the northwestern state of Washington; the illness, believed to have been transmitted by travelers from Wuhan, Hubei Province in China, manifested symptoms that especially made the elderly and those with underlying health conditions quite vulnerable. Over the next 60 days, governments all over the world would undertake measures to contain the illness, believed to transmit in aerosolized form, its symptoms manifesting anywhere up to five days after infection, and especially troublingly, being transmitted asymptomatically. Soon, the World Health Organization (WHO) and global health experts negotiated a name for the illness, one whose characteristics mirrored those of SARS; this too was a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus was ultimately named Coronavirus Disease (COVID-19) (WHO 2020).

Over the next few months, governments took a variety of approaches, some drastic as seen in China and some fairly lax, to contain the mystery 'pneumonia'-like 'flu' that appeared to target older citizens with underlying conditions, making nursing homes and cruise-ships perfect incubators for the illness. They included banning

air travel between suspected COVID-19 origins and hotspots, refusing docking for ships and vessels with the outbreaks, and progressively, locking down entire provinces, regions and countries. By early March 2020, Italy became the new center of the viral illness; its lockdown in Lombardy demonstrated the insufficiency of piecemeal actions as an exodus of 'healthy' citizens made its way to different areas of the country and the globe.

Inherent in government actions was their very purpose for existence and the implied contracts between states and their citizens: that of caring for them. Now, these citizens were being evacuated or allowed to return home, but in many instances, the sometimes already infected citizens transmitted the virus and disease as they sought refuge at 'home.'

As governments banned flights but built lag-times for citizens to return, the insufficiency of this approach demonstrated the existing strategies and mechanisms to contain the spread. The absolutely worst possible scenario from the 1995 movie *Outbreak!* was coming true.

The virus, the disease and the misery it caused spread rapidly. Now, the very networks that progressively made the world more interconnected became the very pathways for transmission of the virus, often asymptomatically. The case of the US illustrates the rapidity, the impact of regionally distributed responses and the impact of the impossible choice between sustaining livelihoods through economic activity versus arresting the spread of the virus. Besides a delegated (sometimes read insufficiently coordinated or organized federal) response that led to the emergence of patchworks of levels, regions and strategies of containment beginning early March. Globally, different countries started imposing lockdowns, curfews, isolation centers, treatment centers and strategies to test arrivals, citizens and gradually, began mirroring the actions of China, Europe and the US. Africa was learning, rapidly, out of necessity.

COVID-19 in Africa: Actions, Impacts, Responses and Strategies

Africa's first COVID-19 case was recorded in Egypt on February 14th, 2020, believed to have been spread by infected Egyptians returning from the Asian region (WHO Regional Office for Africa 2020). As the pandemic ravaged western nations, African countries began implementing strategies meant to curb the 'importation' of the vector; overall, compared to other regions, considering the current statistics, one might opine that African countries were largely successful in containing the spread and vector effects of COVID-19. As of the December, 2020 update, Africa's Centers for Disease Control and Prevention (Africa CDC) reported 2.6 million cases, 61,000 deaths, and over one million recoveries (Africa CDC 2020). Approximately 75% of all cases in Africa are distributed between three regions - northern, southern and western and 71 percent of all cases to date, are distributed between the 7 countries: South Africa, Egypt, Morocco and Algeria, Nigeria and Ghana, and Cameroon (Africa CDC 2020). Accounting for 25% of all cases in Africa, South Africa reports the highest infection in the continent although it had one of the strictest lockdowns (Dyer 2020; Africa CDC 2020).

As tragic as any and each COVID-19 death is, these persistence tallies demonstrate the relative success that African countries have had in constraining the spread of COVID-19. For a continent with 54 countries and a 1.35 billion population (World Bank, 2018, the total COVID-19 positive cases as of end of 2020 are far below those of other countries such as Brazil is four times higher especially given that its population 15.5 percent Africa's. It is also more than half of Russia's tally with a population of 144million (10 percent Africa's population).

To achieve these numbers, African countries employed different strategies – from leaving it to the gods of medicine as Tanzania did, to imposing curfews and restricting movement, enforced using military tactics akin

as was in the case of South Africa (Aluga 2020). In the case of Kenya, Human Rights Watch chronicled the counterintuitive approaches to enforcing curfews to limit the spread of COVID-19. On the first day of the curfew set to begin on March 27th 2020 at 7 p.m., fully two hours before its start, "police officers forced a group of people walking home from work to kneel, then whipped and kicked them [...] arrested people on streets, whipping, kicking, and herding them together, increasing the risks of spreading the virus" (HRW 2020, n.p.) HRW chronicled more than 10 deaths in the following days, in addition to egregious human rights. Indeed, on the same day that the curfew began and anywhere upwards of 6 people died at the hands of police officers enforcing the curfew, the total number of reported COVID cases in Kenya was 31, and the first death was recorded on the same day (Al Jazeera 2020). At that point, the probability of dying at the hands of police, or having one's human rights violated in some way was higher than catching COVID-19.

While the impact of the spread of the virus, the disruptions it has caused, the massive loss of life especially in Europe and the US, the near complete shutdown of global communications, business, manufacturing and other facets of economic activities, countries in the Global South have largely mirrored the actions of the countries in the Global North. But the difference in circumstances, including the pervasiveness of social services, economic and income support mechanisms, business bailouts and support – whether from furlough schemes such as the UK, the bailout of Lufthansa by the German government, the Paycheck Protection Program in the US – these actions have differed from those of African countries, given the different levels of economic ability. The outcomes are even direr: there is the perception that future national priorities will include repatriation of supply chains to ensure domestic manufacture of products with national security implications such as the so called Personal Protective Equipment. There are also anticipated impactful unintended consequences for travel, business, commerce and a focus on the broader issues of human interactions with the climate and environment. For African countries, most already struggling with high levels of unemployment and youth bulges, poverty, low

HDI indices, violence, inequality and infrastructure challenges, COVID-19 has produced significant and deleterious effects magnified by the absence of social safety nets and infrastructure systems unable to cope with the population increase. This article aims to study some of the most significant outcomes of COVID-19"s responses on Kenya's social infrastructure.

Complexity: Containing a Viral Pandemic within a System Void of Social Safety Net

Kenya"s first COVID-19 case was diagnosed on 14th March 2020. Patient Zero traveled from the US to Nairobi via London (Lagat, *et al*, 2020). Enroute, Patient Zero was not symptomatic, but a day later, she and two other individuals sitting next to her on the flight tested positive for COVID-19. Still, by 18th March, the number of COVID-19 cases was only four, although the regime testing was not in place and as such, as was the case in other countries, asymptomatic community transmission might have been going on. Kenya, like many countries at the time, had neither testing, even the most rudimentary temperature-taking procedures at points of entry, nor the track-and-trace system necessary to quickly follow up, despite the invention of such systems as Ushahidi (developed by Kenyan engineers with Google input), which had been used to track other infections and unusual events such as earthquakes.

All things considered, Kenya moved quickly to restrict the possible transmission of COVID-19: on March 17th, two days after the first case was diagnosed, the government suspended travel from countries with diagnosed COVID-19 cases. The only exception to the travel ban was for returning Kenyan citizens, residents and UN officials/diplomats. Returning citizens were slapped with a 2-week, later 28-day mandatory quarantine in government-approved facilities at their own cost. All education institutions were to be closed by March 20.

All government offices were shut down, employees were to work from home, and non-essential businesses required to close. Cashless transactions, already a feature of most businesses, were to be adopted. The government imposed restrictions on in-person group meetings or congregating in social spaces. The government prohibited cultural and religious events such as weddings and funerals. The government also „deployed" of soap, water and hand sanitizers to public hospitals, transport hubs and other common areas and mandated the disinfection of cargo transports and set up a hotline to report suspected COVID cases (PSCU 2020).

A week later, the mandatory curfew went into effect. The implementation of the curfew, initially running from 7 p.m. to 5 a.m., was widely condemned for its brutality, lack of coordination, insufficient window for implementation and human rights violations (Dyer 2020). By April 6th, Kenya had 158 confirmed cases; this was also the day when the government imposed a virtual lockdown and disallowed travel from the high-risk urban areas of Nairobi and Mombasa. The 7 p.m. to 5 a.m. curfew would later be modified to 9 p.m. to 5 a.m., and extended on June 6th, 2020 for another 21 days, despite the expectation that it might be relaxed (Junior 2020). The government also set out a time-table for reopening of educational institutions in September, and churches and mosques sooner. In June 2020, the government rolled out new „home care-based isolation protocols," a new program where individuals exhibiting the symptoms of COVID-19 can self-isolate at home and where possible, be cared there (Ministry of Health 2020). Just as the roll-out of the elements of quarantine and general containment of COVID-19 exhibited minimal appreciation of conditions on the ground, the idea that some families live in one-room house and will be expected to self-quarantine there will no doubt continue challenging the narratives and management, and potentially increase contagion.

Government Responses: Compounding Policy Errors and Exogenous Environmental Impacts

To contain the spread of infections, most epidemiologists propose the implementation of both public health and medical interventions. Public health interventions include, among others, "school closure, public gathering bans, and isolation and quarantine" (Gostin, 2007). Public health interventions are considered more simplistic, but they also have the singular ability to significantly diminish the quality of life, sometimes with dire outcomes (Walbert 2011) – in the case of impoverished communities, this can be access to basic services or even food. The timely implementation of public health interventions has often been accompanied by delays in reaching peak mortality; however, a "statistically significant inverse correlation between the duration of the interventions and total mortality (Cliff et al, 2009 p. 644) has been shown. One surmises that especially in the case of Kenya, the public health interventions, while timely and especially strict at the outset, were not exactly helped by the medical interventions.

The potential benefits of the timeliness and strict public health interventions were negatively impacted by the inconsistency, strong-arm tactics, discriminatory nature and human-rights violations incidents that led to opportunities for rent-seeking and corruption, a misunderstanding of the severity of depredations in the business and economic environment and the implications of economic shutdowns, particularly for those whose livelihood depends on daily manual labor or small-scale business activities such as shopkeepers or hawkers.

Given Kenya's lack of a functional social services system, and lack of provisions for support (with rent or food), the likelihood of violating shelter-in-place orders and curfews was real – almost inevitable. COVID-19 restrictions procured the very real threat of starving to death if citizens could not make their daily living. Simultaneously, other unrelated climatic conditions were already wreaking havoc in ways that gave most people a no-choice choice, bringing about the very real outcomes of rational choice theory based on transitive

preferences. The government also neglected a number of challenges to the implementation of the public health interventions that made it inevitable that the disease was going to spread; these are discussed next.

Quarantine on the fly – for a public health crisis

Although the Kenyan government moved quickly to impose conditions meant to limit the spread of COVID-19, in other ways, its actions have made the pandemic's spread worse. Evidence abounds, that the most effective ways to control the spread of contagious infections is by utilizing a combination of pharmaceutical and non-pharmaceutical interventions. The latter often include medication, therapy, vaccines and vaccinations, seeking medical services, voluntary and mandatory quarantine, and confinement while seeking treatment; for COVID-19 across the globe, some have been available and some have not, including, for example, quarantine. One of Kenya's most significant challenges to containing COVID-19 is the cost and conditions of quarantine facilities. Individuals returning from abroad and being confined to hotels, hostels and even dormitories with marginal living conditions, and then being charged up to US$500 for stays anywhere from 14 to 30+ days even after testing negative (Dahir 2020) – other accounts suggest the cost for accommodation at hostels and hotels was higher, ranging from US$20 a night to US$100 (BBC 2020)

Prior experience with inability to meet the cost of services, especially hospital bills, has produced outcomes not supportive of public health. That individuals can be detained in hospitals (and even for the deceased, in morgues) procures the fear of inability to pay such high amounts. This has increasingly led to instances of individuals breaking quarantine and fleeing, potentially increasing contagion. The per capita GDP of US$1,800 in Kenya, implies that an individual could potentially face a bill they couldn't pay in a year; this increases the likelihood of breaking quarantine and imperiling public health. The goals of the quarantine were also flouted by the very same government by its overall management of the facilities and process, with HRW reporting that "authorities have also held crowds of people in the arrivals area at the Nairobi airport for more than four hours with no social distancing, sanitizers, or masks; ferried people in packed buses with little ventilation" (HRW 2020, n.p.).

The confounding logic of the government's actions was reinforced after a man in quarantine at Kenyatta University attempted suicide in part to escape the future costs imposed upon him, which was followed by another suicide attempt; this brought to the fore the suicide of a South African national on March 27th in Nakuru, Kenya (HRW 2020). Even for those who stayed in quarantine, the length of the quarantine, testing (individuals were free to depart after three negative tests), access to services they would regularly have access to, and stories of having to send outside the facilities for medication, food and items of basic needs did not support the objectives of quarantine. Indeed, for those most unfortunate to be sent into quarantine, including for simple infractions such as being caught out during curfew (even without any evidence that one was potentially exposed to COVID-19), was an outcome considered more punitive than rehabilitative. Taken together, the quarantine facilities, care, costs, conditions, and implementation and management strategies constituted one of the most significant, self-defeating government approaches to battling COVID-19.

Despite spelling out the non-pharmaceutical interventions, the implementation of the pharmaceutical interventions got off to a rocky start. One of the most significant challenges for Kenya was COVID-19 testing. While understanding its potential ramifications, Kenya has not quite treated COVID-19 as a public health crisis, and where it has, has failed to encourage quarantine (for example, free testing, free facilities for quarantined persons) and demonstrating a better understanding for the other issues related to a halt in economic activity.

These include, for example, understanding the implications of such government policy as limiting the number of individuals who can be in a public vehicle as a function of social-distancing; a decrease in the number of passengers will inevitably lead to fewer persons but also correspond with a rise in the cost of transportation. Arbitrary rules that limit the ability to travel produced an underground economy focusing on smuggling people across county lines, but the reality of living in one county and working in another did not appear to feature in the overall government plans or find accommodation. Such blanket application of rules intensifies the hardship that individuals are likely to encounter.

Test, Track and trace

Testing has also lagged behind that of other countries and regions, and recently, increased testing has consistently produced higher numbers of infected persons. The government did not begin mass testing until April 2020 (Ombuor 2020). By end of July 2020, 276,415 tests had been completed by both government and private laboratories (Ministry of Health 2020), accounting for 0.52 percent of Kenya's estimated 53 million population. Even where free testing has been available, there has been significant pushback, or simply decisions to not get tested. There were other pertinent, if perhaps exaggerated reasons: testing almost inevitably confines one to quarantine in government facilities, where according to one individual deciding against testing, "chances of contracting COVID-19 are high, because of the way people are staying in the facilities. For example, sanitation is not good, people are sharing washrooms, picking individuals and taking them by force to these quarantine facilities has made people fear" (Ombuor 2020, n.p.). Other accusations of testing facilities and staff using the same gloves to test several persons have highlighted the risk of transmission of COVID-19 during testing.

Contact tracing has been highlighted as one of the critical components of the management of pandemics. The use of contact tracing, through technology and other applications can produce positive outcomes, although COVID-19 produces unique challenges. Despite the pervasiveness of mobile connectivity at over 100.1 percent and the use of the Unstructured Supplementary Service Data (USSD) communication system that does not require internet connections, there is not a well-organized test, track and trace system that is a critical component of public health, especially in contagious illnesses. Especially nefarious with COVID-19 as relates to track and trace even with increased possibilities of use of digital contract-tracing is the lag time; the time between contact between an asymptomatic individual who transmits the illness, and the other persons they contact while still not showing symptoms. "The complexity of asymptomatic and presymptomatic transmission makes it more difficult to identify all cases of COIVD-19" (Kahn 2020, p. 35). The long period during which individuals may be carrying the virus asymptomatically, but either fail to develop expected or significant symptoms or forget the symptoms which might have appeared up to a week before make contact tracing much different (Kahn 2020). Thus, between insufficient testing, the breaking of self or mandatory quarantine, and the financial consequences of shutdowns put even more pressure on the prospects for successful illness management.

COVID-19 disinformation, misinformation and stigma

One of the most confounding, inexplicable outcomes of the COVID-19 spread has been the stigma associated with the illness. Despite its aerosolized transmission, COVID-19 procures a stigma not unlike that of HIV (Kimani *et al.* 2020), especially against the less affluent and in other countries, against low-income persons and migrants (Corburn, Vlahov & Mberu *et al.* 2020). The stigma is compounded and helped along by Kenya"s explosion of wireless communications, driven primarily by a combination of the use of mobile phones and on occasion, free internet from Facebook and WhatsApp on some platforms (CAK 2018). Legislation and

practice allow the government to control information, yet misinformation has been a significant feature of the COVID-19 pandemic.

The misinformation is not just limited to Kenya; in messages that have spread in Africa and Europe, for example, messages including the following "tests run by the university's laboratory [...] had found 'strong evidence that ibuprofen accelerates the multiplication of the virus'" have been transmitted through WhatsApp (Delcker, Wanat & Scott 2020, n.p.), including in Kenya. Such messages perpetuate the stigma and have negatively impacted the government efforts to increase efforts to undertake „contact tracing". Although different levels of Kenyan government (national and county) and leaders have attempted to proactively demystify COVID-19 and destigmatize it, including using health workers to "set up tents to provide information on COVID-19 and to take visitors" temperatures and log their travel histories before they enter the hospital" (El-Sadr & Justman 2020, p. 1); there remains extremely high levels of misinformation and stigma around COVID-19. The stigmatization is also seen to decrease the trust and legitimacy of health systems that are recruited to tackle the very issue of correcting the problem (Alegbeleyea & Mohamed 2020).

COVID-19 and impact on healthcare and Neglected Tropical Diseases (NTDs)

Even as the government increased the level of vector surveillance, in line with best practices across the globe and reassigned some public health facilities to focus on COVID-19 patients, (Gidney 2015), changed the workflow, isolated specific sections of health facilities and provided protection equipment (Wong, et al 2020), there has been a marked decrease in the level of trust of healthcare facilities and the health system. The perception that interactions might lead to contracting COVID-19 or that individuals might be suspected of being infected, led to lower utilization of health care facilities and services, even for the treatment of other illnesses (Alegbeleyea & Mohammed 2020). As a newer illness, much is still being learned, information changes daily and guidance is often contradictory on COVID-19.

Similar to other countries and health systems, there are significant supply chain challenges of diagnostic and preventive kits, resource deficiency (e.g. availability, supply and the number of mechanical ventilators), the lack of treatment and inconsistent guidance on transmission, prevention and social distancing measures, virus survival and strategies to contain its spread, and lackluster efforts at follow-up on seeking medical treatment (Alegbeleyea & Mohammed 2020).

Kenya"s experience with some of these issues mirrors other African countries. On any regular day, overtaxed, understaffed and insufficiently resourced health facilities struggle to attend to long, snaking lines of patients from dawn to dusk. Imposition of a 7 p.m. to 5 a.m. curfew, combined with the higher-level use of public transportation requiring better planning to avoid getting caught outside as curfews are enforced, the limited number of patients that hospitals can see, given the government-mandated 1.5 meter social-distancing spacing between persons, necessary especially in hospitals which can be disease vectors, has seen a precipitous decrease in the use of healthcare facilities (Lagat *et al*, 2020). The stigma extends to the possible management of other diseases; a 2020 HIV-study in Uganda found that "COVID-related stigma discourages use of healthcare facilities where HIV testing services are located" (Ponticiello, *et al.* 2020). Considering that HIV was considered a death sentence and testing was minimal, undoing this progress will have deleterious effects; increasingly better HIV management, and care for other illnesses such as Tuberculosis is significantly impacted.

The government's approach towards COVID-19 management by charging for quarantine and tests is ineffective. Whereas private health insurance has been picking up, since most Kenyans have health insurance through the National Hospital Insurance Fund (NHIF), with 7.6 million 'principal subscribers' facilitating

coverage for 25 million beneficiaries (Wanjau 2019). Provider imposed utilization limits often limits the level of access to necessary medical care. Interestingly, even as health facilities in the counties have been labeled COVID19 facilities, only 58 percent of hospital beds have oxygen supply, the capacity to handle COVID-19 varies from 12 percent to 145 percent across counties, 50 percent of counties have at least an ICU unit, while far more ICU beds and ventilators will be needed over the long term (Barasa, Ouma & Okiro 2020).

Thus, even where the stigma of COVID-19 (treatment facilities) fails to dissuade patients, the cost of outof-pocket medical care, the slowdown in economic activity impacting ability to pay produces marginal choices for patients. The practice of detention in healthcare facilities for outpatient medical services is ever present, even though some of the services can be paid for using NHIF. At the same time, the designation of some hospitals as COVID-19 facilities decreases the number, and ability of patients to consult with their preferred provider or having to pay out of pocket rather than using the NHIF benefits, because their regular facility has been designated a COVID-19 facility. This is even further compounded by the lack of portability and sharing of medical records; visiting a new facility almost necessarily implies restarting the process all over again, consuming time and resources. Some of the „new" facilities lack the medical professionals and treatment capacity for certain illnesses, and for most people, having already paid NHIF premiums of up to Kshs. 6,000, out of pocket payments make foregoing medical care more appealing, at a time when the incidence of more NTDs and lifestyle illnesses are on the rise (Mbau, Kabia, & Honda, *et al* 2020).

Containing COVID-19: Economic impact

Even as COVID-19 spread in the early days, there was a heightened awareness of the potential impact of the virus on their livelihoods, on business and the economy. Payce cites a March 17th GeoPoll that found that 79 percent of Kenyans "believe that they will be worse off financially as the virus spreads" (Payce 2020, n.p.). As the crisis has unfolded, the financial impact has continued to increase. Pandemics have both health and economic implications: COVID-19"s economic impacts mirror other findings on the impact of pandemics in general.

The Asian Development Bank (ADB), for example, estimated that the cost of the 2002-2004 SARS outbreak was between US$10 billion and $30 billion (Fleming & Parker 2009), while estimates of the cost of the COVID-19 pandemic ranges between US$5 and US$8 trillion (BBC News 2020; UN-DESA News 2020), accounting for about 5 percent of annual global economic output (Alegado 2020).

Most health-related crises fail to attract attention on the economic implications, and generally do not include economic intervention solutions as part of recovery. COVID-19 pandemic has seen more economic intervention, with the goal of shoring up economies and businesses and supporting citizens, contrary to the practices of past epidemics that were considered more in the context of public health crises (Commission on a Global Health Risk Framework for the Future 2016). These economic corrective actions are often dependent on each national jurisdiction, run the risk of running afoul of WTO rules against subsidies to firms, giving undue advantage to companies and making them more – a common accusation leveled against centrally planned economies. Kenya's activities so far have been limited to a marginal reduction in the Value Added Tax (VAT) and personal income tax relief. While this has the potential to increase take-home pay, government's no pharmaceutical interventions have led to furloughs and dismissals as companies find it challenging to pay wages in the COVID environment. A secondary outcome is that the small numbers of individuals in formal and informal environment have decreased further, from a high of 14 percent; as a share of the total, the figure of 2.7 million accounts for 83 percent of informal employment opportunities, against

17 percent employed in the formal sector (IEA 2020). Rural population has also decreased steadily from a high of 92.5 percent of all population to the current 72.8 percent in 2020 (World Bank 2020).

A factor that would, at any other time spell trouble, i.e., the percentage of Africa's population that works in agriculture, can mitigate the economic impact of COVID-19. FAO estimates that more than any other region, 57 percent of sub-Saharan Africa's population works in agriculture (Wenger & Abulfotuh 2018), while agriculture accounts for 23 percent of African economies total annual economic output (di Falco 2018). That said, almost half a billion of Africa's estimated 1.37 billion population does not work in agriculture and has little in way of social services or other basic income support. Further, extreme poverty remains a challenge, exacerbated by the conditions imposed by COVID-19. On the flipside, Nelson estimates a total of 500 million smallholder farmers in the developing world who primarily work in agriculture. They are, according to the Global Food Policy report of 2019, "among the world's poorest and most vulnerable people" (2020: 59) unlikely to be unaffected by the pandemic especially as markets for their goods continues to evaporate.

In a 2018 report, the World Bank forecasted, before any of the current economic shocks, an „average extreme poverty rate' for Sub-Saharan Africa's 860 million population at 25 percent (over 200 million). Even if Africa was to grow at an average annual economic growth of 8 percent, the extreme poverty rate would still come to 13.5 percent, whereas around the world, it does not exceed 2 percent (World Bank 2018). It is a reasonable expectation that the pandemic will make economic conditions worse, but, given especially that 3 of 5 people living in poverty are to be found in Africa, the impact, and the challenge, becomes greater. In terms of income growth, achieving 4.9 percent from 2008 through 2030 is estimated to potentially reduce the number of poor people to 200 million (Christiaensen & Hill 2019). Although 75 percent of Africa's COVID-19 cases are in 7 countries,

Nigeria, with 16 percent of Africa's population shows that the use of one model of estimating poverty (GHS Panel) versus another (NLSS panel) changes numbers of those in poverty or not, making accurate estimates of poverty's impact challenging (Beegle, Christaensen, Debale and Gaddis 2019). There is no doubt that COVID-19 will exacerbate poverty.

Confounding Variables: Environmental Conditions and Impact on Kenya

As Kenya is battling the new COVID-19 pandemic and its realities, two unrelated catastrophes were either unfolding or seeing the second phase; these had nothing to do with the pandemic. One of the calamities was the desert locust infestation. The locusts were present more broadly in the Arabian Peninsula over the past 18 months but migrated southwest into Somalia, swept along by favorable winds and climate change. The locusts are now thriving in the region (Stone 2020); the most affected countries are Ethiopia, Djibouti, Eritrea, Kenya, Somalia, South Sudan, Sudan, Uganda and Tanzania. The swarms are estimated to contain locusts in the billions, and the second wave (the offspring of the first wave) started in February 2020, although FAO suggests that it is beginning in June (FAO 2020). The implications of the locusts are dire: ECHO estimates that one square kilometer holds up to 40 million locusts, and they can consume an amount of food equivalent to 35,000 people. They damage pasture and food crops, and this particular infestation is considered the worst in Kenya in the past 70 years (ECHO 2020).

National Geographic mapping shows that majority of Kenya is square in the path of the locusts. Although the government embarked on spraying them to kill and reduce the size of swarms and their effects, efforts have been sporadic and inconsistent, as food shortage implications of the locusts especially in Kenya continue to be known as far back as the late 1800s.

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A second, more curious, historical and predictable environmental factor is the perennial floods that occur with clockwork precision each April. Whereas the northern and southern regions of Kenya are more arid, the central and western regions, with higher elevation and more regular rainfall, do experience annual flooding (Opere 2013), with the floods affecting hundreds of thousands of hectares of farmland and millions of citizens (Paron, Olago & Omuto 2013). The rainfall and floods that inevitably follow returned this year in March and April. As of 6th May 2020, they had killed more than 200 people and displaced more than 233,000 and affected 36 of the 47 counties (75 percent). In comparison, Kenya's COVID deaths did not reach 100 until the first half of June 2020. Those who were displaced by the floods found shelter in local schools and other relief centers, but with so many people displaced, it has been increasingly difficult to ask, or even compel, individuals to wear face coverings or employ social-distancing practices (2020). From a survival perspective, fearing COVID while being swept away by floods seems like a no-contest affair.

Centrality of Socio-Cultural Issues and Contestation

As COVID-19 spread rapidly around the world, one of the most significant pathways to transmission was through congregating persons in the so-called 'super-spreader' events: in the US, it was Mardi gras and basketball games, spring break beach parties and mega church services. In Europe, soccer stadiums became a major pathway even as the nursing (care/seniors) homes mirrored the American experience. Yet even highly populated social spaces including bars, churches, parties, night-clubs, softball events and even classrooms, whose population was not in the thousands, had to be discontinued with social distancing becoming the go-to concept. Kenya followed suit, closing schools and suspending religious services (in churches, mosques, temples and other places of worship), weddings, funerals and Harambees (communal fundraisers). Prior research finds that social events such funerals and weddings impact contagion (Lynteris & Evans 2018). African societies are keen adherents of traditions and religion, yet the performance thereof was undoubtedly going to impact transmission. Kenya‟s closure of social activities was met with consternation and occasional violations, even at the risk of being arrested and confined to the sub-par quarantine facilities.

As the so-called cabin fever of staying home persisted, government mandates ran into the realities of cultural traditions. Kenya‟s three sources of law – constitutional/legal, traditional and religious often work closely together, but government authority is often challenged by tradition. Different Kenyan communities carry out their cultural activities surrounding the stages of life, most especially regarding the end-of-life (Renteln 2004). Burial is one of the most important of these rites and such importance is recognized from a cultural perspective. The burial rights "serve to redistribute the roles of the deceased among the survivors, adjusting the social roles of those who remain in order to ensure the continuity of the group" (PAHO 2004, 102), particularly those that believe in transitions to the spirit world. If such practices are not followed, it is assumed that the progression of "socially important roles is altered, causing damage to the social framework (PAHO 2004, 101); there are thus more compelling reasons for communities to continue these practices, fearing the spirit world more than they might a viral pandemic.

Burial ceremonies are often highly elaborate, multi-day, multi-person affair that includes mourning and wailing, dancing and other activities, all of them requiring and attracting the participation of hundreds, sometimes thousands of individuals (Njue *et al* 2015). The communal nature of funerary practices thus qualifies them as super-spreader events, yet the tension between good public health practices and proper burial (and other) events is evident and has been subjected to new guidelines. Non-pharmaceutical proscriptions have long recognized the necessity of proper management of the deceased, for example during the Ebola outbreaks in West Africa - although Lynteris & Nicholas suggest that proscription is based on the perception of

"'traditional African' burial as a 'culture vector' of the lethal virus" (2018, p. 2). In the case of COVID-19, the virus has been shown to transmit in aerosolized form even when individuals are asymptomatic. In the past couple of months, communities have chafed at being unable to properly bury their dead; notwithstanding what purpose the rites serve, the conditions and prohibitions are not just about African traditions.

For Kenya, some of the new guidelines included prohibition on transporting bodies across the country especially COVID high-risk counties, banning of burial processions, constraining practices such as leaving the body in the house overnight before burial (the deceased spending the last night at home), limiting the number of those present at burials to a maximum of 15, burying the body at night, burying bodies in secret, burial within 48 hours of death among conditions; opposition to these prohibitions has led to clashes between police and mourners, some who had gathered in the thousands, deigning it the proper way to mourn and bury kin. Aware of these violations, their implications but also the tensions, Kenya's acting Director of Health restated: "I want to urge those attending burials not to let more than 15 people participate and we are working with the law enforcement offices to ensure that this is adhered to" (Ministry of Health 2020).

Conclusions:

As the global Covid-19 situation unfolded, and the absence of specific and effective treatment for the disease, countries across the globe have focused on prevention and early containment of the virus as the most viable option to reduce the spread of the virus. Countries have taken drastic measures including border closures, travel bans, mandatory quarantines, closing all institutions of learning and increased social distancing. So far, the world has seen the devastating impact of the pandemic not only on the health systems but also in economy, education and the social well-being of communities. It has also exposed the poor preparedness of public health systems for pandemics not only in limited resource countries but also in economic giants such as the United States. However, both the impact of the disease as well as the measures to contain its spread, are more profound in limited resource countries that lack any form of social safety nets for their citizens as we have discussed in the case of Kenya. The situation in Kenya mirrors those of many African nations and other less developed countries. While the focus in Kenya and other sub-Saharan Africa has been mostly on the health challenges, the pandemic also poses real economic challenges. With the enormous loss of income especially for the daily wage earners, small businesses and small-scale farmers, there would be potential concentration of abject poverty especially in the world's poorest regions. It is almost certain that this impact will trickle down to other indicators of society's wellbeing such as infant mortality and malnutrition especially among children and educational achievement.

Similar to the policy reactions that the health sector received internationally to contain the virus, these economic impacts call for governments policies to protect those for whom their livelihoods have been adversely affected and their income-generation possibilities have been put on-hold.

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