



The Economic Impact of
COVID-19 and Prospects for a
Post-Pandemic Economic
Recovery in Africa

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Abstract

This study explores Africa's response to the COVID-19 pandemic during 2020 and 2021, with a focus on the economic impact of measures taken to curb the spread of the virus, and the prospects for economic recovery following the pandemic. This is explored by reviewing and contrasting the responses to the pandemic of five African countries—Egypt, Ethiopia, Kenya, Nigeria, and South Africa.

The study also considers key issues facing the five countries such as vaccine rollouts, continent-wide integration, external financial support, and medium-term trajectories, as well as the developmental challenges the pandemic has exacerbated, which need to be addressed to accelerate recovery. These include inequality, a lack of statistical data, the barriers African countries face in accessing the digital economy, a lack of quality education, as well as pervasive informality.

Given the dynamic environment and rapidly changing COVID-19 landscape globally, the study relied on secondary research methods in order to access the latest pertinent information and data. This included the collection of information from respected internet data portals and databases, newspaper articles, online health and science journals, and special reports from organizations such as the World Health Organization and World Bank.

The study finds that not only were African governments unprepared to effectively manage a crisis of this nature, the pandemic accentuated challenges that have existed in Africa for decades. This includes weak institutions, poor health and education systems, and widespread poverty. While it is too early to predict the economic impact of the COVID-19 pandemic on Africa in the long term, it is evident that the continent's post-pandemic recovery will not be even. Further and ongoing research into the growing body of work around COVID-19 and its impact on countries, particularly those in Africa, is required.

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LIST OF ABBREVIATIONS AND ACRONYMS

| | |
|------------|--|
| AfCFTA | African Continental Free Trade Area |
| AfDB | African Development Bank |
| Africa CDC | Africa Centers for Disease Control and Prevention |
| AGOA | African Growth and Opportunity Act |
| CEPI | Coalition for Epidemic Preparedness Innovations |
| COVAX | COVID-19 Vaccines Global Access |
| COVID-19 | Infection caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) |
| EAC | East African Community |
| FDA | U.S. Food and Drug Administration |
| FDI | Foreign Direct Investment |
| Gavi | The Vaccine Alliance, formerly known as the Global Alliance for Vaccine and Immunization |
| GDP | Gross Domestic Product |
| GPE | Global Partnership for Education |
| GNI | Gross National Income |
| IFC | International Finance Corporation |
| IMF | International Monetary Fund |
| KEMSA | Kenya Medical Supplies Agency |
| mRNA | Messenger RNA |
| NAFDAC | National Agency for Food and Drug Administration and Control (Nigeria) |
| NBP | National Broadband Plan |
| NBS | National Bureau of Statistics (Nigeria) |
| NOFBI | National Optic Fiber Backbone (Kenya) |

| | |
|--------|---|
| NPHCDA | National Primary Health Care Development Agency (Nigeria) |
| OPEC | Organization of Petroleum Exporting Countries |
| PHC | Primary Health Care |
| PHIs | Public Health Interventions |
| SMME | Small, Medium and Micro Enterprise |
| TPLF | Tigray People's Liberation Front |
| UN | United Nations |
| UNCTAD | United Nations Conference on Trade and Development |
| UNECA | United Nations Economic Commission for Africa |
| UNICEF | United Nations International Children's Emergency Fund |
| WEF | World Economic Forum |
| WHO | World Health Organization |

Foreword

WILMOT G. JAMES

IN AUGUST 2020 THE SCHMIDT FUTURES PHILANTHROPY commissioned the Center for Pandemic Research at Columbia University to do a five-country study of COVID-19 pandemic response contrasting Egypt, Ethiopia, Kenya, Nigeria, and South Africa. Drawing on five months of empirical materials, the research team prepared an interim report focused on the public health, economic, and governance/leadership aspects, which was presented to the high-level Futures Forum for discussion in January of 2021.¹

This report—*The Economic Impact of COVID-19 and Prospects for a Post-Pandemic Economic Recovery in Africa*—continued the analysis of the economic impact of the COVID-19 pandemic interventions in the five countries to the end of 2021. It is divided into three parts: (1) an analysis of the initial economic impact of the pandemic; (2) the economics of vaccine rollouts; and (3) Africa’s future development trajectory. The prospects for economic recovery and future progress are considered in the conclusion.

The picture painted by the authors—Lyal White, Liezl Rees, Heinrich Volmink and Nikitta Hahn—is deeply challenging but by no means grim. Their slogan for Africa is ‘catch up, don’t give up.’ Of course, Africa is a continent of enormous variation, and some countries are better equipped to recover than others. Since the pandemic broke, Ethiopia is in the midst of a nasty war. South Africa has struggled to make necessary bold economic reforms. Egypt has done well with their vaccine initiatives. Nigeria and Kenya have done better economically than expected.

The fundamental challenge for Africa—and perhaps for elsewhere—is whether countries will borrow, grow or rely on aid to get themselves out of trouble. The smart money is on a felicitous balance between the three variables but with a laser-like focus on growth. To get there, the authors identify three key areas that must be fixed—lowering access barriers to the digital economy, supporting vulnerable informal business networks, and scaling up access to quality education.

¹ Wilmot James, Amanda McClelland, Lawrence R. Stanberry, Lewis Rubin Thompson, and Lyal White, “Epidemic/Pandemic Response in Africa: Covid-19 in Egypt, Ethiopia, Kenya, Nigeria and South Africa,” (Columbia University and the Brenthurst Foundation, January 2021). Available at: https://iserp.columbia.edu/sites/default/files/EPRiA_Full_20Jan.pdf.

Preface

ROBERT Y. SHAPIRO

THE ACADEMY OF POLITICAL SCIENCE IS PLEASED TO PUBLISH this important five-country study of the response to the COVID-19 pandemic by Egypt, Ethiopia, Kenya, Nigeria, and South Africa. The authors, Lyal White, Liezl Rees, Heinrich Volmink, and Nikitta Hahn faced the challenge of writing about this in real time, as health and economic conditions changed in these countries as the novel coronavirus ran its course and with new variants. They showed that this work could be done quickly and most capably.

What happened in these countries in Africa, especially as we say later in South Africa, had ramifications and offered learning experiences for the rest of the world. The Academy, as part of its mission to publish work of real-world relevance in politics and policymaking, was happy to work with the authors and with Wilmot James of the Center for Pandemic Research (Institute for Social and Economic Research and Policy, Columbia University) in the publication and dissemination of this report.

ROBERT Y. SHAPIRO is President of The Academy of Political Science and Professor of Political Science and International and Public Affairs at Columbia University

Introduction

THE COVID-19 PANDEMIC WILL HAVE A SEVERE AND LASTING economic impact on Africa, as the economic and social impact of policy responses introduced to stem the spread of infection from 2020 already show. The Africa experience of lockdowns is not that different from the broader global experience. But it is in the longer-term economic implications of the pandemic in Africa where the post-pandemic story of the continent may deviate significantly from other regions. Admittedly, this can be partially attributed to the history of economic catch-up, the surge in growth and anticipated development between 2000 and 2010, and subsequent lackluster performance of the continent from 2013, which contributed to poor delivery and inadequate institutional coverage in many countries.

The severity of the COVID-19 pandemic on the global economy is well documented. World Gross Domestic Product (GDP) contracted by 3.2% in 2020. Sub-Saharan Africa's decline was much more severe, with the -1.9% contraction precipitating the first continent-wide recession 25 years, according to the International Monetary Fund (IMF).² Although lower than initially expected, it is a concerning reversal of Africa's developmental progress over the decade to 2020.

A significant rebound in growth is expected, globally and in Africa. According to the IMF, global growth was expected to reach 6% globally in 2021 and 3.4% in Africa. However, the organization also says Africa will be the world's slowest-growing region in 2021 and per capita GDP is not likely to recover to pre-crisis levels until 2025.

Recovery across the continent will not be linear; Africa is likely to present an increasingly disparate set of numbers and performance indicators across its 54 countries over the next few years. Policy limitations and the role of aid and debt relief may add further to the disparities in growth, approaches, and outcomes.³

This study addresses key questions related to these challenges, examined through an African lens. Given the size of the continent and differences across sub-regions and countries, five countries have been selected for in-depth analysis. They are Egypt, Ethiopia, Kenya, Nigeria, and South Africa. These are all significant countries in their respective sub-regions, carrying substantial weight in terms of economic size, population, and political influence in the broader African context.

South Africa, Nigeria, and Egypt are the three largest economies in Africa. Collectively, they comprise more than 60% of Africa's GDP. Ethiopia, with 115 million people, has the second largest population in Africa (after Nigeria), and more than 70% of its people are under the age of 30. Before the pandemic, Ethiopia was frequently cited as one of the most promising economies on the continent, having enjoyed consistently high growth for nearly 20 years. Kenya, meanwhile, is widely regarded as a champion of regional integration and innovation and has driven positive diplomatic engagement with both the East and West. The country has also been recognized as being

² This was according to the IMF, 'Regional Economic Outlook. Navigating a Long Pandemic'. See: <https://www.imf.org/-/media/Files/Publications/REO/AFR/2021/April/English/text.ashx>.

³ See K. Gern, O. Luck & S. Meuchelbock, 'COVID-19 in Africa and its Impact on the Economy', *KIEL Policy Brief* No. 158, September 2021, IFW Kiel Institute for The World Economy (ISSN 2195-7525).

pivotal to Africa's economic modernization and integration in the global economy as a result of its widely recognized and progressive innovations and the priority it has given to connectedness at both the sub-regional and continental level.

The study is divided into three main sections. Section One assesses the initial economic impact and comparative responses of the five countries, which provide a representative sample of Africa, to the first wave of the pandemic in 2020. It also touches on issues pertinent to continent-wide integration, external support, and medium-term trajectories.

Section Two covers the economic impact of the pandemic in 2021, with particular reference to vaccine rollouts across the continent.

Section Three takes a retrospective view of key issues and developments in Africa that are relevant to a post-pandemic world more broadly, and to Africa's trajectory in particular. It identifies five key developmental challenges that have been exacerbated by the pandemic, which need to be addressed to accelerate recovery. These are:

- Pervasive inequality
- A lack of statistical data
- Continental barriers to connecting with the digital economy
- The impact of vulnerable informal business networks
- Limitations in access to quality education.

This section highlights the need for further discussion and research to contribute to the growing body of work on COVID-19 and its impact on countries and provide economic lessons pertinent to a post-pandemic Africa.

Section One | The Initial Impact of COVID-19 on Africa: Comparative Responses and Economic Results Following the First Wave in 2020

THE GLOBAL CRISIS PRECIPITATED BY THE COVID-19 PANDEMIC in 2020 had an immediate impact on Africa. Economic lockdowns and closed borders reversed many of the gains in growth and development achieved over the decade leading up to the outbreak of the pandemic.

Economic output declined rapidly in the wake of lockdowns that cut ties between Africa and its trade and investment partners across the globe and forced businesses to close their doors for an undetermined time. Exports were halted as supply chains were cut, flights were grounded, and capital markets stopped. Hard-won gains in poverty reduction were reversed, with the pandemic estimated to have increased the number of people living on less than \$1.90 per day by 2.3% rising from 34% in 2019 to 35% in 2020 and 2021.⁴ A staggering 25 million Africans are estimated to have been pushed into extreme poverty in 2020.⁵

Stringent and prolonged lockdown measures designed to reduce the spread of the virus and avoid overwhelming already fragile healthcare systems had serious socioeconomic implications for African countries although the consequences of these varied in their severity across the continent. While these measures helped to flatten the infection curve, they also negatively affected economic growth and development. The United Nations Economic Commission for Africa (UNECA) estimated that each month of full lockdown across Africa would cost the continent 2.5% of its annual Gross Domestic Product (GDP).⁶ Ultimately, growth in Sub-Saharan Africa contracted by 2.1% in 2020, the worst economic performance of the region on record.⁷

Africa's economy was expected to contract by between -3.4% and -5.2% in 2020, sparking the first recession on the continent in 25 years, and reducing per-capita incomes to levels last seen in 2010. This is according to initial forecasts made by a cross-section of multilateral organizations and research advisories tracking economic growth in Africa in the first half of 2020, including the World Bank, IMF and the African Development Bank (AfDB).⁸ While the impact of the pandemic on the continent was severe, it was not as harsh as the initial projections had forecast.

⁴ See Africa's extreme poverty rates on the World Poverty Map at <https://worldpoverty.io/map>.

⁵ See Africa's extreme poverty rates on the World Poverty Map at <https://worldpoverty.io/map>.

⁶ UNECA, 'COVID-19 Lockdown Exit Strategies for Africa', United Nations Economic Commission for Africa, May 2020. Available at: <https://repository.uneca.org/handle/10855/43760>.

⁷ International Monetary Fund, SSA Regional Economic Outlook, October 2021. Available at: <https://data.imf.org/?sk=5778F645-51FB-4F37-A775-B8FECD6BC69B>.

⁸ A. Gregory, 'Coronavirus could reverse a decade of progress in tackling global poverty, UN study suggests', *Independent*, 19 July 2020. Available at: <https://www.independent.co.uk/news/world/coronavirus-poverty-inequality-index-hunger-united-nations-ophi-a9627276.html>.

While many countries did not suffer from high infection rates, they were affected by the impact of lockdowns in other regions, particularly regarding trade, the fall in commodity prices, travel lockdowns, and other measures.

South Africa, Nigeria, and Egypt—three of the five countries under study—comprise about 60% of Africa’s total GDP, making their performance relevant to an examination of the broader impact of the pandemic on the continent. The mediocre economic performance of Nigeria and South Africa weighed heavily on the continent’s broader economic performance even before the 2020 decline.

The impact of COVID-19, and the consequences of Public Health Interventions (PHIs) varied across the continent. This is evident in the five countries covered in this study, all of which responded relatively quickly to the pandemic, partly because of the alarming coverage coming out of several European countries and China in the early months of 2020. Egypt and South Africa were among those praised for their early and decisive action, which undoubtedly curbed the spread of the virus during the first wave.

However, while Kenya and Nigeria implemented progressive lockdowns, with specific targets, South Africa’s ongoing blanket lockdowns with varying levels of restrictions had a serious impact on the economy. Most other countries implemented less severe lockdowns and did so over a shorter period. They also factored in the impact of the actions on revenue and productivity, mindful of preparing for eventual recovery.

In all cases, except in South Africa, business confidence began to recover in late 2020. This was a crucial prerequisite to attracting international capital and resuming trade and investment activities.

Despite this, the pandemic continued to have an impact on regional integration and connectivity in Africa. The lockdowns immediately hampered the movement of goods, services, capital and, most importantly, people, across borders. Even where borders were open, COVID-19 tests and other protocols held up trade in many regions. It brought into question the responsiveness of sub-regional blocs to challenges related to intra-Africa trade and connectedness.

It proved to be a test for the launch of trading under the African Continental Free Trade Area (AfCFTA), which was delayed by COVID-19 from mid-2020 to 1 January 2021, reflecting the need for greater attention to be paid to trade facilitation on the ground, even as high-level discussions on integration continue.

It remains to be seen whether COVID-19 will be a catalyst for the long-delayed integration and structural reforms that will shape a continent that is more competitive, modern, and open economically. The likelihood of such a reset will largely depend on individual country responses to COVID-19 and their respective approaches to economic recovery.

COMPARATIVE PRE-PANDEMIC MACROECONOMIC ACTIVITY IN SELECTED AFRICAN COUNTRIES

As has been highlighted, Egypt, Ethiopia, Kenya, Nigeria, and South Africa are all leaders in their respective sub-regions and carry significant weight in terms of their economic size and trajectory, population, and political influence in the broader African context. A variety of factors, including demographics, geographical size, urbanization, levels of development, political systems, and healthcare facilities, distinguish each country and its unique challenges.

TABLE 1
GDP Percentage Growth Rates 2018-2022

| Country | 2018 | 2019 | 2020 Forecast | 2020 | 2021 Forecast | 2022 Forecast |
|------------------------|------|------|------------------|------|------------------|------------------|
| Egypt | 5.3 | 5.6 | 1.9 | 3.6 | 2.5 | 5.2 |
| Ethiopia | 7.8 | 9.0 | 2.6 | 6.1 | 2 | 8.7 |
| Kenya | 6.4 | 5.5 | 0.6 | -0.3 | 7.6 | 5.7 |
| Nigeria | 1.9 | 2.2 | -5.3 | -1.8 | 2.5 | 2.3 |
| South Africa | 0.8 | 0.2 | -8 | -7 | 3.1 | 2 |
| Brazil* | 1.8 | 1.4 | -5.8 | -4.1 | 3.7 | 2.6 |
| United Kingdom* | 1.3 | 1.4 | -10.4 | -9.9 | 5.3 | 5.1 |

Source: The average based on the figures and forecasts of the World Bank, IMF and AfDB for 2018, 2019 and the 2020 estimate. The 2021 and 2022 estimates are based on the latest figures from the IMF.

Note: Brazil and the United Kingdom have been included for comparative purposes.

This highlights the fact that a single solution or approach to dealing with the pandemic could not be uniform across the continent. The variety of different economies flagged the need for country-specific data and a tailored response that took account of the need to balance public health needs with economic security.⁹

In 2020, South Africa and Nigeria experienced their sharpest economic decline in more than 20 years. According to early forecasts made by the IMF and other multilateral agencies, South Africa's growth was expected to contract by up to 8% and Nigeria's by at least 5% in 2020. This was on top of a poor growth record in both countries over the previous five years. In the fourth quarter of 2019, South Africa slipped into its third recession since 1994 and overall, the South African economy grew by just 0.2% that year, the lowest since 2009, according to Statistics South Africa.¹⁰

Nigeria also entered the pandemic period off a low base. It was still recovering from the impact of a severe recession that began in mid-2016 as a result of a sharp drop in oil prices. Although it restarted growth in the second quarter of 2017 on the back of improved prices and oil production, growth was slow as it battled with lingering challenges such as currency devaluation.¹¹

The Egyptian economy was projected to slow dramatically from its previous growth levels above 5%, but still record growth of about 2%. Economic growth in Ethiopia and Kenya was expected to reach 2.6% and 0.6% respectively in 2020, which was substantially lower than the high rates of growth experienced in those countries over the past decade.

⁹ A. Mishra, 'Africa and COVID-19: Impact, Response, and Challenges to Recovery', Observer Research Foundation (ORF) Occasional Paper, September 2020.

¹⁰ T. Mathe, 'South Africa's economy plunges into a recession', *Mail & Guardian*, 3 March 2020. Available at: <https://mg.co.za/article/2020-03-03-south-africas-economy-plunges-into-a-recession> (accessed 21 November 2021).

¹¹ PwC, 'Nigeria's economic recovery. Defining the path for economic growth'. Available at: <https://www.pwc.com/ng/en/publications/nigerias-economic-recovery.html> (accessed 21 November 2021).

TABLE 2
Unemployment, Total (% of total labor force, modeled on ILO estimate)

| Country | 2018 | 2019 | 2020 |
|-----------------------|------|------|------|
| Egypt | 9.8 | 9.7 | 10.5 |
| Ethiopia | 2.1 | 2 | 2.8 |
| Kenya | 2.6 | 2.6 | 3 |
| Nigeria | 8.5 | 8.5 | 9 |
| South Africa | 27 | 28.5 | 28.7 |
| Brazil | 12.3 | 11.9 | 13.7 |
| United Kingdom | 4 | 3.7 | 4.3 |

Source: The figures in this table were obtained using the World Bank's online database: <https://data.worldbank.org/indicator/SU.UEM.TOTL.ZS?end=2018&locations=EG-ET-KE-NG-ZA-BR-GB&start=2018&view=bar>.

Actual economic growth rates achieved by Egypt (3.6%), Ethiopia (6.1%), and Nigeria (-1.8%) were significantly higher than those forecast. Projections for South Africa were relatively accurate, with a 1% difference between projected (-8%) and actual GDP rates (-7%), while those for Kenya were worse than expected as growth rates declined to -0.3% in 2020 (see Table 1 for a comparison between 2020 economic growth forecasts and actual growth).

Lockdowns had a significant impact on unemployment. In 2019, according to the AfDB, approximately 773.4 million Africans were employed in the formal job market, with this number projected to increase marginally to 792.7 million in 2020.¹² The jobs crisis predated the pandemic, with a rapidly growing youth population entering the jobs market each year but leaving empty handed. Many ended up in the informal economy, which has long been a significant source of income and job creation for most people in Africa. The size of this market has been difficult to quantify as it is not captured in official statistics.

Table 2 shows that unemployment marginally increased between 2018 and 2020 in the five countries in this study, while noting that the informal sector accounts for more than 80% of non-agricultural jobs and more than 60% of urban employment. However, it does not give a true indication of how many people were not economically active because of the COVID-19 pandemic. For example, Nigeria's Bureau of Statistics found that one in every two Nigerians in the country's labor force was unemployed or underemployed in the second quarter of 2020, bringing the unemployment rate in the country to 27%, which is significantly higher than the International Labor Organization's (ILO) estimates in Table 2.¹³

¹² Africa Development Bank, *Africa's Growth Performance and Outlook Amid the COVID-19 Pandemic*, March 2021. Available at: https://www.afdb.org/sites/default/files/2021/03/09/aeo_2021_-_chap1_-_en.pdf (accessed 25 August 2021).

¹³ Y. Kazeem, 'Nigeria's unemployment rate has more than tripled in the last five years – and it will only get worse', *Quartz Africa Online*, <https://qz.com/africa/1892237/nigerias-unemployment-rate-tripled-in-five-years>.

TABLE 3
Manufacturing, Value Added (% of GDP)

| Country | 2018 | 2019 | 2020 |
|-----------------------|------|------|------|
| Egypt | 16.2 | 15.9 | 16.2 |
| Ethiopia | 5.8 | 5.6 | 5.3 |
| Kenya | 7.8 | N/A | N/A |
| Nigeria | 9.6 | 11.5 | 12.7 |
| South Africa | 11.8 | 11.8 | 11.5 |
| Brazil | 10.5 | 10.1 | 9.8 |
| United Kingdom | 9 | 8.7 | 8.4 |

Source: The figures in this table were obtained using the World Bank's online database: <https://data.worldbank.org/indicator/NV.IND.MANF.ZS?end=2020&locations=EG-ET-KE-NG-ZA-BR-GB&start=2020&view=bar>.

TABLE 4
Foreign Direct Investment (USD Millions)

| Country | 2018 | 2019 | 2020 |
|-----------------------|--------|--------|--------|
| Egypt | 8 141 | 9 010 | 5 852 |
| Ethiopia | 3 310 | 2 549 | 2 395 |
| Kenya | 1 139 | 1 098 | 717 |
| Nigeria | 775 | 2 305 | 2 385 |
| South Africa | 5 450 | 5 125 | 3 106 |
| Brazil | 59 802 | 65 386 | 24 778 |
| United Kingdom | 65 299 | 45 454 | 19 724 |

Source: UNCTAD, World Investment Report 2021.

When considering the manufacturing output of the five countries, as a share of each of their economies, there was a marginal difference between 2018 and 2020 across all countries in this study (see Table 3).

In 2020, Foreign Direct Investment (FDI) flows to Africa were at their lowest level in 15 years, declining by 16% to \$40 billion. Nigeria was the only country out of the five in this study that saw an increase in FDI in 2020 from the previous year (see Table 4). This was attributed to the government's long-term FDI diversification policy, and several key investments, including \$66 million from Kenya's Ariel Foods for the construction of a manufacturing facility in the Lekki Free

Trade Zone and \$221 million from China Communications Construction Company in the Lekki Deep Sea Port, among others.¹⁴

Egypt maintained its position as the largest recipient of FDI on the continent, despite a substantial reduction of 35% in 2020.¹⁵ Ongoing efforts to improve FDI diversification in the country include an agreement to launch a \$16 billion Saudi–Egyptian investment fund, which will prioritize sectors such as health and pharmaceuticals, digital technologies and financial services, and infrastructure and tourism.¹⁶

FDI to Ethiopia decreased marginally in 2020, by 6% to just under \$2.4 billion. As part of the government’s efforts to attract investment, incentives were put in place to attract foreign investment in the manufacture of personal protective equipment (PPE).¹⁷ Inflows to Kenya dropped to \$717 million from just over \$1 billion in 2019 as a result of COVID-19 restrictions and ownership rules requiring foreign firms in certain industries to increase local ownership, making the investment climate less attractive.¹⁸ Levels of restrictions for foreign investors vary from sector to sector in Kenya, including those in telecommunications, aviation, insurance, financial institutions, mining, and engineering.¹⁹

South Africa has struggled to attract FDI for several years due to the country’s increasingly unfavorable investment environment. Factors such as COVID-19-related challenges, longstanding structural issues, political uncertainty, and the failure to tackle corruption saw FDI to South Africa fall 39% over the period, to \$3.1 billion.²⁰

Trade was severely affected by the lockdown measures implemented by countries around the world and the cost of logistics increased. Table 5 and Table 6 show the export and import of goods and services as a percentage of GDP across the five countries.

Declines in imports can be attributed to supply chain disruptions and border closures as well as efforts to source manufacturing inputs locally rather than importing them. For resource dependent countries such as Nigeria, the global drop in demand for fuel had dire consequences for exports in 2020. Oil prices declined dramatically because of the pandemic—more than 60% between February and May 2020.²¹

¹⁴ UNCTAD, World Investment Report 2021, June 2021. Available at: <https://unctad.org/webflyer/world-investment-report-2021> (accessed 23 August 2021).

¹⁵ UNCTAD, World Investment Report 2021.

¹⁶ UNCTAD, World Investment Report 2021.

¹⁷ UNCTAD, World Investment Report 2021.

¹⁸ UNCTAD, World Investment Report 2021.

¹⁹ UNCTAD, World Investment Report 2021

²⁰ UNCTAD, World Investment Report 2021.

²¹ J. Lain and T. Vishwanath, ‘The COVID-19 crisis in Nigeria: What’s happening to welfare?’, *World Bank Blogs*, 16 November 2021. Available at: <https://blogs.worldbank.org/africacan/covid-19-crisis-nigeria-whats-happening-welfare-new-data-call-expanded-social-protection> (accessed 23 November 2021).

TABLE 5
Exports of Goods and Services (% of GDP)

| Country | 2018 | 2019 | 2020 |
|-----------------------|------|------|------|
| Egypt | 18.9 | 17.5 | 13.2 |
| Ethiopia | 8.4 | 7.9 | 7.1 |
| Kenya | 13.2 | 12 | 11.3 |
| Nigeria | 15.5 | 14.2 | 8.8 |
| South Africa | 29.9 | 29.9 | 30.5 |
| Brazil | 14.6 | 14.1 | 16.9 |
| United Kingdom | 30.9 | 31.1 | 27.4 |

Source: The figures in this table were obtained using the World Bank's online database: <https://data.worldbank.org/indicator/NE.IMP.GNFS.ZS?end=2020&locations=EG-ET-KE-NG-ZA-BR-GB&start=2020&view=bar>.

TABLE 6
Imports of Goods and Services (% of GDP)

| Country | 2018 | 2019 | 2020 |
|-----------------------|-------|-------|-------|
| Egypt | 29.37 | 25.74 | 20.77 |
| Ethiopia | 22.83 | 20.88 | 16.93 |
| Kenya | 22.98 | 21.37 | 20.16 |
| Nigeria | 17.51 | 19.80 | 16.57 |
| South Africa | 29.56 | 29.35 | 25.53 |
| Brazil | 14.24 | 14.35 | 15.48 |
| United Kingdom | 32.08 | 32.32 | 27.72 |

Source: The figures in this table were obtained using the World Bank's online database.

ECONOMIC IMPACT OF THIS

Table 7 outlines selected public health interventions in 2020 across the five African countries in this study. The economic consequences of these interventions varied from country to country, with the more stringent lockdown measures having greater economic, social, and political impacts.

Egypt

Egypt was the first country in Africa to record a case of COVID-19 (in mid-February 2020). The government responded quickly and decisively by implementing a nationwide lockdown, closing schools and halting international travel, along with other measures to avoid the spread of SARS-CoV-2. Close monitoring followed, and restrictions were eased dramatically by the end of June when curfews were lifted, restrictions started being lifted on international travel and economic activity restarted.

TABLE 7
Selected PHIs Following First COVID-19 Cases, 2020

| Country | First case reported | Lockdown start date | Suspension of int. flights | Opening of int. flights | Closure of Schools | Opening of schools |
|---------------------|---------------------|--|---|-------------------------|--------------------|--------------------|
| Egypt | 15 February 2020 | 24 March 2020 Nation-wide lock-down implemented | 19 March 2020 | 1 July 2020 | 15 March 2020 | October 2020 |
| Ethiopia | 13 March 2020 | No official lockdown, but certain prohibitions put in place | 20 March 2020 to 30 March to 80 countries | 8 July 2020 | 16 March 2020 | September 2020 |
| Kenya | 13 March 2020 | 7 May 2020 Partial lock-down in hotspots | 25 March 2020 | 1 August 2020 | 20 March 2020 | January 2021 |
| Nigeria | 2 March 2020 | 30 March 2020 Partial lockdown in certain states | 21 March 2020 | 5 September 2020 | 24 March 2020 | September 2020 |
| South Africa | 6 March 2020 | 5-phase alert levels starting 26 March 2020 with nation-wide lock-down | 26 March 2020 | 1 October 2020 | 26 March 2020 | August 2021 |

Source: A range of resources contributed to compiling the data in this table, including the World Bank, IMF and AfDB reports and news articles.

While the pandemic and PHIs triggered a period of economic uncertainty in Egypt, the immediate impact was less severe when compared to other African countries, such as South Africa and Nigeria. This may be attributed to a careful consideration of the social and economic consequences of PHIs, resulting perhaps in less stringent measures.²²

²² This was described by the IMF, 'Egypt Takes Proactive Approach to Limit the Pandemic's Fallout'. See: <https://www.imf.org/en/News/Articles/2020/07/09/na070920-egypt-takes-proactive-approach-to-limit-the-pandemics-fallout>. It was also elaborated on in the report, 'Impact of the Coronavirus (Covid 19) on the African Economy', with reference to South Africa's 'recessionary' economy and Nigeria's dependence on oil, which is more extreme than Egypt's. See: <https://www.tralac.org/documents/resources/COVID-19/3218-impact-of-the-coronavirus-COVID-19-on-the-african-economy-african-union-report-april-2020/file.html>.

COVID-19 ended a relatively long period of macroeconomic stability, high growth, and improving levels of investment and foreign reserves in Egypt. At the onset of the pandemic, tourism accounted for roughly 12% of the country's GDP, 10% of employment, and 4% of GDP in foreign currency earnings.²³ As a result of lockdowns and the associated grounding of flights, foreign reserves dropped sharply. This was further exacerbated by large-scale capital outflows as the COVID-19 crisis unfolded and essential revenue from the Suez Canal dried up with the severe downturn in global trade.

Apart from the sudden and dramatic loss in revenue, unemployment rose to 9.6% in the second quarter of 2020, before declining to 7.3% in the third quarter of the year.²⁴ The economic impact on the country led business confidence to plummet although by the end of the year, it had returned. Although FDI inflows were 38% down from 2019, total inflows in 2020 were still at a significant \$5.5 billion, by far the highest in Africa that year.²⁵

Nevertheless, the country's economic fundamentals proved to be relatively resilient on the back of a macroeconomic reform process put in place in 2015. Economic sectors that contributed to growth during the worst of COVID-19 included significant public sector construction projects, including the building of a new capital city, and investments in the telecommunications sector. This helped to offset the losses experienced in the critical tourism sector and enabled the country to stave off recession in 2020.²⁶

The Egyptian economy was expected to grow between 3.5% and 4% in 2020 and it ended up achieving growth of 3.6%, making it one of the few emerging markets to maintain positive economic growth during the crisis. This was attributed to several factors including the government's quick response to the COVID-19 pandemic, the short period of lockdowns, and the country's comparatively diversified economy.²⁷

Ethiopia

Ethiopia implemented several early, well-coordinated and progressive PHIs in response to the pandemic. This was especially important in a country with a lower level of development than the others in this study. Ethiopia also has a particularly fragile healthcare system for a population of 115 million people and is simultaneously battling other communicable diseases, such as tuberculosis.

²³ IMF, 'Egypt: Overcoming the COVID Shock and Maintaining Growth', July 2021. Available at: <https://www.imf.org/en/News/Articles/2021/07/14/na070621-egypt-overcoming-the-covid-shock-and-maintaining-growth> (accessed 25 August 2021).

²⁴ Brookings Doha Centre, Policy and Institutional Responses to COVID-19 in the Middle East and North Africa: Egypt, 28 January 2021. Available at: <https://www.brookings.edu/wp-content/uploads/2021/01/MENA-COVID-19-Survey-Egypt-January-28-2021-1.pdf> (accessed 25 August 2021).

²⁵ M.N. Ledy, 'Egypt remains the top destination for FDI in Africa in 2020', *African Markets*, 2 February 2021, www.african-markets.com/en/news/north-africa/egypt/egypt-remains-the-top-destination-for-fdi-in-africa-in-2020 (accessed 25 August 2021).

²⁶ This is based on World Bank reports and country overviews. See: <https://www.worldbank.org/en/country/egypt/overview#1>

²⁷ IMF Egypt, Overcoming the COVID Shock and Maintaining Growth, July 2021. Available at: <https://www.imf.org/en/News/Articles/2021/07/14/na070621-egypt-overcoming-the-covid-shock-and-maintaining-growth> (accessed 25 August 2021).

The economic consequences of the PHIs are particularly relevant given Ethiopia's dependency on international aid and the export of primary and manufactured goods. Unlike many other governments, Ethiopia did not implement a nationwide lockdown. It moved swiftly to protect its national airline industry by implementing stringent passenger-screening protocols at Addis Ababa's international airport as early as January 2020, even before the virus had been recorded in Africa. Measures were scaled up from March, following the country's first recorded COVID-19 case, and a state of emergency was declared on 8 April 2020.²⁸

Like Egypt, Ethiopia's PHI responses were both measured and tailored to the country's specific social and economic landscape. The government encouraged manufacturing and other economic activities to continue during the crisis in order to manage the economic impact of the pandemic. International flights from Bole International Airport, the largest aviation hub for flights into and out of Africa, resumed in early July 2020.²⁹ Early on in the pandemic, the national carrier, Ethiopian Airlines, refocused its services from passengers to freight and aid flights to enable it to survive the pandemic.

Decades of double-digit growth in Ethiopia have been fueled predominantly by public infrastructure spending related to mega geo-strategic projects in power, water, rail, and ports. In recent years, there has been a concerted effort by the Ethiopian government and leading businesses to reduce debt and increase economic efficiency through a process of liberalization and modernization.

This was also designed to attract much-needed FDI and private capital to fund industrialization and global integration efforts.³⁰ In May 2021, Ethiopia implemented the first major step in its liberalization project with the launch of a tender for two licenses in its telecommunications sector, one of which was awarded to a consortium led by Kenya's Safaricom, for US\$850 million, making it the single largest foreign investment in the country. A separate sale of 40% in state monopoly Ethio Telecom, which has about 44 million subscribers out a population of 115 million, is also on the cards. These privatization initiatives have the aim of driving down prices, increasing efficiencies, and raising precious foreign currency.³¹

Due to rising political tensions in parts of the country, Ethiopia's FDI dropped by 25% between 2018 and 2019, and further contracted in 2020 as a result of the COVID-19 pandemic.³² In April, the IMF revised Ethiopia's growth pre-COVID-19 forecast to 2% in 2021, noting that pandemic-related uncertainty continued to hinder non-agricultural activity, particularly in the textile industry. However, there were non-pandemic affects too, including serious locust infestations that resulted in downward forecasts for agricultural output, and the impact of ongoing political conflict in the province of Tigray.³³

²⁸ World Economic Forum, 'Ethiopia's unconventional COVID-19 response', 5 June 2021, <https://www.weforum.org/agenda/2020/06/ethiopia-covid19-response> (accessed 20 August 2021)

²⁹ World Economic Forum, 'Ethiopia's unconventional COVID-19 response'.

³⁰ For detailed insight into the current standing and recent background to the Ethiopian economy, see: <https://www.state.gov/reports/2020-investment-climate-statements/ethiopia>.

³¹ More details on the partial privatization of the company can be found here: <https://www.afri-canews.com/2021/06/15/ethiopia-launches-tender-process-to-sell-40-stake-in-ethio-telecom>.

³² See Table 4, which outlines the FDI received by Ethiopia between 2018 and 2020.

³³ IMF, 'Regional Economic Outlook for Sub-Saharan Africa: Navigating a Long Pandemic', April 2021. Available at: <https://www.imf.org/en/Publications/REO/SSA/Issues/2021/04/15/regional-economic-outlook-for-sub-saharan-africa-april-2021> (accessed 20 August 2021).

Ethiopia is heavily dependent on financial aid, as well as crisis support from multilateral lenders and aid agencies. In April 2020, the IMF committed \$411 million to Ethiopia's pandemic response and the World Bank approved over \$330 million in financing to kick start economic activity.³⁴

One of the greatest concerns in the medium-to-long term has been the impact of school closures, which was among the government's targeted COVID-19 interventions. This is of particular concern in Ethiopia, where a large proportion of the population attends primary and secondary school.

Politically, the country's national elections were delayed twice—once due to the pandemic, and again to allow officials more time to prepare for the poll. Voting finally went ahead in June 2021. While the incumbent Prime Minister Abiy Ahmed's Prosperity Party won a landslide victory, voting did not take place in one-fifth of the country's 547 constituencies due to ethnic violence and logistical difficulties.³⁵ A second round of polling took place on 30 September 2021 in the outstanding constituencies.

The country's progress has been undermined by the Tigray conflict, which is between the Tigray People's Liberation Front (TPLF), which ran Ethiopia for almost three decades, and the central government. Beginning in early November 2020, it has since escalated to neighboring regions, and there have been concerns that it could spread throughout Ethiopia.³⁶ The conflict, and the threats of punitive measures against the government in the wake of reports of serious human rights abuses in the Tigray region, pose a significant risk to financial and political stability.³⁷

Kenya

Kenya reported its first COVID-19 case in March 2020, prompting the government to implement travel restrictions in and around the capital Nairobi, such as a curfew from 7pm-4am, the closure of all schools and learning institutions, and a nationwide dusk-to-dawn dining curfew for restaurants and bars which was only lifted in October 2021. Travel between counties was also affected.³⁸

³⁹ Kenya's PHIs were more progressive, and perhaps lighter, than those implemented in the other countries in this study. This is partly because of the shorter duration of many of the restrictions. Many were removed just 45 days after being implemented, although schools only reopened in January 2020 while those in the four other countries under study reopened in the last few months of 2020.

³⁴ See <https://fas.org/sgp/crs/row/IF10185.pdf> for more details.

³⁵ 'Ethiopians hope for peace, economic stability as PM Abiy Ahmed wins election', *Africa News*, 12 July 2021, <https://www.africanews.com/2021/07/12/ethiopians-hope-for-peace-economic-stability-as-pm-abiy-ahmed-wins-elections> (accessed 19 August 2021).

³⁶ W. Davison, 'The Dangerous Expansion of Ethiopia's Tigray War', International Crisis Group, 30 July 2021, <https://www.crisisgroup.org/africa/horn-africa/ethiopia/dangerous-expansion-ethiopia-tigray-war> (accessed 29 September 2021).

³⁷ W. Schneidman, 'Ethiopia, human rights, and the internet', Brookings, 15 June 2021. Available at: <https://www.brookings.edu/blog/africa-in-focus/2021/06/15/ethiopia-human-rights-and-the-internet> (accessed 21 August 2021)

³⁸ M Waruru, 'Kenya kept COVID-19 infections low for months, but fatigue threatens gains', *Downtoearth*, 7 April 2021. Available at: <https://www.downtoearth.org.in/blog/africa/kenya-kept-COVID-19-infections-low-for-months-but-fatigue-threatens-gains-76339> (accessed 20 August 2021).

³⁹ V. Oluwole, 'Kenya ends 7pm curfew for restaurants and bars as COVID-19 cases drop', *Business Insider Africa*, 20 October 2021, <https://africa.businessinsider.com/local/lifestyle/kenya-ends-7-pm-curfew-for-restaurants-and-bars-as-covid-19-cases-drop/h0bgme1> (accessed 31 October 2021).

Nevertheless, the Kenyan economy was hard hit by COVID-19 as supply chains were disrupted by border closures and global lockdown policies which impeded the movement of people and goods. Tourism, which accounts for 4.4% of Kenya's GDP, declined as the number of tourists fell from an annual 2 million to fewer than 500,000 in the first 10 months of 2020.⁴⁰ While exports from Kenya increased by 13% during March-June 2020, imports declined significantly by 23%, affected by lockdown policies implemented by trading partners and border closures.⁴¹

The economic impact of COVID-19 was felt by households in Kenya, with 88% of households having to adopt alternative survival strategies such as turning to savings to survive and reducing food consumption.⁴² Food insecurity continued to rise with the onset of the second lockdown in April-June 2021 and was still an issue for 42% of households as of June 2021. These hardships were compounded by the locust infestation that swept through East Africa and the Horn over this period.

Following a period of strong economic growth, with an average year-on-year growth of 5.7% between 2015 and 2019, the Kenyan economy grew by just 0.1% in 2020, according to the IMF.⁴³ While the locust attacks decimated food resources production, COVID-19 not only eradicated tourism earnings, it had a significant impact on export revenues as supply chains to key exports markets for Kenyan cut flowers and coffee were destabilized. International remittances also plummeted in the wake of job losses in markets outside Africa.

While economic activity increased from later in 2020, several challenges remained. One was the rise in poverty. This was a significant setback to Kenya's progress in achieving its development goals. In May 2021, the IMF provided Kenya with an interest-free loan of \$739 million to be spent on health, social protection, and speeding up payments to boost the economy.⁴⁴ The IMF forecasts that the economy will grow by 7.6% in 2021.

Nigeria

Nigeria faced more serious challenges in implementing PHIs than most other African countries, including the others in this study. Limited resources, the informal nature of the economy and day-to-day living as well as the high levels of density in urban areas affected the sustainability of the government's interventions. Drawing on its experiences with diseases such as polio and the Ebola virus, the government initially chose to implement lockdowns from 30 March 2020 in selected states—Lagos, Ogun, and Kano as well as Federal Capital Territory (home to the capital, Abuja)—

⁴⁰ R. Warah, 'We are on our knees: Covid's impact on tourism in Kenya', ONE, 12 August 2021, <https://www.one.org/africa/blog/kenya-tourism-sector-covid> (accessed 24 November 2021).

⁴¹ M.K Socrates and A. A. Lashitew, 'The Effect of Lockdown Policies on International Trade: Evidence from Kenya', Brookings, 20 January 2021.

⁴² U. J. Pape et al., 'Socioeconomic Impacts of COVID-19 in Kenya', World Bank, June 2021, <https://openknowledge.worldbank.org/bitstream/handle/10986/35961/Socioeconomic-Impacts-of-COVID-19-in-Kenya.pdf?sequence=1&isAllowed=y> (accessed 24 November 2021).

⁴³ IMF, 'Regional Economic Outlook for Sub-Saharan Africa: Navigating a Long Pandemic', April 2021, <https://www.imf.org/en/Publications/REO/SSA/Issues/2021/04/15/regional-economic-outlook-for-sub-saharan-africa-april-2021> (accessed 20 August 2021).

⁴⁴ 'IMF Loan to Support Economic Recovery in Kenya', IMF, 18 March 2021, <https://www.imf.org/en/News/Articles/2021/03/17/na031721-imf-loan-to-support-economic-recovery-in-kenya> (accessed 21 August 2021).

rather than to impose a nationwide lockdown. This approach created tensions between the federal and state governments, leading to the early relaxation of many restrictions in May 2020.⁴⁵

Despite this, Nigeria suffered its worst economic contraction in more than a decade, driven mostly by the crash of oil prices on which Nigeria still depends for most of its government revenues and foreign exchange. Along with the impact of various lockdowns as well as high inflation, 2020 was one of the worst years for the country's economy.

Following a period of lackluster growth prior to the onset of the pandemic (characterized by ongoing fiscal and monetary constraints) the Nigerian economy plummeted, with growth of about -6% by mid 2020, worse than the originally predicted 5% contraction. The economy recovered in the second half of the year, to record -1.8% growth.

Given the country's prevailing dependency on oil for its foreign exchange and national revenues, low levels of economic competitiveness across the board and ongoing uncertainty around COVID-19, recovery is expected to be slow with the most optimistic projections anticipating economic growth in the region of 2.5% in 2021—off a low base and below the current population growth rate of 2.5% in Africa's most populous country.⁴⁶ This will undoubtedly put enormous strain on monetary systems and increase the expectations of government delivery and development among the populace.

In 2020, the economy attracted a total FDI of \$2.6 billion, down from \$3.3 billion the previous year.⁴⁷ The low levels of investment in 2020 are concerning, particularly following a period of declining investment in Nigeria, and West Africa in general. In 2019, FDI dropped by over 20%, largely because of ongoing obstacles to investing in Nigeria, such as trade barriers, the challenging business environment, and uncertainty over long-delayed new regulations for the oil and gas sector.

South Africa

Despite its size and relative economic sophistication, the COVID-19 crisis had a more severe impact on South Africa than most other African economies. Indeed, the country experienced its worst economic downturn in more than 25 years.

On 26 March 2020, a level 5 lockdown was imposed on the whole of South Africa—the most severe of the five levels of lockdown drawn up by the government to manage the crisis under the newly promulgated National Disaster Regulations. Citizens were not allowed to leave their residences, except for essential activities such as grocery shopping and medical care. All non-essential activities and businesses were forced to shut down, and government restrictions even affected online business.

⁴⁵ N. Orjinmo, 'Coronavirus lockdown: Nigerians cautious as restrictions eased in Lagos and Abuja', *BBC News*, 4 May 2020. Available at: <https://www.bbc.com/news/world-52526923> (accessed 21 August 2021).

⁴⁶ For a useful country overview, see: <https://country.eiu.com/nigeria>.

⁴⁷ F. Adekoya, 'Nigeria attracts \$2.6bn FDI in 2020 amid global downturn', *The Guardian*, 26 January 2021. Available at: [https://guardian.ng/business-services/nigeria-attracts-2-6bn-fdi-in-2020-amid-global-downturn/#:~:text=Global%20foreign%20direct%20investment%20\(FDI,billion%20of%20the%20global%20volume](https://guardian.ng/business-services/nigeria-attracts-2-6bn-fdi-in-2020-amid-global-downturn/#:~:text=Global%20foreign%20direct%20investment%20(FDI,billion%20of%20the%20global%20volume) (accessed 21 August 2021).

The speed of implementation and onerous restrictions on movement and activity were effective in curbing infection rates, although they did have wide-ranging economic ramifications for business from large corporations right through to small and micro businesses. The latter point is significant as an estimated 98% of businesses in South Africa are in the small, medium, and micro enterprise (SMMEs) category, and collectively make a significant contribution to the economy. In the first quarter of 2019, for example, SMMEs contributed 38.2% of the turnover of all enterprises.⁴⁸

The controversial ban on the sale of alcohol and cigarettes on an ad hoc basis during the various levels of lockdown was intended to improve health outcomes and keep hospital beds available for COVID-19 patients. However, the measures also led to a loss of billions rands in tax, excise, and export revenues.

The stringent lockdown measures at home and the impact of the global economic shutdowns and border closures took a heavy toll on an economy that is one of the most globalized in Africa. The economic contraction in 2020 was a significant 7%, albeit off a low base, given that the country had already gone into recession in the last quarter of 2019. South Africa also has weak fiscal metrics, high government debt, and growing political risk, which have affected business confidence and led to several ratings downgrades. The government is struggling to bring down its ratio of debt to GDP with gross debt as a share of GDP increasing to 81.8% in 2020, from 63.5% in 2019.⁴⁹ These represent ongoing risks to its economic profile.⁵⁰

Added to the mix is one of the highest unemployment rates in the world. Sitting at 28.1% in 2019, and increasing to 32.6% in 2020, unemployment is more than double that recorded by the other countries in this study.⁵¹ Youth unemployment under the expanded definition, which includes discouraged job seekers, is a high 74.7%.⁵² This is more the result of deep-seated structural problems than the pandemic, although the latter did exacerbate the problem. The pandemic has also exposed socioeconomic fault lines exacerbated by limitations in public policy implementation and growing inequality.

The South African economy is expected to see growth in 2021. The IMF projection in 2020 for the following year's performance was 3.1%, but this would still be far below what is required to address development needs and growing unemployment. Growth and business confidence have been slow to return to South Africa compared to other African countries.

COVID-19 STIMULUS PACKAGES AND ECONOMIC INTERVENTIONS IN 2020

The responses of the governments in this study, as well as those of international agencies, provide important lessons for managing the broader economics of pandemics going forward. Furthermore,

⁴⁸ For a deeper perspective on the economic contribution of SMMEs in South Africa, see: <http://www.seda.org.za/Publications/Publications/SMME%20Quarterly%202019-Q1.pdf>.

⁴⁹ 'South Africa records FDI inflows in 2020; sales of bonds and equities soar', *Reuters*, 30 March 2021. Available at: <https://www.reuters.com/article/uk-safrica-economy-investment-idUSKBN2BM13Z> (accessed 21 August 2021).

⁵⁰ Focus Economics, 'South Africa Economy - GDP, Inflation, CPI And Interest Rate', 2020. Available at: <https://www.focus-economics.com/countries/south-africa>.

⁵¹ Only Nigeria has similarly high levels of unemployment at 27%. World Economic Forum, 'Here's how COVID-19 has battered Africa's largest economy', August 2020, <https://www.weforum.org/agenda/2020/08/africa-largest-economy-worst-contraction-in-a-decade>.

⁵² For more details on South Africa's unemployment levels in 2020, see: <http://www.statssa.gov.za/publications/P0211/P02111stQuarter2021.pdf>.

the collective request for debt relief that came from African countries in the context of the pandemic is important to consider. Some examples of support from international financial institutions in 2020 include:⁵³

- The African Union COVID-19 Response Fund, set up in March 2020.
- The African Development Bank’s COVID-19 Response Facility to provide \$10 billion to African governments and the private sector.
- The African Development Bank’s Fight COVID-19 Social Bond, which, at \$3 billion, was the world’s largest social bond in international capital markets.
- The European Union allocation of €60 billion to assist countries in the Horn of Africa to manage the impact of the pandemic.
- The contribution by the WHO, IMF and the World Bank of \$57 billion to individual countries on the continent or Africa-based multilateral agencies for COVID-19 relief.
- The agreement by G20 nations to suspend the debt of poor countries from 1 May 2020 until the end of the year, with an option to extend by another year if necessary.

The response to, and impact of, economic interventions varied from country to country. Financial support focused on the survival and bolstering of the SMME sector (which represents a large proportion of firms and employment in Africa), government-led investment, and stimulus packages as well as tax and interest rate relief, and support to the banking sector to allow these institutions to pass on relief measures to their customers. The approach was consistent across all five countries in the study, albeit with different applications depending on local circumstances.

There was a clear effort to introduce measures that would combat growing unemployment, rising levels of poverty and the immediate impact of the crisis on peoples’ day-to-day lives, be it in healthcare or access to food. A detailed list of programs, support and stimulus packages and economic interventions in 2020 are tabled for comparative purposes in the Appendix.⁵⁴

⁵³ A. Mishra, ‘Africa and COVID-19: Impact, Response, and Challenges to Recovery’, *Observer Research Foundation* (ORF), Occasional Paper, September 2020.

⁵⁴ The data and information for these comparative tables is based on material publicly available online up until September 2020.

Section Two | Developments in Africa in 2021: Economic Impact of Vaccine Rollouts

THE GLOBAL RESPONSE TO THE COVID-19 PANDEMIC has been one marked by inequitable access to COVID-19 vaccines, as well as variability in the effectiveness of the vaccination rollout programs. Early ambitions to achieve international co-ordination around vaccine efforts were impeded by a rising tide of vaccine nationalism,⁵⁵ with clear disparities emerging between the Global North and Global South. The African continent has been particularly affected by this dynamic,⁵⁶ while public health responses have been further hindered by challenges in the implementation of the domestic COVID-19 vaccination rollout (including funding shortages, a lack of trained professionals, inadequate planning and vaccine hesitancy in portions of the population).⁵⁷

The consequences of the skewed global COVID-19 vaccine rollout are likely to be far-reaching, given that the economic recovery and outlook for the continent are as contingent on equitable vaccination access as they are on regional integration and progressive fiscal measures and reforms. Indeed, in 2020, growth in Sub-Saharan Africa contracted by 2.1%, ultimately resulting in the region's worst economic performance in 50 years.⁵⁸ Sub-Saharan Africa is also expected to be the slowest growing region in the world in 2021, reaching growth of a modest 3.4%—well below the global average of 6%.⁵⁹

A cumulative per capita GDP growth over the 2020-2025 period was predicted to be 3.6%—substantially lower than the rest of the world at 14%. The IMF forecasts that per capita GDP will not reach pre-pandemic levels until the end of 2025, with a rise in poverty levels reducing per capita incomes to 2013 levels.⁶⁰ Uneven economic recovery across Africa, based on pandemic responses and preparedness, rising inequality, and a clear divergence between less developed countries and the rest of the world, have exposed clear global socioeconomic fault lines.

In this section, the COVID-19 vaccination rollouts in the five countries in the study will be reviewed. This will be followed by general observations on vaccine supply and demand challenges, as well as the potential value of building the bioeconomy on the continent, with particular reference to vaccine development.

⁵⁵ T.J. Bollyky and C.P. Bown, 'The tragedy of vaccine nationalism: only cooperation can end the pandemic', *Foreign Affairs*, 27 July 2020, <https://www.foreignaffairs.com/articles/united-states/2020-07-27/vaccine-nationalism-pandemic> (accessed 1 November 2021).

⁵⁶ P. Mwai, 'Covid-19 vaccinations: More than 50 nations have missed a target set by the WHO', BBC, 1 October 2021, <https://www.bbc.com/news/56100076> (accessed 1 November 2021).

⁵⁷ WHO, 'Risks and challenges in Africa's COVID-19 vaccine rollout', 14 May 2021, <https://www.afro.who.int/news/risks-and-challenges-africas-covid-19-vaccine-rollout> (accessed 1 November 2021).

⁵⁸ 'African Economic Outlook', African Development Bank Group, 12 March 2021, <https://www.afdb.org/en/knowledge/publications/african-economic-outlook> (accessed 29 September 2021).

⁵⁹ 'Regional Economic Outlook: Sub-Saharan Africa', IMF Data, April 2021, <https://data.imf.org/?sk=5778F645-51FB-4F37-A775-B8FECD6BC69B> (accessed 29 September 2021).

⁶⁰ A. Selassie and S. Hakobyan, 'Six Charts Show the Challenges Faced by Sub-Saharan Africa', *IMF News*, 15 April 2021, <https://www.imf.org/en/News/Articles/2021/04/12/na041521-six-charts-show-the-challenges-faced-by-sub-saharan-africa> (accessed 29 September 2021).

TABLE 8
Vaccination Responses by the Five Countries Under Study

| | Egypt | Ethiopia | Kenya | Nigeria | South Africa |
|---|--------------------------------------|-----------------------------|---|----------------------|--|
| Brand of vaccine | AstraZeneca, Sinopharm, J&J, Sinovac | AstraZeneca, Sinopharm, J&J | AstraZeneca, Sinopharm | AstraZeneca, Moderna | BioNTech, J&J |
| Date of rollout | 1/24/2021 | 3/13/2021 | 3/5/2021 | 3/5/2021 | 1/17/2021 |
| Local vaccine manufacture | Sinovac ^a | | | | Aspen “fill and finish” |
| Phase | 2 of 3 | 1 of 1 | 3 of 3 | 1 of 1 | 3 of 3 |
| Priority groups | HCW, 50YO or Older, PWC | HCW, 50YO or Older | HCW, PWC, 50YO or Older, Front/Essential Worker | HCW | HCW, 50YO or Older, Front/Essential Worker |
| Percentage population vaccinated, target end of 2021 | 40% ^b | 20% ^c | 40% ^d | 40% ^e | 70% ^f |

Note: HCW: Health Care Workers; PWC: People with Comorbidities.

Source: This table is a compilation of data from the WHO and Africa CDC COVID-19 tracking: <https://covid19.who.int/region/emro/country/eg> and <https://africacdc.org/COVID-19-vaccination>.^a Xinhua, ‘Egypt receives raw materials to produce Sinovac COVID-19 vaccine’, May 24, 2021, <https://www.globaltimes.cn/page/202105/1224277.shtml> (accessed 29 September 2021).

^b Egypt aims to vaccinate 40% of population by end-2021 – PM’, *Reuters*, 2 June 2021, <https://www.reuters.com/world/middle-east/egypt-aims-vaccinate-40-population-by-end-2021-pm-2021-06-02> (accessed 29 September 2021).

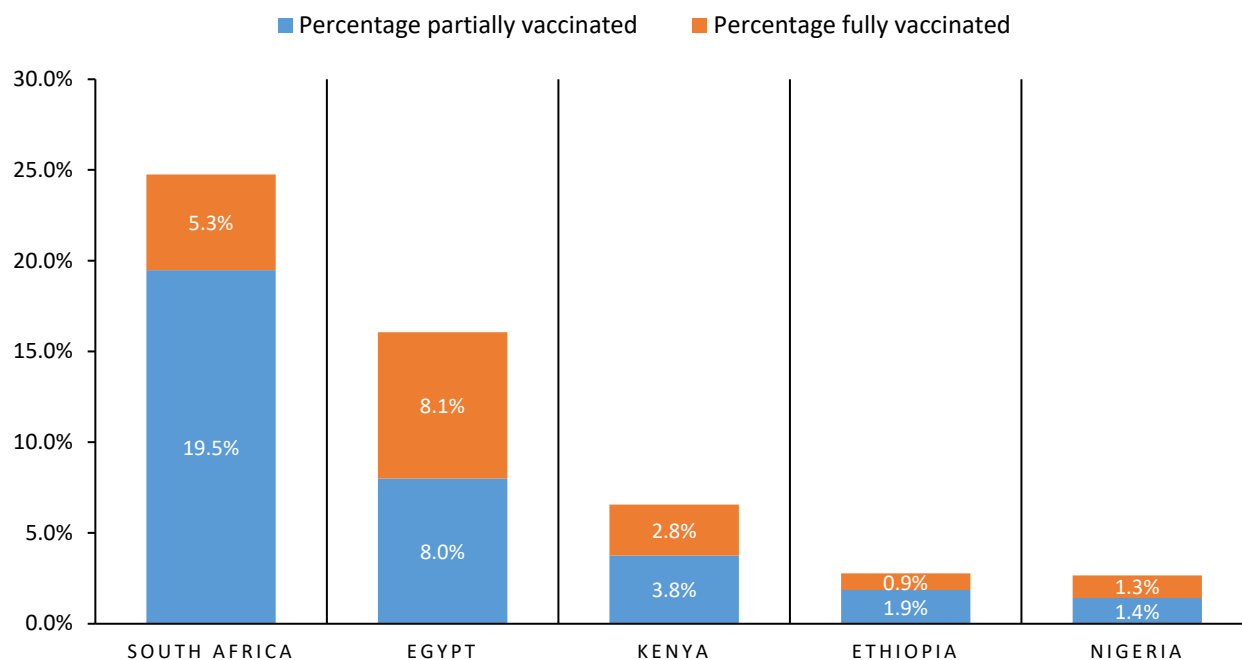
^c A. Getachew, ‘Ethiopia plans to vaccinate 20% population in 2021’, *Anadolu Agency*, 2 April 2021, <https://www.aa.com.tr/en/af-rica/ethiopia-plans-to-vaccinate-20-population-in-2021/2133346> (accessed 29 September 2021).

^d N. Adebowale and E. Onyeji, ‘Why Nigeria may not meet its COVID-19 vaccination target’, *Premium Times, Nigeria*, 3 May 2021, <https://www.premiumtimesng.com/news/headlines/459112-why-nigeria-may-not-meet-its-COVID-19-vaccination-target.html> (accessed 29 September 2021).

^e T. Obiezu, ‘Nigeria’s Goal: Vaccinate 40% of Population Against COVID-19 This Year’, *VOA News*, 9 January 2021, <https://www.voanews.com/COVID-19-pandemic/nigerias-goal-vaccinate-40-population-against-COVID-19-year> (accessed 29 September 2021).

^f South African Government, ‘COVID-19 Coronavirus vaccine strategy’, South African Government website, <https://www.gov.za/COVID-19/vaccine/strategy> (accessed 29 September 2021).

FIGURE 1
COVID-19 vaccinations (from start of rollouts to late October 2021)



Source: Our World in Data, 'Coronavirus (COVID-19) Vaccinations', 2021

VACCINE ROLLOUT REVIEW: FIVE COUNTRY CASE STUDIES

A review of the vaccine rollouts across the five countries in this study shows that each country's campaign has been affected to varying degrees by a combination of local contextual challenges as well as external complications. To date, none of the five countries has achieved an optimal rate of vaccination.

By late October 2021, South Africa (after a relatively slow start) had emerged as having the highest proportion of the population covered by at least one dose of the COVID-19 vaccine (19.48%), followed by Egypt (8.00%), Kenya (3.75%), Ethiopia (1.85%) and Nigeria (1.41%).⁶¹

The planning and implementation of vaccine rollouts have, of course, been dependent on access to accurate data. With regard to this, addressing Africa's data deficit will be vital—not just in terms of improving the public health response to the pandemic, but also to chart a positive trajectory for the post-pandemic economic recovery. This is covered in some detail in a later section of this study.

Egypt

Egypt's vaccination campaign began on 24 January 2021, yet a clear vaccination strategy was a challenge to the nationwide rollout from the start.⁶² By 13 April 2021, only 355,104 vaccine doses

⁶¹ Our World in Data, 'Coronavirus (COVID-19) Vaccinations', 2021, <https://ourworldindata.org/covid-vaccinations?country=EGY~ZAF~ETH~NGA~KEN> (accessed 30 October 2021).

⁶² Africa CDC, 'Africa CDC Vaccine Dashboard', 2021, <https://africacdc.org/COVID-19-vaccination> (accessed 29 September 2021).

had been administered in a country with a population of more than 100 million people. Fear and anxiety regarding the vaccine, as well as a widespread information deficit on vaccination sites and procedures, contributed to vaccination apathy.⁶³

According to Amnesty International, the lack of a clear and transparent national strategy for the rollout of the COVID-19 vaccine in Egypt created barriers and delays. The organization called for greater access to the vaccine for marginalized and ‘at risk’ individuals, including socioeconomically marginalized groups living in remote and informal urban areas, refugees, migrants and prisoners.⁶⁴ It should be noted that the Egyptian government subsequently took steps to include asylum seekers and refugees in the national COVID-19 vaccine program.⁶⁵

On 28 February 2021, a month after the vaccination campaign commenced, online registration opened. This phase applied to healthcare workers, people over the age of 40 and those with pre-existing health conditions. About 150,000 people registered within a four-day period.⁶⁶ On 6 March 2021, registrations opened to the public, even though millions of at-risk people with comorbidities and the elderly had not yet received their vaccinations.⁶⁷ Despite the government increasing the number of vaccination centers to accommodate growing demand, people from priority groups who registered in advance struggled to get appointments and endured long waiting times.⁶⁸

By June 2021, arguably not enough had been done to improve public awareness of vaccine registrations and procedures. Information channels such as radio and television were poorly utilized and people with limited access to the internet experienced difficulties in registering for the vaccine.⁶⁹ The lack of targeted campaigns in low income and remote rural areas resulted in a poor turnout at vaccine centers, with residents unaware they could even register to be vaccinated. Registration procedures at hospitals were also reportedly difficult and inconsistent.⁷⁰

On 24 June, the health minister reported that four million people had received the first jab but would not give profiles of who had received it. In April, the government started vaccinating workers in the tourism industry, with one million of these workers having been vaccinated by 3 June. However, by the end of June, the government had not yet reached out to many other essential workers, such as those in the food and transport industries.⁷¹

Despite these challenges, the Egyptian Prime Minister, Mostafa Madbouly, announced in early June that the country aimed to vaccinate 40% of its population against COVID-19 by the end of

⁶³ S. Amin, ‘Egypt steps up coronavirus vaccine campaign amid surge in cases’, *Al-Monitor*, 21 April 2021, <https://www.al-monitor.com/originals/2021/04/egypt-steps-coronavirus-vaccine-campaign-amid-surge-cases#ixzz73JFHIAWJIn> (accessed 29 September 2021).

⁶⁴ Amnesty International, ‘Egypt: Haphazard and flawed COVID-19 vaccine rollout fails to prioritize most at-risk’, Amnesty International, 29 June 2021, <https://www.amnesty.org/en/latest/press-release/2021/06/egypt-haphazard-and-flawed-COVID-19-vaccine-rollout-fails-to-prioritize-most-at-risk> (accessed 29 September 2021).

⁶⁵ ReliefWeb, ‘As Vaccines Roll Out in Egypt, Refugees Are Not Left Behind’, 23 September 2021, <https://reliefweb.int/report/egypt/vaccines-roll-out-egypt-refugees-are-not-left-behind-enar> (accessed 1 November 2021).

⁶⁶ Amnesty International, ‘Egypt: Haphazard and flawed COVID-19 vaccine rollout fails to prioritize most at-risk’, Amnesty International, 29 June 2021, <https://www.amnesty.org/en/latest/press-release/2021/06/egypt-haphazard-and-flawed-COVID-19-vaccine-rollout-fails-to-prioritize-most-at-risk> (accessed 29 September 2021).

⁶⁷ Amnesty International, ‘Egypt: Haphazard and flawed COVID-19 vaccine rollout fails to prioritize most at-risk’.

⁶⁸ Amnesty International, ‘Egypt: Haphazard and flawed COVID-19 vaccine rollout fails to prioritize most at-risk’.

⁶⁹ Amnesty International, ‘Egypt: Haphazard and flawed COVID-19 vaccine rollout fails to prioritize most at-risk’.

⁷⁰ Amnesty International, ‘Egypt: Haphazard and flawed COVID-19 vaccine rollout fails to prioritize most at-risk’.

⁷¹ Amnesty International, ‘Egypt: Haphazard and flawed COVID-19 vaccine rollout fails to prioritize most at-risk’.

2021.⁷² At about the same time, Head of the Chamber of Pharmaceutical Industry in Egypt, Ahmed al-Ezaby, said Egypt would be manufacturing several types of vaccines by the last quarter of 2022. The first—Sinovac—would be produced on contract with China through the Egyptian Holding Company for Biological Products and Vaccines (VACSERA). Two companies would produce the Russian Sputnik vaccine, while a third would manufacture an Egyptian vaccine, once clinical trials on it had ended.⁷³ The deal with China was the first between the Asian giant and an African country for COVID-19 vaccine production, making a potentially important contribution to the start of Africa’s bioeconomy.

In an effort to ramp up vaccination numbers, Egypt’s Health and Population Minister Dr. Hala el Zayed announced in July 2021 that the country would receive 148.2 million doses of the COVID-19 vaccine. Included in this number were new quantities of China’s Sinovac COVID-19 raw materials, which would allow the country to manufacture 70.2 million doses of this type of vaccine, as well as a further 20 million doses of the Sputnik vaccine, 20 million doses of J&J, 35.6 million doses of AstraZeneca and 2.4 million Pfizer-BioNTech vaccines.⁷⁴

The Egyptian Government appears to have learned important policy and planning lessons as the rollout has proceeded, particularly in terms of developing programmatic agility. In mid-September 2021, for example, it launched the ‘Together We Are Assured’ campaign, which allowed citizens to be vaccinated immediately after registering for the vaccine, a response to substantial delays that had previously been experienced between these two steps. As part of this, citizens were allowed to receive immediate vaccinations even without prior online registration at youth centers across the country to reduce pressure on health facilities during the fourth wave of the pandemic.⁷⁵

According to the WHO, a total of 25,083,832 COVID-19 vaccine doses had been administered in Egypt as of 23 October 2021, with 16 per 100 of the population having received at least one dose of the vaccine by this date.⁷⁶

Ethiopia

In terms of national COVID-19 vaccination rollouts, some of the greatest challenges faced by Ethiopia (and, indeed, other East African countries) can be attributed to poor logistical capabilities and limited infrastructure, which have hindered vaccine deployment. Pertinent factors related to this include: limited cold chain capacity to keep vaccines viable at optimum temperatures, insufficient data to identify at-risk groups, poor health system capabilities in the delivery of vaccines, limited trained workers to administer vaccines, the difficulty of community health workers faced

⁷² ‘Egypt aims to vaccinate 40% of population by end-2021 – PM’, *Reuters*, 2 June 2021, <https://www.reuters.com/world/middle-east/egypt-aims-vaccinate-40-population-by-end-2021-pm-2021-06-02> (accessed 29 September 2021).

⁷³ ‘Egypt to manufacture four coronavirus vaccines by 2022’, *Egypt Independent*, 15 June 2021, <https://egyptindependent.com/egypt-to-manufacture-four-coronavirus-vaccines-by-2022> (accessed 29 September 2021).

⁷⁴ ‘Egypt to receive 148.2 million doses of Covid 19 vaccine, Health Minister’, *Egypt Today*, 29 July 2021, <https://www.egypttoday.com/Article/1/106448/Egypt-to-receive-148-2-million-doses-of-COVID-19> (accessed 28 August 2021).

⁷⁵ ‘Egypt allows immediate COVID-19 vaccination amid fourth wave’, *Reuters*, 28 September 2021, <https://www.reuters.com/world/middle-east/egypt-allows-immediate-covid-19-vaccination-amid-fourth-wave-2021-09-28> (accessed 1 November 2021).

⁷⁶ WHO, ‘WHO Emergency Dashboard, Egypt’, 2021, <https://covid19.who.int/region/emro/country/eg> (accessed 31 October 2021).

in accessing remote populations, poor communication to promote vaccine acceptance, and poor oversight and governance in the delivery of vaccines to people.⁷⁷

The second phase of the Ethiopia COVID-19 Emergency Response Project aimed to prevent, detect, and respond to the threat posed by COVID-19 while strengthening national systems for public health preparedness in the country. It was geared to support “the expansion of a sustained and comprehensive pandemic response that includes vaccination”.⁷⁸ Ethiopia received its first batch of 2.2 million AstraZeneca vaccines from the COVAX facility on 7 March 2021, with national and regional rollout activities commencing on 13 March 2021.⁷⁹ The World Bank provided the country with a grant of \$207 million to finance vaccine procurement and distribution.⁸⁰ This financing was part of the Bank’s \$12 billion envelope provided to developing countries in October 2020 to support the procurement and supply of COVID-19 vaccines, treatment, and tests.⁸¹

The country’s vaccine rollout strategy has seen the initial vaccination phase targeting essential workers, the elderly, and at-risk individuals.⁸² However, the vaccine rollout has moved slowly, particularly with the administration of second doses. This is a cause for concern as Ethiopia has one of the highest rates of COVID-19 infections on the continent.⁸³

In July 2021, the Ministry of Health announced that 400,000 doses of the AstraZeneca vaccine were being distributed across the country as part of the second round of its vaccination campaign rollout, with an additional 1.7 million doses expected in August.⁸⁴ It also approved the use of the Chinese Sinopharm vaccine, with plans to administer 20 million doses by November 2021.⁸⁵

According to the WHO, a total of 25,083,832 COVID-19 vaccine doses had been administered in Egypt as of 23 October 2021, with two per 100 of the population having received at least one dose.⁸⁶

⁷⁷ ‘What do we know about vaccine procurement and distribution in East Africa?’ *Health Desk*, 20 July 2021, <https://health-desk.org/articles/what-do-we-know-about-vaccine-procurement-and-distribution-in-east-africa> (accessed 29 September 2021).

⁷⁸ ‘Acting Early, Fast and Together: Mobilizing efforts to prepare and respond to the COVID-19 pandemic in Ethiopia’, World Bank, 14 January 2021, <https://reliefweb.int/report/ethiopia/acting-early-fast-and-together-mobilizing-efforts-prepare-and-respond-COVID-19> (accessed 29 September 2021).

⁷⁹ ‘2.2 million COVID-19 vaccines allocated by the COVAX Facility arrive in Ethiopia, marking the start of the country’s COVID-19 vaccination campaign’, World Health Organization, 7 March 2021, <https://www.afro.who.int/news/22-million-COVID-19-vaccines-allocated-covax-facility-arrive-ethiopia-marking-start-countrys> (accessed 29 September 2021).

⁸⁰ ‘Accelerating Broad and Equitable Access to the COVID-19 Vaccine in Ethiopia’, World Bank, 30 March 2021, <https://www.worldbank.org/en/news/feature/2021/03/30/accelerating-broad-and-equitable-access-to-the-COVID-19-vaccine-in-ethiopia> (accessed 29 September 2021).

⁸¹ ‘World Bank Approves \$12 Billion for COVID-19 Vaccines’, World Bank, 13 October 2021, <https://www.worldbank.org/en/news/press-release/2020/10/13/world-bank-approves-12-billion-for-COVID-19-vaccines> (accessed 29 September 2021).

⁸² H. Gebreamlak, ‘Ethiopia struggles to administer second doses of COVID-19 vaccine’, *Addis Zeybe Digital*, 16 July 2021, <https://addiszeybe.com/featured/addis-ababa/COVID-19/health/analysis/ethiopia-struggles-to-administer-second-doses-of-COVID-19-vaccine> (accessed 29 September 2021).

⁸³ H. Gebreamlak, ‘Ethiopia struggles to administer second doses of COVID-19 vaccine’.

⁸⁴ ‘Ethiopia Rolls out Second Round of COVID-19 Vaccination’, *Ethiopian Monitor*, 13 July 2021, <https://ethiopianmonitor.com/2021/07/13/ethiopia-rolls-out-second-round-of-COVID-19-vaccination> (accessed 29 September 2021).

⁸⁵ ‘Ethiopia Rolls out Second Round of COVID-19 Vaccination’, *Ethiopian Monitor*.

⁸⁶ WHO, ‘WHO Emergency Dashboard, Ethiopia’, 2021, <https://covid19.who.int/region/afro/country/et> (accessed 31 October 2021).

Kenya

Kenya set an ambitious COVID-19 vaccination campaign plan in early 2021, scheduled to run for more than two years with a target to cover 60% of the adult population. The rollout was meant to start with the vaccination of 1.25 million frontline healthcare workers, with priority also given to those aged 58 and older, given their high-risk status. However, by April 2021 the country only had sufficient AstraZeneca doses for one million of its population of 55 million people, with over half of these doses set aside for healthcare workers.⁸⁷

A major stumbling block to the government's vaccine rollout plan arose in June 2021, when India paused AstraZeneca exports due to its own escalating COVID-19 crisis at the time. Kenya had expected to receive three million doses of the vaccine from India but was forced to look elsewhere.⁸⁸ Almost 360,000 doses were received from Denmark, and in July, Kenya received another 182,400 from the Government of France, and 410,000 doses from the United Kingdom, which promised an additional 407,000 doses over time.⁸⁹

Despite the many challenges the nation has faced in securing vaccines, it has taken a rigorous approach to ensuring that its campaign achieves its targets. In August 2021, Kenya's Head of Public Service, Joseph Kinyua, declared that it would be mandatory for all civil servants to be vaccinated and those failing to do so by the target date of 23 August could face disciplinary action.⁹⁰

In May 2021, Kenya began working on a three-phase action plan for vaccination self-sufficiency, starting with the identification of premises to establish a Human Vaccine Production facility. According to Health Cabinet Secretary Mutahi Kagwe, the government had started engaging vaccine manufacturers with a view to building local production capacity in a quest for greater self-sufficiency in this area. This development is particularly important considering the delays in acquiring COVID-19 vaccines for the country from COVAX.⁹¹

The first phase includes refurbishment of a designated facility as well as the installation of the 'fill and finish' line. The second phase, expected to cover a period of 18-24 months, involves the establishment of a fully-fledged bulk antigen production facility. The third phase will revolve around capacity building with a focus on research and development and see the establishment of a vaccine/biological products research and development centre.⁹²

⁸⁷ G. Kamadi, 'Kenya's COVID-19 Vaccine Rollout: All Ready to Go, But No Doses', Health Policy Watch, 16 April 2021, <https://healthpolicy-watch.news/kenya-rollout> (accessed 29 September 2021).

⁸⁸ S. Kimani, 'It is unclear whether Kenya will meet its vaccination targets as India halts supply', *SABC News*, 22 June 2021, <https://www.sabcnews.com/sabcnews/it-is-unclear-whether-kenya-will-meet-its-vaccination-targets-as-india-halts-supply> (accessed 29 September 2021).

⁸⁹ UNICEF, 'Over 182,000 COVID-19 vaccine doses arrive in Kenya, donated by France', 8 July 2021, <https://www.unicef.org/kenya/press-releases/over-182000-COVID-19-vaccine-doses-arrive-kenya-donated-france> (accessed 29 September 2021).

⁹⁰ P. Adepoju, 'Kenya Mandates COVID-19 Vaccines for Civil Servants as Africa's Vaccine Rollout Gathers Speed', Health Policy Watch, 13 August 2021, <https://healthpolicy-watch.news/kenya-mandates-covid-vaccines-for-civil-servants-as-africa> (accessed 29 September 2021).

⁹¹ Kenyan Ministry of Health, 'Kenya Edge Towards Human Vaccines Production', 25 May 2021, <https://www.health.go.ke/kenya-edge-towards-human-vaccines-production> (accessed 29 September 2021).

⁹² Kenyan Ministry of Health, 'Kenya Edge Towards Human Vaccines Production'.

According to the WHO, a total of 4,930,336 COVID-19 vaccine doses had been administered in Kenya as of 23 October 2021, with seven 7 per 100 of the population having received at least one dose of the vaccine.⁹³

Nigeria

The first phase of Nigeria's vaccination campaign aimed to cover frontline healthcare workers, those with co-morbidities, teachers, the elderly, and people in high-risk contagion areas (such as border regions). The country set the goal of vaccinating 40% of its 211 million population by the end of 2021, reaching a total of 70% by the end of 2022.⁹⁴

Nigeria's National Agency for Food and Drug Administration and Control (NAFDAC) launched a self-registration portal online to facilitate and operationalize the rollout of vaccines. However, the country faced significant logistical challenges in rollout operations.⁹⁵ For example, states without an operational airport received their vaccines by road, using temperature-controlled vans.⁹⁶ This introduced logistical and security risks to vaccine distribution.

In March 2021, Nigeria announced it had received almost four million AstraZeneca vaccines from COVAX to launch its vaccination program, with expectations of receiving an additional 3.9 million doses by the end of August,⁹⁷ and a further 29.8 million J&J vaccinations through the African Union by the end of September.⁹⁸ The AstraZeneca vaccine, requiring storage temperatures between 2°C and 8°C (unlike, for example, the Pfizer vaccine that must be stored at between -80°C and -60°C) is better suited for the country given its unstable power supply.⁹⁹ To help overcome electricity supply challenges, the private sector stepped in to provide cold storage facilities.¹⁰⁰

By the end of June 2021, just under 3.5 million doses of the AstraZeneca had been administered as first and second doses, accounting for about 88% of the total AstraZeneca stock in Nigeria.¹⁰¹ In August 2021, the country received nearly four million doses of Moderna, donated by the United States government.¹⁰²

In the first phase of vaccination rollout, NAFDAC and the National Primary Healthcare Development Agency (NPHCDA) collaborated closely in the tracking and tracing of vaccines from the

⁹³ WHO, 'WHO Emergency Dashboard, Kenya', 2021, <https://covid19.who.int/region/afro/country/ke> (accessed 31 October 2021).

⁹⁴ 'COVID-19: Experts worry over challenges as Nigeria rolls out vaccines', *Vanguard Nigeria*, 10 March 2021, <https://www.vanguardngr.com/2021/03/COVID-19-experts-worry-over-challenges-as-nigeria-rolls-out-vaccines> (accessed 29 September 2021).

⁹⁵ 'COVID-19: Experts worry over challenges as Nigeria rolls out vaccines', *Vanguard Nigeria*.

⁹⁶ "'Fantastic step forward': First COVAX vaccines arrive in Nigeria", Al Jazeera, 2 March 2021, <https://www.aljazeera.com/news/2021/3/2/millions-of-free-covax-jabs-arrive-in-nigeria> (accessed 29 September 2021).

⁹⁷ 'Nigeria at sixes and sevens on COVID-19 vaccine rollout', *The Conversation*, 10 March 2021, <https://theconversation.com/nigeria-at-sixes-and-sevens-on-COVID-19-vaccine-rollout-156757> (accessed 29 September 2021).

⁹⁸ T. Kareem, 'As Nigeria steps up to fight COVID-19 variant', *The Guardian Nigeria*, 11 July 2021, <https://guardian.ng/features/as-nigeria-steps-up-to-fight-COVID-19-variants> (accessed 29 September 2021).

⁹⁹ T. Kareem, 'As Nigeria steps up to fight COVID-19 variant', *The Guardian Nigeria*.

¹⁰⁰ T. Kareem, 'As Nigeria steps up to fight COVID-19 variant', *The Guardian Nigeria*.

¹⁰¹ 'Nigeria: iMMAP/DFS COVID-19 Situation Analysis', *iMMAP*, 30 July 2021, <https://reliefweb.int/report/nigeria/nigeria-immmapdfs-COVID-19-situation-analysis-june-2021> (accessed 29 September 2021).

¹⁰² National Primary Health Care Development Agency, <https://www.facebook.com/NPHCDA> (accessed 29 September 2021).

national to subnational level, and then to the site of administration. This has allowed for vaccine stock level monitoring from the National Strategic Cold Store in Abuja, with plans in place to continue with this approach through the second phase of the country's vaccine rollout.¹⁰³

According to the NPHCDA's Executive Director, Dr. Faisal Shuaib, who addressed the media at a briefing in August 2021, phase two of Nigeria's vaccine rollout strategy would include the addition of just over 40,000 recently trained healthcare workers being rolled out across the country's national, state, and ward levels to improve on vaccine delivery, communication, data, and vaccine management.¹⁰⁴ He noted that any person aged 18 and above would be eligible to receive a vaccine.¹⁰⁵ The NPHCDA also announced plans to adopt a 'whole family' approach in the second phase. This would see the integration of other basic Primary Health Care services, such as childhood vaccinations and screening for hypertension and diabetes, into the vaccine rollout campaign, ensuring a holistic approach to the health of individuals and families.¹⁰⁶

Despite these positive steps taken in the vaccination rollout, Nigeria has still struggled to reach crucial targets. For example, it missed the 10% vaccination target set for the end of September 2021,¹⁰⁷ and is likely to miss the 40% target set for the end of 2021.¹⁰⁸

According to the WHO, a total of 8,538,713 COVID-19 vaccine doses had been administered in Nigeria as of 25 October 2021, with three per 100 of the population having received at least one dose of the vaccine.¹⁰⁹

South Africa

The South African government has been widely recognized for taking swift action in early 2020 to contain the spread of the virus, with the introduction of a five-level lockdown system and the establishment of a Ministerial Advisory Committee on COVID-19.¹¹⁰ However, there was a significant delay in the introduction of a detailed vaccine rollout plan. Indeed, by late 2020, the government had come under growing pressure from civil society organizations and the general public to present such a plan.¹¹¹ On 3 January 2021, the then Health Minister, Dr. Zweli Mkhize, an-

¹⁰³ National Primary Health Care Development Agency.

¹⁰⁴ National Primary Health Care Development Agency.

¹⁰⁵ National Primary Health Care Development Agency.

¹⁰⁶ News Agency of Nigeria, 'COVID-19 Vaccine: Nigeria to adopt "whole family" approach', *The Guardian Nigeria*, 10 August 2021, <https://guardian.ng/news/COVID-19-vaccine-nigeria-to-adopt-whole-family-approach> (accessed 29 September 2021).

¹⁰⁷ C. Muanya and N. Onyedika-Ugoeze, 'Nigeria misses out as 15 African nations hit 10% COVID-19 vaccination target', 1 October 2021, <https://guardian.ng/news/nigeria-misses-out-as-15-african-nations-hit-10-covid-19-vaccination-target> (accessed 1 November 2021).

¹⁰⁸ D. Tolu-Kolawole, 'Nigeria, 48 others to miss 40% vaccination target by year-end – WHO', *Punch*, 29 October 2021, <https://punchng.com/nigeria-48-others-to-miss-40-vaccination-target-by-year-end-who> (accessed 1 November 2021).

¹⁰⁹ WHO, 'WHO Emergency Dashboard, Nigeria', 2021, <https://covid19.who.int/region/afro/country/ng> (accessed 31 October 2021).

¹¹⁰ J.A. Singh, 'How South Africa's Ministerial Advisory Committee on COVID-19 can be optimised', *South African Medical Journal*, 110, no. 6, (June 2020): 439-42, <http://dx.doi.org/10.7196/SAMJ.2020.v110i6.14911> (accessed 1 November 2021).

¹¹¹ M. Heywood, 'Civil society demands action on a plan to get Covid jabs to those at greatest risk', *Daily Maverick*, 29 December 2020, <https://www.dailymaverick.co.za/article/2020-12-29-civil-society-demands-action-on-a-plan-to-get-covid-jabs-to-those-at-greatest-risk> (accessed 1 November 2021).

nounced a three-phase national rollout strategy that, in its first phase, prioritized healthcare workers, the elderly, and those with co-morbidities.¹¹² The initial vaccination target of 67% of the adult population was later increased to 70%, set to be achieved by the end of 2021.¹¹³

The government was also criticized for what appeared to be its exclusive initial reliance on COVAX for vaccine supply and its delay in simultaneously exploring other routes of acquisition.¹¹⁴ In January 2021, the National Department of Health accelerated its engagement to secure vaccines through bilateral agreements, starting with negotiations with the Serum Institute of India for doses of the AstraZeneca COVID-19 vaccine.¹¹⁵

The initial rollout of AstraZeneca vaccines in February 2021, following the delivery of one million doses earmarked for healthcare workers, was suspended before it had begun after a clinical trial indicated that the vaccine had significantly decreased efficacy against the B.1.351 (Beta) COVID-19 variant, which was prevalent in South Africa at the time.¹¹⁶ The more infectious Beta variant was first identified in South Africa and subsequently spread to 105 countries.¹¹⁷ The South African government sold its stock to the African Union, and instead rolled out the J&J vaccines it had secured to healthcare workers through the ‘Sisonke Program’ which commenced on 17 February 2021.¹¹⁸ The J&J vaccine requires a single dose and normal refrigeration storage facilities, making it ideal for rural areas, while it has also been shown to have efficacy against the Delta variant according to an extensive South African study.¹¹⁹ The Delta variant, first identified in India, had become the major driving force of the third wave in South Africa by mid-2021.¹²⁰

The country’s rollout plan faced another obstacle in April 2021 after the U.S. Food and Drug Administration (FDA) suspended the J&J vaccine following the occurrence of rare blood clots in six recipients of the dosage. In turn, South Africa suspended the rollout of the vaccine while it consulted healthcare professionals, and the country’s vaccine rollout stalled for several weeks as there was no other option available.¹²¹ The Pfizer vaccine would only become part of the country’s

¹¹² BusinessTech, ‘South Africa outlines Covid-19 vaccine rollout plan’, 3 January 2021, <https://business-tech.co.za/news/trending/458608/south-africa-outlines-covid-19-vaccine-rollout-plan> (accessed 1 November 2021).

¹¹³ N. McCain, ‘COVID-19: Low vaccine demand could take rollout programme off target’, *News24*, 13 August 2021, <https://www.news24.com/news24/southafrica/news/COVID-19-low-vaccine-demand-could-take-rollout-programme-off-target-20210813> (accessed 29 September 2021).

¹¹⁴ A. van den Heever, et al., ‘South Africa’s vaccine quagmire, and what needs to be done now’, University of the Witwatersrand, 5 July 2021, <https://www.wits.ac.za/covid19/covid19-news/latest/south-africas-vaccine-quagmire-and-what-needs-to-be-done-now.html> (accessed 29 September 2021).

¹¹⁵ A. van den Heever, et al., ‘South Africa’s vaccine quagmire, and what needs to be done now’, University of the Witwatersrand.

¹¹⁶ N. Natrass and J. Seekings, ‘South Africa’s vaccine rollout needs a boost’, *Ground Up*, 27 May 2021, <https://www.groundup.org.za/article/south-africas-vaccine-rollout-needs-a-boost> (accessed 29 September 2021).

¹¹⁷ *Cov-lineages.org*, B.1.351, https://cov-lineages.org/global_report_B.1.351.html (accessed 29 September 2021).

¹¹⁸ Department of Health: Republic of South Africa, 17 February 2021, <http://www.health.gov.za/wp-content/uploads/2021/02/Media-Statement-South-Africa-rollout-COVID-19-Vaccine.pdf> (accessed 29 September 2021).

¹¹⁹ K.E. Foley, ‘J&J shot effective against Delta variant in large South Africa study’, *Politico*, <https://www.politico.eu/article/johnson-johnson-coronavirus-vaccine-delta-variant> (accessed 29 September 2021).

¹²⁰ C. Bhengu, ‘Delta variant is dominating SA’s third wave: 5 things you need to know about the Covid-19 strain’, *Times Live*, 28 June 2021, <https://www.timeslive.co.za/news/south-africa/2021-06-28-delta-variant-is-dominating-sas-third-wave-5-things-you-need-to-know-about-the-covid-19-strain> (accessed 24 November 2021).

¹²¹ P. Fihlani, ‘Covid vaccine in South Africa: Behind the slow rollout’, *BBC News*, 5 May 2021, <https://www.bbc.com/news/world-africa-56944400> (accessed 29 September 2021).

vaccine mix in May 2021.¹²² The J&J vaccine was later reinstated as U.S. regulators determined the risk for developing a blood clot to be extremely rare.¹²³ A further set-back arose in June 2021, when two million doses of the same vaccine were deemed to be potentially contaminated, and therefore discarded.¹²⁴

The campaign appeared to be gaining momentum when phase two launched on 1 July 2021, allowing people aged 50–59 years to register for a vaccine, and only two weeks later and ahead of schedule, registrations were extended to people between 35–49 years.¹²⁵ However, politically motivated unrest in the provinces of Gauteng and KwaZulu-Natal in mid-July affected the country’s vaccine rollout as pharmacies offering vaccinations in these areas were either looted, or temporarily closed as a precautionary measure at this time.¹²⁶ However, the rollout continued in the rest of the country.

The third and final phase of South Africa’s rollout began in September, earlier than originally planned, with people over the age of 18 becoming eligible to register for the vaccine.¹²⁷

On 13 August, a total of 153,999 people were vaccinated in one day, just over half of the peak of 273,011 on 21 July. The decline in the rate was attributed to a variety of factors including: vaccine hesitancy, misinformation on vaccines, insufficient vaccination sites in rural areas requiring community members to travel long distances at a high cost to be vaccinated, as well as the need for online registration that potentially excluded those without access to the internet.^{128,129} It is important to note, however, that vaccinations per day again reached a high of 241,230 on 29 August 2021 and, by 23 October, had returned to 178,572.¹³⁰ This is, perhaps, reflective of a pattern of variability in demand as well as possible access barriers.

¹²² South African Government, ‘Minister Zweli Mkhize on the arrival of Pfizer and Johnson & Johnson Coronavirus COVID-19 vaccine’, 2 May 2021, <https://www.gov.za/speeches/minister-zweli-mkhize-arrival-pfizer-and-johnson-johnson-coronavirus-covid-19-vaccine-2-may> (accessed 24 November 2021).

¹²³ J. Daley, ‘Blood Clots and the Johnson & Johnson Vaccine: What We Know So Far’, *Scientific American*, <https://www.scientificamerican.com/article/blood-clots-and-the-johnson-johnson-vaccine-what-we-know-so-far> (accessed 29 September 2021).

¹²⁴ ‘South Africa rejects 2 million J&J vaccines due to USFDA decision’, *Africa News*, 15 June 2021, <https://www.africanews.com/2021/06/15/south-africa-rejects-2-million-j-j-vaccines-due-to-usfda-decision> (accessed 29 September 2021).

¹²⁵ ‘INFOGRAPHIC | South Africa’s COVID-19 vaccine rollout in numbers’, *Business Insider South Africa*, 30 July 2021, <https://www.businessinsider.co.za/the-number-of-people-vaccinated-against-COVID-19-in-south-africa-rollout-2021-7> (accessed 29 September 2021).

¹²⁶ K. Mlaba, ‘Civil Unrest in South Africa: How the Vaccine Rollout Has Been Affected’, *Global Citizen*, 15 July 2021, <https://www.globalcitizen.org/en/content/unrest-in-south-africa-impact-on-vaccine-rollout> (accessed 29 September 2021).

¹²⁷ ‘INFOGRAPHIC | South Africa’s COVID-19 vaccine rollout in numbers’, *Business Insider South Africa*, 30 July 2021, <https://www.businessinsider.co.za/the-number-of-people-vaccinated-against-COVID-19-in-south-africa-rollout-2021-7> (accessed 29 September 2021).

¹²⁸ ‘South Africa COVID-19 and Vaccine Social Listening Report’, *sacoronavirus.co.za*, 16 August 2021, <https://sacoronavirus.co.za/2021/08/16/south-africa-COVID-19-and-vaccine-social-listening-report-16-august-2021-report-14> (accessed 29 September 2021).

¹²⁹ R. Mochoari, ‘Transport issues putting brakes on vaccination efforts in rural Free State’, *News24*, 12 August 2021, <https://www.news24.com/health24/news/public-health/transport-issues-putting-brakes-on-vaccination-efforts-in-rural-free-state-20210811> (accessed 29 September 2021).

¹³⁰ Our World In Data, ‘Daily COVID-19 vaccine doses administered. South Africa’, 2021. <https://our-worldindata.org/grapher/daily-covid-19-vaccination-doses?country=~ZAF> (accessed 1 November 2021).

According to the WHO, a total of 21,321,996 COVID-19 vaccine doses had been administered in South Africa as of 24 October 2021, with 25 per 100 of the population having received at least one dose of the vaccine.¹³¹

VACCINE INEQUITY AND BARRIERS TO ACQUISITION

In 2020, as the various vaccine manufacturers received approval and authorization to make doses available, countries across the world scrambled to establish their vaccine rollout plans and secure an adequate supply. By January 2021, high-income countries, which represent 16% of the world's total population, had secured 60% of available COVID-19 vaccines.¹³² Some high-income countries, such as Canada, secured enough doses to vaccinate their populations several times.¹³³ By February 2021, 175 million vaccinations had been administered worldwide, while the whole of Sub-Saharan Africa had not yet started a single vaccination program.¹³⁴ This was partly attributed to vaccine hoarding but also to planning issues, cost and other constraints. By March 2021, high-income nations were vaccinating one person on average every second, while most of the poorest nations, many of which are in Africa, had yet to provide a first dose.¹³⁵

There were several barriers to vaccine acquisition for lower income countries, even as vaccines became more available globally. A dominant factor was the cost of vaccines, with pharmaceutical monopolies influencing the distribution pattern of vaccinations worldwide. About 90% of Pfizer-BioNTech and Moderna vaccines have been sold to high-income countries, for more than 24 times the cost of production.¹³⁶ Globally, countries' options for vaccine acquisition are further limited by the shortage of raw materials to produce vaccines as well as limited vaccine manufacturing capabilities.¹³⁷

On average, countries are charged more than six times the cost of production for vaccines, making purchasing an adequate supply a substantial challenge for lower income nations. The European Union has been overcharged for their 1.96 billion Moderna vaccines by as much as \$36 billion,

¹³¹ WHO, 'WHO Emergency Dashboard, South Africa', 2021, <https://covid19.who.int/region/afro/country/za> (accessed 1 November 2021).

¹³² M.B. Marcus, 'Ensuring Everyone in the World Gets a COVID Vaccine', Duke Global Health Institute, 20 January 2021, <https://globalhealth.duke.edu/news/ensuring-everyone-world-gets-covid-vaccine> (accessed 29 September 2021).

¹³³ P Gill, Canada has enough COVID-19 vaccine doses to cover each citizen five times over, *Business Insider*, 9 December 2020, <https://www.businessinsider.in/science/health/news/canada-has-enough-COVID-19-vaccine-doses-to-cover-each-citizen-five-times-over-while-the-fate-of-67-poor-countries-remains-undecided/article79645493.cms> (accessed 29 September 2021).

¹³⁴ K. Kupferschmidt, 'Unprotected African health workers die as rich countries buy up COVID-19 vaccines', *Science*, 7 February 2021, <https://www.sciencemag.org/news/2021/02/unprotected-african-health-workers-die-rich-countries-buy-COVID-19-vaccines> (accessed 29 September 2021).

¹³⁵ 'Rich nations vaccinating one person every second while majority of the poorest nations are yet to give a single dose', UNAIDS, 10 March 2021, <https://www.oxfam.org/en/press-releases/vaccine-monopolies-make-cost-vaccinating-world-against-covid-least-5-times-more> (accessed 29 September 2021).

¹³⁶ 'Vaccine monopolies make cost of vaccinating the world against COVID at least 5 times more expensive than it could be', OXFAM International, 29 July 2021, <https://www.oxfam.org/en/press-releases/vaccine-monopolies-make-cost-vaccinating-world-against-covid-least-5-times-more> (accessed 29 September 2021).

¹³⁷ 'How much will vaccine inequity cost?', The Economist Intelligence Unit, 30 August 2021, <https://www.eiu.com/n/campaigns/how-much-will-vaccine-inequity-cost> (accessed 29 September 2021).

while the African Union has been charged six times the price of production for Pfizer- BioN-Tech.¹³⁸ Sinopharm charges between \$20 and \$40 for a single dose, a cost that many African nations have had to agree on given the lack of access to cheaper alternatives.¹³⁹ Due to the high cost of vaccines, many countries in Africa have become reliant on loans and vaccine donations to support their programs.

The uneven rollout of vaccination programs can also be attributed to several other factors. Logistical challenges have arisen due to the requirements of the different types of vaccines procured, particularly different storage temperatures. This has required investments in cold chain equipment and storage, as well as reliable electricity supply.¹⁴⁰ This not only presents significant additional costs, the situation also demands detailed planning and monitoring capacity from already stretched health departments.

This has resulted in varied local approaches to vaccine rollouts, as each country needed to determine the best way of storing, transporting, and administering the vaccines. Furthermore, a shortage of trained healthcare professionals to administer vaccines, a lack of public awareness campaigns to inform citizens of the benefits of vaccines and where or how to register, as well as insufficient funding to finance rollouts have been identified as additional barriers.¹⁴¹ According to an assessment by the WHO in February 2021, only 42% of African countries were ready for their mass vaccination programs once doses were available—well below the targeted benchmark of 80%.¹⁴²

In an effort to address global vaccine inequity, COVAX was launched in April 2021. This global initiative aimed to secure vaccine access for lower income nations through a collaboration between the WHO, the Coalition for Epidemic Preparedness Innovations and Gavi, the Vaccine Alliance.¹⁴³ COVAX intended to deliver 470 million vaccination doses to Africa by the end of 2021, adjusted from 620 million earlier in 2021.¹⁴⁴

Despite its noble intentions, the initiative has faced many challenges in its execution. It has paid more than five times the price of production cost for vaccines and has struggled to acquire the scale and volume necessary to meet its distribution targets.¹⁴⁵ In a best-case scenario, the initiative

¹³⁸ ‘Rich nations vaccinating one person every second while majority of the poorest nations are yet to give a single dose’, UNAIDS, 10 March 2021, <https://www.oxfam.org/en/press-releases/vaccine-monopolies-make-cost-vaccinating-world-against-covid-least-5-times-more> (accessed 29 September 2021).

¹³⁹ S. Goh, *BMJ*, April 9, 2021, 373:912, <https://www.bmj.com/content/373/bmj.n912/rr-0> (accessed 29 September 2021).

¹⁴⁰ R. Chakamba, ‘The cold chain storage challenge’, *Devex*, 13 May 2021, <https://www.devex.com/news/the-cold-chain-storage-challenge-99869> (accessed 29 September 2021).

¹⁴¹ ‘Africa’s Lack of Vaccine Is Not the Only Reason for Slow Vaccine Rollout’, *Reliefweb*, 14 June 2021, <https://reliefweb.int/report/world/africas-lack-vaccine-not-only-reason-slow-vaccine-rollout> (accessed 29 September 2021).

¹⁴² ‘Africa needs timely access to safe and effective COVID-19 vaccines’, World Health Organization, 21 January 2021, <https://www.afro.who.int/news/africa-needs-timely-access-safe-and-effective-COVID-19-vaccines> (accessed 29 September 2021).

¹⁴³ S. Berkley, ‘COVAX explained’, GAVI The Vaccine Alliance, 3 September 2021, <https://www.gavi.org/vaccineswork/covax-explained> (accessed 29 September 2021).

¹⁴⁴ A. Winning and G. Obulutsa, ‘COVAX aims to deliver 520 mln vaccine doses to Africa this year’, *Reuters*, 8 July 2021, <https://www.reuters.com/world/africa/covax-aims-deliver-520-mln-vaccine-doses-africa-this-year-2021-07-08> (accessed 29 September 2021).

¹⁴⁵ ‘The great vaccine robbery: Pharmaceutical corporations charge excessive prices for COVID-19 vaccines while rich countries block faster and cheaper route to global vaccination’, *Reliefweb*, 29 July 2021, <https://reliefweb.int/report/world/great-vaccine-robbery-pharmaceutical-corporations-charge-excessive-prices-COVID-19> (accessed 29 September 2021).

will provide vaccines for 23% of lower-income countries across the world by the end of 2021. Without prohibitive costs resulting from pharmaceutical monopolies, the COVAX Alliance could have supplied enough vaccines to fully vaccinate every person in low- and middle-income countries in 2021, based on its spending to date, had it been able to purchase vaccines at cost price.¹⁴⁶ Instead, it has had to cut its projections by nearly 30%, delivering only 311 million total doses by late September 2021.¹⁴⁷

The COVAX case underscores the major global challenge of achieving adequate coordination for vaccine equity. While U.S. President Joe Biden’s call for a global COVID-19 summit to drive the goal of vaccinating 70% of the global population by September 2022 is commendable, it is evident that greater galvanization of resources will be needed at a global governance level (including coordination with the WHO and other international agencies) to reach this target.¹⁴⁸

THE CHALLENGE OF DEMAND GENERATION

Even if the global supply constraints of COVID-19 vaccines could be overcome, creating greater demand for vaccines in African countries would still be a considerable challenge. That is not to imply that the degree of vaccine hesitancy on the continent is unequivocal. Indeed, findings related to COVID-19 vaccine hesitancy/acceptability studies on the continent show a range of different responses. For example, a survey by Kanyanda et al. that included six countries in Sub-Saharan Africa—including Ethiopia and Nigeria—found a relatively high acceptability rate for COVID-19 vaccines,¹⁴⁹ while a paper by Nachege et al. reported on several studies that showed substantially lower acceptability rates.¹⁵⁰

While further research is certainly needed to quantify the extent of vaccine hesitancy, the underlying factors have shown some generally recognizable trends. These include distrust of authorities, the spread of misinformation (including dissemination of such on social media) and concerns about vaccine effectiveness and safety, given the short timeframe for developing the vaccines.¹⁵¹ Strategies to address vaccine hesitancy are also becoming more effective. Recommendations have been

¹⁴⁶ ‘The great vaccine robbery: Pharmaceutical corporations charge excessive prices for COVID-19 vaccines while rich countries block faster and cheaper route to global vaccination’, Reliefweb.

¹⁴⁷ ‘GAVI, the Vaccine Alliance, ‘COVAX’, 2021, <https://www.gavi.org/covax-facility> (accessed 19 September 2021).

¹⁴⁸ P. Wintour, ‘Joe Biden to propose target of vaccinating 70% of world in a year’, *The Guardian*, 14 September 2021, <https://www.theguardian.com/world/2021/sep/14/joe-biden-propose-target-vaccinating-world-covid> (accessed 29 September 2021).

¹⁴⁹ S. Kanyanda, Y. Markhof, P. Wollburg, and A. Zezza, ‘The acceptance of covid-19 vaccines in Sub-Saharan Africa: Evidence from 6 national phone surveys’, *medRxiv*, 2 July 2021, <https://doi.org/10.1101/2021.06.28.21259320> (accessed 1 November 2021).

¹⁵⁰ J.B. Nachege, N.A. Sam-Agudu, R. Masekela, M.M. van der Zalm, S. Nsanzimana, J. Condo, F. Ntoumi, H. Rabie, M. Kruger, C.S. Wiysonge and J.D. Ditekemena, ‘Addressing challenges to rolling out COVID-19 vaccines in African countries’, *The Lancet Global Health*, 9, issue 6, (10 March 2021): pp.e746-e748. [https://doi.org/10.1016/S2214-109X\(21\)00097-8](https://doi.org/10.1016/S2214-109X(21)00097-8) (accessed 1 November 2021).

¹⁵¹ N.P. Menezes, M. Simuzingili, Z.Y. Debebe, F. Pivodic, E. Massiah, ‘What is driving COVID-19 vaccine hesitancy in Sub-Saharan Africa?’ *World Bank Blog*, 11 August 2021, <https://blogs.worldbank.org/african/what-driving-covid-19-vaccine-hesitancy-sub-saharan-africa> (accessed 1 November 2021).

made for more sophisticated and targeted communications strategies to be implemented, with a strong focus on community engagement and mobilization.^{152, 153}

A range of interventions have been adopted to address vaccine hesitancy in the countries in this study. Mandatory vaccinations for public servants in Kenya¹⁵⁴ and Nigeria,¹⁵⁵ for example, is among the more stringent measures. While the debate around mandatory vaccinations in South Africa continues,¹⁵⁶ the country has—so far—adopted a less coercive approach. Notably, a social listening team has been established within the National Department of Health, which produces regular reports aimed at improving understanding and mitigating vaccine hesitancy.¹⁵⁷

More recently, the national government has introduced ‘Vooma Vaccination Weekends’, a large-scale vaccination campaign launched by the Presidency to increase vaccination numbers.¹⁵⁸ Although it didn’t reach the target of 500,000 people vaccinated, the first of these weekends (1–3 October 2021) resulted in more than 353,000 people being vaccinated—a significant achievement in terms of accelerating the rollout.¹⁵⁹

DEVELOPING LOCALIZED VACCINATION CAPABILITIES: A CATALYST FOR A BIOECONOMY

The COVID-19 pandemic has exposed significant structural weaknesses in vaccine production on the African continent. Timely access to vaccines of any nature will remain uncertain as long as the continent is dependent on external suppliers and manufacturers for 99% of its vaccine supplies for COVID-19 and other diseases.¹⁶⁰

¹⁵² A.A. Afolabi and O.S. Ilesanmi, ‘Dealing with vaccine hesitancy in Africa: the prospective COVID-19 vaccine context’, *The Pan African Medical Journal*, 38, Article 3, 5 January 2021, <https://www.panafrican-med-journal.com/content/article/38/3/full> (accessed 1 November 2021).

¹⁵³ J.B. Nachege, N.A. Sam-Agudu, R. Masekela, M.M. van der Zalm, S. Nsanzimana, J. Condo, F. Ntoumi, H. Rabie, M. Kruger, C.S. Wiysonge and J.D. Ditekemena, ‘Addressing challenges to rolling out COVID-19 vaccines in African countries’, *The Lancet Global Health*, 9, issue 6, 10 March 2021: pp. e746-e748, [https://doi.org/10.1016/S2214-109X\(21\)00097-8](https://doi.org/10.1016/S2214-109X(21)00097-8) (accessed 1 November 2021).

¹⁵⁴ P. Adepoju, ‘Kenya Mandates COVID-19 Vaccines for Civil Servants as Africa’s Vaccine Rollout Gathers Speed’, *Health Policy Watch*, 13 August 2021, <https://healthpolicy-watch.news/kenya-mandates-covid-vaccines-for-civil-servants-as-africa> (accessed 1 November 2021).

¹⁵⁵ N. Adebowale, ‘COVID-19: Nigerian govt makes vaccination mandatory for civil servants’, *Premium Times*, 13 October 2021, <https://www.premiumtimesng.com/news/headlines/489749-just-in-covid-19-nigerian-govt-makes-vaccination-mandatory-for-civil-servants.html> (accessed 1 November 2021).

¹⁵⁶ BusinessTech, ‘South Africa will need to consider mandatory vaccinations and incentives in the coming months: business group’, 6 October 2021, <https://businesstech.co.za/news/business/526710/south-africa-will-need-to-consider-mandatory-vaccinations-and-incentives-in-the-coming-months-business-group> (accessed 1 November 2021).

¹⁵⁷ C. Bateman, ‘Covid-19: How to respond to vaccine hesitancy’, *Daily Maverick*, 30 September 2021, <https://www.dailymaverick.co.za/article/2021-09-30-covid-19-how-to-respond-to-vaccine-hesitancy> (accessed 23 November 2021).

¹⁵⁸ SAnews, ‘President Ramaphosa kicks off Vooma Vaccination Weekend’, 1 October 2021, <https://www.sanews.gov.za/south-africa/president-ramaphosa-kicks-vooma-vaccination-weekend> (accessed 1 November 2021).

¹⁵⁹ The Citizen, ‘Vooma Vaccination Weekend: Ramaphosa “proud” of 353k new inoculations’, 4 October 2021, <https://www.citizen.co.za/news/covid-19/2638195/vooma-vaccination-weekend-ramaphosa-proud-of-353k-new-inoculations> (accessed 1 November 2021).

¹⁶⁰ A. Gennari, T. Holt, E. Jordi, and L. Kaplow, ‘Africa needs vaccines. What would it take to make them here?’ McKinsey and Company, 2021, <https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our>

As global shortages impeded vaccination drives across the continent, addressing the capability of African countries to manufacture vaccines locally became a top priority for the African Union. At a meeting in April 2021, a partnership between the organization and the Coalition for Epidemic Preparedness Innovations was announced, with the key strategy of ensuring that Africa build the capability to manufacture 60% of the continent's vaccine needs, from start to finish, within 20 years.¹⁶¹ According to the strategy, vaccination sites are to be established in each region, namely North, East, West, Southern, and Central Africa.¹⁶² Furthermore, in June 2021 the President of the AfDB, Akinwunmi Adesina, announced the bank's commitment of \$3 billion to support the development of Africa's pharmaceutical industry, particularly its capacity to produce vaccines.¹⁶³

As an example of an important development in building the bioeconomy in Africa, Pfizer-BioNTech recently brokered a 'fill and finish' deal with the Biovac Institute in July 2021. As a result, the South African facility will complete the final stages of manufacturing the COVID-19 vaccine, a first for the continent in terms of mRNA technology (the separate, and pre-existing, 'fill and finish' deal between South African-based Aspen Pharmacare and J&J involves viral vector technology). The Pfizer-BioNTech and Biovac deal is set to include a shared investment of \$13.6 million and will assist Biovac in the manufacturing of 100 million doses of the COVID-19 vaccine for the African Union each year—with the aim of reaching this output target by early 2023.¹⁶⁴

Africa's vaccine sales are worth about \$1.3 billion, within a global market estimated to be \$33 billion. Despite this, the continent accounts for 25% of the global demand. Africa's market share could be expanded to a projected \$5.4 billion by 2030—if it takes important steps such as overcoming access barriers, equitably addressing pricing issues, and introducing new products (including COVID-19 vaccines). Technological innovations along with progress made in addressing trade barriers, regulatory issues, and other key enablers, could position Africa to compete with other emerging market vaccine manufacturers, such as Brazil and India. The development of vaccine production capabilities in these countries is an important underpinning of Africa's early-stage bioeconomy roadmap.¹⁶⁵

However, developing this bioeconomy is not a simple process; it is a complex undertaking involving multiple role players, from pharmaceutical companies to multilateral development partners

insights/africa-needs-vaccines-what-would-it-take-to-make-them-here?cid=other-eml-alt-mip-mck&hdpid=7a8aab8c-d9cd-4a94-9cff-1c5815b14a5e&hctky=12831289&hlkid=f22ca6f3ff8142c68a808f9ec7382d9d (accessed 29 September 2021).

¹⁶¹ African Union, 'African Union and Africa CDC launches Partnerships for African Vaccine Manufacturing (PAVM), framework to achieve it and signs 2 MoUs', 16 April 2021, <https://africacdc.org/news-item/african-union-and-africa-cdc-launches-partnerships-for-african-vaccine-manufacturing-pavm-framework-to-achieve-it-and-signs-2-mous> (accessed 29 September 2021).

¹⁶² R. Agyarko, 'A new era of vaccine sovereignty in Africa beckons', *Mail & Guardian*, 14 April 2021, <https://mg.co.za/africa/2021-04-14-a-new-era-of-vaccine-sovereignty-in-africa-beckons> (accessed 29 September 2021).

¹⁶³ D. Onwuamaeze, 'AfDB to Support AfCFTA with \$208bn Projects', *ThisDay*, 24 June 2021, <https://www.thisdaylive.com/index.php/2021/06/24/afdb-to-support-afcfta-with-208bn-projects> (accessed 29 September 2021).

¹⁶⁴ 'South African firm to help make Pfizer/BioNTech COVID vaccine', *Reuters*, 21 July 2021, <https://www.reuters.com/business/healthcare-pharmaceuticals/pfizerbiontech-strike-south-africa-covid-19-manufacturing-deal-with-biovac-2021-07-21> (accessed 1 November 2021).

¹⁶⁵ A. Gennari, T. Holt, E. Jordi, and L. Kaplow, 'Africa needs vaccines. What would it take to make them here?' McKinsey and Company, 2021, <https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/africa-needs-vaccines-what-would-it-take-to-make-them-here?cid=other-eml-alt-mip-mck&hdpid=7a8aab8c-d9cd-4a94-9cff-1c5815b14a5e&hctky=12831289&hlkid=f22ca6f3ff8142c68a808f9ec7382d9d> (accessed 29 September 2021).

such as the African Union and the AfDB. Supportive regulations and an enabling environment for manufacturing need to be in place, which should include basics such as regular power supply, cold storage facilities, and efficient supply chains.

Despite the challenges, the benefits of a fully developed African bioeconomy, centered on large-scale vaccine production, are manifold. They include a reliable supply of vaccines to combat preventable diseases, creating support for and resilience in the local healthcare system and overall improved preparedness for future epidemics. An indirect benefit could be a meaningful contribution to overall economic growth on the continent. Indeed, the prospect of an Africa-wide bioeconomy, servicing its citizens and achieving scale, would be one of the most significant outcomes of the pandemic.

THE ECONOMIC CASE FOR VACCINATING THE WORLD

In addition to the human cost of the COVID-19 pandemic, the economic consequences of vaccine inequity are also dire. Indeed, countries with less than 60% of their population vaccinated by mid-2022 are projected to experience, between 2022 and 2025, GDP losses of US\$2.3 trillion.¹⁶⁶ It has been estimated that with each month's delay in the adequate provision of COVID-19 vaccines, Africa incurs potential losses of \$14 billion to overall GDP.¹⁶⁷ Furthermore, the WHO has noted that if low and lower-middle income countries were vaccinating their populations at the same rate as high-income countries, an additional \$38 billion would be added to their GDP in 2021.¹⁶⁸

The United Nations Council for Trade and Development (UNCTAD) has added that mounting economic losses due to a slow or failed rollout of vaccination programs has consequences not just for Africa, but globally. For example, COVID-19's direct impact on tourism and related sectors for 2020 and 2021 is estimated to be more than \$4 trillion globally, with 60% of these losses attributed to tourism-dependent developing economies, such as Kenya and Egypt.¹⁶⁹

In order to control the pandemic and reduce PHIs such as lockdowns, at least 40% of the global population should be vaccinated by the end of 2021, and 60% by the first half of 2022.¹⁷⁰ The \$50 billion cost implication of investing in this goal is comparatively small when compared to the estimated \$9 trillion global return that could be achieved if it is done.¹⁷¹ Higher vaccination rates will change the course of the pandemic and potentially prevent the emergence of future variants. This will also shorten the so-called tail of the pandemic, which is now the primary area of research and commentary, as well as improve the overall accomplishment of health planning and policy formulation.

¹⁶⁶ ONE Campaign, 'COVID's Aftershocks: Vaccination delays will cost \$2.3 trillion', 27 August 2021, <https://www.one.org/africa/blog/covid-vaccination-delays-costs> (accessed 1 November 2021).

¹⁶⁷ W. Clowes, 'Africa's Slow Vaccine Rollout Could Cost \$14 Billion a Month', *Bloomberg*, 20 May 2021, <https://www.bloomberg.com/news/articles/2021-05-20/africa-s-slow-vaccine-rollout-could-cost-14-billion-a-month> (accessed 29 September 2021).

¹⁶⁸ 'Vaccine inequity undermining global economic recovery', World Health Organisation, 22 July 2021, <https://www.who.int/news/item/22-07-2021-vaccine-inequity-undermining-global-economic-recovery> (accessed 29 September 2021).

¹⁶⁹ 'Global economy could lose over \$4 trillion due to COVID-19 impact on tourism', UNCTAD, 30 June 2021, <https://unctad.org/news/global-economy-could-lose-over-4-trillion-due-COVID-19-impact-tourism> (accessed 29 September 2021).

¹⁷⁰ R. Agarwal and G. Gopinath, A Proposal to End the COVID-19 Pandemic, IMF: Staff Discussion Notes, 19 May 2021, <https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2021/05/19/A-Proposal-to-End-the-COVID-19-Pandemic-460263> (accessed 29 September 2021).

¹⁷¹ R. Agarwal and G. Gopinath, A Proposal to End the COVID-19 Pandemic.

While the impact of the COVID-19 pandemic on five critical areas of recovery, beyond GDP, will be discussed in Section Three, it is important to note at this stage that an equitable global rollout is a moral imperative and an economic necessity. The truism that ‘no one is safe until everyone is safe’ is often repeated.¹⁷² However, this should expand beyond the immediate global vaccine rollout to ultimately describe a post-pandemic world that is on an equitable trajectory to social and economic recovery.

¹⁷² GAVI, the Vaccine Alliance, ‘No one is safe until everyone is safe’, 29 October 2021, <https://www.gavi.org/vaccineswork/no-one-safe-until-everyone-safe> (accessed 1 November 2021).

Section Three | Africa's Trajectory: Key Developments and Trends Exposed or Accelerated by the Pandemic

FIVE KEY AREAS HAVE BEEN IDENTIFIED AS BEING PIVOTAL to post-pandemic recovery and progress across Africa. These are pervasive inequality; a lack of statistical data; the ability of African countries to connect to the digital economy; the future of work on a continent beset by vulnerable informal businesses and jobs; and poor levels of and access to quality education.

The pandemic exposed and has accentuated these issues globally. But nowhere has their impact been more severe, and more immediate, than in Africa where a dramatic slowdown and even reversal of key development metrics not only undermines post-pandemic economic recovery but threatens to reverse decades of progress on an already underdeveloped continent.

Despite these setbacks, the pandemic could potentially be the catalyst to accelerate and drive new and important changes in key areas of development, encouraging the progress of citizens and investors alike, and introducing a greater sense of urgency in government policymaking and reform.

WIDENING INEQUALITY: FIVE COUNTRY CASE STUDIES

COVID-19 and subsequent interventions to contain it have exacerbated socioeconomic inequality on an unprecedented scale both within and between people and countries. While the pandemic first exposed endemic inequality in the months after it first broke out, the impact of measures taken to manage the virus has been a watershed moment in history: COVID-19 could be the single biggest contributor to deepening inequality at a global scale.

Africa is at the center of this seismic shift. The enormous impact of the pandemic on progress across the continent became evident in 2020 when output in sub-Saharan Africa contracted by 3.7%, and per capita income declined by 6.1%.¹⁷³ Economic inequality was strongly propelled by a 7.7% decline in working hours, with an estimated 29 million jobs lost on the continent.¹⁷⁴ The most vulnerable members of society have been disproportionately affected, which includes informal workers, youth, women, and unskilled people, as seen in the case studies below.

Worldwide, extreme inequality outpaces deaths from the virus as an impact of the pandemic, and this particularly the case in Africa where immediate interventions are needed to avoid eradicating years of progress and development. If the continent remains on its current trajectory, nine out of

¹⁷³ 'Global Economic Prospects', The World Bank, January 2021, <https://pubdocs.worldbank.org/en/389631599838727666/Global-Economic-Prospects-January-2021-Analysis-SSA.pdf> (accessed 29 September 2021).

¹⁷⁴ Global Economic Prospects', The World Bank.

TABLE 9
Gini Coefficient Values and GDP per Capita

| Country | Gini Coefficient | GDP per capita 2019 | GDP per capita 2020 |
|---------------------|------------------|---------------------|---------------------|
| Egypt | 31.5 (2017) | 3,019.1 | 3,547.9 |
| Ethiopia | 35.0 (2015) | 855.8 | 936.3 |
| Kenya | 40.8 (2015) | 1816.5 | 1,838.2 |
| South Africa | 63.0 (2014) | 6,001.4 | 5,090.7 |
| Nigeria | 35.1 (2018) | 2,229.9 | 2,097.1 |

Source: Data is derived from the World Bank Data Repository, <https://data.worldbank.org/indicator/SI.POV.GINI>.

10 of the countries that are home to the largest numbers of extreme poor in the world, will be in Africa by 2030.¹⁷⁵

Table 9 captures the Gini coefficient, as well as the GDP per capita in current U.S. dollar prices, across the five selected countries between 2019 and 2020. The Gini coefficient measures the income distribution across a country's population, while the GDP per capita averages the sum of a country's economic output per person. South Africa has the highest Gini coefficient rate of the five countries measured and it was the only one to experience a significant decline in GDP per capita. This shrunk by 15.2% between 2019 and 2020. Egypt has the lowest Gini coefficient of the five and the second largest GDP per capita value, which increased by 17.5% between 2019 and 2020. If not addressed urgently and decisively, the worsening inequality of opportunity will become a defining characteristic of Africa's socioeconomic landscape.

Egypt

Egypt's outlook for economic recovery is more favorable than it is for most parts of Africa. It was one of the few emerging market economies to maintain a positive economic growth rate during the pandemic. The country's relatively low Gini coefficient and growing GDP per capita hold promise for a more equal society.¹⁷⁶ While the government's focus on maintaining macroeconomic stability through the advancement of key structural reforms and bolstering of social safety nets helped to cushion the blow of pandemic-related income losses, gender inequality was a casualty of the pandemic.¹⁷⁷

The challenges facing women in Egypt include lack of participation in the economy, an increase in domestic violence, as well as higher levels of exposure to the virus given their dominance in

¹⁷⁵ H. Kharas and M. Dooley, 'Long-run impacts of COVID-19 on extreme poverty', Brookings, 2 June 2021, <https://www.brookings.edu/blog/future-development/2021/06/02/long-run-impacts-of-COVID-19-on-extreme-poverty> (accessed 29 September 2021).

¹⁷⁶ As shown in Table 9.

¹⁷⁷ 'Egypt: IMF - SBA With Egypt Achieved Major Targets During Covid', *All Africa*, 23 July 2021, <https://allafrica.com/stories/202107230527.html> (accessed 29 September 2021).

high-contact sectors such as healthcare, education, food production, and hospitality.¹⁷⁸ Sociocultural pressures on women mean those who have left their jobs during the pandemic have been predominantly female, a trend largely attributed to their extra homecare-giving responsibilities during the pandemic.¹⁷⁹

Low rates of female participation in the formal economy is not confined to Egypt but it is a regional phenomenon. An estimated 20% of women in the Middle East and North Africa participate in the formal economy, well below the global average of 47%.¹⁸⁰ The closing of childcare facilities to prevent the spread of the virus disproportionately affected women as they had to stay at home to care for their children. Furthermore, work from home opportunities for women in Egypt were also limited as household computers were prioritized for male members of the household.¹⁸¹

One example of a pandemic-led initiative to address the challenges of limited opportunities for females to participate formally in the Egyptian economy is a women-friendly ‘safe-space’ library that was launched in June 2021.¹⁸² Unveiled in Ezbet El Borg city in Damietta, the newly renovated Misr Public Library is a small step towards empowering vulnerable women in Egypt. This initiative aims to provide sanctuary for victims of domestic violence as well as build confidence and workplace skills for women.¹⁸³ The library was renovated and developed by the National Council of Women, the Damietta Governate, the UN Women Egypt, and was backed by the Kingdom of the Netherlands.

Ethiopia

Despite achieving double digit economic growth for a decade prior to the onset of the pandemic, this trajectory has been undermined by conflict in the Tigray region, low per capita incomes, and widening inequality. COVID-19 and climate change also threaten the country’s aspirations to reach lower-middle income status by 2025.¹⁸⁴ But the current trajectory to do so is on track. According to the World Bank, lower middle-income countries are those with a per capita income of between \$1,036 and \$4,045 per annum. Ethiopia, at \$936 in 2021 and increasing at an annual rate of nearly 10%, should reach lower middle-income status well before 2025, barring any unforeseen economic events.

¹⁷⁸ OECD Policy Responses to Coronavirus (COVID-19), ‘Women at the core of the fight against COVID-19 crisis’, 1 April 2020, <https://www.oecd.org/coronavirus/policy-responses/women-at-the-core-of-the-fight-against-COVID-19-crisis-553a8269> (accessed 29 September 2021).

¹⁷⁹ C. Krafft, R. Assaad, and M.A. Marouani, ‘Vulnerable workers in MENA a year into the pandemic’, *The Forum ERF Policy Portal 2021*, <https://theforum.erf.org/2021/06/06/vulnerable-workers-mena-year-pandemic> (accessed 29 September 2021).

¹⁸⁰ B. Sherman, ‘Implications of School Closures on MENA Women’, Wilson Center, 26 October 2020, <https://www.wilsoncenter.org/article/implications-school-closures-mena-women?emci=c2bd0a21-0c25-eb11-9fb4-00155d03affc&emdi=ffa2a0a8-2125-eb11-9fb4-00155d03affc&ceid=59035> (accessed 29 September 2021).

¹⁸¹ B. Sherman, ‘Implications of School Closures on MENA Women’.

¹⁸² UN Women Egypt, ‘The Opening of a Women-Friendly Space in Damietta to Empower Women and Girls’, 13 June 2021, <https://egypt.unwomen.org/en/news-and-events/stories/2021/06/women-friendly-space-in-damietta> (accessed 29 September 2021).

¹⁸³ EU Neighbours South, ‘Egypt opens female friendly space to empower women and girls’, 14 June 2021, <https://www.euneighbours.eu/en/south/stay-informed/news/egypt-opens-female-friendly-space-empower-women-and-girls> (accessed 29 September 2021).

¹⁸⁴ World Health Organization, Ethiopia, <https://covid19.who.int/region/afro/country/et> (accessed 29 September 2021).

The country has been hard hit by the pandemic. Substantial economic shocks have led to rising inflation, stifled economic growth and reversed progress that had been made in alleviating poverty. In August 2021, the country's Central Statistics Agency attributed a 44% decline in household income to the pandemic and the subsequent measures implemented to contain it.¹⁸⁵ The gap between households experiencing economic losses and receiving government assistance is wide. Out of 54.5% of households that experienced loss of income between March and May 2020, only 2.8% received financial assistance from the government.¹⁸⁶

Despite these statistics, the World Bank has forecast that the economy is poised for recovery, and continues to show signs of resilience.¹⁸⁷ While certain sectors were hard-hit by the pandemic, in the first half of the 2021 fiscal year roughly 1.7 million jobs were created in Ethiopia through public and private investments, despite previous forecasts estimating 700,000 to 2 million job losses.¹⁸⁸ Progressive economic measures, in addition to emergency conflict management, is necessary to ensure that Ethiopia recovers from its recent economic setbacks.

The uneven economic recovery and performance across the region has been complicated by the Tigray conflict between the Tigray People's Liberation Front and the central government. The resulting humanitarian crisis in the region is accelerating the hardships wrought by COVID-19.

Kenya

With the onset of the global pandemic, and subsequent measures implemented to contain it, social unrest has intensified in Kenya as weak economic performance, coupled with corruption, mismanagement of relief funds, and worsening inequality, has caused societal damage.

In 2020, the state-run Kenya Medical Supplies Agency (KEMSA) was embroiled in a scandal highlighting the pervasive corruption present in the institution.¹⁸⁹ KEMSA officials and related business people pilfered \$400 million earmarked for medical equipment. Rampant mismanagement of funds led to the hashtag #MoneyHeist trending on Kenyan social media platforms and followed a \$12.2 million donation by the World Bank towards alleviating the impact of the pandemic. In the expenditure report on the donation presented to parliament, Health Secretary Mutahi Kagwe detailed overspending on items such as the leasing of 15 ambulances for \$373,000.¹⁹⁰

¹⁸⁵ T. Tilahun, 'Ethiopia: Survey Depicts Covid Economic Impact', *All Africa*, 18 August 2021, <https://allafrica.com/stories/202108190096.html> (accessed 29 September 2021).

¹⁸⁶ A. Deshpande, A.K. Mulat, W. Mao and M.M. Diab, 'Social assistance in Ethiopia during COVID-19', Brookings, 28 May 2021, <https://www.brookings.edu/blog/future-development/2021/05/28/social-assistance-in-ethiopia-during-COVID-19> (accessed 29 September 2021).

¹⁸⁷ The World Bank, 'Ethiopia Economic Update: Ensuring Ethiopia's Full Recovery from COVID-19', 28 April 2021, <https://www.worldbank.org/en/country/ethiopia/publication/ethiopia-economic-update-ensuring-ethiopia-s-full-recovery-from-COVID-19>.

¹⁸⁸ Deloitte, 'Economic impact of the COVID-19 pandemic on East African economies', July 2021, <https://www2.deloitte.com/content/dam/Deloitte/ke/Documents/finance/Economic%20Impact%20of%20the%20COVID-19%20Pandemic%20on%20East%20African%20Economies-Volume%202.pdf> (accessed 29 September 2021).

¹⁸⁹ M. Oduor, 'Africa's COVID-19 corruption that outweighs pandemic', *Africa News*, 25 May 2021, <https://www.africanews.com/2021/05/25/africa-s-COVID-19-corruption-that-outweighs-pandemic> (accessed 29 September 2021).

¹⁹⁰ 'Coronavirus in Kenya: Fearing 'money heists' amid pandemic', *BBC News*, 7 May 2021, <https://www.bbc.com/news/world-africa-52540076> (accessed 29 September 2021).

As infections rose exponentially in August 2021, further burdening healthcare systems, the Kenyan government extended existing COVID-19 related restrictions, angering the public.¹⁹¹ The 10 p.m. to 4 a.m. curfew has been a subject of controversy while Kenyans have protested against police violence against citizens following extrajudicial killings of people found breaking the curfew. The issue became international news when a young boy was murdered after breaking curfew regulations in Nairobi.¹⁹²

Kenya has some of the highest levels of inequality in the world. The gap between the richest and poorest Kenyans is extreme. It has the second highest Gini coefficient after South Africa among the five countries under study. According to Oxfam, 8,300 people (fewer than 0.1% of the population) are wealthier than the remaining 44 million people (the bottom 99.9%) in the country.¹⁹³ The number of extremely wealthy individuals in Kenya is growing at a rate faster than anywhere else in the world, and is projected to increase by over 80% within the next 10 years.¹⁹⁴ The pandemic has highlighted the urgent economic and political interventions and reform required to ensure a more sustainable and equal society in Kenya.

Nigeria

Despite being the largest economy on the African continent in GDP terms, Nigeria's socioeconomic crisis has been exacerbated by COVID-19 in the wake of rising food prices, increasing poverty, and a lack of social safety nets. Nigeria's GDP per capita declined by 6% from 2019 to 2020.¹⁹⁵ In the months after COVID-19 hit the country, the oil price hit record lows, even falling below zero briefly. As its economy is dependent on oil exports for the bulk of its revenues and foreign exchange, Nigeria has been unable to regain momentum, entering into a recession in late 2020, reversing three years of growth.¹⁹⁶

Nigeria's 16-month closure of its borders with neighboring countries from August 2019 to stop smuggling of basic goods contributed to rising inflation, compounding the woes of consumers already hard hit by lockdowns and restrictions on economic activity.¹⁹⁷ The price of staple foods has risen by 30% since the start of the pandemic, with the most vulnerable affected. The number of households with at least one adult going without food for an entire day has tripled since before the pandemic.¹⁹⁸

¹⁹¹ M. Oduor, 'Kenya extends Covid restrictions despite protests to end curfews', *Africa News*, 19 August 2021, <https://www.africanews.com/2021/08/19/kenya-extends-covid-restrictions-despite-protests-to-end-curfews> (accessed 29 September 2021).

¹⁹² M. Oduor, 'Kenya extends Covid restrictions despite protests to end curfews'.

¹⁹³ OXFAM International, Kenya: extreme inequality in numbers, 2021, <https://www.oxfam.org/en/kenya-extreme-inequality-numbers> (accessed 29 September 2021).

¹⁹⁴ OXFAM International, Kenya: extreme inequality in numbers.

¹⁹⁵ See Table 1.

¹⁹⁶ T. White, 'Figure of the week: COVID's impacts on the Nigerian extractive sector', Brookings, 16 April 2021, <https://www.brookings.edu/blog/africa-in-focus/2021/04/16/figure-of-the-week-covids-impacts-on-the-nigerian-extractive-sector> (accessed 29 September 2021).

¹⁹⁷ D. Games, 'Nigeria looks to build back after pandemic havoc', *African Business*, 21 April 2021, <https://african.business/2021/04/trade-investment/nigeria-looks-to-build-back-after-pandemic-havoc> (accessed 29 September 2021).

¹⁹⁸ L. George and E. Shirbon, 'Pandemic disruptions push millions of Nigerians into hunger', *Reuters*, 15 July 2021, <https://www.reuters.com/world/africa/pandemic-disruptions-push-millions-nigerians-into-hunger-2021-07-15> (accessed 29 September 2021).

Furthermore, the COVID-19 pandemic exposed structural weaknesses and imbalances in the Nigerian economy in general and health sector in particular. The systemic underperformance of public services in the country is one of the factors increasing inequality across the country. More than 100 million Nigerians—more than 50% of the population—will be in poverty by 2030, an increase of 16 million people from 2021, according to Brookings.¹⁹⁹ The long-term impact of Covid-19 will contribute significantly to this rising number.

Pervasive and institutionalized corruption and mismanagement of funds has further strained Nigeria's volatile economic and public health environment. One report found that \$96,000 was spent by the federal health ministry on 1,808 ordinary face masks.²⁰⁰

The \$3.4 billion of emergency financial assistance from the IMF, and the \$6 billion economic stimulus from the federal government, have not trickled down to the average citizen.²⁰¹ The most vulnerable, poverty-stricken households in Nigeria have been left without a lifeline. A survey by Nigeria's National Bureau of Statistics (NBS) found that only 12.5% of poverty-stricken respondents had received any form of food assistance in the early stages of the pandemic.²⁰² While relief through governmental spending was offered to the formal sector, in Lagos state alone, 5.5 million people in the informal sector were left without any financial assistance.²⁰³

South Africa

In South Africa, current dysfunctional elements of the state apparatus have compounded the country's pre-existing problem of structural inequality. South Africa has been in one or other of the five levels of lockdown introduced by the government since the start of the lockdowns on 26 March 2020, introduced under the Disaster Management Act passed on 15 March.

By November 2021, the COVID-19 numbers were at their lowest since the early days of the pandemic, but the country remained on level one lockdown, with the government ignoring mounting calls for the above-mentioned legislation to be repealed. The government has regularly extended the state of disaster, with current extensions planned until 15 December 2021. This has had lasting consequences on the socioeconomic wellbeing of citizens, especially the most vulnerable.

A tiny 0.1% of the richest individuals in South Africa own more wealth and assets than the poorest 90% of individuals combined.²⁰⁴ The country's GDP per capita declined by 15.2% from 2019 to 2020, as a result of economic hardships before the pandemic.²⁰⁵ The extreme disparity in wealth

¹⁹⁹ H. Kharas and M. Dooley, 'Long-run impacts of COVID-19 on extreme poverty', Brookings, 2 June 2021, <https://www.brookings.edu/blog/future-development/2021/06/02/long-run-impacts-of-COVID-19-on-extreme-poverty> (accessed 29 September 2021).

²⁰⁰ M. Oduor, 'Africa's COVID-19 corruption that outweighs pandemic', *Africa News*, 25 May 2021, <https://www.africanews.com/2021/05/25/africa-s-COVID-19-corruption-that-outweighs-pandemic> (accessed 29 September 2021).

²⁰¹ M. Oduor, 'Africa's COVID-19 corruption that outweighs pandemic'.

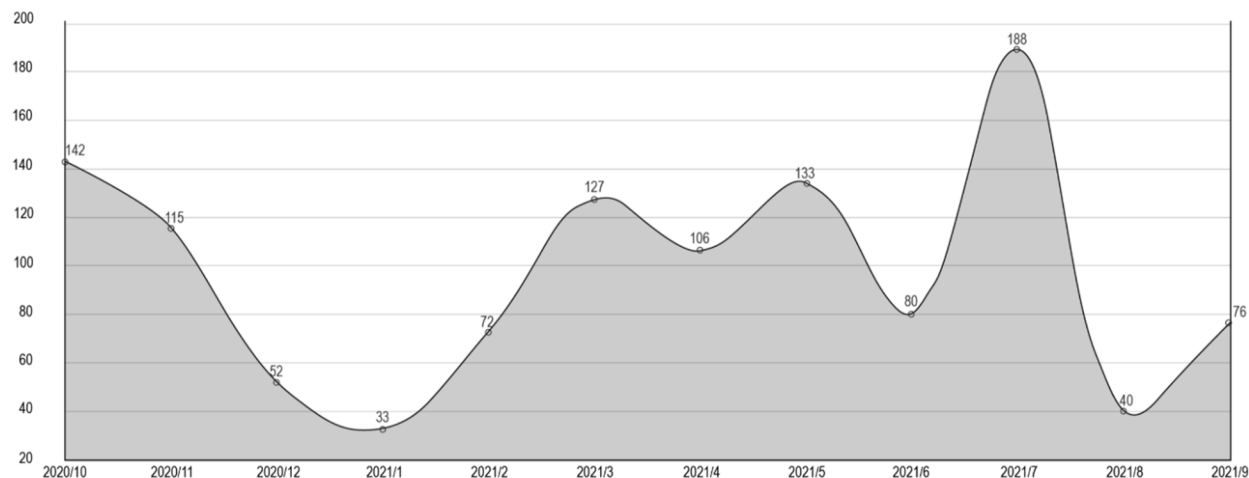
²⁰² M. Oduor, 'Africa's COVID-19 corruption that outweighs pandemic'.

²⁰³ 'Coronavirus: Nigeria's informal economy hit hard', *The Africa Report*, 25 May 2020, <https://www.theafricareport.com/28694/coronavirus-effects-of-COVID-19-on-nigerias-informal-economy> (accessed 29 September 2021).

²⁰⁴ 'New data shows what it takes to be in South Africa's richest 10%', *Business Tech*, 4 August 2021, <https://businessstech.co.za/news/wealth/510822/new-data-shows-what-it-takes-to-be-in-south-africas-richest-10> (accessed 29 September 2021).

²⁰⁵ See Table 1.

FIGURE 2
Protests in South Africa 2021



Source: The ISS Crime Hub map shows incidents of protest and public violence captured as part of the ISS Protest and Public Violence Monitoring Project, ongoing since 2013, <https://issafrica.org/crimehub/maps/public-protest-and-violence-stats>.

and lackluster growth is compounded by unequal access to opportunities, education, and land ownership. The high level of youth unemployment—it reached an all-time high of 63.3% in the first quarter of 2021—is of particular concern.²⁰⁶ In the second quarter of 2021, South Africa recorded unemployment of 34.4%, its highest since 2008 and one of the highest rates in the world. It is predicted that the number will increase steadily until 2025 and beyond without any significant turnaround in growth or strategic interventions by the government.²⁰⁷

A prolonged slowdown in economic growth and increasing corruption has adversely affected the socioeconomic climate and the number of protests against poor service delivery, electricity cuts, and other issues has increased. Between January and August 2021, more than 600 protests had taken place in South Africa.²⁰⁸ During the same period last year, there were 835 protests.²⁰⁹

Years of lackluster economic growth, job losses and insufficient employment opportunities culminated in a widespread wave of looting and violence in July 2021 in the provinces of Gauteng and KwaZulu-Natal. The worst occurrence of civil unrest in the country's post-apartheid democracy, the protests were sparked by South Africa's former president Jacob Zuma's imprisonment on corruption charges. The unrest was a further blow to South Africa, with the costs to the country's already faltering economy estimated to be as high as \$3.4 billion and a loss of an estimated 50,000 jobs.²¹⁰ Indirect losses were expected to continue the wake of serious damage to businesses and

²⁰⁶ Trading Economics, South Africa Youth Unemployment Rate, 2021, <https://tradingeconomics.com/south-africa/youth-unemployment-rate> (accessed 29 September 2021).

²⁰⁷ The Global Economy, Unemployment rate forecast, 2021, https://www.theglobaleconomy.com/rankings/unemployment_outlook (accessed 29 September 2021).

²⁰⁸ Institute for Security Studies Crime Hub, Public protest and violence map, 2021, <https://issafrica.org/crimehub/maps/public-protest-and-violence-stats> (accessed 29 September 2021).

²⁰⁹ Institute for Security Studies Crime Hub, Public protest and violence map.

²¹⁰ S. Cele and L. Wilson, 'South Africa Economy Set to Take \$3.4 Billion Hit From Riots', *Bloomberg*, 20 July 2021, <https://www.bloomberg.com/news/articles/2021-07-20/south-african-economy-set-to-take-3-4-billion-hit-from-riots> (accessed 29 September 2021).

the destruction of buildings and factories.²¹¹ About 337 people were killed during the less than two weeks of looting and rioting.

South Africa is a prime example of how the pandemic has further exacerbated endemic inequality, and set the country up for a lasting crisis.

AFRICA’S DATA DEFICIT: “IT IS HARD TO HELP THE POOR IF YOU DON’T COUNT THEM”²¹²

According to Morten Jerven, author of *Poor Numbers: How We Are Misled by African Development Statistics and What to Do About It*, one of the most pressing challenges facing African governments in planning and policy formulation is the poor quality of basic economic and social statistical data, and analytical capabilities.²¹³ Hard and accurate numbers are the foundation of policy decisions and choices.

As Jerven puts it, “Reliable statistics, including estimates of economic growth rates and per capita income, are basic to the operation of governments in developing countries and vital to non-governmental organizations and other entities that provide financial aid to them. Rich countries and international financial institutions such as the World Bank allocate their development resources on the basis of such data. The paucity of accurate statistics is not merely a technical problem; it has a massive impact on the welfare of citizens in developing countries.”²¹⁴

Poor numbers and incomplete data have undoubtedly affected economic performance in Africa. From tallying up COVID-19 infections to the impact of the pandemic on local, national, and regional economies, the challenge of poor numbers and reporting in Africa has undermined the continent’s response and recovery and will continue to do so if it is not addressed holistically at national, regional, and continental levels.

One of the consequences of the data deficit is that the full extent of COVID-19 in Africa is largely unknown, an outcome that has led some analysts to say the continent has not been badly affected even though the full picture is not known. The situation is exacerbated by overburdened healthcare systems that often lack modern technology and efficient systems, but also because of poor management of testing, and of contact track and trace systems. Many countries have not invested sufficiently in data systems and skilled personnel to drive the efficient capture of information. Outdated census statistics have not helped matters, and many rural and outlying areas have not been captured in the COVID-19 data for infections and deaths.

²¹¹ ‘South Africa’s week of riots and looting likely cost 50,000 jobs: economists’, *Business Tech*, 16 July 2021, <https://businesstech.co.za/news/trending/506522/south-africas-week-of-riots-and-looting-likely-cost-50000-jobs-economists> (accessed 29 September 2021).

²¹² ‘Lacking data, many African governments make policy in the dark’, *The Economist*, 9 May 2020, <https://www.economist.com/middle-east-and-africa/2020/05/07/lacking-data-many-african-governments-make-policy-in-the-dark> (accessed 29 September 2021).

²¹³ M. Jerven, *Poor Numbers: How we are Misled by African Development Statistics and What to Do About It*, 2013, Cornell University Press: New York.

²¹⁴ M. Jerven, *Poor Numbers: How we are Misled by African Development Statistics and What to Do About It*.

TABLE 10
Most Recent National Census Date in Selected Countries

| Country | Census Year |
|----------------------------------|-------------|
| Egypt ^a | 2017 |
| Ethiopia ^b | 2007 |
| Kenya ^c | 2019 |
| Nigeria ^d | 2006 |
| South Africa ^e | 2011 |

Sources:

^a ‘Summary and Statistical Report of the 2007 Population and Housing Census’, Federal Democratic Republic of Ethiopia, December 2008, [https://www.ethiopianreview.com/pdf/001/Cen2007_firstdraft\(1\).pdf](https://www.ethiopianreview.com/pdf/001/Cen2007_firstdraft(1).pdf) (accessed 30 September 2021).

^b ‘Summary and Statistical Report of the 2007 Population and Housing Census’, Federal Democratic Republic of Ethiopia.

^c ‘2019 Kenya Population and Housing Census Reports’, Kenya National Bureau of Statistics, 28 February 2021, <https://housing-financeafrica.org/documents/2019-kenya-population-and-housing-census-reports> (accessed 30 September 2021).

^d ‘Nigeria’s census has always been tricky: why this must change’, *The Conversation*, 9 December 2021, <https://theconversation.com/nigerias-census-has-always-been-tricky-why-this-must-change-150391> (accessed 30 September 2021).

^e Stats SA, Republic of South Africa, 2021, http://www.statssa.gov.za/?page_id=3836 (accessed 30 September 2021).

Nigeria is an example of the underreporting of COVID-19-related statistics that is prevalent across the continent. According to official data, Africa’s most populous country had recorded just over 190,000 COVID-19 cases as of 29 August 2021, fewer than 2,400 deaths and 10,500 active cases after testing a total of just 2.7 million of its estimated 200 million people between the start of the pandemic and the end of August 2021.²¹⁵ Nigeria had recorded only 1.3% of all deaths in Africa by 22 November 2021, suggesting a significant undercount.²¹⁶

Only eight countries in Africa have compulsory and functioning universal death recording systems, otherwise known as CRVS systems—Egypt, South Africa, Tunisia, Algeria, Cape Verde, São Tomé and Príncipe, the Seychelles and Mauritius.²¹⁷ Five of these countries—South Africa, Tunisia, Egypt, Morocco and Ethiopia—reported the highest number of COVID-19-related deaths on the continent as of 22 November 2021.²¹⁸

The data crisis in Africa is not new. Almost half of the continent’s population lives in a country where a national census has not taken place since 2009. The recommended time between censuses

²¹⁵ Worldometer, <https://www.worldometers.info/coronavirus> (accessed 29 September 2021).

²¹⁶ K. Cardoso, ‘Measuring Africa’s Data Gap: The cost of not counting the dead’, *BBC News*, 22 February 2021, <https://www.bbc.com/news/world-africa-55674139> (accessed 29 September 2021).

²¹⁷ K. Cardoso, ‘Measuring Africa’s Data Gap: The cost of not counting the dead’.

²¹⁸ Coronavirus in Africa tracker, *BBC News*, 2021, <https://www.bbc.co.uk/news/resources/idt-4a11d568-2716-41cf-a15e-7d15079548bc> (accessed 29 September 2021).

is 10 years.²¹⁹ As Table 10 shows, three of the five countries in this study have not conducted a census in 10 years or more. Ethiopia's was done 14 years ago, in 2007, and it was only the third in the country's history and the first that was documented and the results publicly disseminated.²²⁰

Nearly 31% of adults in Sub-Saharan Africa have no formal identification, according to the Identification, Financial Inclusion and Development in Sub-Saharan Africa report produced by the World Bank and International Finance Corporation (IFC). This affects financial and economic inclusion, healthcare, education, and migration, among others.²²¹ Data on births and deaths is also typically inaccurate or unavailable.²²² Overall, record keeping of population trends in Africa is dismal, leaving governments and policymakers to speculate where to build clinics and roads, and businesses on where to invest in new markets.²²³

Without credible data, African governments will continue to struggle to make appropriate plans to manage this crisis and others in the future, as well as to manage national planning and other initiatives on an ongoing basis.²²⁴

The situation in the five countries under study can be extrapolated across the continent. In fact, given that the five are among the most developed in Africa, the situation is likely to be worse in many other nations. Reliable data needs to be the foundation of planning for post-pandemic recovery, particularly given the fact that most African countries have high levels of informality in terms of business, migration, and residency.

A REGIONAL APPROACH TO CONNECTIVITY AND DIGITALIZATION: COUNTRY CASE STUDIES

Connectivity is key to facilitating trade, economic activity, and growth. It determines the efficiency and capacity of a country to move goods, services, capital, and information internally and beyond its borders. African countries continue to lag in the development of connecting infrastructure, including roads, rail, ports, and telecommunications. This not only affects the efficiency of logistics, but the costs of doing business.

The pandemic has exposed the extent of African countries' infrastructure deficits, forcing governments to critically assess where investments need to be made as they focus on immediate recovery and long-term economic development. It has also highlighted the importance of deepening regional integration.

²¹⁹ 'Lacking data, many African governments make policy in the dark', *The Economist*, 9 May 2020, <https://www.economist.com/middle-east-and-africa/2020/05/07/lacking-data-many-african-governments-make-policy-in-the-dark> (accessed 29 September 2021).

²²⁰ International Housing Survey Network, Population and Housing Census of 2007, <https://catalog.ihnsn.org/index.php/catalog/3583> (accessed 29 September 2021).

²²¹ Development Research Group, The World Bank, 'Sub-Saharan Africa Series: Identification, Financial Inclusion and Development In Sub-Saharan Africa', March 2019, https://globalindex.worldbank.org/sites/global-index/files/referpdf/FindexNote4_062419.pdf (accessed 30 September 2021).

²²² 'Lacking data, many African governments make policy in the dark', *The Economist*, 9 May 2020, <https://www.economist.com/middle-east-and-africa/2020/05/07/lacking-data-many-african-governments-make-policy-in-the-dark> (accessed 29 September 2021).

²²³ Lacking data, many African governments make policy in the dark', *The Economist*.

²²⁴ 'Africa: poor data quality leads to poor information quality', *Journodev.tech*, 14 May 2021, <https://journodev.tech/africa-poor-data-quality-leads-to-poor-information-quality> (accessed 29 September 2021).

Trading under the African Continental Free Trade Area (AfCFTA) began in January 2021. The launch of the initiative made the continent the largest free trade area in the world based on the number of member countries. Connecting 1.3 billion people across 54 countries, with a combined GDP of about \$3.4 trillion, the AfCFTA has the potential to lift 30 million Africans out of extreme poverty and drive much needed reforms to boost inclusive economic growth by improving the movement of goods, services, people, and information.²²⁵

There are many issues that are still being negotiated to make the first phase of the AfCFTA fully operational. These include agreement on rules of origin requirements and tariff reduction schedules, which are key foundations for the smooth operation of free trade.²²⁶

The pandemic demonstrated that Africa's industrial production can be swiftly strengthened, and African industries can react to demand if given the opportunity to do so.²²⁷ While governments moved quickly to coordinate their response to COVID-19 and integrate their supply chains, African firms stepped up to address markets gaps created by the pandemic, which played a role in not just building local capacity but also strengthening regional value chains. In Ethiopia, for example, Ethiopian Airlines adapted to lower passenger numbers by repurposing passenger planes for cargo, while firms in the country's industrial parks retooled to manufacture PPE.

The pandemic particularly highlighted Africa's dependence on imported pharmaceuticals. In 2018, 95.9% of Africa's medicinal and pharmaceutical products were imported from outside the continent. Improved integration across Africa therefore is an important plank in the development of an Africa-based pharmaceutical capacity and needs to be supplemented by a proactive policy agenda both nationally and regionally. Strengthening trade facilitation will improve collaboration between countries and enable them to scale production if the products can be moved easily, cheaply, and quickly around the continent.

The AfCFTA is also a catalyst for the growth of Small, Micro and Medium Enterprises (SMMEs). Among other interventions, negotiations for e-commerce and digital trade are set to be fast-tracked under the Africa-wide free trade pact, which will improve modernization efforts and business competitiveness as well as market access.

COVID-19 has demonstrated that self-sustainability is important and is most critical in the areas of food security, education, healthcare, and logistics. A fundamental goal of the AfCFTA is to make Africa self-sufficient in these sectors, and member states should set the agenda accordingly, putting in place realistic plans to develop these vital sectors.²²⁸

²²⁵ 'Africa: poor data quality leads to poor information quality', *Journodev.tech*.

²²⁶ F. Thompson, 'Delay expected as deadline looms for AfCFTA rules of origin talks,' *Global Trade Review*, 28 July 2021, <https://www.gtreview.com/news/africa/delay-expected-as-deadline-looms-for-afcfta-rules-of-origin-talks> (accessed on 22 August 2021)

²²⁷ L. White and L. Rees, 'Benefits of Africa's free trade bloc could boost post-pandemic recovery.' *Business Day*, 3 September 2021, <https://www.businesslive.co.za/bd/opinion/2020-09-03-benefits-of-africas-free-trade-bloc-could-boost-post-pandemic-recovery> (accessed on 22 August 2021)

²²⁸ Pwc.Com (2020), COVID-19 and the African Continental Free Trade Area Agreement, <https://www.pwc.com/ng/en/pdf/covid19-key-considerations-afcfta.pdf> (accessed 22 August 2021).

TABLE 11
Percentage of Individuals Using the Internet in 2010 and 2021

| Country | 2010 | 2021 |
|---------------------|-------|------|
| Egypt | 21.60 | 57.3 |
| Ethiopia | 0.75 | 20.6 |
| Kenya | 7.20 | 40 |
| Nigeria | 11.50 | 50 |
| South Africa | 24.00 | 64 |

Source: 2010 figures are based on reports from the International Telecommunication Union (ITU) and 2020 figures are based on a DataReportal study found at <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx> <https://datareportal.com/about>.

TABLE 12
Cost of Mobile Broadband Data (1.5 GB) as a % of GNI per Capita (US\$, 2020)

| Country | % GNI per capita | US\$ |
|---------------------|------------------|---------|
| Egypt | 1.01 | \$2,71 |
| Ethiopia | 9.52 | \$5,57 |
| Kenya | 3.31 | \$4,66 |
| Nigeria | 1.71 | \$2,70 |
| South Africa | 2.53 | \$10,21 |

Source: Policy Brief, International Telecommunication Union, February 2021, https://www.itu.int/en/ITU-D/Statistics/Documents/publications/prices2020/ITU_A4AI_Price_Briefing_2020.pdf (accessed 30 September 2021).

One of the issues that needs to be tackled is poor and uneven access to the internet and the quality and reliability of access.²²⁹ The shift to online working, teaching, shopping, and other activities as a result of lockdowns has highlighted the need for greater attention to the information and communications technology (ICT) sector generally.

According to the United Nations Economic Commission for Africa, fewer than one in five households on the continent has access to the internet, which is a constraint to economic growth.²³⁰ Estimates by Google and the IFC show the internet economy has the potential to contribute up to

²²⁹ U. Bower, 'Making Egypt's Post-Covid Growth Path More Sustainable, European Commission, May 2021, https://ec.europa.eu/info/sites/default/files/economy-finance/eb066_en.pdf (accessed 30 September 2021).

²³⁰ 'Internet Exchange Points Are Critical to Improving Internet Access and Lowering Connectivity Costs in Africa', *Internet Society*, 6 July 2021, <https://www.internetsociety.org/news/press-releases/2021/internet-exchange-points-are-critical-to-improving-internet-access-and-lowering-connectivity-costs-in-africa> (accessed 30 September 2021).

US\$180 billion to Africa's GDP by 2025.²³¹ Two metrics—the growth in active internet users and the cost of mobile data—illustrate the levels of digital connectivity in Africa and highlight the need for tackling constraints to building a more connected and inclusive Africa.

As Table 11 demonstrates, the five countries in this study need to address constraints in telecommunications if they are to benefit from the internet economy. Penetration rates vary between 64% in South Africa, to a dismal 20.6% in Ethiopia. This, in turn, is affected by the high cost of mobile broadband data, limiting access for poorer Africans. Table 12 shows the cost of mobile broadband data, using 1.5 Gigabyte of data as a percentage of Gross National Income (GNI) per capita.

Egypt: Digital Reform, but Less Freedom

According to DataReportal, internet penetration in Egypt was 54% in January 2021.²³² This is low for a country striving to advance its technical connectivity and the associated demands of the digital economy. Furthermore, low internet speeds and poor connections persist, posing a significant barrier to access to digital products and broad-based services.

The Inclusive Internet Index 2021 outlines the current state of internet inclusion across 120 countries in four categories: availability, affordability, relevance, and readiness. It shows that Egypt climbed five places to 73rd overall, following the government's recent moves towards digital transformation.²³³ However, most of Egypt's telecommunications infrastructure is owned by Telecom Egypt, a state-owned company. This gives the authorities the power to suspend the internet and decrease speeds to serve the government's agenda. This has occurred on several occasions, most recently during anti-government protests that took place in September 2019.²³⁴ A study by Freedom House found that at the end of the March 2020, 546 websites were blocked by the authorities, infringing on the rights of people to access information.²³⁵

The affordability of mobile broadband data in Egypt in 2020 was 1% of GNI per capita, well below the 2% rate recommended by the Broadband Commission for Sustainable Development—a joint initiative of the International Telecommunication Union (ITU) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) to promote internet access.²³⁶

If Egypt is to participate meaningfully in the digital economy, significant investment must be made in its telecommunications infrastructure to expand internet reliability, freedom, and access.²³⁷

²³¹ 'e-Conomy Africa 2020', Google and International Finance Corporation, 2021, <https://www.ifc.org/wps/wcm/connect/e358c23f-afe3-49c5-a509-034257688580/e-Conomy-Africa-2020.pdf?MOD=AJPERES&CVID=nmuGYF> (accessed 30 September 2021).

²³² S. Kemp, 'Digital 2021: Ethiopia', *Datareportal*, February 11, 2021, <https://datareportal.com/reports/digital-2021-ethiopia> (accessed 30 September 2021).

²³³ 'Egypt jumps 5 places on Inclusive Internet index 2021: IDSC', *Daily News Egypt*, 21 April 2021, <https://dailyn-ewsegyp.com/2021/04/21/egypt-jumps-5-places-on-inclusive-internet-index-2021-idsc> (accessed 30 September 2021).

²³⁴ Freedom House, Freedom on the Net 2020, <https://freedomhouse.org/country/egypt/freedom-net/2020> (accessed 30 September 2021).

²³⁵ Freedom House, Freedom on the Net 2020.

²³⁶ Policy Brief, International Telecommunication Union, February 2021, https://www.itu.int/en/ITU-D/Statistics/Documents/publications/prices2020/ITU_A4AI_Price_Briefing_2020.pdf (accessed 30 September 2021).

²³⁷ OECD, OECD Digital Economy Outlook 2020, 27 November 2020, <https://www.oecd.org/digital/oecd-digital-economy-outlook-2020-bb167041-en.htm> (accessed 30 September 2021).

Ethiopia: Coming Out of Digital Isolation

Ethiopia is one of the least connected and most digitally isolated countries in the world today. According to DataReportal, the percentage of people using the internet in Ethiopia was a mere 20.6% as of January 2021.²³⁸ This is a substantial increase from 2010, when less than 1% of the population used the internet, but it is far from optimal in a country of 115 million people. The situation has significant repercussions for innovation and inclusive economic growth. The affordability of mobile broadband data in Ethiopia was the highest out of the five countries under study in 2020, at 9.52% of GNI per capita. This is more than four times the 2% rate recommended by the Broadband Commission.²³⁹

Part of the problem is a lack of telecommunications infrastructure in rural areas where more than 80% of people live.²⁴⁰ The country's unreliable electricity supply and regular power outages, as well as poor internet speeds, limit access further.²⁴¹ In an effort to address these problems, about US\$40 million of a 2019 US\$300 million World Bank loan, has been earmarked for expansion of the sector.²⁴²

Despite Ethiopia's commitment to reform its ICT sector through partial privatization, the country periodically shuts down the internet and social media in response to political criticism and crisis, as noted above.²⁴³ Examples include a nationwide internet shutdown for almost 10 days in June 2019 following an attempted coup in Amhara State, and a three-month shutdown in parts of the Oromiya State from January 2020 as a result of conflict between government forces and a faction of the Oromo Liberation Front.²⁴⁴

Compounding these challenges, more than a quarter of Ethiopian adults do not have a proper identity card or a bank account, and only 38.5% have a mobile connection—all essential for participating in the digital economy.²⁴⁵ The Ethiopian government has a long way to go to equip the country with the necessary infrastructure, tools, and skills to integrate into and participate effectively in the digital economy to leverage, among other things, the potential of its large youth population.²⁴⁶

Kenya: Urban Advances Versus Rural Poor

Despite a high mobile penetration rate of more than 100%, and the widespread use of mobile money, only 40% of Kenya's population used the internet in 2021 according to DataReportal.²⁴⁷

²³⁸ S. Kemp, 'Digital 2021: Ethiopia', *Datareportal*, 11 February 2021, <https://datareportal.com/reports/digital-2021-ethiopia> (accessed 30 September 2021).

²³⁹ International Telecommunication Union, 'Measuring Digital Development: ICT Price Trends 2020', 2021, <https://www.itu.int/en/ITU-D/Statistics/Pages/ICTprices/default.aspx> (accessed 30 September 2021).

²⁴⁰ Freedom House, *Freedom on the Net 2020*, <https://freedomhouse.org/country/ethiopia/freedom-net/2020> (accessed 30 September 2021).

²⁴¹ Freedom House, *Freedom on the Net 2020*.

²⁴² Freedom House, *Freedom on the Net 2020*.

²⁴³ Freedom House, *Freedom on the Net 2020*.

²⁴⁴ Freedom House, *Freedom on the Net 2020*.

²⁴⁵ K. Navis and W.G. Moore, 'Here's What Ethiopia Needs to Become Africa's Next Tech Hub', *Center for Global Development*, 12 August 2019, <https://www.cgdev.org/blog/heres-what-ethiopia-needs-become-africas-next-tech-hub> (accessed 30 September 2021).

²⁴⁶ W. Schneidman, *Ethiopia, human rights, and the Internet*, Brookings, 15 June 2021, <https://www.brookings.edu/blog/africa-in-focus/2021/06/15/ethiopia-human-rights-and-the-internet> (accessed 30 September 2021).

²⁴⁷ S. Kemp, 'Digital 2021: Kenya', *Datareportal*, 11 February 2021, <https://datareportal.com/reports/digital-2021-kenya> (accessed 30 September 2021).

This is largely because 70% of people live in rural areas, with only 17% of them having access to the internet because of severe infrastructure constraints, including telecommunications and electricity.²⁴⁸ In terms of the affordability of mobile broadband data, at 3.31% of GNI per capita, Kenya is slightly above the rate recommended by the Broadband Commission, but it is still prohibitively expensive for a large part of the population.²⁴⁹

In July 2020, Kenya partnered with Loon, sister company to Google, on a pilot project to launch a fleet of 35 internet balloons to provide access in remote areas.²⁵⁰ Installed as solar powered wireless internet connectivity towers floating 20 kilometers above earth, the plastic balloons sent signals to stations on the ground, which then transmitted the internet to about 1,000 users across 80 square kilometers through internet service providers.²⁵¹ However, this project was short lived because the company failed to establish a sustainable business model or partners, and operations ended in March 2021.²⁵²

In 2020, Safaricom announced the launch of the country's first 5G mobile services in major urban centers, while the National Optic Fiber Backbone Infrastructure project aims to improve connectivity nationwide, as well as the delivery of e-government services.²⁵³ The Kenyan government has also invested substantially in the broadband connectivity provided by four undersea fiber optic cables off the country's coast, including Seacom, Teams, Eassy, and Lion2.²⁵⁴

Overall, while internet access has continued to improve in Kenya, particularly in major urban centers, cost and infrastructure challenges continue to limit internet quality and speed of connections in rural areas. Despite these challenges Kenya's capital, Nairobi, has become known as the Silicon Savannah, a name drawn from Silicon Valley in the United States, because of its status as a regional leader in internet connectivity and ICT infrastructure investment.²⁵⁵ Analysts predict continued growth in the ICT sector, which will translate into job opportunities in key industries, such as financial services, retail, manufacturing, healthcare, agriculture, and tourism.²⁵⁶

²⁴⁸ J. Mugendi, 'Challenges in Implementing Digital Technologies in Rural Kenya', Engineering For Change, 15 December 2020, <https://www.engineeringforchange.org/news/challenges-implementing-digital-technologies-rural-kenya> (accessed 30 September 2021).

²⁴⁹ International Telecommunications Union, Digital Development Dashboard, 2021, <https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/Digital-Development.aspx> (accessed 30 September 2021).

²⁵⁰ N. Nuganda, 'Kenya's Internet Balloons Could Help to Bridge the Digital Divide', *University of the Witwatersrand News*, 20 July 2020, <https://www.wits.ac.za/news/latest-news/opinion/2020/2020-07/kenyas-internet-balloons-could-help-to-bridge-the-digital-divide.html> (accessed 30 September 2021).

²⁵¹ N. Nuganda, 'Kenya's Internet Balloons Could Help to Bridge the Digital Divide'.

²⁵² 'Internet Balloons Pilot Project to be Discontinued in Kenya', *XinhuaNet*, 22 January 2021, http://www.xinhuanet.com/english/2021-01/22/c_139690175.htm (accessed 30 September 2021).

²⁵³ Freedom House, Freedom on the Net 2020, 2021, https://freedomhouse.org/country/kenya/freedom-net/2020#footnote6_ygjhdd6 (accessed 30 September 2021).

²⁵⁴ Information, Communications and Technology, 'Kenya – Country Commercial Guide', 13 September 2021, <https://www.trade.gov/country-commercial-guides/kenya-information-communications-and-technology-ict> (accessed 30 September 2021).

²⁵⁵ Information, Communications and Technology, 'Kenya – Country Commercial Guide'.

²⁵⁶ 'Silicon Savannah: Tapping the Potential of Africa's Tech Hub', Switzerland Global Enterprise, 16 September 2021, <https://www.s-ge.com/en/article/global-opportunities/20213-c6-kenya-tech-hub-fint1> (accessed 30 September 2021).

Nigeria: Big Plans, Poor Implementation

Internet penetration in Nigeria stood at just 50% of the population in January 2021, but given the population size, this makes it one of the largest populations of internet users in sub-Saharan Africa at just over 100 million people, according to DataReportal.²⁵⁷ The number of mobile connections was 90.0%.²⁵⁸ Despite the high number of users, the low internet penetration has been attributed to the high cost of internet adoption in rural areas in particular, poor quality services and inadequate infrastructure.²⁵⁹ Unreliable power supply is a major issue for stable internet access. In 2019, Nigerian households reported receiving about 9.5 hours of electricity per day.²⁶⁰ In terms of the affordability rate of mobile broadband data, at 1.71% of GNI per capita, Nigeria is slightly below the rate recommended by the Broadband Commission.

In 2020, the Nigerian government introduced a new National Broadband Plan (NBP) 2020–25, which aims to expand broadband penetration to 70% of the population by 2025.²⁶¹ The government has implemented a temporary policy to waive charges for laying fiber optic cables on federal highways until December 2022 to make it cheaper for internet service providers to install this infrastructure across the country.²⁶²

Like Kenya, Nigeria is also a center of financial innovation, and revenues from the fintech sector are expected to reach \$544 million in 2022, up from \$153 million in 2017.²⁶³ Nigeria is home to several African Unicorns—companies with a valuation of \$1 billion and more. They include Flutterwave, a payment company founded in 2016 that helps businesses to build customizable payments applications, payments platform Interswitch, founded in 2002, and e-commerce company Jumia.²⁶⁴

If Nigeria, and other African countries, are to achieve sustainable and inclusive economic growth, they need to encourage the growth of innovative companies offering appropriate and affordable products and services that are also improving efficiencies and addressing longstanding challenges within countries and across borders.²⁶⁵

²⁵⁷ S. Kemp, ‘Digital 2021: Nigeria’, *Datareportal*, 11 February 2021, <https://datareportal.com/reports/digital-2021-nigeria> (accessed 30 September 2021).

²⁵⁸ S. Kemp, ‘Digital 2021: Nigeria’.

²⁵⁹ O. Udegbunam, ‘58% of Nigerians unable to access internet – Survey’, *Premium Times*, 4 November 2020, <https://www.premiumtimesng.com/news/top-news/424547-58-of-nigerians-unable-to-access-internet-survey.html> (accessed 30 September 2021).

²⁶⁰ Freedom House, *Freedom on the Net 2020, 2021*, https://freedomhouse.org/country/nigeria/freedom-net/2020#footnote2_9gk8jj4 (accessed 30 September 2021).

²⁶¹ Freedom House, *Freedom on the Net 2020*.

²⁶² Y. Kazeem, ‘Nigeria is trying to bridge internet inequality and boost access by cutting expensive red tape’, *Quartz Africa*, 7 September 2020, <https://qz.com/africa/1900348/nigeria-waives-right-of-way-charges-to-boost-internet-access> (accessed 30 September 2021).

²⁶³ L. Monteiro, ‘3 promising FinTech start-ups to watch out for in Nigeria’, *IBS Intelligence*, 12 August 2021, <https://ibsintelligence.com/ibsi-news/3-promising-fintech-start-ups-to-watch-out-for-in-nigeria> (accessed 30 September 2021).

²⁶⁴ T. Collins, ‘Flutterwave becomes Africa’s fourth \$1bn unicorn’, *African Business*, 10 March 2021, <https://african.business/2021/03/technology-information/flutterwave-becomes-africas-fourth-1bn-unicorn> (accessed 30 September 2021).

²⁶⁵ P. Hyde, ‘Nigeria’s Fintech Frenzy: Onwards and Upwards’, *Forbes Africa*, 30 August 2021, <https://www.forbesafrica.com/cover-story/2021/08/06/nigerias-fintech-frenzy-onwards-and-upwards> (accessed 30 September 2021).

South Africa: Good Coverage, High Cost

Internet penetration has expanded rapidly in South Africa, reaching 64% as of January 2021. This makes it the most connected country of the five in this study.²⁶⁶ The majority of suburbs in urban centers, such as Cape Town, Johannesburg, Pretoria, and Durban, have fiber-optic cables. Projects to roll out public Wi-Fi in metropolitan areas and towns across the country have been relatively successful.²⁶⁷ The least connected individuals are typically those living in rural areas. In general, internet speeds and reliability are good compared to the other four countries. However, regular power cuts by the state-owned power supplier, Eskom, have increasingly interrupted services over the past decade.²⁶⁸

The cost of data in South Africa is high, at 2.5% of GNI per capita, which equated to \$10.21 per 1.5 gigabytes in 2020. It is unaffordable for individuals earning less than \$500 per month—about 40% of the population.²⁶⁹ Following the release of an inquiry by the Competition Commission into the data service market in 2019, the country’s leading two internet service providers, Vodacom and MTN, agreed to reduce data costs and increase the number of zero-rated websites accessible on their networks, including universities, schools, and some job portals.²⁷⁰ The main telecommunications providers also provided COVID-19 support. In April 2020, Vodacom donated 20,000 smartphones, 100 terabytes of data and 10 million voice call minutes to the National Department of Health to support the initial country-wide COVID-19 testing campaign.²⁷¹ In January 2021, MTN donated \$25 million to the African Union’s COVID-19 vaccination campaign.²⁷²

The internet offers countries the means to participate in the global, digital economy. All five countries in this study, with low penetration rates, high data costs, and unreliable services, need to invest significantly in not only telecommunications infrastructure, but also electricity and appropriate regulations in order to increase access to local and global digital products and services. This is critical for sustainable and inclusive development economic growth in the post-pandemic era.²⁷³

²⁶⁶ S. Kemp, ‘Digital 2021: South Africa’, *Datareportal*, 11 February 2021, <https://datareportal.com/reports/digital-2021-south-africa?rq=south%20africa> (accessed 30 September 2021).

²⁶⁷ Freedom House, *Freedom on the Net 2020, 2021*, <https://freedomhouse.org/country/south-africa/freedom-net/2020> (accessed 30 September 2021).

²⁶⁸ S. Grootes, ‘Twelve Years of Loadshedding – Written Starring & Directed by the ANC’, *Daily Maverick*, 9 December 2019, <https://www.dailymaverick.co.za/article/2019-12-09-twelve-years-of-load-shedding-written-starring-directed-by-the-anc> (accessed 30 September 2021).

²⁶⁹ Freedom House, *Freedom on the Net 2020, 2021*, <https://freedomhouse.org/country/south-africa/freedom-net/2020> (accessed 30 September 2021).

²⁷⁰ Freedom House, *Freedom on the Net 2020, 2021*.

²⁷¹ Vodacom, ‘In delivering on our purpose to “Connect for a better future”, we have committed to a Social Contract, guided by three core principles.’ Available at: <https://www.vodacom.com/covid-19.php> (accessed 23 November 2021).

²⁷² MTN website, ‘MTN partners with African Union on COVID-19 vaccinations.’ Available at: <https://www.mtn.com/mtn-partners-with-african-union-on-covid-19-vaccinations> (accessed 23 November 2021).

²⁷³ World Bank Group, *Africa’s Pulse*, April 2021, <https://openknowledge.worldbank.org/bitstream/handle/10986/35342/9781464817144.pdf> (accessed 30 September 2021).

TABLE 13
Percentage of Households with Computer and Internet Access

| Country | Computer at home | Year of data | Internet access at home | Year of data |
|--------------|------------------|--------------|-------------------------|--------------|
| Egypt | 70.2 | 2020 | 73.0 | 2020 |
| Ethiopia | 5.0 | 2016 | 15.4 | 2016 |
| Kenya | 8.8 | 2019 | 17.9 | 2019 |
| Nigeria | 6.4 | 2018 | 7.5 | 2017 |
| South Africa | 22.7 | 2019 | 63.3 | 2019 |

Source: International Telecommunication Union, 2021.

THE FUTURE OF WORK IN AFRICA: LEVERAGING THE INFORMAL ECONOMY

In the wake of the spread of COVID-19 across the world, digital technologies have been in the ascendancy.²⁷⁴ In the workplace, trends in remote working and e-commerce have been accelerated across almost all sectors and they have changed demands globally for certain skills and labor.²⁷⁵ The pandemic forced businesses, workers and consumers to embrace new technologies at short notice.²⁷⁶ This trend towards the more ubiquitous use of online and digital platforms will outlast the pandemic. But effective participation in this new economy will require more investment in supporting infrastructure and skills. These new approaches pose a significant challenge for industries and jobs dependent on physical, on-site interactions, and, most significantly in Africa, those in the informal sector.²⁷⁷

For Africa, the implications of this disruption have been profound and underlined the digital divide that existed before the pandemic. While about 90% of people in more developed regions of the world have access to a mobile-broadband network, just 20% of Africa's population does, with the biggest access challenges existing in rural areas.²⁷⁸

Furthermore, a mere 28% of African households in urban areas have internet access at home, and just 6.3% in rural areas.²⁷⁹ The trend is similar for households with access to a computer. Only 17% of people in Africa's urban areas have such access, while in rural areas it is a low 2%.²⁸⁰ This has serious implications for the adoption of work-from-home models for those in formal employment, and for access to online learning. Table 13 outlines the coverage of internet access and computer availability at a household level for the five countries in this study.

²⁷⁴ World Bank Group, Africa's Pulse, April 2021.

²⁷⁵ McKinsey Global Institute, 'The Future of Work after COVID-19', 18 February 2021, <https://www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-after-COVID-19> (accessed 30 September 2021).

²⁷⁶ McKinsey Global Institute, 'The Future of Work after COVID-19'.

²⁷⁷ McKinsey Global Institute, 'The Future of Work after COVID-19'.

²⁷⁸ International Telecommunications Union, 2021, <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2020.pdf> (accessed September 30, 2021).

²⁷⁹ International Telecommunication Union, 2021, <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2020.pdf> (accessed September 30, 2021).

²⁸⁰ International Telecommunication Union, 2021.

TABLE 14
Percentage of Individuals Working in the Informal Sector

| Country | % of informal sector employment | Year of data |
|---------------------------|---------------------------------|--------------|
| Egypt ^a | 63 | 2020 |
| Ethiopia ^b | 90 | 2016 |
| Kenya ^c | 80 | 2019 |
| Nigeria ^d | 84 | 2018 |
| South Africa ^e | 20 | 2019 |

Sources:

^a M. F. Mabrouk, 'Egypt's sizeable informal economy complicates its pandemic response', *MEI@75*, 22 June 2020, <https://www.mei.edu/blog/egypts-sizeable-informal-economy-complicates-its-pandemic-response> (accessed September 30, 2021).

^b Commission of the African Union, *AU Study on the Informal Sector in Africa*, 2008.

^c E. von Jacob Omolo, 'How the Pandemic is affecting the informal sector in Kenya', *Friedrich Ebert Stiftung*, 20 April 2020, <https://www.fes.de/referat-afrika/neuigkeiten/how-the-pandemic-is-affecting-the-informal-sector-in-kenya> (accessed 30 September 2021).

^d T. Obiakor, *COVID 19 and the Informal Sector in Nigeria: The Socio-Economic Cost Implications*, Centre for the Study of the Economies of Africa, 24 April 2020, <http://cseaafrica.org/COVID-19-and-the-informal-sector-in-nigeria-the-socio-economic-cost-implications> (accessed 30 September 2021).

^e M. Rogan and C. Skinner, 'South Africa's Informal Sector Creates Jobs, but Shouldn't be Romanticised', *The Conversation*, 12 September 2019, <https://theconversation.com/south-africas-informal-sector-creates-jobs-but-shouldnt-be-romanticised-122745> (accessed 30 September 2021).

According to ITU research, 70.2% of households in Egypt have a household computer, and 73% have access to the internet from home, compared to Nigeria, where less than 10% of the population has a computer and access to the internet from home.²⁸¹ Ethiopia and Kenya do not fare much better. While home-based internet is closer to 20% in these two countries, less than 10% of the population has a personal computer. South Africa also performs poorly on both measures, with just 63.3% of the population able to access the internet from home, and 22.7% having access to a home computer.

Efforts need to be made to ensure the informal sector in Africa, which accounts for more than 80% of non-agricultural jobs and more than 60% of urban employment,²⁸² does not get left behind in this digital shift.²⁸³ Informal jobs and businesses are typically insecure, low in productivity, often have unskilled owners and workers and lack ready access to credit, basic services, and high-value

²⁸¹ International Telecommunication Union, 2021.

²⁸² M. Given and R. Karlen, 'Supporting Africa's urban informal sector: Coordinated policies with social protection at the core', *World Bank Blogs*, 3 December 2020, <https://blogs.worldbank.org/african/supporting-africas-urban-informal-sector-coordinated-policies-social-protection-core> (accessed 30 September 2021).

²⁸³ K. Sen, M. Danquah and S. Schotte, 'Informal Work in sub-Saharan Africa: Dead-end or Stepping Stone?' United Nations University, UNU-WIDER, 21 November 2019, https://igmozambique.wider.unu.edu/sites/default/files/Event/Kunal%20IGM%202_0.pdf (accessed 30 September 2021).

markets.²⁸⁴ A World Bank survey conducted between April and June 2020 found that 56.3% of respondents with informal urban jobs in Nigeria stopped working because of COVID-19, and 39.2% in rural areas, demonstrating the vulnerability of this market segment.²⁸⁵ Table 14 outlines the percentage of people working in the informal sector in the five African countries in this study.

Ethiopian, Nigeria, and Kenya have an exceptionally high proportion of informal to formal jobs, of the countries in this study. Policy interventions to improve the welfare and skills of workers, boost productivity of small-scale businesses and create jobs are essential.²⁸⁶ The future of work in Africa is not about growth in the formal sector jobs and full-time employment; it is about people working multiple ‘gigs’ or jobs, for entities that are formalized as far as possible.²⁸⁷ It is important to see how to leverage digital technologies and platforms to make the nature of informal work more productive and qualitative for workers.²⁸⁸ This will require giving more people access to

²⁸⁴ M. Given and R. Karlen, ‘Supporting Africa’s urban informal sector: Coordinated policies with social protection at the core’, *World Bank Blogs*, 3 December 2020, <https://blogs.worldbank.org/african/supporting-african-urban-informal-sector-coordinated-policies-social-protection-core> (accessed 30 September 2021).

²⁸⁵ M. Weber, A. Palacios-Lopez, I.M. Contreras-Gonzalez, ‘Labor market impacts of COVID-19 in four African countries’, *World Bank Blogs*, 18 November 2020, <https://blogs.worldbank.org/opendata/labor-market-impacts-COVID-19-four-african-countries> (accessed 30 September 2021).

²⁸⁶ International Labor Organization, ‘The future of work in the digital economy’. Available at: https://www.ilo.org/global/about-the-ilo/how-the-ilo-works/multilateral-system/brics/2020/WCMS_771117/lang-en/index.htm (accessed 30 September 2021)

²⁸⁷ A. Ng’weno and D. Porteous, ‘Let’s Be Real: The Informal Sector and the Gig Economy are the Future, and the Present, of Work in Africa’, *Center for Global Development*, 15 October 2018, <https://www.cgdev.org/publication/lets-be-real-informal-sector-and-gig-economy-are-future-and-present-work-africa> (accessed 30 September 2021).

²⁸⁷ M. Weber, A. Palacios-Lopez and I.M. Contreras-Gonzalez, ‘Labor market impacts of COVID-19 in four African countries’, *World Bank Blogs*, 18 November 2020, <https://blogs.worldbank.org/opendata/labor-market-impacts-COVID-19-four-african-countries> (accessed 30 September 2021).

²⁸⁷ M. F. Mabrouk, ‘Egypt’s sizeable informal economy complicates its pandemic response’, *MEI@75*, 22 June 2020, <https://www.mei.edu/blog/egypts-sizeable-informal-economy-complicates-its-pandemic-response> (accessed 30 September 2021).

²⁸⁷ Commission of the African Union, *AU Study on the Informal Sector in Africa*, 2008.

²⁸⁷ E. von Jacob Omolo, ‘How the Pandemic is affecting the informal sector in Kenya’, *Friedrich Ebert Stiftung*, 20 April 2020, <https://www.fes.de/referat-afrika/neuigkeiten/how-the-pandemic-is-affecting-the-informal-sector-in-kenya> (accessed 30 September 2021).

²⁸⁷ T. Obiakor, COVID 19 and the Informal Sector in Nigeria: The Socio-Economic Cost Implications, *Centre for the Study of the Economies of Africa*, 24 April 2020, <http://cseaf.org/COVID-19-and-the-informal-sector-in-nigeria-the-socio-economic-cost-implications> (accessed 30 September 2021).

²⁸⁷ M. Rogan and C. Skinner, ‘South Africa’s Informal Sector Creates Jobs, but Shouldn’t be Romanticised’, *The Conversation*, 12 September 2019, <https://theconversation.com/south-african-informal-sector-creates-jobs-but-shouldnt-be-romanticised-122745> (accessed 30 September 2021).

²⁸⁷ International Labor Organization. ‘The future of work in the digital economy.’ Available at: https://www.ilo.org/global/about-the-ilo/how-the-ilo-works/multilateral-system/brics/2020/WCMS_771117/lang-en/index.htm (accessed 30 September 2021).

²⁸⁷ A. Ng’weno and D. Porteous, ‘Let’s Be Real: The Informal Sector and the Gig Economy are the Future, and the Present, of Work in Africa’, *Center for Global Development*, 15 October 2018, <https://www.cgdev.org/publication/lets-be-real-informal-sector-and-gig-economy-are-future-and-present-work-africa> (accessed 30 September 2021).

²⁸⁸ A. Ng’weno and D. Porteous, ‘Let’s Be Real: The Informal Sector and the Gig Economy are the Future, and the Present, of Work in Africa’.

information and digital technologies to give them greater access information and improved customer reach through social media.²⁸⁹

Research indicates that the adoption of new technologies in Africa not only creates new jobs but can improve worker productivity. Both informal and formal businesses on the continent that adopted digital technologies prior to the pandemic, such as smartphones, digital payment platforms and management systems, demonstrated improved productivity levels, increased profits, and higher wages and employment over the period.²⁹⁰ Building on the digital components of their businesses, these companies were able to ramp up activities and increase sales and employment.²⁹¹ For example, Nigeria's online retailer, Jumia, had a more than 50% increase in transactions in the first half of 2020, from 3.1 million to 4.7 million, compared to the first six months of 2019.²⁹²

According to the United Nations (UN), Africa's working age population will grow by 224 million by 2030, and 730 million by 2050. Insufficient formal wage jobs are being created to absorb new entrants, and as a result, the informal sector will continue to grow.²⁹³ In order to reverse this trend and reset prevailing economic structures built on informality and a reliance on natural resources, African governments must fast-track policies and investments to improve the ecosystem for entrepreneurs, while also expanding connectivity, fostering innovation, and improving access to finance.²⁹⁴ Simultaneously, the general lack of digital skills to meet the requirements of the growing global digital economy needs to be addressed.²⁹⁵

As companies work to achieve sustainability and profitability in the rapidly changing business landscape, boosting productivity and reaching new customers requires employees to have different skills and new ways of thinking.²⁹⁶ Governments must invest heavily in education, especially in science, technology, engineering, and mathematics, to improve available skills to drive new digital economies.²⁹⁷

According to the World Economic Forum, digital skills (incorporating computer skills, basic coding and digital reading) have become core competencies, which are necessary to allow people to actively participate in the digital economy. This highlights the need for both the government and private sector in African countries to prioritize the reskilling and upskilling of workers. In Figure 3, which measures digital skills over a three-year period, Ethiopia, Nigeria and South Africa fall below the world median score of 4.20, while Kenya and Egypt surpass it. South Africa has the lowest year-on-year average growth of 0.7%.²⁹⁸

²⁸⁹ World Bank Group, Africa's Pulse, Volume 23, April 2021, <https://openknowledge.worldbank.org/bitstream/handle/10986/35342/9781464817144.pdf> (accessed 30 September 2021).

²⁹⁰ World Bank Group, Africa's Pulse.

²⁹¹ World Bank Group, Africa's Pulse.

²⁹² World Bank Group, Africa's Pulse.

²⁹³ United Nations, Department of Economic and Social Affairs, 'World Population Prospects 2019', https://population.un.org/wpp/Publications/Files/WPP2019_Volume-I_Comprehensive-Tables.pdf (accessed 30 September 2021).

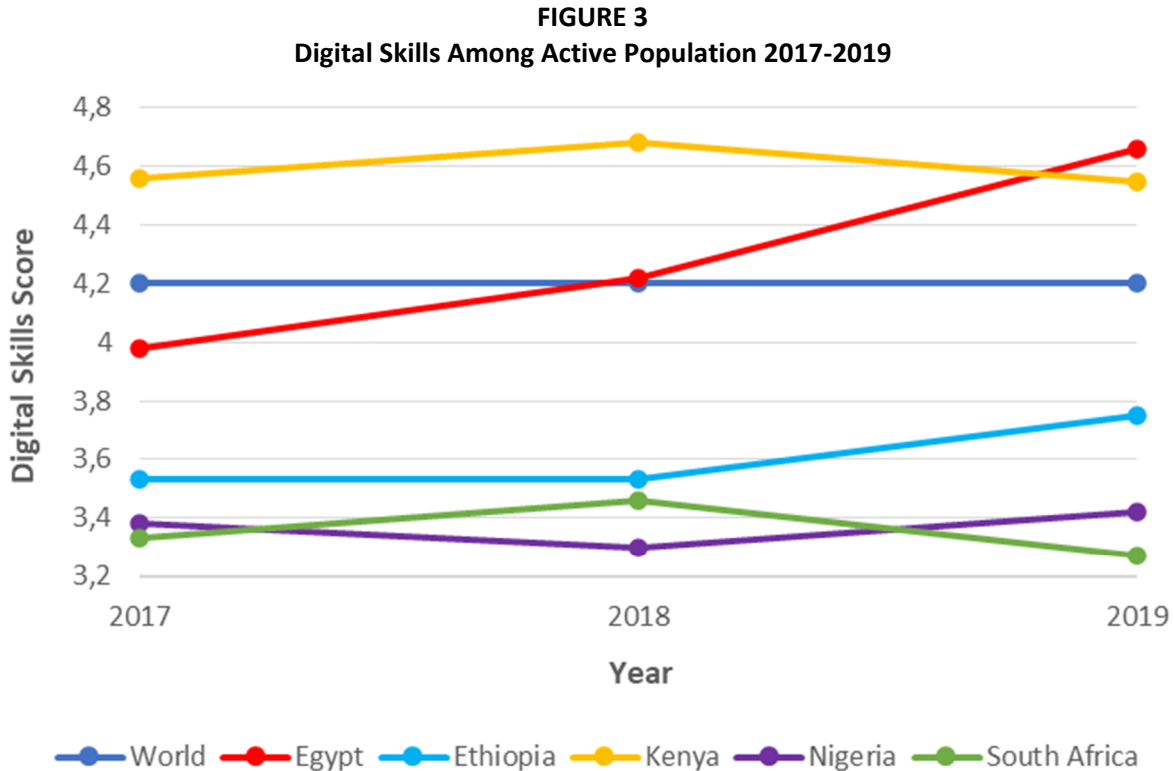
²⁹⁴ World Bank Group, Africa's Pulse, April 2021, <https://openknowledge.worldbank.org/bitstream/handle/10986/35342/9781464817144.pdf> (accessed 30 September 2021).

²⁹⁵ F. Wallace Stephens and E. Morgante, 'Pathfinding: The future of work in Sub-Saharan Africa', The RSAorg, 2 August 2021, <https://www.thersa.org/reports/future-of-work-sub-saharan-africa> (accessed 30 September 2021).

²⁹⁶ The Future of Work in Africa, The London School of Economics and Political Science, Online Event, 16 March 2021, <https://www.lse.ac.uk/Events/2021/03/202103161400/work> (accessed 30 September 2021).

²⁹⁷ World Bank Group, Africa's Pulse, April 2021, <https://openknowledge.worldbank.org/bitstream/handle/10986/35342/9781464817144.pdf> (accessed 30 September 2021).

²⁹⁸ The World Bank, GCI 4.0: Digital Skills Among Population, 2021.



Source: The World Bank, GCI 4.0: Digital Skills Among Population, 2021, https://tcdata360.worldbank.org/indicators/h945a9708?country=EGY&indicator=41400&countries=ETH,KEN,NGA,ZAF&viz=line_chart&years=2017,2019 (accessed 30 September 2021).

Given the future of work in a digitally-led context, it is critical for Africa to foster new skills and employment pathways to not only effectively participate in the digital economy, but to also unlock the vast opportunities on offer. Making drastic improvements (and changes) in school curricula and tertiary education, as well as providing access to high-quality educational institutions, will be critical to address current skills gaps and meet the requirements of business in the future. The following section considers the future of education in Africa in more detail through the prism of the countries in this study.

THE IMPACT OF COVID-19 ON EDUCATION IN AFRICA

Economic modernization and the future world of work, defined by increasing connectivity, demands equal access to education at all levels and improved literacy levels. Access to inclusive education will determine Africa's ability to capitalize on the opportunities of digitization. This is essential to narrow the digital divide between Africa and other regions in this regard, and to maintain competitiveness in the global economy.

Prolonged school closures resulting from COVID-19 lockdowns have held back access to quality education in Africa for many. An estimated 69 million children²⁹⁹ are currently, in 2021, out of

²⁹⁹ UNICEF, '37 million children were out of school before the pandemic hit', 27 July 2021, <https://www.unicef.org/press-releases/40-cent-children-eastern-and-southern-africa-are-not-school> (accessed 30 September 2021).

school on the African continent, with limited access to online learning. As one example, only 5% of youth under the age of 25 have internet access at home in West and Central Africa.³⁰⁰

Online learning has been fast tracked because of the pandemic, but this presents a significant challenge to African students that cannot access this medium of education because of a lack of electricity, no access to relevant equipment, and no digital skills. At the onset of the pandemic, only 29% of higher education institutions in Africa were able to move online in a shift to emergency remote teaching, compared to 85% in Europe.³⁰¹

To safeguard Africa's future, a resilient, inclusive and integrated economic system that fosters productive learning environments through accessible innovative solutions and technological advances is imperative. The future of education in Africa relies on reducing the digital learning divide and building critical digital and literacy skills.

Egypt: Pushing Online Education

Egypt has a relatively high literacy rate of 71.2% for adults aged 15 years and older, compared to other African countries.³⁰² It also has a comparatively low number of children out of school, as well as a high number of students enrolled in vocational education programs and pre-university education. Prior to the onset of the pandemic, the country's education sector was constrained by historically low budgetary spending on education, inefficient allocation of educational resources, as well as high unemployment rates among higher and tertiary education graduates.³⁰³ The rapid acceleration of the digital economy has enabled the introduction of innovative and sustainable interventions to address structural educational issues.

In a bid to respond to growing digital education needs and address educational inequality, Egypt and the United Arab Emirates have collaborated in a new online school launched in March 2021.³⁰⁴ The Digital School, the first of its kind, is an Arab online school that aims to reach one million disadvantaged students by 2026, as well as progressively improve the quality of online education across the board.³⁰⁵

Ethiopia: Poor Access to Education

Ethiopia has a low literacy level, with only 51.1% of adults aged 15 years and older considered to have adequate literacy skills.³⁰⁶ Eight months of school closures as direct response to Covid-19,

³⁰⁰ UNICEF, 'How many children and young people have internet access at home?', <https://data.unicef.org/resources/children-and-young-people-internet-access-at-home-during-covid19> (accessed 30 September 2021).

³⁰¹ P. Koninckx, C. Fatondji and J. Burgos, 'COVID-19 impact on higher education in Africa', *OECD Development Matters*, 19 May 2021, <https://oecd-development-matters.org/2021/05/19/COVID-19-impact-on-higher-education-in-africa> (accessed 30 September 2021).

³⁰² The World Bank, <https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=EG> (accessed 30 September 2021).

³⁰³ M. Biltagy, 'How Did COVID-19 Pandemic Impact Education In Egypt?', Euro-Mediterranean Economists Association, April 2021, <https://euromed-economists.org/download/how-did-COVID-19-pandemic-impact-education-in-egypt/?wpdmdl=11061&refresh=6123d7e00c7791629738976> (accessed 30 September 2021).

³⁰⁴ 'Egypt, UAE announce new certified online learning platform', *Egypt Independent*, 17 March 2021, <https://egyptindependent.com/egypt-uae-announce-new-certified-online-learning-platform> (accessed 30 September 2021).

³⁰⁵ 'Egypt, UAE announce new certified online learning platform', *Egypt Independent*.

³⁰⁶ The World Bank Data Repository, 2021, <https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=ET> (accessed 30 September 2021).

which affected 26 million children, have widened the gap between rich and poor.³⁰⁷ Government interventions to support distance learning for students have been implemented, but this leaves disadvantaged students by the wayside, as they often cannot access the required technology, do not have the required learning materials, and, in many instances, lack support and assistance at home.³⁰⁸

The country's private education facilities have suffered from non-payment of fees during lockdowns, particularly higher education institutions. Ethiopia's private higher education sector comprises more than 260 institutions, and accounts for about 17% of national higher education enrolment. These institutions rely solely on tuition fees to survive.³⁰⁹ Salary reductions for teachers of between 50% and 60% were temporarily implemented and new appointments frozen.³¹⁰

Though digital education is at an early stage in Ethiopia due to limited infrastructure and spending, the government has begun implementing its digital transformation strategy. A collaboration between the Ministry of Innovation and Technology and the Internet Society seeks to expand connectivity and internet access to rural areas, as well as develop and implement digitization strategies in key growth sectors.³¹¹ Ethiopia has already started using blockchain technology in education for identification and record keeping purposes. Other benefits are providing real-time verification and access to grades, boosting the quality of education nationwide, and creating employment opportunities.³¹²

But challenges for online education remain, including access and cost issues, particularly for those in rural areas.

Kenya: Tackling Educational Inequality

2020 has been described as a lost year in education for impoverished Kenyan students following the closure of schools for nine months. The impact of COVID-19 on the education system could potentially worsen already low literacy rates in the country, currently at 81.5% for adults aged 15 years and older.³¹³ Prolonged school closures, interrupted learning, and inaccessible learning materials have left disadvantaged children vulnerable to child labor, child marriage, and teenage pregnancy.

³⁰⁷ D. Bizuwork and Z. Sewunet, 'Schools reopening restores normalcy to children amid lingering COVID-19 risks', UNICEF, <https://www.unicef.org/ethiopia/stories/schools-reopening-restores-normalcy-children-amid-lingering-covid-19-risks> (accessed 30 September 2021).

³⁰⁸ D. Bizuwork and Z. Sewunet, 'Schools reopening restores normalcy to children amid lingering COVID-19 risks'.

³⁰⁹ W. Tamrat, 'COVID-19 has dealt a blow to Ethiopia's private higher education institutions', *The Conversation*, 11 February 2021, <https://theconversation.com/COVID-19-has-dealt-a-blow-to-ethiopias-private-higher-education-institutions-153398> (accessed 30 September 2021).

³¹⁰ W. Tamrat, 'COVID-19 has dealt a blow to Ethiopia's private higher education institutions.'

³¹¹ 'The Ministry of Innovation and Technology and the Internet Society Sign New Pact to Advance Digital Economy in Ethiopia', *Internet Society*, 10 June 2021, <https://www.internetsociety.org/news/press-releases/2021/the-ministry-of-innovation-and-technology-and-the-internet-society-sign-new-pact-to-advance-digital-economy-in-ethiopia> (accessed 30 September 2021).

³¹² D. Mesmar, 'Ethiopia overhauls its education system with IOHK blockchain partnership', Global Educational Supplies and Solutions, 27 April 2021, <https://www.gesseducation.com/industry-news/ethiopia-overhauls-its-education-system-with-iohk-blockchain-partnership?page=8> (accessed 30 September 2021).

³¹³ The World Bank Data Repository, 2021, <https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=KE> (accessed 30 September 2021).

The extreme economic divide at a national level is evident in students' varied performance. Students that were able to continue learning throughout the pandemic improved on their positive examination results of previous years, while 53% of rural students showed significant declines in their levels of mathematics knowledge and comprehension.³¹⁴

The extreme inequalities that have been exposed by the pandemic gave Kenyan officials the impetus to rapidly connect students digitally. The Kenyan government has launched DigiSchool, a Digital Literacy Program developed by the Ministry of Information, Communications and Technology. Using a multi-stakeholder approach, it aims to equip learners with the necessary skills for virtual instruction and digital learning.³¹⁵ This multi-pronged program addresses infrastructure and broadband challenges, the upskilling of teachers, and provides digital content for online learning. Microsoft has also partnered with the Ministry of Education in Kenya in the Global Partnership for Education initiative to expand digital education and advance data competency through data science.³¹⁶

Nigeria: Private Solutions to Digital Access

Nigeria's education system has suffered from a range of challenges that predate the pandemic, such as adult literacy rates at a low 62%.³¹⁷ Eight months of school closures prompted the introduction of alternative technology-based methods of learning. More than 70% of state governments said they had implemented learning alternatives such as television and radio broadcasts of lessons in a "learn from home approach".³¹⁸ Electricity cuts, lack of access to technology and the lack of teaching professionals during lockdowns meant many children were unable to even participate in home schooling.³¹⁹ The pandemic also disrupted the distribution of educational material, particularly to rural and impoverished areas.

On the upside, the private sector is developing partnerships to boost access to digital education for children in Nigeria. Private partnerships and learning interventions by the likes of Microsoft have led to the training of 18,000 secondary school teachers in digital literacy, while financial institutions and telecommunications operators are working to improve digital access to educational systems and internet connectivity.³²⁰ Local innovation hubs have also provided internet solutions to

³¹⁴ M. Zaman, 'After COVID-19, let's reimagine education in Kenya', UNICEF, 24 July 2021, <https://www.unicef.org/kenya/stories/after-COVID-19-lets-reimagine-education-kenya> (accessed 30 September 2021).

³¹⁵ DigiSchool Kenya, 2021, <https://www.digischool.go.ke> (accessed 30 September 2021).

³¹⁶ 'Microsoft To Partner with Kenya and Governments Across Africa to Transform Education for Millions of Students', Microsoft News Center, 2 August 2021, <https://news.microsoft.com/en-xm/2021/08/02/microsoft-to-partner-with-kenya-and-governments-across-africa-to-transform-education-for-millions-of-students> (accessed 30 September 2021).

³¹⁷ The World Bank Data Repository, 2021, <https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=NG> (accessed 30 September 2021).

³¹⁸ O.B. Azubuike, 'Education, digital skills acquisition and learning during COVID-19 in Nigeria', *Africa Portal*, 2 June 2021, <https://www.africaportal.org/features/education-digital-skills-acquisition-and-learning-during-COVID-19-nigeria> (accessed 30 September 2021).

³¹⁹ O.B. Azubuike, 'Education, digital skills acquisition and learning during COVID-19 in Nigeria'.

³²⁰ F. Ogundare, 'Nigeria: Lagos Partners Microsoft, Trains 18,000 Teachers on Digital Literacy', *All Africa*, 29 April 2021, <https://allafrica.com/stories/202004290587.html> (accessed 30 September 2021).

³²⁰ F. Ogundare, 'Nigeria: Lagos Partners Microsoft, Trains 18,000 Teachers on Digital Literacy'.

ensure that as many students as possible have access to virtual education.³²¹ Building digital literacy skills across the country, utilizing available technologies, as well as bolstering internet access and educational material are all playing a role in keeping Nigerian students connected.

South Africa: A Slow Move Online

South Africa's downward trajectory of adult literacy continues to threaten the future progress of the country. Literacy rates decreased by 8% from 2015 to 2017, recording figures of 94.4% and 87% respectively.³²² Schoolchildren in South Africa are nearly one year behind where they otherwise would be because of pandemic-related school closures.³²³ Teenage pregnancy is especially of concern as the number of young girls who have had children, in the province of Gauteng alone—South Africa's economic hub—has climbed by 60% since the start of the pandemic.³²⁴ With low social mobility and inadequate social safety nets, the implications of these multiple crises could be long lasting.

The situation has been exacerbated by teacher protests in the province of Kwazulu-Natal over the \$500 million budgetary cuts in the province's education sector. An additional 2,000 teachers are needed in the province, but new hires have been suspended over financing issues.³²⁵

With relatively sophisticated digital infrastructure and access, South Africa has failed to utilize the opportunity provided by digital education, and the country needs to adopt a more innovative approach to ensure that impoverished learners are not left behind.

The high costs of data, and lack of access to educational software, have hampered the ability of existing higher education institutions to take real advantage of the opportunity to advance digital transformation among South Africa's youth, who are future participants in the global digital economy.³²⁶

ECONOMIC RECOVERY AND PROGRESS IN 2021 AND BEYOND: CATCH UP, DON'T GIVE UP³²⁷

As was the case with Africa's economic growth and development before COVID-19, the continent's trajectory over the pandemic period, and pathway to recovery, have not been uniform across all countries and will continue to be uneven going forward. This is particularly true for the five

³²¹ B. Oladunjoye, 'Making Online Education Accessible to All in Nigeria', *Pulitzer Center*, 22 October 2020, <https://pulitzercenter.org/stories/making-online-education-accessible-all-nigeria> (accessed 30 September 2021).

³²² The World Bank Data Repository, 2021, <https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=ZA> (accessed 30 September 2021).

³²³ 'Learners in South Africa up to one school year behind where they should be', UNICEF, 22 July 2021, <https://www.unicef.org/press-releases/learners-south-africa-one-school-year-behind-where-they-should-be> (accessed 30 September 2021).

³²⁴ 'Teen pregnancies in South Africa jump 60% during COVID-19 pandemic', *ReliefWeb*, 23 August 2021, <https://reliefweb.int/report/south-africa/teen-pregnancies-south-africa-jump-60-during-covid-19-pandemic> (accessed 30 September 2021).

³²⁵ O. Singh, 'Treasury urged to relook at R6.3bn education budget cut as KZN is short of 2,000 teachers', *Sunday Times*, 17 August 2021, <https://www.timeslive.co.za/news/south-africa/2021-08-17-treasury-urged-to-relook-at-r63bn-education-budget-cut-as-kzn-is-short-of-2000-teachers> (accessed 30 September 2021).

³²⁶ P. Mabolloane, 'Data costs and online access high on list of obstacles to online learning for South African students', *Daily Maverick*, 3 August 2021, <https://www.dailymaverick.co.za/opinionista/2021-08-03-data-costs-and-online-access-high-on-list-of-obstacles-to-online-learning-for-south-african-students> (accessed 30 September 2021).

³²⁷ 'Unrest and economic underperformance haunt the emerging world,' *The Economist*, 31 July 2021. Available at: <https://www.economist.com/leaders/2021/07/31/unrest-and-economic-underperformance-stalk-the-emerging-world> (accessed 31 August 2021)

countries in this study. The economic and political state of each country before COVID-19 will determine the pace and nature of their recovery in the long term.

As this report has already discussed, COVID-19 has exacerbated and highlighted the inequalities and widening divides prevalent in day-to-day life across the continent. This is true of education, as described above, as in other areas. Inequalities extend well beyond conventional linear economics. Migration, both legal and illegal, is another fact dividing people and limiting access to services and opportunities. Increasingly there are those who can afford access to the internet and those who are simply disconnected from the rest of the world.

In the world of work, more jobs are informal than formal in Africa. Many millions of Africans earn a living without the luxury of support structures or legal protection, and many more have entered this environment as the pandemic has affected the number of formal jobs available. The actual numbers and trends are not readily available, given Africa's data challenges.

The five countries in this study highlight the severe strain emerging economies have been put under due to the COVID-19 pandemic, with medium-term GDP forecasts for emerging markets, mostly across Africa and Latin America, about 5% lower than they were before the pandemic. Following a period of 'hype and hope', widely described as the best growth decade on record between 2002 and 2012, Africa's poor economic performance over the past decade, combined with the fallout of the pandemic, has left it susceptible to unrest, politically inspired violence, and authoritarianism. The unrest and looting in parts of South Africa in mid-2021 is a case in point, as is the growing insecurity in Nigeria, for example.

African governments have an enormous task ahead of them on several fronts in rebuilding their economies as the pandemic starts to retreat in the wake of widespread vaccination programs globally. Broadly these include ensuring the success of their vaccine rollout programs, recouping lost gains following mediocre continental growth over the past decade, and the devastating impact of the pandemic, to bridging divides that threaten to undermine past progress and set the continent even further back in its development.

It is imperative that future growth in emerging markets, particularly those in Africa, is inclusive and the rebuilding process makes countries more competitive and resilient. The key driver in this regard is equal access to the digital economy. Without this, the economic, social, and cultural divides between Africa and the rest of the world will widen.

While the future is still uncertain for everyone, some countries are already on the path to recovery while others are stalling or struggling to find direction. The nature of recovery and the reforms adopted for sustainable and competitive economic inclusion will be essential to predicting the likelihood and shape of recovery and progress in the post-COVID-19 era. This will distinguish those which used the crisis as an opportunity to reset their structures and trajectories from the rest.³²⁸

Egypt, for example, is expected to recover to pre-pandemic levels of growth by 2022—about 5.5%—on the back of renewed business confidence and increasing investment, especially as international tourism recovers.³²⁹

³²⁸ For a detailed insight into country forecast see: <https://www.focus-economics.com/countries>.

³²⁹ For a country overview see <https://www.worldbank.org/en/country/egypt/overview#1> and <https://africaincarnet.com/2020/08/12/egypts-economy-may-rebound-to-6-5-in-2021-new-imf-forecast-shows>.

The recovery of the Ethiopian economy hinges on crucial reforms, such as the liberalization of strategic sectors, and the management of sociopolitical tensions. In the immediate future, economic growth should return to 2018 and 2019 levels of about 8% by 2022. But the long-term implications of COVID-19 in Ethiopia depend heavily on so-called ‘non-economic’ factors associated with education and political stability. For now, Ethiopia appears to be on a pathway to economic recovery.³³⁰

Kenya is expected to recover faster than the other economies, given its strong economic standing before the pandemic as growth rates averaged 5.7% from 2015–2019, along with its deep connectiveness to global markets. In 2021, Kenya’s economy is expected to grow by more than 7.5%.

Structural deficiencies are likely to hamper recovery in Nigeria. Growth projections in 2021 and 2022 remain modest, at between 1.5 to 2.5%, as the economy remains dependent on oil prices and investment is constrained by an onerous regulatory environment.³³¹ While the oil price recovery in 2021 and 2022 should bolster the economy, Nigeria needs to increase the contribution of the non-oil sector to exports and revenue generation to offset volatility in the oil sector. This requires reforms to encourage competitiveness and stimulate business confidence and investment in relevant sectors.³³² This would improve Nigeria’s long-term prospects and build on its existing assets of a large and youthful population and an innovative and entrepreneurial business sector.

Finally, South Africa’s slow recovery remains a concern for its citizens, and the continent at large. Recovery appears to be directly related to the approach adopted for management of the pandemic relative to existing constraints and economic costs. South Africa implemented the most severe and prolonged countrywide lockdown measures of any other African country. But this came at a serious cost. The economic consequences have been severe and will last longer than anticipated, with a slow recovery and low levels of business confidence and investor interest, as well as increased capital outflows.

Modest economic growth is expected to return in 2021, at about 3%, with pre-COVID-19 levels of output and productivity only likely to increase in late 2023.³³³ COVID-19 has exposed structural flaws in South Africa’s economy. The reforms to address constraints to growth have been avoided until now but can no longer be delayed. Proper recovery depends on addressing the severe social constraints and prevailing divisions that exist, as well as tackling corruption and high government spending.³³⁴

³³⁰ For a detailed overview of the outlook in Ethiopia and other African countries, see: https://www.afdb.org/sites/default/files/documents/publications/afdb20-04_aeo_supplement_full_report_for_web_0705.pdf.

³³¹ D. Games, ‘Nigeria looks to build back after pandemic havoc’, *African Business*, 21 April 2021, <https://african.business/2021/04/trade-investment/nigeria-looks-to-build-back-after-pandemic-havoc> (accessed 29 September 2021).

³³² D. Games, ‘Nigeria looks to build back after pandemic havoc’.

³³³ National Treasury Budget Review 2021. Available at: <http://www.treasury.gov.za/documents/National%20Budget/2021/review/FullBR.pdf> (accessed 30 September 2021).

³³⁴ For further insights into South Africa’s slow recovery, see <https://businesstech.co.za/news/finance/432148/it-will-take-years-to-get-south-africas-economy-back-to-pre-covid-levels-economists>.

Conclusion

THIS STUDY HIGHLIGHTS THE IMPACT OF COVID-19 and the anticipated economic recovery across five countries, representing a trend across Africa. It provides a useful insight into key areas of development and structural issues defining current economic circumstances as well as Africa's future trajectory. The final section of the study introduces five key areas for further discussion and debate.

The impact of COVID-19 and the anticipated consequences across health, social, and economic outcomes in Africa is more difficult to assess and anticipate than in other parts of the world. Under-reporting and poor numbers are the main reason for this. Incomplete and inadequate data in Africa is a legacy issue, which has once again been brought to the attention of officials and global organizations as they seek to understand the pandemic in Africa and decide on appropriate responses to it.

The impact of the pandemic is more important in Africa than elsewhere, given the demographic dynamics, underdevelopment, and inequality, particularly in light of the threat of new variants and new pandemics if this is not addressed comprehensively and universally at this time. Deeper global inequality threatens to be the most obvious and significant impact of the COVID-19 pandemic, given the interconnected nature of the world and its people today. Africa is at the center of this.

With respect specifically to Africa, one certainty is clear: the post-pandemic recovery and Africa's growth and development trajectory will not be even. This was evident before COVID-19. But the pandemic has accentuated a range of issues, from poor data and access to information through to high levels of informality in the private sector and relatively low digital connectedness, not to mention inequality and poor health and education systems. These factors define Africa's prevailing state of underdevelopment and will determine its post-pandemic trajectory.

It is clear that most African countries were poorly prepared for the pandemic, or for any crisis, for that matter. Poor governance, a lack of growth-friendly policies, weak institutions and a dearth of social safety nets and decent public health and education facilities hampered growth before the pandemic and hindered management of the crisis during it. These factors will also affect the nature and length of recovery, which varies across the five countries covered in this study. As noted above, the state of institutions and stage of reforms under way leading into the crisis will determine the nature and pace of recovery. This is evident from the data emerging from the five countries in this study.

Some initial findings suggest that Egypt is expected to recover to pre-COVID-19 levels of growth by early 2022 on the back of renewed business confidence and especially as international tourism returns. But long-term recovery will require attention to existing economic exclusion, digital connectedness, and the modernization of education.

Economic recovery in Ethiopia depends on crucial reforms, such as the liberalization of strategic sectors, a return to pre-pandemic education levels and the management of ongoing socio-political tensions. The continuing conflict may disrupt projections of an expected return to 2018/2019 growth by early 2022.

Kenya is expected to recover faster than the other economies, given its strong standing and economic growth pre-COVID-19, along with its deep connectivity with global markets. But growing inequality exacerbated by problems of educational and economic inclusion may threaten Kenya's long-term progress.

Structural deficiencies are likely to hamper recovery and progress in Nigeria. The economy is improving on the back of increasing oil prices, but revenue and export diversification needs to gain pace, and the business environment improved for investors and local business to enable them to drive growth in the recovery. Growth projections remain modest for 2021 and 2022, with the latest World Bank projections, from November 2021, being 2.7% and 2.8% respectively.

Finally, South Africa's response to COVID-19 was both swift and effective. But it came at a serious economic cost, the social consequences of which spilled over into mass protests and looting that has never been seen in its 25 years of democracy. The pandemic has exposed structural flaws in South Africa's economy, and despite a seemingly strong commitment to social inclusion and broad-based modernization, it remains the most unequal country in the world, a situation that has been exacerbated by the pandemic. Rising unemployment is a concern for the future as is the quality of state policies and institutions, and the regression of educational standards and literacy levels.

The study does put some emphasis on the role of vaccines and the importance of an effective and rapid rollout as a pre-cursor to economic and sustainable recovery. The importance of vaccine production and effective distribution, in a competitively functioning bioeconomy, is also key to future pandemic responses and long-term prospects in a post-pandemic world.

But vaccination targets set by all five countries in the study will not be met in 2021. As of September 2021, South Africa, the most advanced of the five in terms of vaccinations, had vaccinated just 19% of its population with at least one dose. This falls well short of the 70% target set for year-end. Even Ethiopia's modest target of 20% of the population vaccinated by year-end was only at 2.6% of the population by September 2021.

In conclusion, following this study and the ongoing development of material and research, the question remains: Will countries use this pandemic as an opportunity to implement necessary reforms and changes, or will they continue to hesitate and muddle their way through the precarious balance of economic competitiveness and progress as they prioritize political expedience over smart policy?

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Appendix

ECONOMIC RELIEF: GOVERNMENT PROGRAMS AND MULTILATERAL SUPPORT (MARCH 2020 – SEPTEMBER 2020)

| Country | GDP | Government relief packages | Targeted government funding for healthcare | Emergency support (IMF, World Bank, AfDB) |
|----------|-------------------|--|--|---|
| Egypt | US\$250.9 billion | US\$6.32 billion package (2.5% of GDP) <i>(May 27, 2020).</i> | US\$508.89 million made available for necessary medical supplies, and incentives for frontline healthcare workers. | · US\$2.772 billion, IMF <i>(May 11, 2020)</i> |
| | | | | · US\$5.2 billion loan, IMF <i>(June 26, 2020)</i> |
| | | | | · US\$50 million, World Bank <i>(May 17, 2020)</i> |
| Ethiopia | US\$84.36 billion | US\$1.64 billion in funding for food, health, shelters (1.9% of GDP) <i>(May 31, 2020).</i> | US\$154 million | · US\$500,000 emergency assistance grant, AfDB <i>(May 27, 2020)</i> |
| | | | | · US\$265 million budget support loan for electricity sector, AfDB <i>(June 17, 2020)</i> |
| | | | | · US\$411 million, IMF <i>(April 30, 2020)</i> |
| Ethiopia | US\$84.36 billion | US\$1.64 billion in funding for food, health, shelters (1.9% of GDP) <i>(May 31, 2020).</i> | US\$154 million | · US\$82.8 million, World Bank (\$41.3 million grant and \$41.3 million credit) <i>(April 2, 2020)</i> |
| | | | | · US\$250 million (\$125 million grant and \$125 million credit), World Bank <i>(June 17, 2020)</i> |
| | | | | · US\$165.08 million, African Development Fund (ADF) grant <i>(July 3, 2020)</i> |

| Country | GDP | Government relief packages | Targeted government funding for healthcare | Emergency support (IMF, World Bank, AfDB) |
|--------------|-------------------|--|--|--|
| Kenya | US\$87.91 billion | <ul style="list-style-type: none"> · US\$503 million for 8-Point Economic Stimulus Program (0.6% of GDP) <i>(May 19, 2020).</i> | <ul style="list-style-type: none"> · US\$377 million for hiring of healthcare workers and hospital improvements. | <ul style="list-style-type: none"> · US\$ 739 million, IMF <i>(May 6, 2020)</i> |
| | | | | <ul style="list-style-type: none"> · US\$1 billion budget support, World Bank <i>(May 20, 2020)</i> · US\$50 million loan, World Bank <i>(April 2, 2020)</i> |
| | | | | <ul style="list-style-type: none"> · US\$223.1 million loan, AfDB <i>(May 22, 2020)</i> |
| Nigeria | US\$397.3 billion | <ul style="list-style-type: none"> · US\$5.96 billion stimulus package focusing on job-intensive projects including those in agriculture, road, and housing sectors (1.6% of GDP) <i>(June 16, 2020).</i> | <ul style="list-style-type: none"> · US\$2.7 million for Nigeria’s Center for Disease Control. · US\$18 million for testing. · US\$28 million grant to the Lagos State. | <ul style="list-style-type: none"> · US\$3.4 billion, IMF <i>(April 28, 2020)</i> |
| | | | | <ul style="list-style-type: none"> · US\$114.28 million financing, World Bank <i>(August 7, 2020)</i> |
| | | | | <ul style="list-style-type: none"> · US\$288.5 million loan, AfDB <i>(June 5, 2020)</i> |
| South Africa | US\$368.3 billion | <ul style="list-style-type: none"> · US\$30.7 billion COVID-19-relief package (10% of GDP) <i>(April 21, 2020).</i> | <ul style="list-style-type: none"> · US\$1.3 billion made available for health. · US\$ 982.6 million will be transferred to provinces as an adjustment to the provincial equitable share allocation. · US\$337 million is allocated to the National Department of Health. | <ul style="list-style-type: none"> · US\$4.3 billion, IMF <i>(July 27, 2020)</i> |
| | | | | <ul style="list-style-type: none"> · US\$288 million loan, AfDB <i>(July 22, 2020)</i> |

COVID-19 GOVERNMENT ECONOMIC INTERVENTIONS: INTEREST RATES AND INVESTMENTS

| Country | Interest rates | Investment |
|---------------------|--|---|
| Egypt | The Central Bank cut interest rates by three percentage points | 2020-2021: US\$17.6 billion allocated to improve general services and raise standards of living. \$13.3billion is financed by the treasury, US\$3.3billion is sourced from various funds. |
| Ethiopia | Development Bank of Ethiopia (DBE) cut interest rates by 4% for borrowers from tourism and hospitality services (including hotels), and poultry farming and processing. Commercial lending rate for other sectors and industries were cut by 3.5%. | July 2020: Changes to the Investment Proclamation, enabling foreign investors to enjoy more choice of areas in which to invest. |
| Kenya | Interest rate cut by two percentage points, to nine-year low of 7%. | May: Govt announced plans to spend US\$503 million on a stimulus package to support small businesses through the provision of credit guarantees and loans, as well as boost tourist facilities for the post-Covid period. |
| Nigeria | Interest rate cut from 13.5% to 12.5%. | US\$5.9 billion stimulus package for retaining or creating jobs in agriculture and housing, undertaking infrastructural investments that enhance growth and create jobs and promoting local manufacturing and processing. |
| South Africa | Interest rates cut by a total of three percentage points to a 50-year low of 7%. | Plans for US\$91 billion in infrastructure investments over the next decade. |

STIMULUS PROGRAMS FOR BUSINESS RECOVERY AND SMME SUPPORT

| Country | Small Business Relief | Programs and Additional Funding |
|---------------------|---|--|
| Egypt | <ul style="list-style-type: none"> · Reduction of prices for natural gas and electricity in the industrial sector. · US\$100 million loan for hard-hit businesses and SMEs from the European Bank for Reconstruction and Development (EBRD). · US\$118.7 million announced in finance for SMEs from Egypt EIB and the Banque du Caire. | <ul style="list-style-type: none"> · Expansion of Takaful and Karama – cash transfer social programs. · US\$32 monthly grants for irregular workers for 1.6 million beneficiaries. · Pensions have been increased by 14%. |
| Ethiopia | US\$50 million liquidity by National Bank for private banks towards debt relief and loans. | · \$88 million dedicated to the expansion of The Urban Productive Safety Net Program to 16 additional cities. In collaboration with the World Bank. |
| Kenya | <ul style="list-style-type: none"> · US\$30 million as seed capital for SME Credit Guarantee Scheme. | <ul style="list-style-type: none"> · US\$20 million soft loans to hotels and related establishments. · US\$15 million to assist flower and horticultural producers to access international market. · US\$92.2 million in cash transfers to the elderly, orphans and other vulnerable members of society. |
| Nigeria | <ul style="list-style-type: none"> · US\$136.6 million credit relief to businesses which includes petty traders and small enterprises. | Transfers of US\$52 to poor and vulnerable households registered in the National Social Register (NSR). |
| South Africa | <ul style="list-style-type: none"> · US\$ 9.2 million seed capital Solidarity Fund. · US\$ 30.7 million for the Small, Medium and Macro Enterprises (SMMEs) Debt Relief Financing Scheme. · US\$860 million- COVID-19 Temporary Employer/Employee Relief Scheme – · Rupert Family’s R1bn Sukuma Relief Program (+US\$63 million). · The South African Future Trust (SAFT) established by the Oppenheimer family, provides financial assistance to qualifying SMEs, R1 billion (+US\$63 million). | <ul style="list-style-type: none"> · Monthly US\$22 COVID-19 Social Relief grant paid to unemployed individuals that do not receive any other social grants or payment from the Unemployment Insurance Fund (UIF). · For tax compliant businesses with a turnover of less than US\$3.1 million: These companies are eligible for a 20% delay of pay-as-you-earn liabilities and a portion of provisional corporate income tax payments without penalties or interest for 6 months. |

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