

# Finding Africa's path:

Shaping bold solutions to save lives and  
livelihoods in the COVID-19 crisis

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**The impact of COVID-19 in Africa could be devastating, unless governments, development institutions, and the private sector act with extraordinary speed and agility in the weeks ahead.**

The number of recorded COVID-19 cases in Africa, at about 15,000 on April 14, is still relatively small, but it is growing fast. The continent has far fewer doctors, hospital beds, and ventilators per capita than any other region. A health crisis of significant proportions looms unless containment measures succeed *and* urgent action is taken to ramp up health-system resources.

On the economic front, the crisis in jobs and livelihoods could be even greater. After two decades of steady economic progress, the pandemic could tip Africa into its first recession in 25 years. By our analysis, as many as one-third of all jobs in Africa could be affected. Africa's high degree of informality and relatively low levels of social protection exacerbate the risk.

In this article, we present new analysis that underlines the urgency of action required to save lives and safeguard livelihoods in Africa. We also suggest specific approaches that governments, development institutions, and business can take to act decisively on both fronts. These insights build on our recent article "Tackling COVID-19 in Africa: An unfolding health and economic crisis that demands bold action".<sup>1</sup>

We focus on three imperatives:

- **Protecting lives.** We present new analysis showing that bold steps will be needed to strengthen Africa's health-system capacity over the next 100 days, at a potential cost of more than \$5 billion.
- **Safeguarding livelihoods.** We show that the jobs or incomes of 150 million Africans are vulnerable in the crisis, and we share new analysis of the interventions required to mitigate the economic damage.
- **Finding the right path.** We consider how governments can make optimal decisions on lockdowns, shutdowns, and shielding of people at the highest risk of contracting the virus, and so achieve the best possible outcomes in protecting lives and safeguarding livelihoods.

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<sup>1</sup> <https://www.mckinsey.com/featured-insights/middle-east-and-africa/tackling-covid-19-in-africa>.

# Protecting lives: \$5 billion in 100 days to ramp up health-system capacity

Although Africa has fewer known COVID-19 cases than other regions, the number is growing fast. Epidemiological projections suggest that, in a worst case, there could be many millions of cases in Africa over the next 100 days if the spread of the virus is not contained. Such projections vary and are sensitive to assumptions, including the starting position and the number of people a single infected person will infect in a population. But they do shine a spotlight on the scale of the health risks facing Africa.

African health systems are ill prepared for a widespread outbreak. The entire continent may have just 20,000 beds in intensive-care units (ICUs), equivalent to 1.7 ICU beds per 100,000 people.<sup>2</sup> By comparison, China has an estimated 3.6 ICU beds per 100,000 people, while the United States has 29.4.<sup>3</sup> And while there are shortages of ventilators in many parts of the world, that shortage is particularly acute in Africa. There are an estimated 20,000 ventilators across the continent, far too few to manage large numbers of COVID-19 cases; excluding North Africa and South Africa, the rest of sub-Saharan Africa might have as few as 3,500.<sup>4</sup> By comparison, the United States, with one-third of Africa's population, has up to 160,000 ventilators.<sup>5</sup>

To gauge the ramp-up that might be needed, we assessed how the capacity of Africa's health systems would need to increase if the continent's infection rate were to reach 1 percent in the next 100 days—equivalent to the infection rate in New York State after one month of the COVID-19 crisis. In such a scenario, we estimate that more than \$5 billion in additional funding would be needed to cover the cost of critical supplies for hospitals, including tests, masks, gloves, and ventilators. This sum excludes the cost of wider responses to the health crisis, such as building new hospital capacity, quarantining individuals, providing masks to the general population, or implementing a widespread testing strategy.

Even if containment efforts limit Africa's infection rate to 0.1 percent over the next 100 days (a third of Spain's official case rate after one month of the crisis), we estimate that the continent could require 35,000 ICU beds and ventilators for COVID-19 patients alone. Even in this less severe scenario, we estimate that at least 20 million masks will be required in the next 100 days for hospitals to be prepared to meet the COVID-19 caseload.

Likewise, whichever scenario the outbreak follows, a major ramp-up will be required in the number of COVID-19 tests available in Africa (Exhibit 1). At a minimum, we estimate that 5 million such kits will be required over the next 100 days in a scenario of robust containment. If the virus were to spread more rapidly and African governments were to adopt a strategy of broad testing similar to that used in South Korea, 80 million test kits could be needed in this short period. By our estimates, fewer than 500,000 such kits have been deployed across Africa to date.

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2 Niall McCarthy, "The countries with the most critical care beds per capita," *Forbes*, March 12, 2020, [forbes.com](https://www.forbes.com).

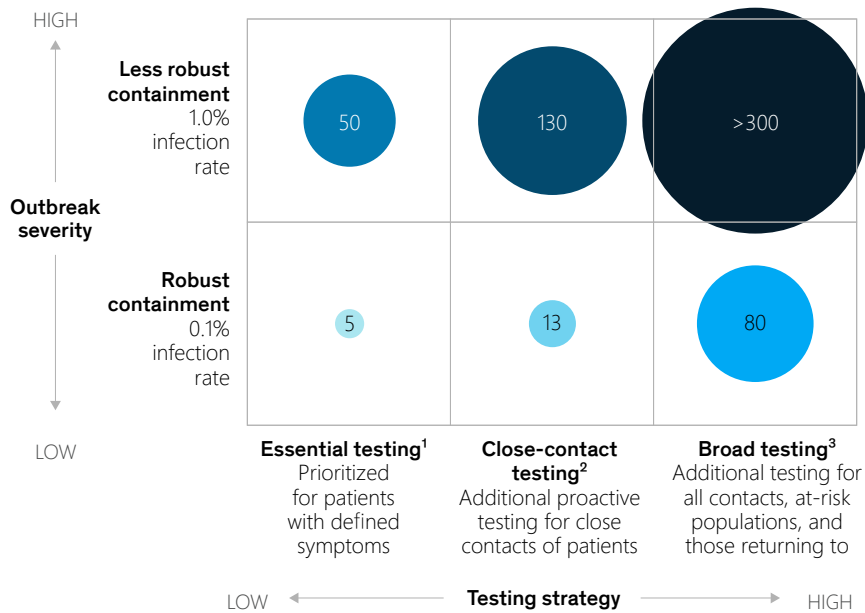
3 "United States resource availability for COVID-19," *Society of Critical Care Medicine* blog, March 19, 2020, [sccm.org](https://www.sccm.org)

4 Aryn Baker, "Few doctors, fewer ventilators: African countries fear they are defenseless against inevitable spread of coronavirus," *Time*, April 7, 2020, [time.com](https://www.time.com).

5 "United States resource availability for COVID-19," *Society of Critical Care Medicine*, March 19, 2020, [sccm.org](https://www.sccm.org). [This figure includes both full-feature and older models.](#)

## The number of test kits required will depend on both the outbreak severity and the testing strategy

Test kits required across Africa, millions of tests



1 Assumes roughly 1 positive result for every 4 tests.  
 2 Assumes roughly 1 positive result for every 10 tests.  
 3 Assumes roughly 1 positive result for up to 60 tests.  
 Source: McKinsey Analysis, Press Searches

Even if funding were secured to purchase these supplies and resources, the procurement and distribution logistics involved would be hugely challenging—as would be the effort to build up the capacity of healthcare providers to use the equipment. Private-sector capacity for production and distribution of medical supplies would need to be integrated into the effort. And thousands of community health workers would need to be trained to support the medical response, given Africa’s very low numbers of health workers per capita. As one illustration of this gap, consider the fact that Italy, whose hospital staffs have been overwhelmed in some cities, has a doctor for every 243 people, but Zambia has one for every 10,000 people.<sup>6</sup>

Across the continent, innovative, collaborative initiatives are under way to ramp up health-systems capacity. For example, in South Africa,

where the government and private sector are collaborating on the health response, the National Ventilator Project seeks to produce 10,000 ventilators by the end of June with only locally sourced inputs.<sup>7</sup> In Kenya, an apparel factory shifted to producing masks within one week and is now producing 30,000 masks per day. Development finance institutions, donors, and the private sector are supporting such projects with funding, guarantees, and expertise.

African countries have acted fast to contain the spread of this virus, and this has helped delay the course of the pandemic on the continent.<sup>8</sup> But there is much uncertainty about how the outbreak will progress; case growth and severity will depend on many factors. It is not simply about the choice of policy measures implemented by governments. Outcomes will depend on policy adherence and efficacy. For example, robust isolation and

6 [“Zambia,” Global Health Workforce Alliance, World Health Organization, who.int.; Physicians \(per 1,000 people\), World Bank Open Data, data.worldbank.org.](#)  
 7 Ferial Hafferjee, “Stavros Nicolaou: South Africa’s Mr Ventilator,” *Daily Maverick*, April 8, 2020, [dailymaverick.co.za](#).  
 8 [African countries move swiftly to head off coronavirus spread,” Financial Times, March 20, 2020, ft.com.](#)

physical distancing may be less implementable in the context of dense urban environments with high poverty rates. Other demographic and environmental factors also matter. Case severity in Africa could be positively affected by a younger population—the median age in Africa is 19.7 years—but negatively affected by higher rates of comorbidities, such as HIV, tuberculosis, and malnutrition. Evidence is still emerging on the impact of a wide range of environmental factors, from temperature and humidity to levels of Bacillus Calmette–Guérin (BCG) vaccination.

In short, it is critical that efforts be intensified to contain the COVID-19 outbreak in Africa. Bold measures must be taken, including a significant scaling up of testing, to prepare health systems for a scenario in which infection rates increase rapidly.

## **Safeguarding livelihoods: Large-scale, targeted stimulus to protect 150 million jobs**

Alongside the urgent steps needed to strengthen health systems and protect lives, rapid, far-reaching action is needed to safeguard livelihoods. Our analysis shows that the jobs or incomes of 150 million Africans, across the formal and informal sectors, are vulnerable in the crisis; this is equivalent to one-third of the entire labor force. Moreover, our modeling suggests that the economic stimulus required to mitigate the economic damage will potentially be much larger than African governments have announced to date. Careful targeting of this stimulus could help protect the economy and jobs—and provide urgent support to vulnerable households.

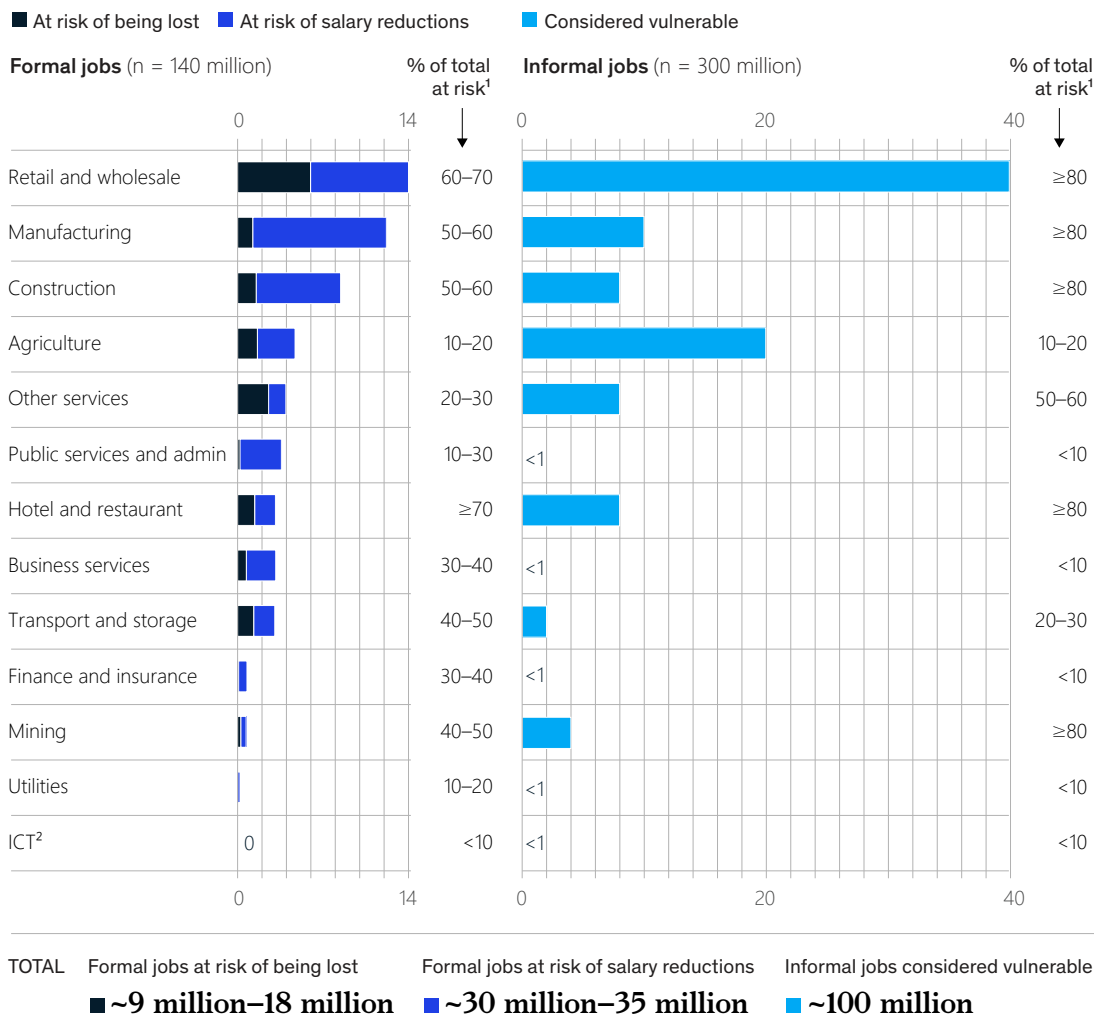
### **Jobs or incomes are vulnerable for one-third of the African workforce**

We assessed the risk posed by the COVID-19 pandemic to the livelihoods of African workers in both the formal and informal sectors (Exhibit 2). It is worth noting that, out of a total labor force of about 440 million people, Africa's formally employed workforce numbers about 140 million—less than a third of the total. The remainder of the workforce, totaling as much as 300 million people, is in informal employment.

## **Between 9 million and 18 million formal jobs in Africa could be lost or made redundant due to the COVID-19 crisis.**

## One-third of all jobs in Africa—formal and informal—could be affected by COVID-19

Total jobs at risk by sector, millions of jobs



<sup>1</sup> Percentage of total jobs in sector impacted or considered vulnerable.

<sup>2</sup> Information and communication technology.

Source: International Labour Organization; World Bank; McKinsey Global Institute

Our analysis suggests that between 9 million and 18 million formal jobs in Africa could be lost or made redundant due to the COVID-19 crisis. We also find that a further 30 million to 35 million formal jobs are at risk of reductions in wage and working hours as a result of reduced demand and enforced lockdowns. This puts the jobs of one-third of Africa’s formal-sector workers at risk of significant impact. In major sectors such as manufacturing, retail and wholesale, tourism, and construction, the jobs of more than half the workforce could be affected.

In addition, our analysis shows that approximately 100 million informal jobs—again, one-third of the total—are in occupations and sectors that are vulnerable to loss of income during the COVID-19 crisis. Most members of Africa’s informal-sector workforce are involved in subsistence agriculture, and fortunately they are less likely to be affected. But as many as 35 million informal sales and service jobs in the wholesale and retail sector are vulnerable, as are about 15 million casual craft, trade, and plant-operating jobs in the manufacturing and construction sectors.

## Major additional stimulus may be required to mitigate damage to economies and livelihoods

Across the African continent, a range of initiatives has already been launched to help mitigate the impact of the COVID-19 crisis. In addition to these efforts, governments and development institutions might consider much larger stimulus packages than those implemented to date. To ensure that such stimulus helps safeguard the livelihoods at risk, it will be important to target it to support the most vulnerable households, reach small businesses, and protect both the economy and jobs.

## Much greater stimulus may be needed

In our previous article in this series, we showed that the COVID-19 pandemic could reduce Africa's GDP growth by between 3 and 8 percentage points in 2020.<sup>9</sup> Weighed against the potential downside, the stimulus measures announced to

date by several African governments are relatively small, amounting to between 1 and 1.5 percent of GDP. In some cases, these measures have been matched with reductions in government spending of between 1 and 1.5 percent of GDP. Even with well-targeted fiscal-stimulus measures, which can have a multiplier effect on GDP, African countries could still be left with a gap of five percentage points of GDP growth to return to precrisis levels and one to two percentage points to avoid an economic contraction.

In this regard, it is worth comparing the stimulus packages announced by African governments with those announced by other governments in response to the pandemic (Exhibit 3). Some developing countries, including Colombia and Malaysia, have announced packages exceeding 3 percent of GDP, while China's stands at approximately 4 percent of GDP. The \$2 trillion stimulus package in the United States represents about 10 percent of GDP.

> \$100  
billion

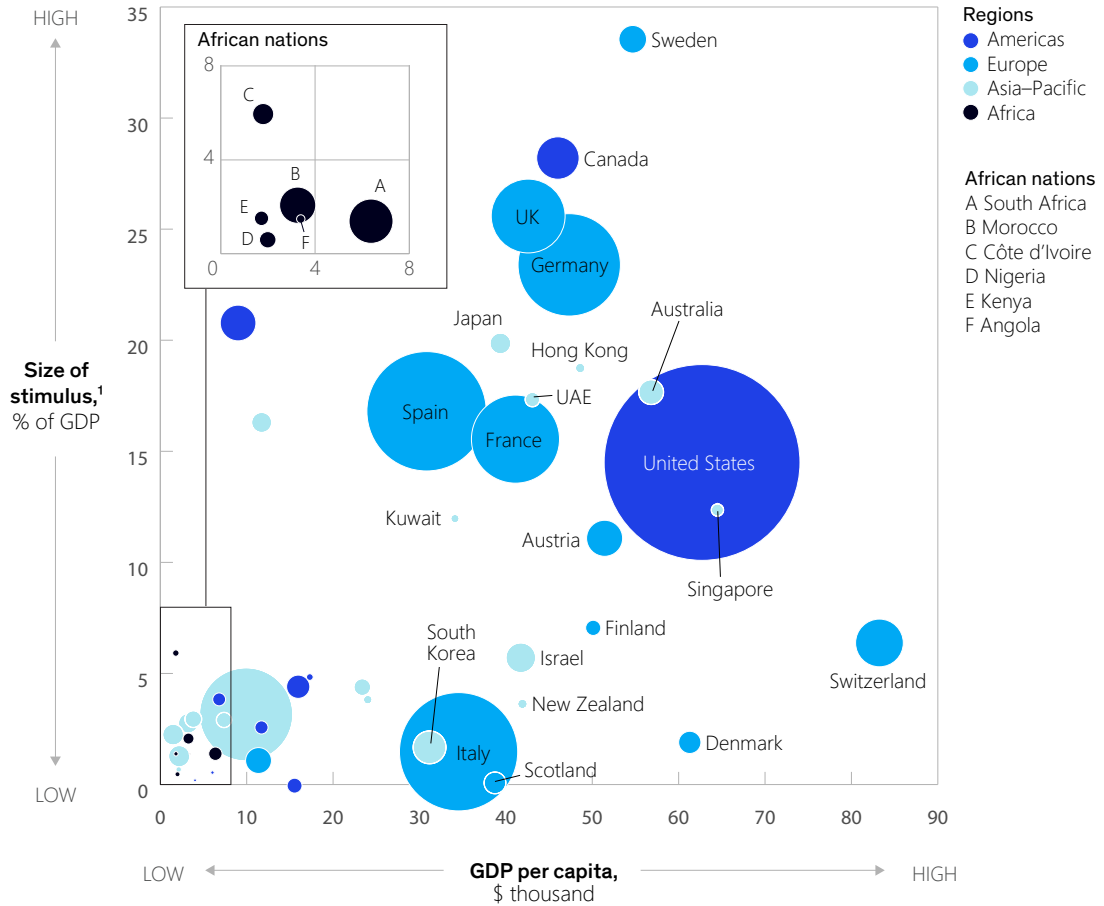
in support called for by African finance ministers

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<sup>9</sup> Kartik Jayaram, Acha Leke, Amandla Ooko-Ombaka, and Ying Sunny Sun, "Tackling COVID-19 in Africa," April 2020, McKinsey.com.

## African countries have typically announced fiscal stimulus packages of 1–1.5 percent of GDP

Cases by country, number (circle size = relative number of cases as of April 9, 2020)



Note: Numbers as announced by governments; The fiscal multipliers (these are higher during a recession) and the actual impact on GDP will vary significantly depending on the source of the stimulus funding.

1 Size of stimulus response is the aggregate amount announced at that point in time.

2 Number of cases recorded on the day of the stimulus announcement.

Source: IHS Data for GDP; official government sources; WHO COVID-19 Dashboard

It is likely that African governments and their partners will need to mobilize substantial additional resources to mitigate the economic damage of COVID-19 and to safeguard livelihoods. African finance ministers have already called for the release of \$100 billion to \$150 billion in support for African countries, while the International Monetary Fund and the World Bank have called on all official bilateral creditors to suspend debt payments from low-income countries.<sup>10</sup> A group of prominent business and

institutional leaders, recently appointed as envoys of the African Union, have called for a two-year standstill on all external-debt repayments by African countries, including those in respect of private and commercial debt.<sup>11</sup>

### Targeting the stimulus: Secure basic incomes, safeguard jobs, support key institutions

As countries design their stimulus package in response to the COVID-19 crisis, they typically

<sup>10</sup> Communiqué - African ministers of finance - Immediate call for \$100 billion support and agreement the crisis is deep and recovery will take much longer, United Nations Economic Commission for Africa, March 31, 2020, uneca.org.

<sup>11</sup> Ngozi Okonjo-Iweala and Brahim Coulibaly, "Africa needs debt relief to fight COVID-19," Project Syndicate, April 9, 2020, project-syndicate.org.



have three objectives in mind: (1) ensuring basic incomes and availability of essential products and services to individuals and households in need; (2) safeguarding small and medium-size enterprises (SMEs) and the jobs of the people who work for them; and (3) supporting key corporate institutions that are necessary for the health of the economy. Achieving these goals will require a combination of financial and operational support.

To **support individuals and households**, many governments are launching direct cash-transfer programs to reach vulnerable populations. One example is in Togo, where the government has acted swiftly to provide emergency financial support to households in Lome, the capital city, where economic activity has been sharply curtailed during a COVID-19 lockdown. The program, created in just one week, transfers small tranches of financial support to affected households each week, with women receiving more than men; at the time of writing it had registered more than 300,000 beneficiaries. It is using electoral cards, issued to nearly all adults ahead of a recent election, as the basis for the program.

Many countries in Africa unfortunately do not have comprehensive national databases that they can use. But we have found that in such cases there are still masses of existing data that they can leverage to design such programs quickly.

It is also important to **safeguard SMEs and the jobs of the people who work for them**. These firms typically have smaller balance sheets than their larger counterparts, putting their survival in the crisis under threat. Some of the steps that could be taken to safeguard these businesses are operational—for example, keeping the largest markets in the country open while ensuring that hygiene conditions are adhered to. In respect of financial support to SMEs, we suggest two key priorities for governments:

- *Ensure the survival of SMEs that provide essential goods and services*, such as pharmacies and traders. One option is to support these SMEs through larger players in their value chains, such as upstream suppliers or downstream buyers. Governments might

provide easier liquidity and working-capital terms to the larger players in the value chain, which they would be expected to pass on to the SMEs in the value chain, with certain conditions attached (for example, on geographic coverage and access).

- *Ensure that jobs are retained through SMEs*. In designing SME support funds, governments and development financiers can consider weighting support more heavily toward SMEs with larger workforces, as well as the sectors that are likely to recover faster from the crisis. To encourage banks to lend to SMEs, governments and financiers can consider providing certain risk guarantees or first-loss mechanisms while requiring banks to on-lend under the chosen set of criteria and guidelines.

For supporting key **corporate institutions**, two approaches might be considered. First, in a few very special situations, countries may designate certain institutions as “strategic” and develop support packages to ensure that these institutions survive the crisis. These packages can come in varying forms, such as debt-to-equity swaps, short-term loan deals, and payroll-support packages. The design of such packages could give preference to the customers, employees, and debtors, rather than the shareholders, of such institutions.

Moreover, most companies in the economy are trying to conserve cash during the crisis, and supporting those efforts across the economy can be very beneficial. Ideas adopted in some countries include lowering banks’ liquidity or capital-ratio requirements; reducing general corporate tax rates; deferring mandatory payments; and helping companies raise capital (for example through private-equity financing). Governments may require companies to maintain a minimum wage or payroll to avail themselves of such support, so that the overall objective of job retention remains at the forefront of these efforts.

Across all three of these dimensions—support to individuals, SMEs, and corporations—governments can create agile structures to convene key decision makers, surface and filter

ideas, and guide implementation. One such structure is already in place in Kenya, where the Ministry of Industrialization, Trade and Enterprise Development (in partnership with UK Aid's Manufacturing Africa program) has set up a Situation Room with the objective of reducing the economic and job-loss impact of COVID-19. The Situation Room convenes companies and private-sector associations regularly to identify issues rapidly, conduct analyses, and propose solutions that can be discussed and approved by the full cabinet or Parliament or implemented directly. It has also set up a 24/7 hotline for inquiries and a system to unearth operational problems in different parts of the country and in different sectors. Finally, it is coordinating with the Ministry of Health, the Ministry of Agriculture, and security services to ensure joint implementation of ideas.

## **Finding the right path: The optimal response to protect lives and livelihoods**

Although the COVID-19 virus poses a serious threat to lives and health across Africa, the continent's 54 countries have faced differing rates and types of transmission. They also have widely differing levels of economic development, urbanization, formal employment, and social welfare. It should be no surprise, then, that African governments have adopted a very broad range of immediate responses to the pandemic. Consider the quite different approaches taken by three of the continent's largest economies:

**Governments across Africa will be considering whether and how to implement lockdowns, curfews, and other restrictions. Countries already in lockdown will be making equally tough decisions on how to manage, modulate, and emerge from their lockdowns**

- South Africa implemented a nationwide lockdown on March 27 and instituted full border closure for the movement of people. Limited border points remain open to goods.
- Nigeria has implemented a partial lockdown in some parts of the country and instituted full border closure.
- Ethiopia has closed schools and universities, banned mass gatherings, closed public spaces, and placed limitations on prison and hospital

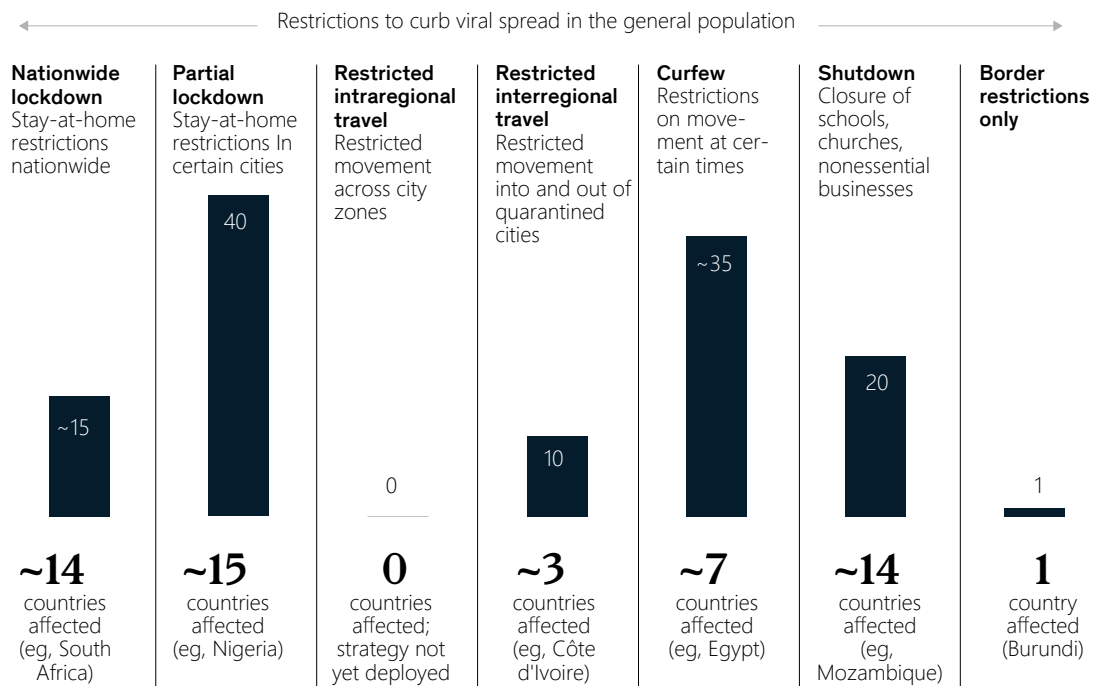
visits, but it has not instituted a lockdown or curfew. It has closed its land borders but has remained open to air traffic.

When we analyzed the responses of each of Africa's countries, we found a similar divergence across the continent: 53 out of 54 countries had implemented restrictions, but these ranged from full lockdowns to curfews to shutdowns of schools and businesses and restrictions on gatherings (Exhibit 4).

Exhibit 4

## Half the countries in Africa have implemented partial or nationwide lockdowns, and almost all have restricted certain activities or movement

Tally of countries by most restrictive policy deployed,<sup>1</sup> % of population affected (as of April 14, 2020)



<sup>1</sup> Restrictive policies are not mutually exclusive (e.g. countries have partial lockdowns and curfews), but we categorize countries only by the most restrictive policy implemented (i.e. 1 policy per country). Source: Africa Centres for Disease Control and Prevention; McKinsey analysis

In the coming days and weeks, governments across Africa will be considering critical, difficult decisions on whether and how to implement lockdowns, curfews, and other restrictions. The countries already in lockdown will be making equally tough decisions on how to manage, modulate, and emerge from their lockdowns. Every government, though, will face the same dual imperative in this decision-making process: how best to protect lives and safeguard livelihoods.

There is evidence that lockdowns are slowing the spread of the virus in the countries that have

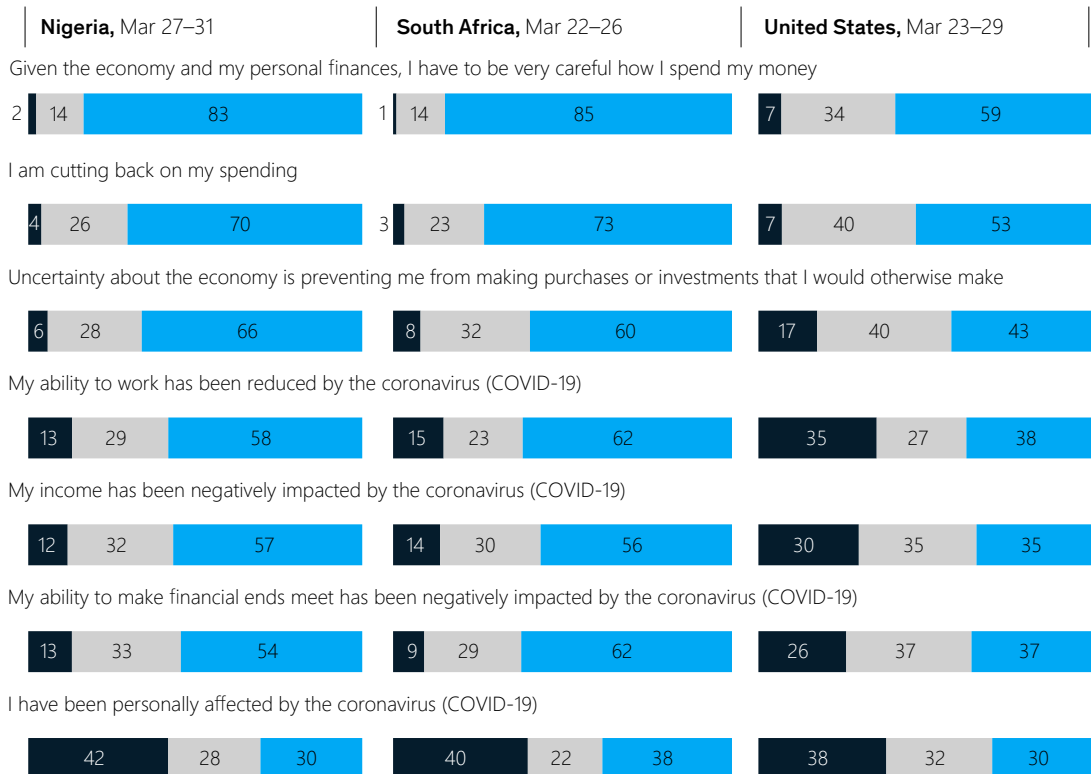
implemented them. As of April 7, African countries that have gone on full or partial lockdowns have seen their average daily growth of known cases decrease by more than 60 percent. However, testing rates in most countries remain low. But lockdowns and curfews have also had a huge impact on economic activity. In South Africa, for instance, retail sales declined by two-thirds in the first two days of its lockdown. In addition, a recent McKinsey survey found that two-thirds of consumers in Nigeria and South Africa were cutting back their spending (Exhibit 5).

Exhibit 5

## Consumers in Nigeria and South Africa are rapidly adjusting their behavior post-lockdown with more than two-thirds cutting back on spending

Overall sentiment in the general population in the country,<sup>1</sup> % of respondents

■ Disagree ■ Neither agree nor disagree ■ Agree



<sup>1</sup> Q: Please indicate how strongly you agree or disagree with each of the following statements. Please select only one response for each statement.

Source: McKinsey COVID-19 US Consumer Pulse Survey, Mar 23–Mar 29, 2020, n = 1,119, matched and weighted to US general population 18+ years based on American Community Survey 2016 of the US Census Bureau; McKinsey M&S COVID-19 Nigeria Consumer Pulse Survey, Mar 27–Mar 31, 2020, n = 531 sampled and weighted to match Nigeria general population 18+ years; McKinsey M&S COVID-19 South Africa Consumer Pulse Survey, Mar 24–Mar 26, 2020, n = 535 sampled and weighted to match South African general population 18+ years

In deciding the most effective way forward, African governments need to consider the economic, geographic, and demographic aspects of lockdowns, curfews, and other restrictions alongside the crucial public-health dimensions. To help them do so, we suggest a framework for

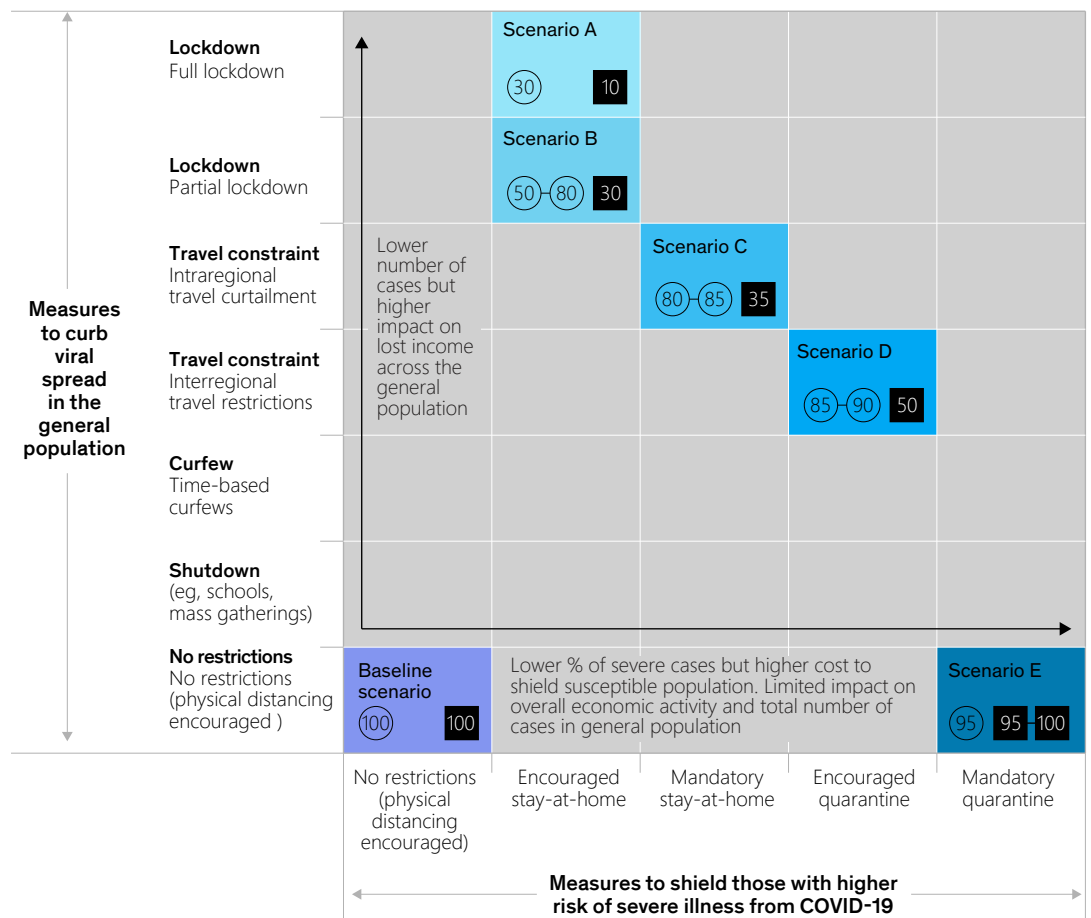
decision making: the matrix presented in Exhibit 6. The matrix depicts the various measures governments may consider in curbing the spread of the virus while protecting those with higher risk of severe illness from COVID-19.

Exhibit 6

## Measures to curb viral spread and shield populations will set countries' trajectories of resilience and recovery through the crisis

**Illustrative options and scenarios for a country, over a 30-day period,** relative impact of restrictions on GDP and the number of cases

% **Level of economic activity,** % of baseline<sup>1</sup>
% **Total number of cases,** % of baseline<sup>1</sup>



**Scenario A:** The government orders a full lockdown of all economic activity and movement across the entire country. This has the effect of curbing transmission of the virus in the general population but comes at great cost to its GDP.

**Scenario E:** The government simply provides guidelines to citizens about practicing safe physical distancing but strictly shields those most severely at risk of mortality. While the number of cases is higher, the proportion of severe cases may be low. There is significantly less impact to the economy overall.

1 Baseline refers to the cell in the bottom left corner of the matrix where economic activity continues, with no restrictions that curb the spread of the virus in either the general population or those at risk of severe illness from COVID-19.  
 2 Economic activity refers to income generating activities that contribute to GDP.  
 Source: McKinsey Analysis

Along the y-axis of the matrix are measures that can be implemented to curb the spread of the virus in the general population, from mild measures such as closing schools and banning mass gatherings to more intensive measures like imposing curfews and shutting down economic activity in all or part of the country. As previously discussed, these are the measures that African governments have considered to date.

Along the x-axis of the matrix is a spectrum of options for “shielding” measures to achieve extra protection for those who are at higher risk of severe illness from COVID-19, including the elderly and those with underlying health conditions. These measures have not yet been widely used across the African continent. More stringent than physical-distancing measures issued for the general public, shielding measures aim to minimize or eliminate all interaction between those at higher risk and others. In most countries where shielding has been implemented, such as the United Kingdom, the measures have been on the least strict end of the spectrum: voluntary and limited to those who are extremely clinically vulnerable, such as cancer patients undergoing active chemotherapy or people with severe respiratory conditions. Other countries, such as Turkey, have applied stricter shielding measures.

The outcome of any shielding measures depends on many factors, including health and environment. Nonetheless, African countries could consider adopting stronger and broader shielding options, for three reasons:

- Shielding alleviates the most critical pressure point in healthcare systems and could be important given that almost all African countries have very low thresholds for dealing with critical and severe cases. As discussed earlier, numbers of ICU beds and ventilators are very low in many countries.
  - Shielding protects the health and lives of those at greater risk of severe illness due to COVID-19. That is a key consideration, given that some African countries have significant numbers of people with compromised immune systems due to HIV, tuberculosis, and acute malnutrition, among other causes, despite having a generally young population.
  - Shielding a small portion of the population is a potentially more practical strategy to adopt for a prolonged period of time, compared with strong physical distancing among the general public. This is all the more important given that millions of people across the continent live in dense urban areas with poor sanitation and rely on day-to-day earnings to survive.
- How, then, can governments and their partners consider the appropriate approach to shielding in the African context? The starting point, we suggest, is to define the inclusion criteria for which people to shield based on a country’s demographics and the presence of comorbidities. Individuals who meet these criteria can be identified by leveraging existing programs in place.
- Once people who would benefit from shielding are identified, governments can create, communicate, and implement two options for shielding:
- **Stay at home.** For the stay-at-home option, governments and their partners can provide clear communication, incentives, and other support to those shielded and their families, to help them deal with practicalities such as preferential distribution of food and nonfood essentials.
  - **Off-site quarantine.** In the case of an off-site quarantine, governments can design models that are feasible to implement based on the local cultural context and physical environment. One idea is to create quarantine spaces directly within or adjacent to a community—“green zones” where high-risk groups are relocated temporarily to minimize contact with other residents.<sup>12</sup>

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<sup>12</sup> COVID-19 control in low-income settings and displaced populations: What can realistically be done?, London School of Hygiene and Tropical Medicine, April 2, 2020, lshtm.ac.uk.

Implementing such shielding measures will not be easy. In doing so, it will be important to give healthcare workers, local leaders, and community organizations central roles in identifying people for shielding and providing them with support. Governments can work with communities to gain acceptance for shielding and find appropriate ways to design and implement the model while avoiding the perception that shielding is an oppressive measure.<sup>13</sup>

We modeled the potential impact of shielding measures in one African country, as illustrated in Exhibit 6. The baseline for the modeling was a scenario in which no restrictions were in place beyond guidelines to practice safe physical distancing. We found that, in a scenario of full lockdown (Scenario A in the exhibit), the country would potentially reduce the number of COVID-19 cases to 10 percent of what would be expected in the baseline, but economic activity would be greatly curtailed, falling to 30 percent of the baseline. In contrast, in a shielding scenario (Scenario E), mandatory quarantine would be established for the people most at risk of mortality from the virus, while the general population would be subject to no restrictions beyond guidelines to practice safe physical distancing. In this scenario, the overall number of COVID-19 cases would

be relatively high, but there would be relatively fewer severe cases, as susceptible and immune-compromised people would be shielded. Economic activity, at 95 percent of the baseline, would be far less affected.

For countries shaping strategies to emerge from current lockdown measures, shielding is one option to consider in the quest to minimize the risk of contagion while maximizing employment and economic activity. It could form a demographic dimension of the reopening strategy, alongside a geographic dimension (opening regions or cities with low viral transmission rates and stronger public-health systems first) and an economic dimension (opening sectors with the lowest risk of contagion first).<sup>14</sup>

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In Africa, the COVID-19 pandemic could have a devastating impact on both health and economies if it is not contained effectively. Governments and their partners need to act now to mobilize a large-scale ramp-up of health-system capacity and muster the resources needed to protect jobs and incomes across the continent. Tough choices lie ahead, but governments can adopt bold, innovative approaches to protect lives *and* safeguard livelihoods.

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<sup>13</sup> Caroline Favas, *Guidance for the prevention of COVID-19 infections for the prevention among high risk individuals in camp and camp-like settings*, London School of Hygiene and Tropical Medicine, March 31, 2020, [lshtm.ac.uk](https://www.lshtm.ac.uk).

<sup>14</sup> *How to restart national economies during the coronavirus crisis*, April 2020, [McKinsey.com](https://www.mckinsey.com).

# Methodology

**This methodology note addresses our methods for estimating the impact of COVID-19 on GDP, employment, health, and the need for medical supplies.**

## Impact on GDP

Our approach in estimating the impact of COVID-19 on Africa's GDP follows the same approach as our previous article in this series, "Tackling COVID-19 in Africa: An unfolding health and economic crisis that demands bold action", where we estimated a decline in GDP growth of between three and eight percentage points (3.9 percent growth falling to 0.4 to -3.9 percent). However, we make three methodological revisions that, on aggregate, slightly revise the GDP outlook to a decline from 3.9 percent to between 0.2 and -5.2 percent before accounting for a fiscal stimulus

- 1. Expanded country base.** The countries for which we model economic impacts are expanded from Angola, Kenya, Morocco, Nigeria, and South Africa to those five countries plus Egypt and Ghana. On aggregate, these countries capture about 60 percent of Africa's total GDP. We then extrapolate the proportional impacts of these countries to the rest of Africa, assuming a lower intensity owing to the remaining economies being less susceptible to some of the modeled impacts (for example, oil prices and tourism).
- 2. Continuous refinement.** We are keeping abreast of leading indicators that provide a sense of the impact being felt on the economy. We are continuously refining our assumptions and modeled impacts to reflect the evolving situation, both globally and in Africa. For example, this has led to our tracking economic disruptions more closely via the impact on reduced household consumption, rather than through supply-chain interruptions.

- 3. Incorporation of fiscal stimulus.** While we previously modeled just the pure economic shock to the economy from COVID-19, we have now updated our view to account for economic responses and stimulus packages that have been announced by various African governments. Based on a case study of responses announced by Angola, Kenya, Nigeria, and South Africa, we estimate a positive impact of these responses equivalent to a 1 percent boost to GDP, based on a fiscal multiplier of 0.8 to 1.3 conservatively, though it is anticipated to be greater in a recession. As these countries provide further details regarding the source of financing for the stimulus, we can further refine the multipliers (for example, reduced government operating expenditure versus new borrowing or debt relief). Assuming that more governments will announce similar responses as the situation evolves, we extrapolate this GDP boost to Africa as a whole.

## Impact on employment

Our approach to assessing the impact on Africa's labor force is split into modeling three distinct effects: job losses in formal employment, salary reductions in formal employment, and loss of activity in informal employment.

We make the important distinction between formal and informal employment, as the impact on each will be unique, given the structure of Africa's labor market. We combine the International Labour Organization's estimates of employment by sector (November 2019) with McKinsey Global Institute (MGI) estimates of formal versus informal employment to create our starting base. The following assumptions and methodologies are considered when estimating each category of effects:

- 1. Job losses in formal employment.** We model potential job losses in formal employment through the triangulation of three methods: the historical economic relationships between sector output and jobs (based on initial, direct, and indirect impacts), proportional losses to sector-specific GDP, and anecdotal evidence via business-sentiment surveys.



**2. Salary reductions in formal employment.**

We assess the number of jobs that could be subject to salary reductions through a combination of business-sentiment surveys, consumer-sentiment surveys, and expert input based on the evolving situation on the ground by sector.

**3. Loss of activity in informal employment.**

Given the complex nature of Africa's informal sector, assessing the employment impact is difficult because of the fluid state of activity (for example, many people may become underemployed rather than fully unemployed, or they switch their core trades and activities). We define informal employment as activity in own-account enterprises or as contributing family work. We therefore assess jobs that are "vulnerable" (at risk of furloughs, layoffs, or rendered unneeded), based on the type of occupation and sector.

**Impact on health and need for medical supplies**

Our approach to estimating the impact on health and the need for medical supplies is informed by proprietary 100-day projections of COVID-19 case growth for 50 countries in Africa.

- 1. Case growth:** We present two simplified and stylized case-growth projections. In a "robust containment" scenario, 0.1 percent of the continent's population (approximately 1.3 million) is infected after 100 days from today. In a "less effective containment" scenario, 1.0 percent of the population (13 million) is infected.

- 2. Medical supplies for hospitalization:** We extrapolated hospital supply requirements from a case-growth projection based on the globally recommended supply forecasting inputs from the World Health Organization (WHO), which we adjusted for Africa. We focused on the minimum procurement of select critical hospital supplies—for example, N95 masks, surgical masks, gloves, and ventilators—to cover case-load projections in each scenario. Note that these projections are only for hospital supplies (for healthcare workers and patients), not for the population at large (such as masks for day-to-day protection).

- 3. Test-kit supplies:** We extrapolated test-kit supply requirements from case-growth projections, using three testing strategy archetypes. The archetypes model different degrees of testing breadth, from testing only individuals with symptoms (or very close contact to confirmed cases) to testing a broader at-risk population, as modeled by South Korea.

- 4. Cost of all medical supplies:** The cost of both hospital and test-kit supplies was estimated using triangulated price data points from WHO, Africa Centres for Disease Control and Prevention, press reports, and examples of one-off procurement in Africa. The cost will remain volatile because of the limited supply and could also change as new technology (for example, rapid-test kits) or production comes online.

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