Capacity Imperatives of Pandemic Responses:

Building resilient health systems and ensuring socio-economic transformation in Africa

THE AFRICAN CAPACITY BUILDING FOUNDATION | FONDATION POUR LE RENFORCEMENT DES CAPACITES EN AFRIQUE

Securing Africa's future through capacity development

IsDB

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Foreword

African countries, like all other countries in the world, suffered the worst recession in more than 50 years in 2020 due to COVID–19. The pandemic has caused a surge in public financing needs as governments spend more to mitigate the socio-economic consequences of the crisis. African governments required additional gross financing of about USD125 billion to USD154 billion in 2020 to respond to the crisis. Across the continent, COVID-19 has disrupted millions of lives. Poor people and small and informal businesses are the most likely to be significantly affected. In addition to the health-related challenges caused by the crisis, the economic and social impacts are significant.

While the COVID-19 pandemic has heavy socio-economic, cultural, and health repercussions in Africa and beyond, one of the key lessons brought about by the pandemic is the understanding by all countries (developed and less developed) for stronger cooperation and strategic partnerships to build and build back better the post-COVID-19 world. It is, among other reasons, in that spirit that this study on the "*Capacity Imperatives of Pandemic Responses: Building resilient health systems and ensuring socio-economic transformation in Africa"* is being produced jointly by the African Capacity Building Foundation (ACBF) and the Islamic Development Bank (IsDB).

The speedy discovery of vaccines and their subsequent distribution and use in several countries to stop the spread of COVID-19 provides hope for African countries to return to normalcy and build back better their economies. A basic level of human and institutional capacities for state and non-state actors at the national, regional, and continental levels, however, is needed to underpin such renewed optimism for 2021. The good news shown by this study is that African countries have already established some best practices to improve readiness for future pandemics. For instance, early actions by governments - including formulating new policies, developing new guidelines and standard operating procedures, and establishing emergency organizing bodies and presidential task forces to respond to the COVID-19 pandemic - proved to be salutary to curbing the overall impact of the disease.

The study has highlighted the importance of building responsive health and socio-economic systems, including e-health infrastructure and social protection programs. With COVID-19 having exposed the fragility of health and socio-economic systems in Africa, strengthening the capacity of relevant institutions in terms of technical and financial resilience to effectively respond to emerging and re-emerging disease outbreaks and pandemics should, therefore, be a top priority. With the gradual availability of new and effective vaccines and therapeutics against the virus, this study complements the ongoing efforts by bringing to the fore the key capacity required by African countries to build resilient health systems and ensure the socio-economic transformation of the continent in view of future pandemics.

One of the key messages from the study is the urgency to invest in critical technical skills and the right institutions. There is a need for each country to fund and increase the numbers of committed and dedicated public healthcare and socio-economic workers, epidemiologists, laboratory analytics, researchers, infectious disease experts as well as national institutes for disease control and socio-economic development. Furthermore, there is a need for strengthened vector control and disease departments, and improvements in research and training portfolios to combat future outbreaks.

Going forward, ACBF and IsDB will engage countries and partners to work on specific areas, in line with the recommendations of the study, for the development and implementation of capacity development programs to build and build back better post-COVID-19 Africa. Together with our many partners in every part of Africa, ACBF and IsDB will continue to implement capacity development programs and interventions on both the premise and promise of the African Union Agenda 2063 and the 2030 Agenda. We hope that the recommendations and actions proposed in this document will contribute to "empowering people for a sustainable future" and ensuring that "Africa is capable of achieving its own development".

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The study benefited from wide consultations with individuals, institutions, and organizations from which they provided information and data on the prioritized research areas to supplement the findings from the secondary sources and to identify the key capacity imperatives of pandemic responses.

Acronyms

ACBF	African Capacity Building Foundation
ACDC	Africa Centres for Disease Control and Prevention
AHS	Africa Health Stats
AU	African Union
CDA	Causal Data Analysis
CDC	Centers for Disease Control
COVID-19	Corona Virus Disease of 2019
DRC	Democratic Republic of the Congo
ECOWAS	Economic Community of West African States
EDA	Exploratory (and Descriptive) Data Analysis
FGDs	Focus Group Discussion
GDP	Gross Domestic Product
GHS	Global Health Security Index
GNI	Gross National Income
HDA	Healthdata.africa
HIV/AIDs	Human Immunodeficiency Virus/Acquired Immunodeficiency Virus Disease Syndrome
ICU	Intensive Care Unit
IDA	Inferential Data Analysis
IR	Inception Report
IsDB	Islamic Development Bank
KII	Key Informant Interviews
MDB	Multilateral Development Bank
MHPSS	Mental Health and Psychosocial Support
MSMEs	Micro, Small and Medium-Size Enterprises
OECD	Organisation for Economic Co-operation and Development
PPEs	Personal Protective Equipment
RCCE	Risk Communication and Community Engagement
RECs	Regional Economic Communities
SADC	Southern African Development Community
SMEs	Small and Medium-Size Enterprises
SOP	Standard Operating Procedure
TA	Technical Assistance
TB	Tuberculosis
TOR	Terms of Reference
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
WAEMU	West African Economic and Monetary Union
WB	World Bank
WDIO	World Development Indicators Online Database
WFP	World Food Programme
WHDP	World Health Data Platform
WHO	World Health Organization
WISE	World Indicators of Skills for Employment (WISE) Database
WP	Work Plan

Executive Summary

Background

The Coronavirus Disease 2019 (COVID-19), a communicable respiratory disease caused by the novel coronavirus, was declared a global pandemic by the World Health Organization (WHO) on 11 March 2020. The first case of the disease on the African continent was confirmed on 14 February 2020. As of 10 January 2021, the African Centres for Disease Control (ACDC) declared that Africa had crossed the threshold of 3 million cases of coronavirus disease cases, with 72,000 deaths. South Africa alone accounts for more than 30percent of the total cases for the continent with more than 1.2 million reported cases, and 32,824 deaths. New mutations of the virus are being detected in patients around the world, including a UK variant, Brazil, and New York variants, and even a South African variant. The already fragile health systems of the continent were on the brink of being overwhelmed by the severe health consequences of the disease on populations, in addition to the devastating socio-economic impacts of the disease, including increased levels of unemployment, poverty, disruption to social services and social systems, and increasing inequalities.

The continent took quick measures to impose travel and trade restrictions, as well as border closures, in response to the COVID-19 global outbreak. By the end of March 2020, most African countries had declared a state of emergency, a public health emergency, or a state of disaster. These swift and early declarations of emergency, with various forms of restrictive measures, may have been a major factor in the limited spread of the disease compared to other regions and countries, which waited for the case numbers to accumulate prior to taking such measures. Further, virtually all countries announced and enacted fiscal packages usually consisting of economic stimulus measures meant to provide relief and assistance to the population and business in overcoming the economic consequences of COVID-19.

Aim and Study Approach

This study examines the capacity challenges experienced by African countries in their responses to the COVID-19 pandemic and proposes priority capacity development actions aimed at building resilient health systems and supporting socio-economic transformations for dealing with future outbreaks and pandemics. The study is based on an extensive review of the literature and online surveys targeted at selected African countries. The scope of the study is mainly centered on the African Capacity Building Foundation (ACBF) and the Islamic Development Bank (IsDB) implementation countries in the five regions of Africa. Specifically, the study covers ten countries,[1] two from each region, and provides insights and recommendations with respect to the capacities that are necessary for countries to enhance their preparedness and response to this and future pandemics.

Key Findings

Although the insights and lessons on this paper are mainly drawn from the COVID-19 pandemic, the proposed recommendations are still applicable to other pandemics or any health crisis. Using the Global Health Security (GHS) Index, the International Health Regulations (IHR) Coverage ratio, the World Health Assembly (WHA) Indicator and the United Nations Sustainable Development Goal 3 (SDG 3) on Health, the study analyzes the state of the health systems in the ten sample countries and finds that they all show various levels of vulnerabilities and weaknesses that must be addressed as the continent prepares for future pandemics. Several lessons are learned including the need for African ministries of health to build institutional and human capacity in key areas such as: good governance, accountability, and transformational leadership, in addressing policy gaps and vision, setting clear goals to enhance capacity development, capacity retention, and capacity utilization in Africa. This, in addition to strong leadership, planning and budgeting capacities, and establishing and strengthening partnerships and collaborative relationships, including South-South collaboration, will not only address the national gaps but also increase the level of responsiveness and pandemic preparedness.

The study also finds that early action by governments - including formulating new policies, developing new guidelines and standard operating procedures, and establishing emergency organizing bodies and presidential task forces to respond to the COVID-19 pandemic - proves to be salutary to curbing the overall impact of the disease. In addition, prior experience with previous epidemics, such as the Ebola virus disease, allowed countries, such as the Democratic Republic of the Congo and Nigeria, to quickly activate existing structures and mechanisms in response to the COVID-19 pandemic. Nevertheless, it is equally evident that by building and/or strengthening key institutions of development to ensure greater effectiveness, implementation, and sustainability, and by developing leadership capacity and changing mindsets, countries will be better positioned to upgrade their national health strategies, thereby elevating the functionality, robustness, and responsiveness of their health systems.

1. Mauritania, Egypt, Nigeria, Senegal, Congo Democratic Republic, Chad, Kenya, Sudan, Botswana, and Mozambique

The study further uncovers the need for African ministries of health to ensure readiness and preparedness for future pandemics by equipping themselves with a variety of staff - including technicians, intensive care unit (ICU) nurses, cardiologists, and infectious diseases experts; facilities – such as laboratories, infectious disease hospitals, isolation centers, wards, and quarantine facilities; and supplies made up of ICU equipment, personal protective equipment (PPEs), pharmaceuticals, ventilators, and oxygen supply systems. Due to the limited testing capacity in African countries, early detection and diagnosis remains a challenge. With treatment strategies focused mainly on individuals with symptoms, this implies that the transmission from asymptomatic cases remains unknown given the differences in the epi-scenarios across study countries, indicating the need to adequately equip and to build institutional and human capacity to effectively respond to emerging and re-emerging disease outbreaks and pandemics. However, in many countries, health facilities show low readiness levels to deliver quality health services. In Chad for example, only one in every three health facilities had access to electricity and two in every three had access to improved water sources. In addition, essential medical equipment - such as scales, thermometers, stethoscopes - and laboratory capacity were substandard. Therefore, investing in knowledge, research and development is critical not only for the current pandemic but other future epidemics.

African governments established some best practices to improve readiness for future pandemics. For instance, several African governments demonstrated leadership and effective management techniques that have played an important role in addressing the COVID-19 pandemic. These actions include monitoring and maintaining border security, disinfecting roads and public buildings, and operating military hospitals. In addition, police have been supportive in maintaining public order, enforcing social distancing, preparing emergency stocks of food, and producing and supplying free protective masks to the population. These are decisions and positive measures that can be capitalized on for future outbreaks.

Similarly, the study undertakes microeconomic analysis of the impacts of the COVID-19 pandemic on the study countries, and an overall analysis of the socio-economic impacts of the disease on human development, economic and social vulnerabilities in the ten study countries. The findings show that COVID-19 has been destructive, particularly on micro, small and medium-size enterprises (MSMEs). The pandemic also worsened the position of the most vulnerable segments of society, including those who had become newly vulnerable because of COVID-19 effects on their businesses and livelihoods. Furthermore, given that more than 60percent of the population in sub-Saharan Africa are smallholder farmers, and agriculture contributes about 23percent to the region's GDP, and that women constitute close to 70percent of the agricultural workforce in Africa, a clear focus of economic policy on women in the agriculture sector is imperative for countries to mount an effective pandemic response.

COVID-19 has also exposed some of the challenges and vulnerabilities faced by the continent, particularly with respect to countries' budgetary positions; thus, another key finding concerns most countries having not yet developed adequate debt management strategies to build resilience to the COVID-19 pandemic. Yet, building up financial resilience to face COVID-19 quickly became a critical necessity for countries. Traditional resource mobilization methods may not, alone, be the most effective means of achieving financial resilience for Africa. Considerable attention must be paid to new and innovative sources of resource mobilization, but also to developing better and more efficient use of the existing resources.

The above results point to the need for strengthening the macroeconomic management capacity of countries, particularly with regard to debt management and resource mobilization. This is to ensure macroeconomic readiness, as budget and macroeconomic stability is a necessary environment in which to effectively confront future pandemics. Similarly, African countries must continually strengthen their innovation capacity and support of all economic sectors, with particular focus placed on agriculture and the rural economy, and the informal economy in suburban vulnerable environments, such as the Kibera slums in Nairobi, and the slums of Kinshasa or Lagos, where most micro, small and medium-size enterprises (MSMEs) and women and youth-led businesses operate. The analysis further suggests the need to significantly reinforce social protection capacity in Africa. In the end, none of the above would be possible without strong transformative leadership.

Conclusion and Recommendations

Transformative and critical technical skills and capacity needs. The study identifies several key human and institutional capacity development needs that must be addressed to ensure the continent's readiness for future pandemics. Key among these is transformative leadership and the political commitment required from African governments to upgrade, overhaul, and prepare their health and socio-economic systems for future pandemics. Without political commitment, the weakness and fragility detected in African countries is not likely to be addressed, leaving countries vulnerable to future outbreaks.

Health institutional and human capacity challenges. Transformative leadership to drive a significant increase in government and donor investment is required to provide public health workers with critical technical skills such as capabilities in surveillance and data analytics, and institutional renewal such as state-of-the-art laboratories as key ingredients of pandemic readiness and preparedness. Prioritizing expansion of health budgets and accelerating health sector reforms that have been underway before the coronavirus disease pandemic struck will also position African countries to be well equipped for the next pandemic.

Socio-economic institutional and human capacity challenges. Transformative leadership is needed for socio-economic response measures and policies, including fiscal and monetary/financial measures. Socio-protection programs and critical technical skills also need to be strengthened across the board to reduce the severity of the economic impacts of pandemics on businesses and individuals. Governments should develop, expand, and strengthen support programs for MSMEs, and youth and women-led entrepreneurs to limit the disruption in their business activities during outbreaks. Plans for addressing adjustments in the Education sector that will be necessary for future pandemics must be pre-developed so that they are ready to be deployed without delay when needed.

Building operational and composite capacities through resource mobilization and partnerships. Given the dire financial and economic conditions in which several African countries found themselves at the outset of the COVID-19 pandemic, moving forward, it will behoove governments to put in place organizational arrangements, results-based management systems and strategic planning processes to develop sustainable ways and means of resource mobilization, in partnership with the private sector and development partners, in order to bolster their ability to quickly develop and fund response plans to future pandemics. Such resource mobilization measures should further explore domestic and innovative sources to maximize the potential for resource mobilization. Partnerships - including with non-governmental organizations, multilateral and bilateral partners, South-South cooperation, and the private sector - are crucial and must, therefore, be strengthened based on the lessons learned from the COVID-19 pandemic to better prepare countries to respond swiftly and effectively to future outbreaks and pandemics.

Using and looking beyond the Global Health Security (GHS) Index to improve health systems. The GHS Index reveals promise as a valid tool to guide action on biosafety, biosecurity, and systems preparedness indicating health systems, particularly in Africa, where health systems are still not well prepared to respond to pandemics. However, countries need to look beyond existing GHS Index metrics to other factors moderating the impact of future pandemics and other biothreats. Consideration of anthropogenic and large catastrophic scenarios is needed in Africa for innovation and new, evidence-based approaches to succeed, especially during preparedness, response and recovery of disease outbreaks, and pandemics. Readiness will again necessitate strong leadership, accountability, partnership and collaboration between governments, private sector, and international partners to effectively address the gaps in policy, research, and governance.

Chapter I - Introduction

1.1 Background and Context

The coronavirus outbreak was declared a global pandemic by the World Health Organization (WHO) on 11 March 2020, owing to its rapid spread across the globe, including Africa. The COVID-19 pandemic has proved disastrous for the world's health and economies. As of 24 February 2021, at 4:06 GMT, 112,754,519 COVID-19 cases have been confirmed, with 2,498,675 deaths and 88, 323,208 recovered globally (Worldometers, 2021).

In Africa, the Africa Centres for Disease Control and Prevention (Africa CDC or ACDC) has played a critical role in combating the pandemic and conducting research in the region, in collaboration with the African Union (AU). Africa CDC's real-time surveillance of COVID-19 cases and analyses of surveillance data inform public health policies, communication about protective behaviors, and guidance to public health and healthcare providers, communities, businesses, and schools (ACDC, 2020). On 27 November 2020, the ACDC officially declared that Africa had entered the second wave of the coronavirus infection. Moreover, the virus has now mutated into new variants, including the United Kingdom, South Africa, and Brazil variants, and these may be more infectious and more deadly than the original strain. Contrary to the rapid decline in reported cases seen in the months of July and August 2020, the continent began to experience a reverse trend in October 2020, prompting the ACDC to recommend that countries should continue to strengthen their surveillance systems and their health systems in general. As of 24 February 2021, data from Africa reveals a total of 3,874,338 infection cases, with 102,333 deaths, and 3,423,783 recoveries (Worldometers, 2020).

Pandemics have the potential to cause three waves of morbidity and mortality: the first is due to the disease itself; the second is due to the inability of health systems to maintain adequate and commensurate health services; and the third has to do with the social and economic issues that can be ascribed to the outbreak. These social and economic issues include increased levels of unemployment, poverty, disruption to social services and social systems, and increasing inequalities. Response strategies must prioritize strengthening human and institutional capacity and building systems that are resilient and capable to withstand such shocks in the future. Other infectious diseases - such as tuberculosis, malaria, Ebola, human immunodeficiency virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) – remain widespread on the continent. As a result, the challenge remains as to how to strengthen the capacity of its health systems to detect, treat, and stop the spread of future pandemics before a future outbreak overwhelms Africa's already weak health systems.

Government leaders in the continent took quick measures to impose border closures and travel and trade restrictions in response to the COVID-19 global outbreak. However, as government officials were faced with severe economic impacts, they gradually eased restrictions, including travel restrictions. Consequently, it is estimated that during the 30-day period between 20 November 2020 and 20 December 2020, Africa reported 454,000 new cases of coronavirus infections, representing 18percent of the 2.5 million total cases as of that time period (Reuters, 2020). As a result, several countries in the region have reverted to lockdowns, curfews, and restrictions on gatherings, particularly at the approach of 2020 Christmas and New Year's celebrations.[2] In Nigeria, indefinite school closings were ordered, and concerts, carnivals, and street parties were banned in Nigeria's Lagos State as of 18 December 2020, in response to the spike in new cases of corona virus in the country.

Considering their COVID-19 experiences, many African countries are faced with several pressing questions with respect to the health and socio-economic impacts of any future pandemics. Among them are the following:

- How did COVID-19 impact the health sector?
- What capacities are needed to build a robust health system including upgrading and overhauling the health infrastructure?
- What capacities are needed to improve disease control and surveillance, speed up laboratory testing, and strengthen data analytics to improve rapid responses?
- How will COVID-19 impact the leading economic sectors and the MSMEs (micro, small, and medium-size enterprises)?
- What are the impacts on employment opportunities at the sub-national levels?
- What additional pressures will be put on social protection services and programs, particularly with regard to the most vulnerable, newly vulnerable, the poor, and the elderly?

2. Reuters (20 December 2020)

- What additional fiscal pressures will be put on governments' budgets as they are faced with restricted fiscal space at the same time as significant additional expenditures needs?

In this context, generating comparable evidence from multiple African countries and programmatic circumstances is critical to advancing better understanding of the pandemic effects, recovery process on health and socio-economic opportunities, including broader lessons learned to inform the response towards future pandemics. While cases of COVID-19 in the Africa region remain comparatively low, the region remains at risk of sustained outbreaks that could quickly overwhelm health systems and push affected countries into crisis (WHO, 2020). Even without significant outbreaks, COVID-19 has the potential to wipe out a decade of economic growth. A sustained economic downturn would have far-reaching consequences for social cohesion and human development in the region (AfDB, 2020).

To support the capacity imperatives to the responses, the ACBF in partnership with the IsDB developed this knowledge product to identify the capacities required for pandemic preparedness and responses needed from the health, social, and economic sectors in Africa. The study aims to help build resilient health systems and resilient socio-economic systems as key ingredients in the socio-economic transformation in Africa. The study findings are expected to become the blueprint for African policymakers about the continent's preparedness and resilience as they confront COVID-19 and future pandemics. The study implementation employed multi-pronged strategies with multilayered country partnerships that seek to: (a) draw lessons learned on COVID-19 response actions; and (b) adopt the Standard Operating Procedure (SOP) materials, and tools used by the WHO and Africa Centre for Disease Control (CDC) for epidemic responses to assess the capacity imperatives.

1.2 Imperative and Objectives of the Study

This study examines the capacity challenges experienced by African countries in their response to the COVID-19 pandemic, addresses the post-COVID-19 challenges, and proposes priority capacity development actions aimed at building resilient health systems and supporting socio- economic transformations. The scope of this study is mainly centered on some of the ACBF and IsDB implementation countries in the five regions of Africa (as defined by the African Union). Specifically, the study covers ten countries[3] and provides insights and recommendations with respect to the capacities that are necessary for countries to enhance their preparedness and response to this and future pandemics.

The specific objectives under this study are:

1. To explore the impacts of COVID-19 on the health systems and socio-economic activities such as food supply chain, education, SMEs, etc. in Africa and the implications for capacity development in African countries;
2. To assess the priorities for building human and institutional capacities for African countries (both public sector and non-state actors) in the fight against health pandemics such as COVID-19 while referring to and benefiting from relevant WHO guidelines;
3. To identify and document the lessons learned in capacity building to fight pandemics such as COVID-19 in Africa drawing from best practices from outside the continent (Chile, Bolivia, Brazil, and Afghanistan etc.); and
4. To propose policy recommendations and capacity development actions to address the priority capacity gaps identified indicating the appropriate roles for governments and non-state actors, regional economic communities, continental bodies, and development partners involved in the fight against pandemics such as COVID-19. Furthermore, the study highlights the role of South-South cooperation in addressing the capacity gaps.

1.3 Partnership Around the Study

The ACBF is the African Union's Specialized Agency for Capacity Development in Africa. For over three decades, ACBF has spearheaded and robustly coordinated capacity development programs worth over USD 700 million across 48 countries and eight Regional Economic Communities (RECs) in Africa. Since its inception in 1991, ACBF has gathered the requisite experience that makes it the go-to institution for expert knowledge and human resources on capacity development to facilitate the timely implementation of the continental and national development agendas[4]. ACBF places a premium on the need to strengthen the capacity of the core public sector to implement policies; deliver programs in an effective, transparent, and accountable manner; and empower non-state actors to advocate for, or demand, responsiveness, and results from public service institutions.

3. Mauritania, Egypt, Nigeria, Senegal, Congo Democratic Republic, Chad, Kenya, Sudan, Botswana, and Mozambique
4. https://www.acbf-pact.org/media/video/how-africa-can-build-capacity-against-covid-19-shocks (accessed on 27 November 2020)

The IsDB is a multilateral development bank (MDB) working to improve the lives of those it serves by promoting social and economic development in 54 member countries and Muslim communities worldwide, delivering impact at scale. IsDB enables member countries to grow their economies and societies, so they may embrace the challenges and opportunities of our modern world by focusing on science, technology, and innovation-led solutions to the world's greatest development challenges through boosted connectivity and funding, and a focus on the United Nation's Sustainable Development Goals.

This study was designed through a highly collaborative process, involving multi-layer partnerships with the ten selected countries across the five regions of Africa. Working with the national governments, civil society partners, and other key actors in health and socio-economic sectors. These stakeholders were involved in the development of this study, especially in the collection of country-specific data.

Chapter II - Methodology

2.1 Approach and Study Questions

The study is based on an extensive review of the literature/desk research to collect secondary data and information and on-line surveys to collect primary data targeted at a sample of African countries across the five geographic regions (as defined by the African Union). The specific questions to be explored during the study are along the lines of the two dimensions and four capacity sets as defined by ACBF (ACBF and AUC, 2016).

The human capital dimension includes:

1. Critical technical skills required to deal with future pandemics in the public and private sectors as well as for non-state actors; and
2. Transformative leadership required to change mind-sets and to build a coalition of champions and change agents.

The institutional dimension focuses on:

1. Operational capacity to strengthen institutions, policies and systems at the country, regional, and continental levels; and
2. Composite capacity to strengthen strategic planning, project planning, communication, coordination, and partnership development.

Key questions explored that are linked to the study objectives are shown in Box 1.

Box 1: Key study questions

In critical/technical skills some of the questions to be explored in the study include:

- What critical technical/specialist skills are currently available to respond to the health and socio-economic challenges in fighting pandemics in African countries?
- What critical technical/specialist skills are required in African countries to respond effectively to emerging health and socio-economic crises to fight pandemics using comparators/benchmarks from countries with best practices?
- What are the gaps in human critical technical/specialist skills in African countries in responding to emerging health and socio-economic crises to effectively fight pandemics?

In the area of transformative leadership questions to be explored include:

- Do African countries have established leadership structure(s) at the highest level of government to fight pandemics?
- Do African countries have dedicated specialists (e.g., scenario planners, health emergency specialists etc.) to support leadership at the highest level of government to fight pandemics?
- What transformative leadership capacity is required to effectively fight pandemics?
- Do community/traditional leaders have the capacity to support the fight against pandemics?
- Are business leaders contributing effectively to the fight against pandemics?

In the area of operational capacity, some of the questions to be explored in this study include:

- What institutions/institutional structure(s) exist to fight pandemics? Where are the gaps?
- What institutional coordinating mechanisms exist to ensure an effective fight against pandemics? Where are the gaps?
- What institutional structures are required to effectively fight pandemics?
- What policies, systems, and processes are in place to support the fight against pandemics?
- Are existing policies, systems, and processes adequate? What changes are required?

In the area of composite capacity, questions may include, but are not limited to, the following:

- What composite capacity exists to fight the pandemics? (e.g., strategic planning, electronic monitoring – trace and track systems, testing systems, communication systems etc.)
- What composite capacity is required to effectively fight the pandemics?

Source: Authors' compilation

2.2 Sampling and Selection of Target Countries

The selection of the study countries was carried out following a quota selection method. A quota sample is a type of non-probability sample in which the researcher selects sample units according to some fixed standard. The implication is that units are selected into a sample based on pre-specified characteristics so that the total sample has the same distribution of characteristics assumed to exist in the population being studied.

In this study, several distinctive characteristics of the continent were considered, including regional/geographic diversity, linguistic diversity, country size (small vs. large), in addition to countries' institutional membership in both the ACBF and the IsDB. Regarding the last criterion, the study looked to strike a balance between member countries which are common to the two institutions (namely, ACBF and IsDB).

Based on the characteristics, two countries were selected from each of the five regions of the African Union (North Africa, West Africa, Central Africa, Eastern Africa, and Southern Africa) for a total representation of ten countries, including Francophone, Anglophone, Arabophone, and Lusophone countries. In addition, the sample features a mix of large and small countries, as countries such as Nigeria, Egypt, Sudan, and Democratic Republic of the Congo are relatively large, whereas others such as Botswana, Mozambique, Chad, and Senegal are relatively small. Table 1 lists the countries selected for the study.

Table 1: Selected Survey Country Sample

Region	Selected Target Country
Northern Africa	1. Mauritania 2. Egypt
Western Africa	1. Nigeria 2. Senegal
Central Africa	1. Congo Democratic Republic 2. Chad
Eastern Africa	1. Kenya 2. Sudan
Southern Africa	1. Botswana 2. Mozambique

Source: Based on the list of ACBF/IsDB operational countries in Africa.

2.3 Methods of Data Collection and Analysis

2.3.1 Pre-Planning

Several activities enabled the development of an initial time/task forecast to cover the evaluative questions **(Annex B**: Survey Instruments – namely, Health & Socio-economic Components), including examination of inception documentation list provided by ACBF team, feedback from IsDB, the initial questionnaire, and feedback during inception meeting with the ACBF team members, desk research, and literature review.

2.3.2 Data Collection

The primary data were obtained by consulting various country experts, surveyed mainly through use of the online platform and data collection tool, SurveyMonkey as well as directly sending the survey instrument to resource-persons[5]. The focus was placed on those personnel who are directly responsible (or should be) for the incorporation of COVID-19 responses into their respective spheres of programming in national and sub-national contexts, including implementation and monitoring. This scope considers and builds on ACBF capacity development framework.

In addition to the primary data, secondary data were collected mainly from reputable sources such as the African Union Commission (AUC), the African Development Bank (AfDB), the United Nations (UN), and the World Bank data portals. Additional information was also obtained from published literature and review of relevant technical reports, including news sources.

2.3.3 Data Analysis

The data and information collected from the survey and secondary sources were analyzed according to the international standard methods of analysis pertaining to each component of the study. Both quantitative and qualitative data analysis methods were employed. With regard to quantitative analysis, whenever possible, data visualization was used to extract useful insights into the potential meaning of the data presented for countries as they mount responses to the COVID-19 pandemic. This sort of Exploratory and Descriptive Analysis (EDA), conducted through visual methods and data analysis, is also an attempt to establish potential relationships and connections among various variables.

The EDA method does not have predictive power and cannot be used to establish any causal relationships. It was, therefore, bolstered by a Cohort Analysis approach. This is an analytical method that allows each subject (in this case each country) to be analyzed as a unit within a related group instead of examining the country as an isolated unit. By using this analytic methodology, it is possible to gain insight into the impact of the pandemic on, for instance, a specific country while also gaining an understanding of a wider target group, such as regional groupings. Hence, the analysis will in many cases examine countries within their regional/geographical groupings, such as North Africa, West Africa,

5. The survey instruments are found in the Annex to this report.

East Africa, Central Africa, and Southern Africa, allowing the analysis to take cognizance and advantage of the common traits that may characterize each cohort.

The methods described above have allowed for the application of Predictive Analytics to the study. More specifically, based on the patterns and trends in the data, established, for instance, through indicators of health, economic, and social vulnerabilities present in countries prior to the pandemic, the study can develop informed projections of how things may unfold with regard to future pandemics if no corrective actions are taken today. With this understanding, countries are in a better position to take preventive action and adopt policies now that are likely to reduce their vulnerability and strengthen their resilience when faced with future pandemics.

With regard to qualitative analysis, the experts' experience, and knowledge of the African continent, as well as the institutional extensive networks made available both by ACBF and IsDB, often constituted a driving force in analyzing and understanding the data as well.

The study will prove useful to policymakers. Based on the key findings, responsive and practical strategies were developed and recommended for consideration by countries as they fight COVID-19, plan for the post-COVID-19 rebuilding and recovery and ramp-up readiness for potential future pandemics.

2.3.4 Limitations of the Study

The key limitation that can be identified in the conduct of this study concerns the inability of the team to administer important portions of the survey in person due to the risks associated with COVID-19 and continuing travel restrictions and health safety protocols in place throughout the continent. For instance, focus group interviews are best held in person; as well, some key informants such as Ministers and Senior-level officials may lack time to fill out a survey but may have been able and willing to make time for an in-person interview. The team, therefore, has no other choice but to rely entirely on on-line survey approaches, direct e-mailing of questionnaires, on-line interviews, and desk-top research for its data collection.

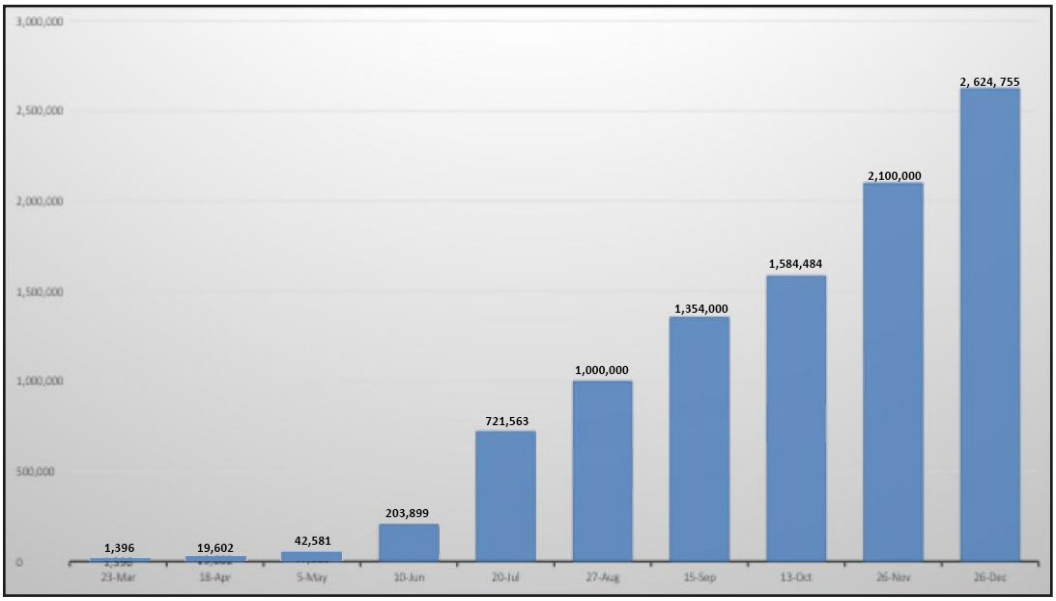
However, the online survey was greatly affected by internet connectivity issues, internet data costs, lack of response from many of those who completed the questionnaire, and a lack of physical guidance to the interviewee as opposed to direct questionnaire administration. Accordingly, it was expected that this may have affected the response rate to the survey. The team, nevertheless, used its own experiences and knowledge of the African continent, as well as the vast knowledge base accumulated by ACBF and IsDB on capacity needs in Africa, to mitigate some of the negative impact of the coronavirus pandemic on the conduct of the study.

Chapter III - Health and Socio-economic Impacts of COVID-19 and Government Responses in Africa

3.1 Overall Trends in the COVID-19 Data for the African Continent

Since its first confirmed COVID-19 case in February 2020, Africa has seen widespread rises in both the infection and death rates caused by the disease. Figure 1 reveals an exponential increase in total COVID-19 cases in Africa from a "low" total number of infections of 1,396 on 23 March 2020, to a considerably higher number of infections of 2,624,755 on 26 December 2020 (see Figure 1). As indicted earlier in the report, it should be underlined here that the number of COVID-19 infections in Africa rises daily, prompting the Africa CDC to declare the emergence of a second wave of the pandemic, with new restrictive measures being taken by Governments in the countries that are most affected.

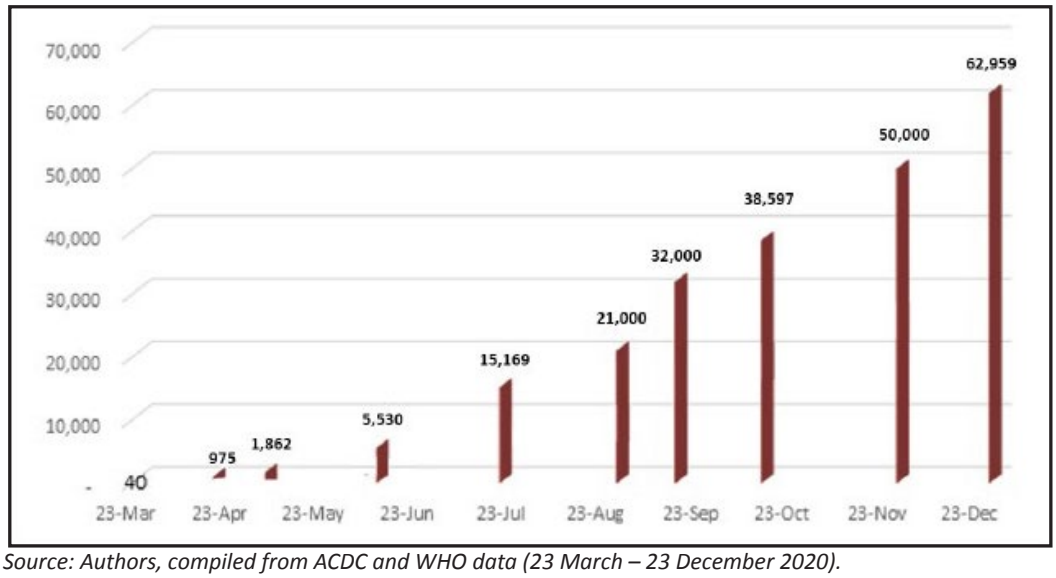
Figure 1: Number of COVID-19 Infections



Source: Authors, Compiled from ACDC and WHO data (23 March to 23 December 2020).

By the same token, COVID-19-related fatalities have steadily or exponentially risen since the beginning of the pandemic on the continent (see Figure 2). On 23 March 2020 for instance, the official death toll due to COVID-19 in Africa amounted to 40; but just a few months later, on 28 January 2021, the total number of coronavirus fatalities on the continent had climbed to 88,993, according to the Africa CDC, and this number also keeps rising daily (ACDC, 2020).

Figure 2: Number of COVID-19 Deaths



Source: Authors, compiled from ACDC and WHO data (23 March – 23 December 2020).

3.2 Trends in COVID-19 Infection Cases in Selected African Countries

Table 2 reveals the infections cases and COVID-19-related deaths in the ten African countries selected for in-depth analysis in this study. The table reveals some of the regional differences in the coronavirus infection rates in Africa. In the study sample, the highest number of COVID-19 infections and deaths occurred in Egypt[6], followed by Nigeria, Kenya, Senegal, and Sudan. Chad had the fewest number of infections and deaths in this sample.

According to the results presented in Table 2, Sudan did not register any active COVID-19 cases and deaths within 24 hours as of 4 January 2021. However, Egypt had the highest number of active COVID-19 cases (1,309) and registered 10,353 cumulative deaths in the last 24 hours as of 4 January 2021. The number of active cases for the other countries are as follows: Botswana (780); Mauritania (722); Democratic Republic of the Congo (474); Mozambique (326); Nigeria (1,653); Senegal (371); and Kenya (220). Meanwhile Chad and the Democratic Republic of the Congo did not register any COVID-19-related deaths in the 24 hours prior to 4 January 2021. During the same period, Mauritania registered 434 cumulative deaths, Kenya registered 1,817, Nigeria registered 1,831, Mozambique registered 587, and Botswana registered 254

Table 2: Trend of COVID-19 Cases in Ten Selected Countries in Africa

Country	Total Confirmed Cases	Active Confirmed Cases	Recovery	Active cases within 24 hours	Deaths Confirmed
Northern African Region					
Egypt	178,151	1,309	131,211	608	10,353
Mauritania	17,083	722	7,011	12	434
West African Region					
Nigeria	151,553	1,653	48,836	645	1,831
Senegal	32,630	371	11,718	252	795
Central African Region					
Chad	3,794	56	967	18	133
DRC	25,079	474	16,135	116	700
East African Region					
Kenya	103,993	220	24,147	152	1,817
Sudan	30,128	00	6,760	00	1,864
Southern African Region					
Botswana	26,524	780	624	00	254
Mozambique	54,968	326	4,064	764	587

Source: WHO (2020).

3.2.1 Percentage of Deaths per Confirmed Cases in Selected Study Countries

Sudan, Egypt, and Chad show the highest percentage deaths per confirmed cases ranging from 3.5percent to 6.19percent (see Table 3). This means that the likelihood of an infected person dying in those three countries is high and most likely due to health care issues, testing capacity, management, and control as compared to Botswana, Senegal, Nigeria, Mozambique, and Kenya combined. It is noted that Botswana, Senegal, Nigeria, Mozambique, and Kenya have the lowest percentages of deaths per confirmed cases ranging from 0.96percent to 1.75percent of deaths per confirmed cases. This is likely due to the relatively strong human and technical capacity to detect and manage the cases, infection control, and surveillance.

6. For Africa as a whole, South Africa maintains the highest number of infection cases and deaths, having crossed the 1 million infection cases mark.

Table 3: Per Capita Deaths and Percentage of Deaths per Confirmed COVID-19 Cases in the ten countries study

Countries	Population size	Confirmed cases of COVID-19	Deaths	Death per Overall population (100,000)	Percentage deaths per confirmed cases	Overall GHS index	GHS Index measure of robustness of health sector
Egypt	104,258,327	178,774	10,404	10	5.82	39.9	15.7
Sudan	43,849,000	30,205	1,871	4	6.19	26.2	14.3
Kenya	102,334,000	104,306	1,827	2	1.75	47.1	20.7
Nigeria	206,140,000	152,616	1,862	1	1.22	37.8	19.9
DRC	92,377,993	25,079	700	1	2.79	26.5	11.8
Senegal	16,744,000	33,099	172	1	0.52	37.9	18.5
Mozam-bique	31,255,000	56,160	599	2	1.07	28.1	17
Chad	16,426,000	3,868	135	1	3.49	28.8	6.6
Mauritania	4,775,119	17,110	435	9	2.54	27.5	17
Botswana	2,351,627	26,524	254	11	0.96	31.1	13.33

Source: Compiled by authors using data from GHS Index (2020) and WHO (2020).

Furthermore, it has been established that some correlation exists between the variables of percentage per case confirmed with the overall Global Health Security (GHS) Index, and the GHS Index measure of robustness of health sector as detailed in Table 3.

3.2.2 Per Capita Deaths in Selected Study Countries

From Table 3, the per capita deaths due to COVID-19 range from 1-10 per 100,000, with Botswana showing the highest number of deaths per capita (11), followed by Egypt (10), and Mauritania (9). This means the above countries have populations that are more vulnerable to COVID-19 infection and deaths. However, countries such as Chad, Democratic Republic of the Congo, Nigeria, and Senegal have the fewest per capita deaths, implying that for most of the labor force, the risks of COVID-19 infection and death are relatively below that of other countries in the sample.

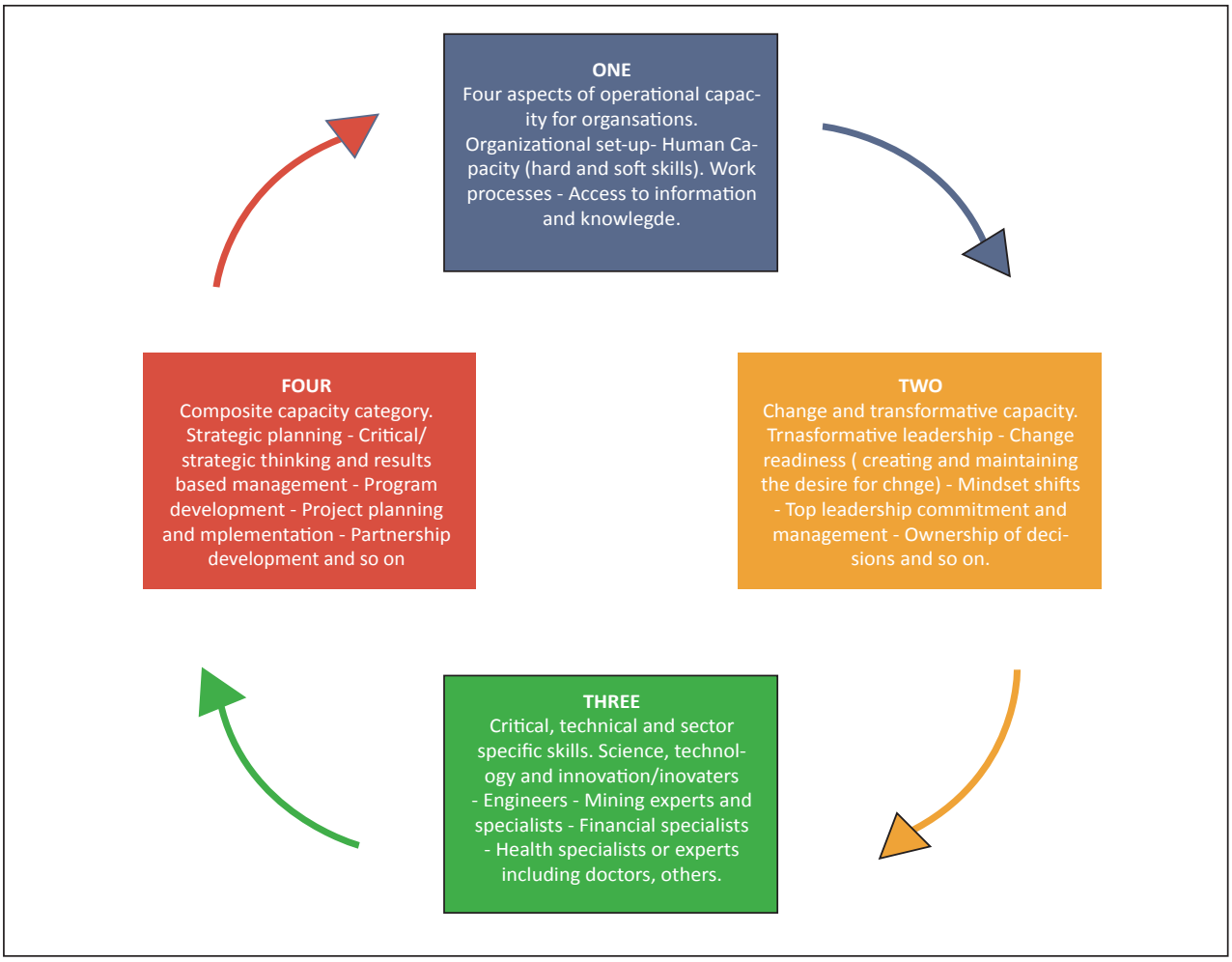
3.2.3 Correlation Analysis

Using data on per capita deaths, the study investigated the correlation among the three variables: percentage deaths per confirmed cases of COVID-19; the overall GHS Index of countries mentioned; and GHS Index measure of robustness of health sector indexes (see Annex C). The analysis reveals that percentage deaths, confirmed cases, and overall GHS Index are negatively correlated; this indicates the importance of good health index score if countries are to experience lower death rates.

Considering the disparity across the ten study countries in the GHS Index, International Health Regulation (IHR) core capacity index, and deaths per capita of confirmed cases, African countries should continuously cross-check their epidemiological data under different indexes and ensure their consistency and develop their specific health capacities and critical technical skills.

The health sector capacity development and critical technical skills are vital for successful pandemic control, socio-economic development, and the realization of the SDG 3, Target on Health Sector for Africa. Therefore, the ACBF Conceptual Framework for Capacity Development in Box 2 can be used effectively to assess, build, and sustain capacities in the era of COVID-19 in Africa.

Box 2: Conceptual Framing of Capacity Sets for Sustainable Development in Africa



Source: ACBF (2019).

The questionnaires and key informants' (KI) interview responses in selected countries, reiterated facts from the Conceptual Framework on Capacity Imperatives for the SDGs in Africa, with specific interest on SDGs 3 Target (ACBF, 2019).

3.3 Government Responses to the COVID-19 Pandemic in Africa

3.3.1 The Initial Emergency Responses

One of the hallmarks of the African government responses to the coronavirus pandemic was that virtually all countries swiftly recognized and declared it to be a grave health emergency. Moreover, many countries did not wait for a rise in the number of cases before making such emergency declarations. By the end of March 2020, most African countries, including one with zero official cases (Sierra Leone) and several with one to three cases only, declared a state of emergency, a public health emergency, or a state of disaster, because of the COVID-19 outbreak. These swift and early declarations of emergency measures, with various forms of restrictive programs, may have been a major factor in the relatively limited spread of the disease compared to other regions and countries that waited for the case numbers to accumulate prior to taking such initiatives (see Table 3).

Aware of the weaknesses in their health systems and building on prior experiences with epidemics such as Ebola and Lassa fever, African countries did not wait for the situation to get out of hand before reacting forcefully to the threat of coronavirus. In the end, this quick response may have saved millions of lives when compared to the initial predictions from several international and continental institutions. African countries will be well served to carry over this disease outbreak awareness capacity into the future when the continent is faced with future pandemics. Though most African countries had low numbers of confirmed COVID-19 cases at the onset of the pandemic, they nevertheless adopted swift and forceful responses, such as declaring states of emergency in compliance with the global health regulations (see Table 4).

3.3.2 Challenges Faced by African Countries in their Initial Health Responses to COVID-19

Testing, Contact Tracing, and Early Diagnosis Capacities

Although testing capacity has greatly improved across the continent, at the outset of the pandemic many African countries were faced with a severely limited capacity for testing and contact tracing. Consequently, it became very difficult for many countries to deploy an effective strategy against this pandemic without an accurate assessment of the number of people infected. The first case of COVID-19 on African soil was confirmed on 14 February 2020. Yet, as of 4 June 2020, 3.4 million tests had been conducted across Africa for a continent of 1.3 billion, which was far behind the Africa CDC goal of conducting at least 10,000 tests per 1 million people. At that point only 1,700 tests were being conducted per million in Africa compared to 37,000 per million in Italy and 30,000 per million in the United Kingdom[7]. Testing capacity varied from one country to the next. Though most African countries had low numbers of confirmed COVID-19 cases, they nevertheless adopted swift and effective responses such as declaring states of emergency in compliance with the global health regulations (see Table 4).

Table 4: African Countries: Emergency Declarations in Response to COVID-19

Country	Type of Emergency Declaration	Date of Announcement	Number of Confirmed Cases
Angola	State of Emergency	25-Mar-20	2
Botswana	Public Health Emergency [*on 10 April (13 confirmed cases) the President declared a national State of Emergency]	31-Mar-20	13
Burkina Faso	Public Health State of Alert	26-Mar-20	114
Cabo Verde	State of Emergency	28-Mar-20	5
Cote d'Ivoire	State of Emergency	23-Mar-20	25
Chad	State of Emergency	19-Mar-20	1
Democratic Republic of the Congo	State of Emergency	24-Mar-20	26
Egypt	State of Emergency (Extension)	19-Apr-20	3,032
Equatorial Guinea	State of Emergency	22-Mar-20	6
Eswatini	State of Disaster	27-Mar-20	6
Ethiopia	State of Emergency	8-Apr-20	82
Gabon	State of Emergency	10-Apr-20	57
Gambia	State of Emergency	21-Mar-20	1
Guinea	State of Emergency	27-Mar-20	5
Guinea Bissau	State of Emergency	27-Mar-20	2
Kenya	State of Emergency	13-Mar-20	1
Lesotho	State of Emergency	18-Mar-20	0
Liberia	Public Health Emergency [*on 8 April (14 confirmed cases) the President declared a national State of Emergency]	21-Mar-20	3
Madagascar	Public Health Emergency	21-Mar-20	3
Mauritania	Public Health Emergency	14-Mar-20	1
Malawi	State of Disaster	20-Mar-20	0
Morocco	Public Health Emergency	23-Mar-20	115
Mozambique	State of Emergency	27-Mar-20	7
Nigeria	State of Emergency	27-Mar-20	1
Namibia	State of Emergency	18-Mar-20	2
Niger	State of Emergency	27-Mar-20	10
Democratic Republic of the Congo	Public Health Emergency	28-Mar-20	19
Senegal	State of Emergency	24-Mar-20	79
Sierra Leone	State of Emergency	25-Mar-20	0
South Africa	State of Disaster	15-Mar-20	24
Sudan	State of Emergency	16-Mar-20	1
Togo	Public Health Emergency	01-Apr-20	34
Zimbabwe	State of Disaster	23-Mar-20	2

Source: Milken Institute (2021).

7. https://news.yahoo.com/south-africas-hotspot-limits-most-135642307.html (accessed on October 21, 2020)

The principal challenges faced by African countries during the COVID-19 pandemic included fragile and strained health care systems coupled with inadequate resources for health and insufficient numbers of nurses, midwives, doctors, hospital beds, intensive care unit beds, and ventilators. In addition, most African countries heavily depend on other nations for pharmaceutical products, with 94percent of the stock of pharmaceuticals being imported. In addition, most African health care systems lack critical health infrastructure, which negatively impacted the continent's preparedness for the COVID-19 pandemic. For instance, only Egypt, South Africa, and Cameroon had better health care infrastructure when compared to other African countries (Mishra, 2020). Furthermore, testing capacity is limited, and the continent's testing rate is the lowest in the world. Africa CDC anticipates that African needs above 15 million test kits.

Unprocessed tests resulting from most laboratories in Africa being understaffed created bottlenecks in the processing of test samples. As a result, the number of tests received exceeds the capacity to deliver results quickly, and the turn-around time lasted approximately two weeks. Such delays create the possibility that the current COVID-19 cases could be lower than the actual number of infections (Mishra, 2020). Structural challenges in health systems also resulted from the fact that most African countries do not manufacture diagnostics tools domestically. In addition, African countries do not produce vaccines, leading to trickle-down diagnostics and high dependence on imports, making African health security extremely vulnerable.

Insufficient testing laboratories at the start of COVID-19 pandemic were endemic. The continent of Africa had only two testing laboratories - the Institute Pasteur (Senegal) and the National Institute of Communicable Diseases (South Africa) - and these were used primarily to carry out training and testing for non-African countries. Consequently, African countries have the lowest testing rates per 1,000 people. Generally, African countries had conducted about 13 million tests for COVID-19 with tests per reported cases ratio of 9.7percent and a positivity rate of 10.3percent (Mishra, 2020).

For instance, as of 22 February 2021, Kenya had conducted 1,269,346 tests - the highest number on the continent; that was followed by Botswana, 778,246 tests; Senegal, 375,452 tests; Egypt, 25,000 tests; and Chad, 3,743 tests. However, with a population of almost 200 million, Nigeria had conducted only 50,000 tests as of 30 April 2020 (see Table 5).

Table 5: Testing Capacity/Testing Carried out for COVID-19 in the Ten Sample Countries

Country	No. of Tests Carried	Date
Botswana	778,246	22 Feb. 2021
Chad	3,743	29 Sept. 2020
Democratic Republic of the Congo	10,937	28 Sept. 2020
Egypt	25000	10 April 2020
Kenya	1,269,346	22 Feb. 2021
Mauritania	165,635	24 Jan. 2021
Mozambique	406,550	22 Feb. 2021
Nigeria	50,000	30 April 2020
Senegal	375,452	22 Feb. 2021
Sudan	300,958	31 Jan. 2021

Source: Compiled by authors using data from Alhas (2020); Pathologists Overseas (2020); WHO (2021); and Worldometers (2021).

Testing capacity is important and relevant for future pandemics because one of the characteristics of effective disease control remains early diagnosis. Three months into the COVID-19 outbreak, Africa CDC had estimated that the continent would have needed to have conducted 15 million tests to build the capacity to accurately estimate the number of cases of infection on the continent. This could establish a benchmark for early diagnostic capacity when the continent is faced with future outbreaks.

The health workers in charge of conducting the coronavirus tests also needed to be adequately equipped with the proper protective gear - called personal protective equipment (PPE) - necessary for them to work safely and not become infected themselves. PPEs include clinical gowns, surgical facemasks or respirators, gloves, goggles, and other supplies that are necessary to protect health workers as they interact with potentially infected patients. In April 2020, three months after coronavirus was first detected in Africa, a WHO survey of 34 African countries revealed that only about half of the sample countries had PPEs available and accessible to health workers (Modern Ghana, 2020).

Contact tracing is also an important aspect of the ability of countries to detect and curb community spread of the infection. Epidemiologists use R_0 to denote the number of people whom a person with a virus can infect in a population. If R_0=1 then the virus is spreading at a stable rate and will not cause an outbreak; but if R_0>1, it is said that the virus

spreads exponentially in the population. The goal in stopping the spread of a virus is to reduce the R_0 to less than 1, meaning that the virus will die out. This is where contact tracing becomes crucial. Indeed, quickly finding and isolating all of those with whom an infected person may have come into contact is fundamental to stopping and eventually killing a virus. At the outset of the pandemic, contact tracing capacity was very limited in many African countries and may have contributed to the wide spread of the disease observed in several countries.

Treatment and Critical Care

Patient management in the middle of a pandemic was another critical health capacity challenge that African counties had to quickly confront as the pandemic intensified on the continent. Patient management consists both of treatment and the conditions under which that treatment is provided. An important aspect of the manifestation of COVID-19 consists in the patient displaying severe and acute respiratory difficulties; therefore, respirators and ICU beds quickly became crucial tools in caring for patients suffering from the disease. As of April 2020, for example, Kenya had only 200 intensive care beds for its entire population of 50 million. Advanced health care was lacking in nearly every country; from Mali to Liberia countries had few ventilators, and their ability to offer good care was compounded by health facilities that were overcrowded, understaffed in rural areas, and serviced by poor roads and unreliable transport (El-Sadr and Justman, 2020). Other healthcare support systems such as ambulatory services, referral systems are of critical importance and are lacking in African countries.

However, given the severity of the coronavirus pandemic, the shortage of critical care medical equipment almost created a catastrophic situation in many of the hardest-hit countries such as South Africa, Egypt, Nigeria as the virus continued to spread steadily throughout the continent. Indeed, at the start of the pandemic, WHO had estimated that there were only five ICU beds per 1 million people in Africa. While Kenya could claim 500 critical care beds according to the Standard newspaper, and Nigeria 120 ICU beds according to the McKinsey consulting firm, many African countries had no ICU beds at all. Indeed, a survey conducted by the WHO revealed that several countries, including Angola, Burkina Faso, Burundi, Central African Republic, Côte d'Ivoire, Guinea Bissau, Lesotho, Malawi, Mali, Mozambique, Niger, Republic of Congo, São Tomé and Príncipe, Seychelles, South Sudan, and Zimbabwe had no ICU beds available to treat COVID-19 when the pandemic broke out (Modern Ghana, 2020).

Regarding respirators, overall, the WHO estimated that there were only 2,000 functional ventilators in 41 African countries, keeping in mind that the continent's population is 1.3 billion. More disquieting was the fact that according to the International Rescue Committee (IRC, 2020), as of 19 April 2020, the number of respirators available in selected African countries stood as follows: Central African Republic (3); South Sudan; Burkina Faso (11); and Sierra Leone (13) (see Table 6).

The treatment of severely ill COVID-19 patients has brought the worldwide shortage of oxygen and ventilator-related resources to public attention. Ventilators are considered vital equipment needed to manage these patients, who account for 3percent – 5percent of patients with COVID-19. Most patients need oxygen and supportive therapy. In Africa, the shortage of oxygen is even more severe and needs equipment that is simpler to use than a ventilator. Different models of generating oxygen locally at hospitals, including at provincial and district levels, are required. In some countries, hospitals have established small oxygen production plants to supply themselves and neighboring hospitals. Oxygen concentrators have also been explored but require dependable power supply and are influenced by local factors such as ambient temperature and humidity.

Table 6: Number of Respirators Available to Fight COVID-19 in the Ten Sample Countries

Ventilator per country			
Countries	**Frequency**	**Percentage (percent)**	**Population size**
Botswana	70	1.0	2,351,627
Chad	22	0.3	16,426,000
DRC	60	0.9	92,377,993
Egypt	3000 to 6000	89.5	104,258,327
Kenya	259	3.8	102,334,000
Mauritania	1	0.0	4,775,119
Mozambique	34	0.5	31,255,000
Nigeria	169	2.5	206,140,000
Senegal	20	0.3	16,744,000
Sudan	74	1.1	43,849,000
Total	**6,728**	**100.0**	

Source: Compiled by authors using data from Craig, Kalanxhi and Hauck (2020).

Most of the study countries had an insufficient number of respirators to handle COVID-19 cases, although Egypt was an outlier (see Table 6). Egypt had about 3,000 to 6,000 respirators to serve a population of 104,258,327. On the other hand, Mauritania had one respirator available to handle all COVID-19 cases in the country against population of 4,775,119. Senegal had only 20 respirators against a population of 16,744,000; Sudan had 74 respirators and a population of 43,849,000; Mozambique had 34 respirators for 31,255,000 inhabitants. In conclusion, although the selected countries had some respirators available to handle COVID-19 cases in their country, gaps remain, because the ratio of respirator to population per country is almost zero. This also reflects a weak level of preparedness as additional waves of COVID-19 appear.

According to the results, Mozambique was among the countries hardest-hit by the COVID-19 pandemic. One treatment for COVID-19 is to administer oxygen to patients in an ICU bed, yet the country has just seven such hospital beds to serve a population of 31,225,000 (see Table 7). Generally, the remaining countries in the table had insufficient capacity to handle COVID-19 cases regarding number of hospital beds per 10,000. Although Egypt and Kenya had a higher number of ICU beds in comparison to other countries under review, their population per 100,000 is extremely high as compared to the available resources to manage COVID-19 patients in their countries.

Table 7: Number of Intensive Care Units and Beds in the Ten Study Countries

Country	Number of hospital beds	Number of ICU beds	
	by country per 10,000 population	Year of data point/estimate	Population size
	2010 -2019	2020	
Botswana	18	150	2,351,627
Chad	4	60	16,426,000
DRC	8	60	92,377,993
Egypt	14	11,000	104,258,327
Kenya	14	518	102,334,000
Mauritania	4	10	4,775,119
Mozambique	7	Not available	31,255,000
Nigeria	5	169	206,140,000
Senegal	3	20	16,744,000
Sudan	7	74	43,849,000

Sources: Compiled by authors from UNDP Development Report (2020) and Craig, Kalanxhi and Hauck (2020).

Thus, Africa's readiness and capacity to provide critical care health services to victims of the pandemic was severely limited at the outset. Preparation and readiness for future pandemics must be informed by the frailty and weaknesses of African health systems as revealed by the COVID-19 outbreak.

3.3.3 General Overview of African Fiscal Responses to COVID-19 by Country

COVID-19 has exposed some of the challenges and vulnerabilities the continent faced, particularly with respect to countries' budgetary positions. African countries are experiencing significant financing gaps and debt service obligations, foreign exchange shortages, and credit crunches. The pandemic has not only disrupted production, transportation, and markets, but also trade and supply chains. Indeed, COVID-19-related trade restrictions have severely disrupted trade routes, including cross-border trade, and routes used by many micro, small and medium-size enterprises. These restrictions have directly impacted revenues and livelihoods. By disrupting supply chains, COVID-19-related trade restrictions have also forced SMEs, particularly, to face lower demand for raw materials and intermediate goods; and given that many SMEs are highly dependent on trade, they are thereby forced to operate on the margins of poverty.

As a result, virtually all countries announced and enacted fiscal packages usually consisting of economic stimulus measures meant to provide relief and assistance to the people and businesses in overcoming the economic consequences of COVID-19. Fiscal measures often included direct spending packages, increased health spending, corporate tax deferrals and exemptions, cash transfers to citizens (including unemployment benefits), and even food assistance. Further, the fiscal measures were often accompanied by monetary policy measures, which often consisted of cuts in the policy rates for most countries.

In addition, many countries adopted capital requirement reduction and liquidity support measures, loan deferral/refinancing frameworks, as well as exchange rate measures. Moreover, many countries adopted exchange rate measures, and many central banks announced subsidies and various credit refinancing frameworks**.** The overall impact of these measures on individuals and businesses remains to be assessed. And it is not clear how the announced spending packages would have been mobilized given the severely limited fiscal space in which many countries were operating, even as they faced debt repayments and debt services during the pandemic. Nonetheless, the fiscal and monetary measures that were attempted may, in the end, prove to have been effective in softening what would have been dire economic consequences due to this pandemic[8].

8. See annexes A1 and A2 for the full fiscal and monetary measures adopted by African countries.

Chapter IV - Readiness and Preparedness for Pandemic and Epidemic Response: Health Sector Capacity Analysis in Ten African Countries

Chapter III analyzed the overall impact of COVID19 on the African continent, with an overview of governments' responses to the pandemic. By contrast Chapter IV seeks to crystalize the analysis for the ten selected African countries included the study sample, with a focus on the Health impacts. The chapter begins by assessing pandemic readiness and capacity in the ten selected countries. The assessment was based on the WHO IHR 2005 Index, GHS Index and SDG-3 targets (WHA 2005 Indicators) etc.

4.1. Pre-COVID-19 Health Sector Analysis and Pandemic Readiness in Ten African Countries

A pioneer study carried out by ACBF on critical technical skills required for the implementation of the first Ten-Year Implementation Plan of Agenda 2063 reveals that Africa lacks capacity in the health sector with an estimated average ratio of physicians or medical doctors of about 0.307 per 1,000 population (ACBF and AUC, 2016). Brazil's estimated ratio of medical doctors and specialists is 1.89 per 1,000 population, and the United Kingdom estimated ratio of medical doctors and specialists is 2.79 per 1,000 population. For an African population of slightly over a billion (1,166,239,000) the target number of medical doctors and specialists in Africa should be approximately 2,915,598 based on the internationally accepted number of medical doctors and specialists for a country of 2.5 per 1,000. Africa currently has about 358,035 medical doctors and specialists.

Table 8 reveals the availability of doctors and nurses per 10,000 population in selected/case study countries.

Table 8: Availability of Doctors and Nurses in Case Study Countries

Country	No. of Doctors per 10,000 population	No. of Nurses per 10,000 population	Date
Botswana	5.27	41.15	2016
Chad	0.43	2.32	2017
DRC	0.74	0.23	2016
Egypt	4.52	19.26	2018
Kenya	1.57	11.66	2018
Mauritania	1.87	9.25	2018
Mozambique	0.84	6.85	2018
Nigeria	3.81	11.79	2018
Senegal	0.69	3.13	2017
Sudan	2.62	7	2017

Source: Compiled by authors' data from WHO (2020) and UNDP (2020).

The assessment of countries' readiness capacity for pandemics was conducted based on the 2019 GHS Index scores and rankings. Developed by the Nuclear Threat Initiative and the Johns Hopkins' Center for Health Security, with the Economist's Intelligence Unit, the GHS Index is the first comprehensive assessment and benchmark of health security and related capabilities across 195 countries. It is designed to assess a country's technical, financial, socio-economic, and political capabilities to prevent, detect, and rapidly respond to epidemic threats with international implications (Global Health Security Index, 2019).

Table 9 reveals the GHS Index scores and rankings of the ten countries in this study. The GHS index is determined based on six capacity dimensions: Prevention; Early Detection and Reporting; Rapid Response; Robustness of Health Sector; Commitment to Improve National Capacity, Financing, and Adherence to Norms; and Risk Environment and Vulnerability. The table assesses the overall readiness capacity of countries as of 2019, as well as the capacity over the six dimensions. Each score is out of 100 possible points, and 195 countries are ranked. In the current country sample, Kenya reveals the highest level of overall pandemic readiness with a score of 47.1/100 and a ranking of 155/195. Sudan reveals the lowest level of pandemic readiness with a score of 26.2/100 and a ranking of 163/195.

Figure 3, showing the overall GHS Index, provides a visual imagery of the variability in the overall pandemic preparedness of the sample countries. Similarly, the robustness of countries' health systems is depicted in Table 9. The figure reveals that the sample countries show very low scores on the Health Robustness dimension, with Kenya displaying the highest score at 20.7/100 and a ranking of 103/195, and Chad showing the lowest score at 6.6/100 and a ranking of 186/195. The generally low scores on the Health Robustness dimension greatly affects the readiness of the sample countries for the COVID-19 pandemic.

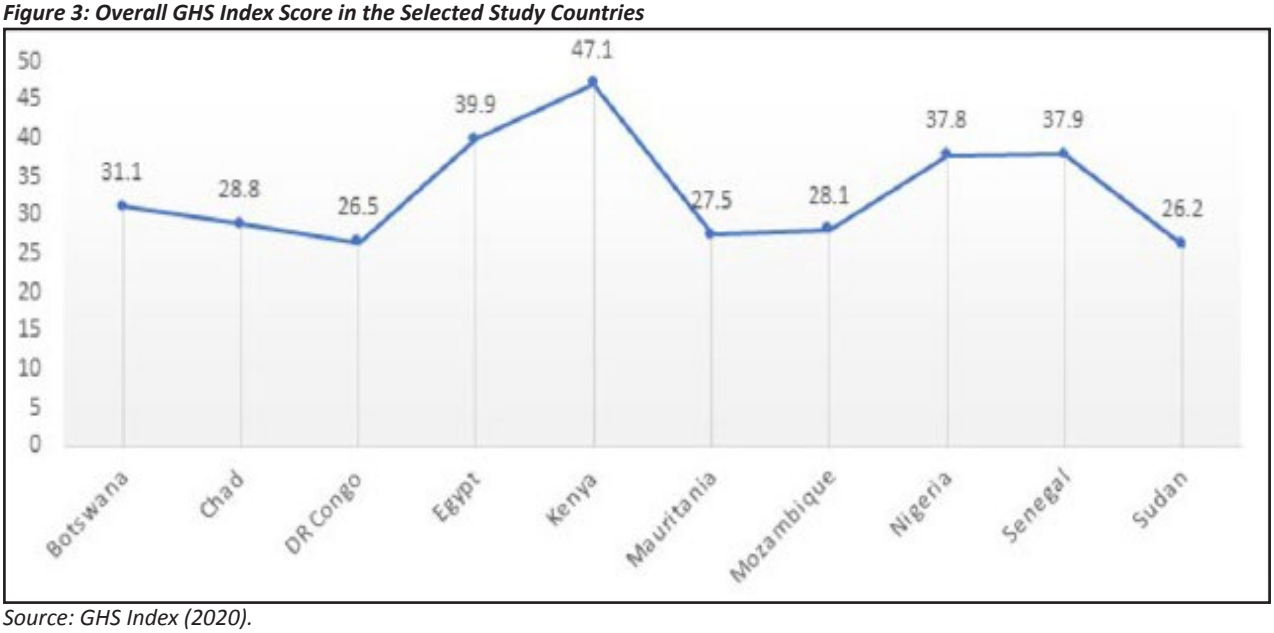
The implication is that if proper measures are not put in place now, African health systems can quickly be overwhelmed if the current pandemic continues spreading or in the case of future pandemics.

Table 9. Readiness for Pandemics and Epidemics in Selected African Study Countries Using GHS Index, WHO-IHR, and WHO-ASPAR Response Readiness[9]

Country	Overall GHS Index (out of 100)	Overall Rank (out of 195 countries)	Prevention Capacity	Prevent Rank	Detection and Reporting	Detection Rank	Rapid Response Capacity	Rapid Response Rank	Robust Health Sector	Robust Health Sector Rank	Improving National Capacity, Financing & Norms	Norms Rank	Risk Environment and Vulnerability	Risk Rank
Botswana	31.1	139	22	152	28.2	133	23.9	160	13.3	138	46.3	107	62.4	62
Chad	28.8	150	23.2	145	36.5	109	34.5	103	6.6	186	46.2	110	23.7	189
DR Congo	26.5	161	24	137	25.1	141	31.3	119	11.8	150	113	45.9	20.1	194
Egypt	39.9	87	36.5	79	41.5	96	45	63	15.7	128	46.4	104	57.5	86
Kenya	47.1	55	45.9	48	68.6	36	37.1	92	20.7	103	67.1	16	40.7	155
Mauritania	27.5	157	9.9	186	39.5	100	24.2	159	17	120	36.3	157	39.5	156
Mozambique	28.1	153	26.5	122	29.3	130	18.2	188	17	120	43.8	125	38.4	163
Nigeria	37.8	96	26.3	123	44.6	78	43.8	68	19.9	107	56.7	50	33.7	174
Senegal	37.9	95	25.4	126	35.1	114	45.4	61	18.5	116	57	47	48.2	128
Sudan	26.2	163	31.8	97	7	185	37.3	91	14.3	135	37.6	153	33	178
Average	**33.09**	**125**	**27.15**	**122**	**35.54**	**112.2**	**34.07**	**110**	**15.48**	**130.3**	**55.04**	**91.5**	**39.72**	**149**

Source: GHS Index (2020).

Figure 3: Overall GHS Index Score in the Selected Study Countries

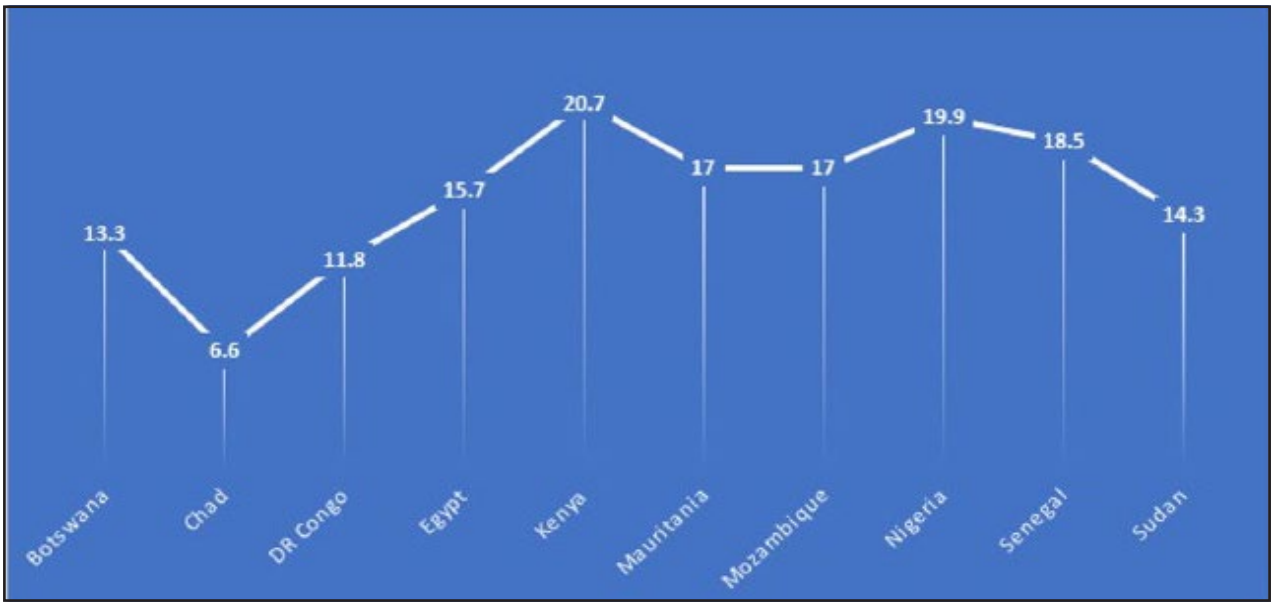


Source: GHS Index (2020).

Overall, the Figure 3 GHS Index scores indicate that the highest scores are for Kenya at 47.1, and Egypt at 39.9. Chad and Sudan have the lowest scores at 28.8 and 26.2, respectively.

9. The Table is considering the Readiness for Pandemics and Epidemics in ten Selected African countries using GHS Index, WHO-IHR, and WHO-ASPAR Response Readiness etc.

Figure 4: Measuring the Robustness of African Health Sectors in the Selected Study Countries



Source: GHS Index (2020).

The GHS Index measure of robustness of the health sector indicates Kenya and Nigeria have the highest scores at 20.7 and 19.9 respectively, while Chad and Democratic Republic of the Congo have the lowest scores at 6.6 and 11.8, respectively. This points to the disparity across the ten study countries in the GHS Index, International Health Regulation (IHR) core capacity index. This, therefore, calls for a continuous monitoring and cross-checking of epidemiological data and variables under each of the indexes by African countries to ensure coordinated efforts in building health systems.

4.2 Health Impacts of COVID-19 in the Ten Sample Countries

The COVID-19 pandemic exerted a remarkably negative impact on the health care and socio-economic structures of countries across the globe. In Africa, for example, the COVID-19 pandemic has significantly impacted a range of health and socio-economic activities. According to the African Union Commission (AUC, 2020) areas affected include health, economic, social and technology sectors. Additionally, low expenditures in the health sector resulting in high health-care worker turnover due to low payment and long working hours were recorded. The impact of COVID-19 on health sector in the ten selected countries in Africa is detailed in subsequent sections.

4.3 Institutional Capacity During the COVID-19 Pandemic in Africa

In Africa, most of the countries had inadequate surveillance and laboratory capacity to perform testing due to limited fiscal support to acquire test kits and build the diagnostic capacity necessary to decentralize testing systems. As a result, the number of COVID-19 cases was acutely underreported, and a significant proportion of the cases remain undetected. This is because African health systems have insufficient capacity to carry out testing and monitoring, which hindered case identification, quarantine, and contact tracing efforts (Dzinamarira, Dzobo and Chitungo, 2020).

Furthermore, most of the African health systems rely on donor aid to supplement public health budgets; some were able to start COVID-19 testing after receiving donated testing kits from Jack Ma Foundation. Accessibility to health care facilities is still wanting in Africa. For example, South Africa has the best health system, but it has fewer than 1,000 intensive care unit beds for a population of 56 million, while Kenya had about 200 ICU beds for population of 50 million people (Dzinamarira, Dzobo and Chitungo, 2020).

Apart from accessibility, most Africa countries had low capacities for manufacturing medical equipment and low drug manufacturing capacities. Consequently, above 70percent of their total drugs are imported from India, Europe, and the United States; with drug-producing countries moving towards export bans for drugs, African countries faced shortages of basic and essential medication that hindered COVID-19 control efforts (Dzinamarira, Dzobo and Chitungo, 2020).

4.4 Approaches Used in Health Service Delivery During COVID-19 Pandemic

Community based health care
In this context, training of the community health workforce was done to boost their capacity and to encompass a range of health workers - lay and professional, formal, and informal. These health professionals provided support and supervision during community outreach services and campaigns.

Patient empowerment
Through improving health literacy and providing telemedicine, patients were empowered to self-manage chronic disease during unusual times in which they were unable to access medical centers as often as needed.

Community engagement and communication
Systematic engagement and communication with individuals and communities was encouraged to maintain trust in the provision of high-quality essential services that encourages appropriate care-seeking behavior and adheres to public health advice (World Health Organization, 2020).

4.5 Northern Africa Region (Mauritania and Egypt)

4.5.1 Mauritania

Initial reactions and measures
Mauritania reported 5,564 cases (with 149 deaths and 2,830 recoveries) as of 15 July 2020. The government took stringent containment measures to limit the spread of the virus, including suspension of all commercial flights into and out of the country; closure of all land borders except for the transportation of goods; closure of schools and universities, as well as of all non-essential businesses, including restaurants and cafés; suspension of non-essential interregional movements of people; a country-wide 9 p.m. - 6 a.m. curfew; and suspension of the Friday prayer. The authorities stepped up imports of medical equipment and medicines (WHO, 2020). In Mauritania, the COVID-19 pandemic has negatively impacted the socio-economic sector. For example, the poverty rate increased from 5.5percent in 2019 to 6percent in 2020, pushing about 42,000 people into extreme poverty (UNICEF Mauritania, 2020). However, due to an increase in the poverty rate, some girls withdrew from school (education) to care for their family members at home. In addition, as movement was restricted due to COVID-19, basic health care services such as immunizations and treatment for children become impossible in most locations.

Reopening of the Economy
On 7 May 2020, the government took the following measures to relax the containment and reopen the economy: (i) the opening of most of the businesses, but restaurants will only operate for carry-out meals; (ii) the relaxation of the curfew that will now take place from 11 p.m. - 6 a.m. instead of from 9 p.m. - 6 a.m.; (iii) the authorization for collective prayer on Friday, but with clear guidelines on social distancing, mask-wearing, and handwashing. However, following the spike in new infections, the Friday collective prayer was suspended again from 14 May 2020 to 24 June 2020. Effective beginning 10 September 2020, all the remaining restrictions were removed.

The curfew was completely lifted throughout the country; the restaurants and cafés were reopened; interregional movements of people and domestic flights also resumed. However, following the gradual increase of new COVID-19 cases since early November, the Health Minister issued a statement on 18 November 2020 alerting the population on a possible second wave underway, and strongly recommending the wear of masks in all public areas, as well as social distancing.

To contain the resurgence of the virus, on 2 December 2020, the government instructed (i) the closure of all schools and universities for two weeks, effective from 4 December 2020; (ii) a strict minimum presence of civil servants in the offices; and (iii) the suspension of public ceremonies. As a result, the number of new cases of infections and deaths have been declining since mid-December, and some of the restriction measures are being lifted (IMF, 2020).

4.5.2 Egypt

Delay in Health Care Service Delivery
In Egypt, a lot of health multidisciplinary meetings and other important activities have either been reduced or suspended. For example, due to a scarcity of ICU beds, patients with cancer who may have needed non-invasive treatments, such as radiotherapy and chemotherapy, faced delays due to the COVID-19 pandemic (den Bakker, Anema, Huirne, Twisk, Bonjer, Schaafsma, 2020). This is because most health care systems focus on reactive care in hospitals, detecting and treating disease while giving limited attention to the prevention and control of non-communicable diseases (World Economic Forum, 2020a).

Health in Mass Media and Communication with the Population
A lack of resources, particularly to purchase face masks, has hampered the effectiveness of mass media campaigns to limit the spread of COVID-19. This is attributed to a lack of resources, particularly for face masks purchases. (Abdelhafiz, Mohammed, Ibrahim, Ziady, Alorabi, Ayyad, Sultan, 2020).

Low Expenditure
The outbreak of the COVID-19 pandemic strained Egypt's health care system and had significant implications for the economy. For example, government expenditures in the health care sector are low, accounting for only 5.6percent of total government spending. However, because high medical expenditures are a barrier to accessing health care, the government declared all activities associated with COVID-19 prevention, testing, care, and treatment to be provided for free to all citizens, and other residents alike. This further strained the government's budget for health, and finding funding for other essential public health programs and universal health insurance remains critical (World Bank, 2020).

Health Care Worker Turnover
There is a high disparity in the distribution of public and private health care workers in Egypt. During the COVID-19 response, it fell to the public health sector to handle most of the COVID-19 cases - on top of all of their other responsibilities - forcing the public health doctors, nurses, and support staff to work long hours (World Bank, 2020). Working in infectious disease departments where the medical needs were acute, they faced a high risk of infection and intense psychological pressure. Motivating public health workers to serve in hotspots and designated COVID-19 facilities remains a significant challenge (World Bank, 2020). Furthermore, the provision of other essential services was disrupted due to barriers to the supply and demand for services. These large service disruptions left 3,140,900 children without diphtheria, pertussis, and tetanus (DPT) vaccinations; 5,522,000 women without access to a birthing facility; and many children without oral antibiotics for pneumonia. Maintaining other essential health services during any pandemic is critical in the prevention of severe outcomes for other health concerns (WHO, 2020b).

Supply Side of Health Care Services
On the supply side, a significant number of medical personnel who normally provide essential health care services were diverted to respond to COVID-19, and many health care workers became ill or have died. Similarly, global supply chains for essential medical supplies and equipment were disrupted due to production shifting to COVID-19-related supplies, with a decline in the production due to lack of availability of raw materials. In addition, transport issues and restrictions on movement caused substantial delays in delivery times.

Demand Side of Health Care Services
On the demand side, very few people used essential services during the COVID-19 pandemic due to lockdowns and mobility restrictions. Lost income limits people's ability to pay for health services, thus limiting utilization of health services. In addition, fear of being exposed to COVID-19 at the health facilities leads fewer people to seek care for other medical issues.

4.6 West Africa Region (Nigeria and Senegal)

4.6.1 Nigeria

Limited access to health care
Access to medicine is a key component of good health systems. Access to health care, together with uninterrupted access to medicine, improves the overall health outcomes of the population. In this context, Nigeria was faced with several constraints in its response to COVID-19, including a limited number of appropriate isolation centers, insufficiency of diagnostics, violations of stay-at-home orders, limitations in hospital capacity, congestion in the cities, as well as family clustering, all of which have facilitated wider spread of the disease (Lucero-Prisno, Adebisi and Lin, 2020).

In addition, Nigeria imports approximately 70percent of its medicines from China and India. Nigeria also relies heavily on other countries for active pharmaceutical ingredients, equipment and other resources required for manufacturing medicine (Akande-Sholabi, 2020), putting the country in a vulnerable position as it confronts the coronavirus pandemic.

Health Funding
In the context of more general budgetary constraints, the country faced serious reductions in health funding causing significant shortcomings in the Nigerian health system, and particularly in primary health care. Most health facilities need significant upgrading, and health workers are mostly concentrated in state and local government capitals, leaving many of those in rural areas seriously vulnerable to rising COVID-19 cases. In addition, routine health services were not rendered effectively, and some hospitals were reluctant to accept patients from ailments not related to COVID-19. Most communities were left without access to affordable health care, and tertiary and secondary health facilities were overcrowded with patients who should have been treated either in or near their communities.

4.6.2 Senegal

In Senegal, the COVID-19 pandemic has significantly impacted the health care system, especially at the community level. According to the WHO, Senegal had an inadequate supply of sample collection kits and personal protective equipment due to the heightened global demand. Related to the supply chain, personnel and logistics needed for effective testing were in short supply (WHO, 2020g). Due to the relatively large population size and low health system capacity to handle a large number of patients suffering from other conditions such as tuberculosis, this further compromised COVID-19 responses. In addition, Senegal is facing shortages of medical equipment due to the breaking down of equipment necessary for serious conditions that require respiratory assistance. Senegal had only 56 resuscitation beds, but it is estimated that 40 additional beds are required for the appropriate management of the COVID-19 pandemic (Yabi, 2020).

4.7 Central Africa Region (Democratic Republic of the Congo and Chad)

4.7.1 Democratic Republic of the Congo

The COVID-19 pandemic threatened health care access and unduly impacted vulnerable groups such as survivors of sexual and gender-based violence, people living with HIV, women with sexual and reproductive health needs, and children who required vaccination (Human Rights Watch, 2020). As COVID-19 cases rose and further spread occurred, ill-equipped health facilities became sources of infection and transmission (McMahon, Peters, Ivers, and Freeman, 2020).

The limited amount of cumulative data per sector that was available made it challenging to monitor and report on the COVID-19 collective response (United Nations Coordinated Appeal, 2020). Another challenge directly linked to medical capacities was misinformation that led to disbelief and distrust in the existence of COVID-19. Similarly, the health care system has insufficient intensive care beds, oxygen supplies, ventilators, and trained staff to manage COVID-19 cases (WHO, 2020a). In addition, the Democratic Republic of the Congo has been battling other pandemics such as Ebola, malaria, and measles. Barriers to accessing health services rose when health care facilities started charging for services to make up for lost income. There was a reduction in health-care-seeking behavior due to a decrease in case notification of multiple diseases, leading to the reduction of the country's ability to detect and respond to new outbreaks on time.

Regarding human resources for health, there were limited resources available for the health care sector, as well as increased stigma towards health care workers due to fear of the latter being infected while treating COVID-19 patients. In addition, frequent changes were made to infection prevention and control procedures, health care policies, and service provision to COVID-19 patients (McMahon, Peters, Ivers, and Freeman, 2020). Furthermore, health care coverage was reduced from 30percent to 27percent, which meant thousands of children did not receive lifesaving vaccinations, especially against measles, as the parents remained reluctant to visit health facilities (UNICEF DRC, 2020).

4.7.2 Chad

In Chad, the COVID-19 pandemic has had a far-reaching impact on the health care system (United Nations Coordinated Appeal, 2020). There was increased pressure on the health system due to the redirection of resources to preventive measures in response to COVID-19 cases. In addition, there was fear of potential transmission within health care system structures that affected patients' willingness to seek medical services.

Furthermore, measles and polio vaccination campaigns have been disrupted because of restricted movement and public gatherings, coupled with inadequate personal protective equipment for health care workers. Similarly, the socio-economic impact of COVID-19 containment measures led to about 1.9 million children becoming acutely malnourished during 2020, of which approximately 627,000 are anticipated to require severe acute malnutrition treatment (United Nations Coordinated Appeal, 2020).

Lastly, the country is faced with an inadequate supply of technical equipment and personal protective equipment. Similarly, points of entry for monitoring and provision of health services along borders remain weak, and vulnerable migrants, such as victims of trafficking, were not allowed into the country due to the closure of airports to contain the spread of COVID-19.

4.8 East Africa Region (Kenya and Sudan)

4.8.1 Kenya

In Kenya, the majority of the population lacks access to health insurance services, which increased their vulnerability during the COVID-19 pandemic (Ouma, Masai and Nyadera, 2020). In addition, the cost of testing for COVID-19 in Kenya had not been included in the national health insurance financing, and few people staying in the hotspot areas were receiving free testing for COVID-19. This suggests that already-limited resource allocation for health was diverted for the prevention, testing and management of COVID-19 cases, leading to imminent crisis in the health care system.

Furthermore, some nurses in Kenya refused to care for COVID-19 patients due to lack of personal protective equipment (Ouma, Masai and Nyadera, 2020). Similarly, the cost of treating COVID-19 is several thousands of dollars in Kenya, implying that the health system is underfunded, understaffed and perhaps inefficient with its use of resources; it is at risk of falling apart if the pandemic leads to mass infections. This is due to the government failing to restructure the health sector in a way that would withstand any serious threats like the COVID-19 pandemic and other health future crises (Ouma, Masai, and Nyadera, 2020).

Kenya had limited capacity for mass testing, particularly in more densely populated areas with confirmed cases. In addition, mass testing was previously done for front-line health care workers at selected treatment and isolation facilities, neglecting those who were not treating suspected cases. There was a lack of adequate coordination between the county and national levels of government in Kenya in the procurement of critical equipment such as ventilators for respiratory support and the recruitment of additional healthcare personnel. Kenya relies on donations from development partners and international organizations such as the WHO to assist in acquiring testing kits. As a result, insufficient numbers of testing kits hindered the fight against COVID-19. There was low turnout for testing and delayed results coupled with the provision of inaccurate contact details or wrong telephone numbers, making it difficult to reach individuals who tested positive for COVID-19 (Limboro, 2020).

4.8.2 Sudan

In Sudan, the official number of confirmed COVID-19 cases remains inaccurately low due to limited testing capacity and lack of timely detection of the transmission of cases. The restrictions on movement to contain the spread of the COVID-19 also slowed down distribution of critical medical supplies from the national medical supply fund, and only 15percent of essential medicines and supplies are available on the open market (United Nations Coordinated Appeal, 2020).

There was a shortage in the number of healthcare workers available due to migration as large extended families stayed in groups, and handling COVID-19 patients at home and presentation of disease stressed the health system. Because one-fifth of Sudan's population lives below the international poverty line, the outbreak of the COVID-19 pandemic negatively impacted food security, nutrition, and the livelihoods of millions of people.

Furthermore, various states and cities closed private health practices to prevent the spread of COVID-19, further limiting access to medical and health care for non-communicable diseases. The disease surveillance system was overwhelmed due to its response to COVID-19, neglecting other emerging and re-emerging diseases. The indirect impacts on the health system included the suspension of polio supplementary immunization activities throughout the year, with restriction in movement during lockdown worsening the ongoing economic crisis in Sudan (United Nations Coordinated Appeal, 2020).

4.9 Southern Africa Region (Botswana and Mozambique)

4.9.1 Botswana

In Botswana, primary health care services have been restructured to reduce overcrowding in health facilities. For example, the Ministry of Health recommended extensions for stable patients with chronic diseases and allowed for medication refills at the pharmacy without requiring a doctor's consultation. In addition, family-physician-led health facilities assisted chronic care patients in obtaining extended medication refills during the pandemic (Motlhatlhedi, Bogatsu, Maotwe and Tsima, 2020).

Maternal and child health care services have been restricted to immunizations and caring for children with malnutrition. As well, the intervals between antenatal care visits have been increased and, in some cases, bookings were blocked except for those in the third trimester or with high-risk pregnancies. Meanwhile, due to the COVID-19 pandemic, some health care workers were redeployed to COVID-19 isolation centers. In addition, the limited number of health facilities led to the introduction of work shifts to prevent overcrowding (Motlhatlhedi, Bogatsu, Maotwe and Tsima, 2020). Furthermore, there were limited human resources available to serve other health needs, and most of the health care personnel have been redirected to work in areas with COVID-19 (WHO Botswana, 2020a).

4.9.2 Mozambique

In Mozambique, the COVID-19 pandemic has heightened the risks facing people living with co-morbidities and those living with challenging health conditions. For example, people with compromised immune systems had poor access to health services due to the restricted movement, and 50percent of them live more than 20 kilometers from the nearest health facility (WHO, 2020a). As resources were shifted to the COVID-19 response, disruptions occurred to the provision of primary health care services - including those for immunizations; continuity of care for HIV, tuberculosis, and malaria; and for sexual and reproductive health. One consequence was an increase in maternal and infant deaths. Indirectly, due to restricted movement, older people, and persons with disabilities faced an increased risk from COVID-19 and barriers accessing lifesaving services (UN Office for the Coordination of Humanitarian Affairs, 2020).

Financial resources are limited and had to be stretched to purchase diagnostic kits and other COVID-19 related supplies; laboratory infrastructures are inadequate for processing samples; and the number of laboratory technicians available to process the samples is inadequate. Personal protective equipment for health care workers within the National Health Service is scarce, and the fear and anxiety of being exposed to COVID-19 posed a significant challenge in handling COVID-19 cases (Nachega et al., 2020). Furthermore, the usual means of disseminating information, such as via pamphlets, shirts depicting health pictures and slogans, and workshops, were prohibited under the circumstances of the COVID-19 pandemic, worsening the spread of disease to the community (Morris, 2020).

4.10 Health Sector Summary Analysis (Ten Study Countries)

This section begins by highlighting key health sector component results from the sample countries to gain a better understanding of their level of preparedness and responses. The section continues by detailing capabilities of health professionals to undertake interventions aggregated by gender, age composition and hospital facilities and the impact of COVID-19 on the health system.

4.10.1 Primary Data

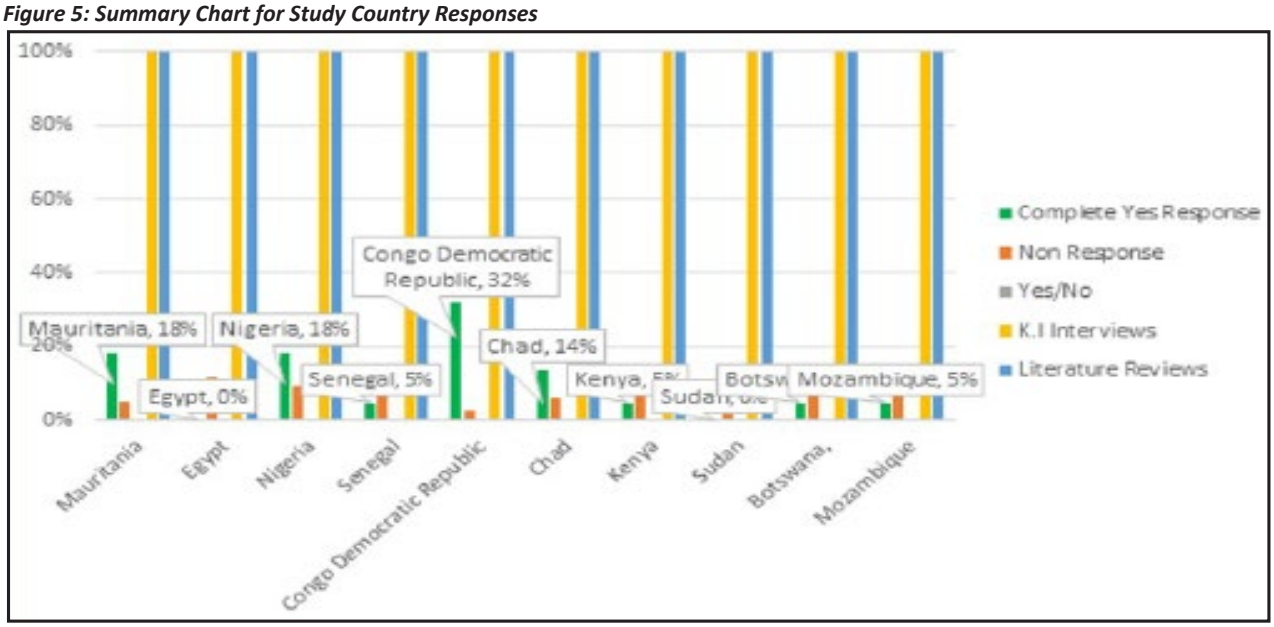
The primary findings and results are solely based on the outcomes of the online questionnaire survey sent to country focal points. Over one hundred questionnaires were e-mailed to the designated categories of people in all five regions of Africa involved in management of COVID-19. Total of 22 completed responses were received (Figure 5) with 17 Males and 5 Females respondent across eight countries. Two countries Sudan and Egypt had no response to the country study questionnaire. Details of the specific country responses are in Table 10.

Table 10: Summary Table for Research Tools Used to Secure Secondary and Primary Data.

Countries	Key Informant Phone/ Zoom/Skype Interviews	Literature Review on Countries	Online Survey Dispatched by email	Completed Online Questionnaire Response
Mauritania	Yes	Yes	10	4
Egypt	Yes	Yes	14	0
Nigeria	Yes	Yes	15	4
Senegal	Yes	Yes	10	1
DRC	Yes	Yes	10	7
Chad	Yes	Yes	10	3
Kenya	Yes	Yes	16	1
Sudan	Yes	Yes	15	0
Botswana,	Yes	Yes	10	1
Mozambique	Yes	Yes	10	1
			120	22

Source: Primary data questionnaire 2020.

Figure 5: Summary Chart for Study Country Responses



Source: Primary data questionnaire 2020.

4.10.2 Gender Balance, Age Composition, and Hospital Facility Consideration in Responses

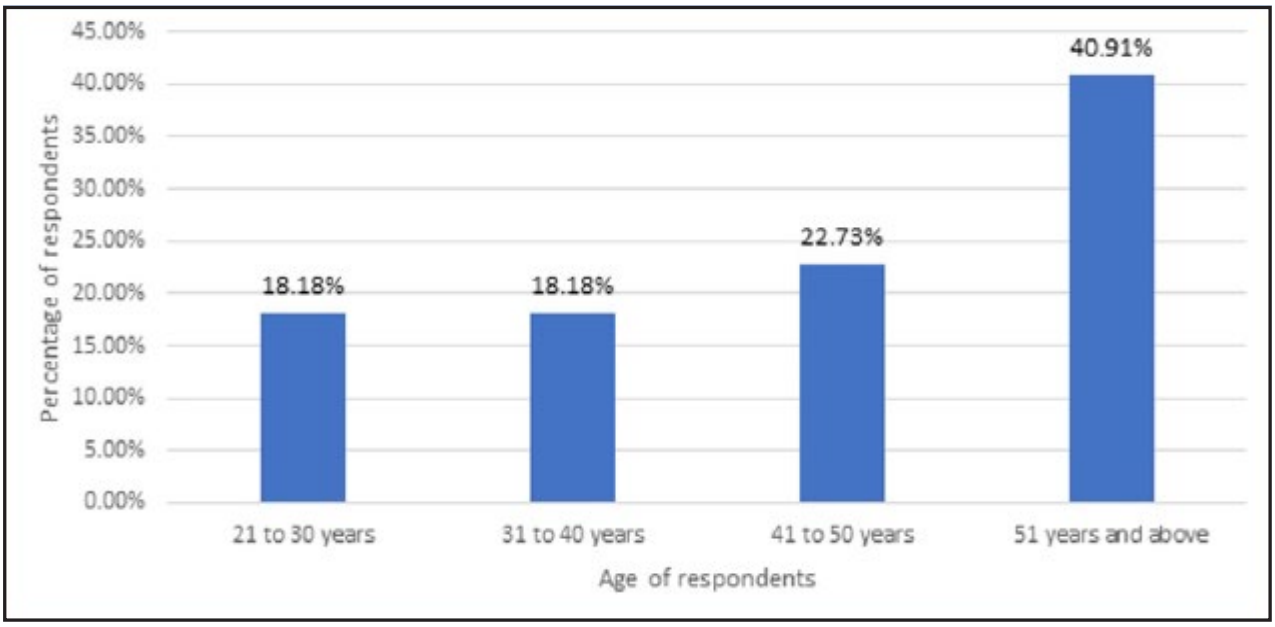
Table 11 reveals the number and percentage of male and female respondents from the study countries. Figure 6 displays the sample's age breakdown, which is as follows: 21 to 30 years (18percent); 31 to 40 years (18percent); 41 to 50 years (23percent); and 51 years and beyond (41percent) (see Figure 6). Among the countries surveyed, 36percent have fewer than 100 government-owned hospitals; 14percent have between 101 and 500 hospitals; and 14percent have 501 hospitals and above. Of these about 1 to 99 per country are designated for COVID-19 cases. About 80percent of respondents indicated the facilities were well-equipped and capable of managing pandemic cases.

Table 11: Respondence Gender and Age Composition by Percentage

Sex	No. of respondents	Percentage
Male	17	77.27percent
Female	5	22.73percent
Total	22	100.00percent

Source: Primary data questionnaire 2020.

Figure 6: Chart of Age Composition of Respondents



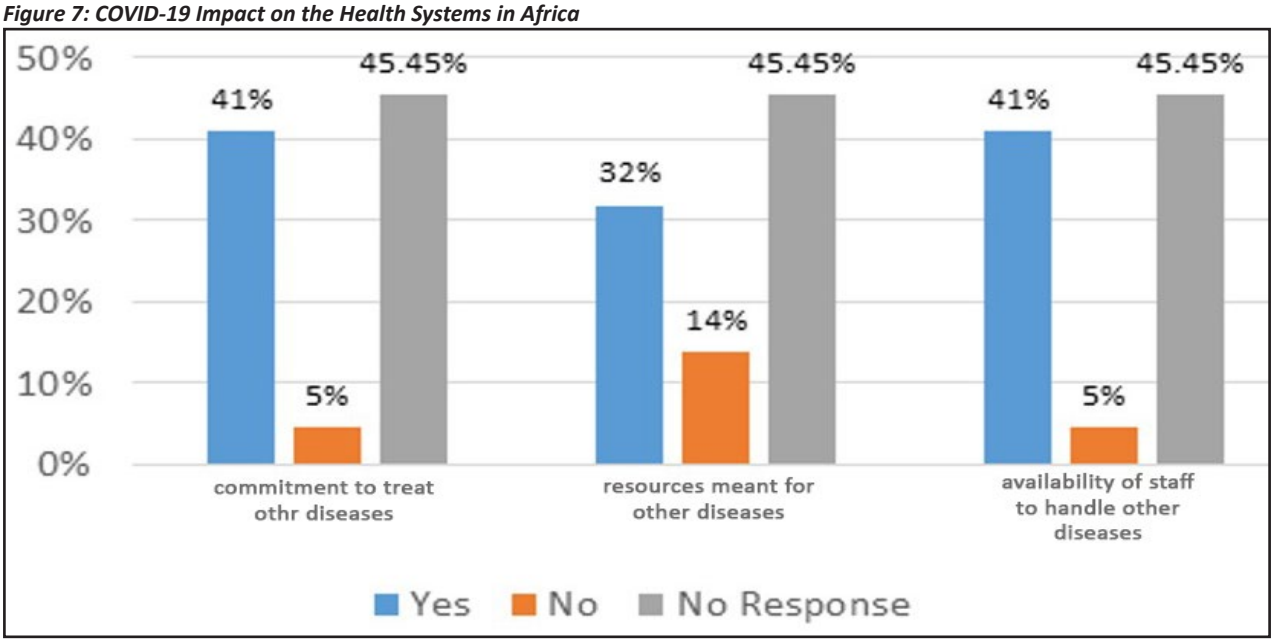
Source: Primary data questionnaire 2020.

On average among the selected countries, each country has over 100 critical specialists (80percent) to handle the COVID-19 pandemic and other infectious diseases. Furthermore, the ratio of health personnel to patients is less than one doctor per 1,000 patients in 80percent of the countries studied. This is below the WHO-recommended standard. Eighty percent of respondents affirmed the existence of documents detailing pandemic policies, regulations, strategies, policy sub-systems, and processes in their countries.

4.10.3 COVID-19 Impact on the Health Systems

All the countries under study fully agreed that their health institutions were forced to redirect resources and staff away from other diseases and toward COVID-19 (Figure 7). But the specific impacts differed somewhat by country. For example, many countries including Kenya, Sudan, Senegal, and Egypt prioritized conducting emergency training to available staff to handle the COVID-19 pandemic cases.

Figure 7: COVID-19 Impact on the Health Systems in Africa



Source: Primary data questionnaire 2020.

The study showed that the COVID-19 pandemic affected all interventions in healthcare including:

- Among respondents, 41percent of said that attention paid to other diseases was affected;
- Additionally, 32percent of respondents indicated that financial resources allocated to other diseases were affected; and
- Lastly, 41percent reported that the availability of staff to manage other diseases was affected.

Overall, the COVID-19 pandemic affected the ability of health systems in the study countries to manage other diseases.

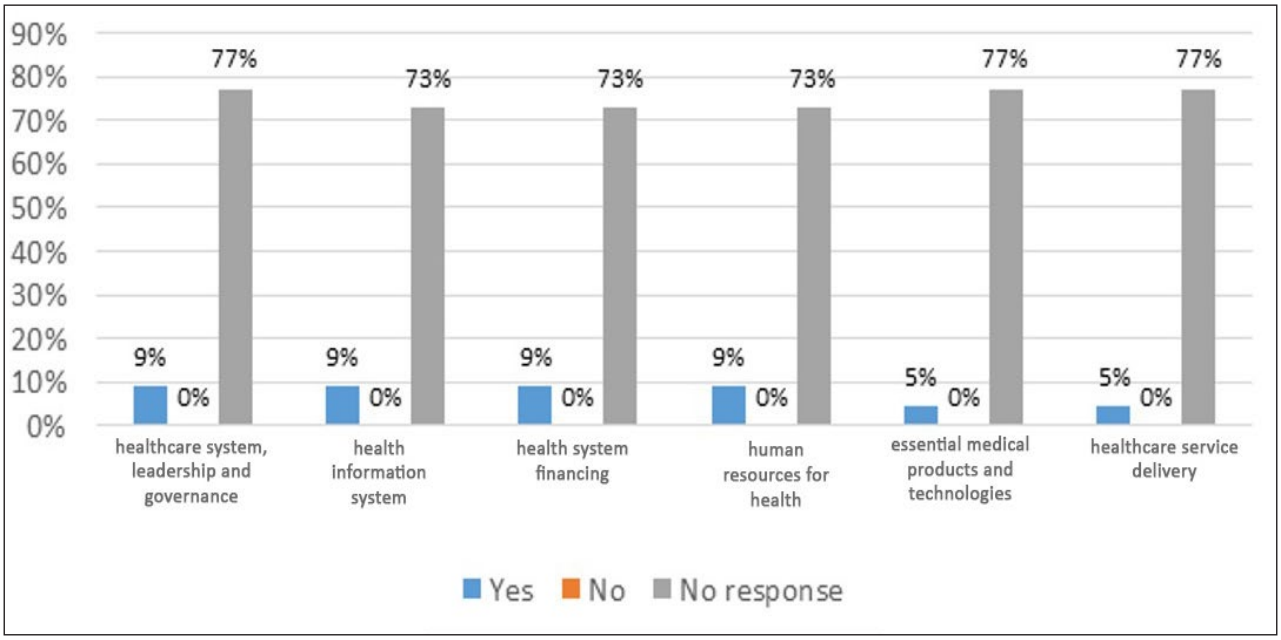
The COVID-19 pandemic revealed the importance of enhancing the capacity of health systems across Africa to combat pandemics. The ten study countries showed the need to improve capacity in the following areas of health care systems: leadership and governance; financing; human resources; and the supply of essential medical products and health technologies (see Figure 8). But this may be difficult to accomplish because few of the respondents in selected countries accepted that the COVID-19 pandemic impacts healthcare service delivery both directly and indirectly (see Box 3).

Box 3: Responses from primary data on the impacts of COVID-19 on healthcare service delivery

- Healthcare system leadership and governance: Democratic Republic of the Congo indicated system centralization and decrease in governance and leadership while Nigeria highlighted mistrust in the health care system.
- Health information systems: since COVID-19 disease is novel, most healthcare systems lacked the coping skills in managing this particular pandemic. Nigerian respondents stressed issues stemming from a lack of political will from the government in providing proper funding. Nigeria also indicated that national legislation needs revision, leadership at sub-national levels is weak, politicized, and not proactive. The Democratic Republic of the Congo noted limited communication and a lack of data collection tools and equipment.
- Health system financing: Democratic Republic of the Congo indicated poorly managed funding and a lack of health system funding. Nigeria indicated health data was not robust for real time transmission of data and reporting; data was mainly paper-based at sub-national levels.
- Human resources for health: Democratic Republic of the Congo reported that human resources were insufficiently trained and had skills that did not match the needs. But these resources can be bolstered by the provision of new information. Regarding the poor levels of funding, government are now beginning to realise the need to invest in the health sector in Nigeria, as health care - and primary care in particular - is grossly underfunded.
- Essential medical products and technologies: almost non-existent in Democratic Republic of the Congo; COVID-19 has exposed our workforce in Africa and has clearly shown that our hospitals are understaffed, as highlighted in Nigeria with an inadequately motivated workforce.
- Healthcare service delivery: Democratic Republic of the Congo reported delivery as low and the situation as precarious, including a lack of basic medical equipment to combat COVID-19. Nigeria reported that innovative technologies, including the ones that are technically driven, were in inadequate and in short supply.

Source: Primary data questionnaire 2020.

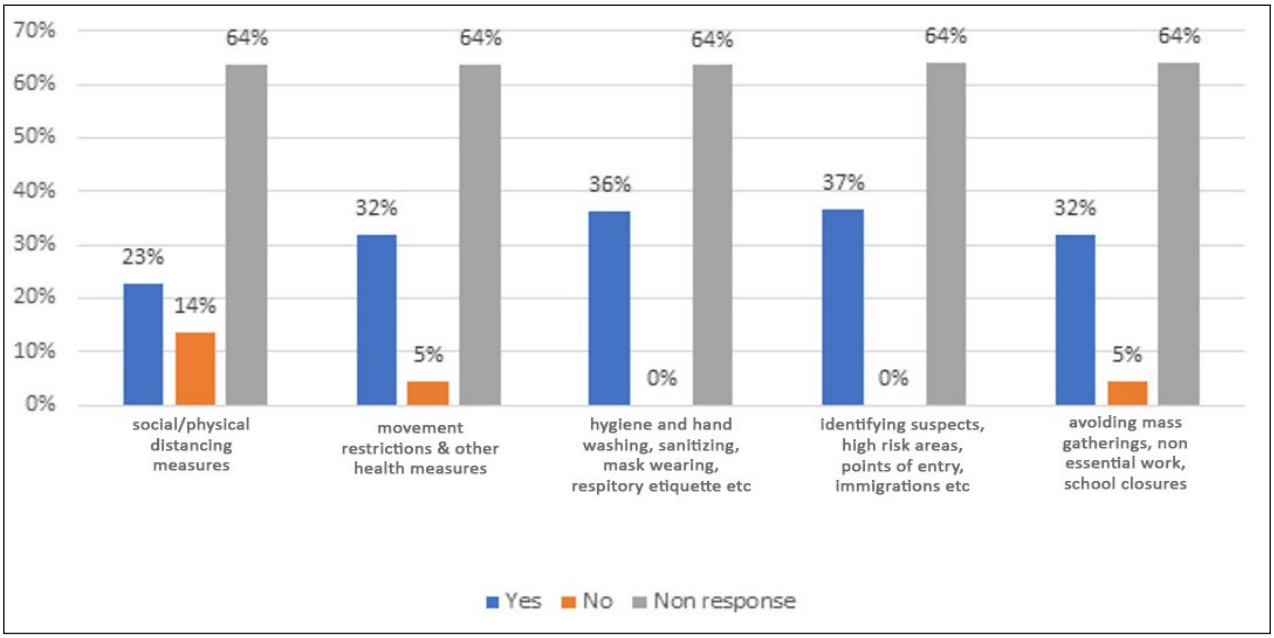
Figure 8: COVID-19 Impact on Capacity Development in Health Systems in Africa



Source: Primary data questionnaire 2020.

The study showed that the COVID-19 pandemic affected all capacities in healthcare systems including leadership, information systems, financing, human resources, and medical essentials. A few respondents also mentioned that capacities regarding health care service delivery and human resources for health were the least affected (see Box 4 on the respondents' feedback for the critical technical/specialist skills required).

Figure 9: Responses to Basic Hand Hygiene and Other COVID-19 WHO-SOPs



Source: Primary data questionnaire 2020.

The study found that 23percent of respondents reported that in their respective countries, social/physical distancing measures were used, while 14percent did not respect the social/physical distancing measures. For hygiene and hand washing, sanitizing, mask wearing, and respiratory etiquette, the data indicated that 36percent practiced these steps. Also, 37percent agreed that they can identify suspects, high risk areas, points of entry, points of immigration, etc. And 32percent indicated avoiding mass gathering, non-essential work, school closures and public transport etc. and only 5percent did not practice (see Figure 9).

Promotion of personal hygiene measures that reduce the risk of person-to person transmission, such as wearing of face masks, hand washing, hand sanitizers, social/physical distancing, face shields and respiratory etiquette was noted and probably observed in every study country.

Identifying high-risk areas/hot spots, such as the border points, airports, or other immigration points as a priority for establishing effective measures rated highly in all countries was noted and are taking action to limit transmission from this entry points.

Finally, all countries adopted community-level measures to reduce contact between individuals, such as the suspension of mass gatherings, the closure of non-essential places of work and educational establishments, and reductions in public transport services.

Box 4: Critical Technical/Specialist Skills Required in Study Countries to Fight Pandemics

Specific respondents from the study countries shared the following insights:

- Health personnel and social workers receive updated training and technicians are available, but health workers lack laboratory equipment for testing, which was the main challenge as noted in Democratic Republic of the Congo.
- Chad indicated that the greatest needs were for technical and laboratory equipment and people with specialized skills.
- Kenya needs contact tracing technologies.
- To fight the pandemic, Nigeria needs modern technology, improved infection prevention control (IPC) and disaster management skills, and enhanced communication and engagement with local communities to explain COVID-19 risks.
- Some countries, such as Mauritania, Senegal, Sudan, Egypt, Botswana, Mozambique, offered no responses to this question.

Source: Primary data questionnaire 2020.

4.11 Critical Technical/Specialist Skills Required for Fighting COVID-19

The responses elicited by inquiry into specific critical, technical and specialist skills required for fighting COVID-19 and other pandemics in African countries were ranked on a Likert/weighted scale of 0 to 10 (0 = Not at all, to 10 = To a great extent). The responses are as follows (see Table 12).

Table 12: Critical Technical/Specialist Skills Required for Fighting COVID-19

Survey Question	Average Response
To what extent has the health personnel in your country been trained to combat pandemics without calling on persons from outside the country?	4
To what degree can the political leaders in your country respect and adhere to the health personnel recommendations regarding the response to pandemics?	5
To what extent are your health personnel preventing community transmission by rapidly finding and isolating all cases in the event of a pandemic?	5
To what extent are your health personnel providing pandemic victims with appropriate health care?	4
To what extent can your health personnel develop safe and effective vaccines and therapeutics that can be delivered at scale and that are accessible based on need?	2
4 = Below Average 3 = Very Low	

Source: Primary data questionnaire 2020.

Overall, these responses from the study countries indicate that there are limited numbers of health personnel with the technical and specialist skills needed to fight the COVID-19 pandemic.

Furthermore, the study found that health professionals, in cooperation with locals, can easily conduct several community interventions in the study countries in Africa (Table 13 and Figure 10).

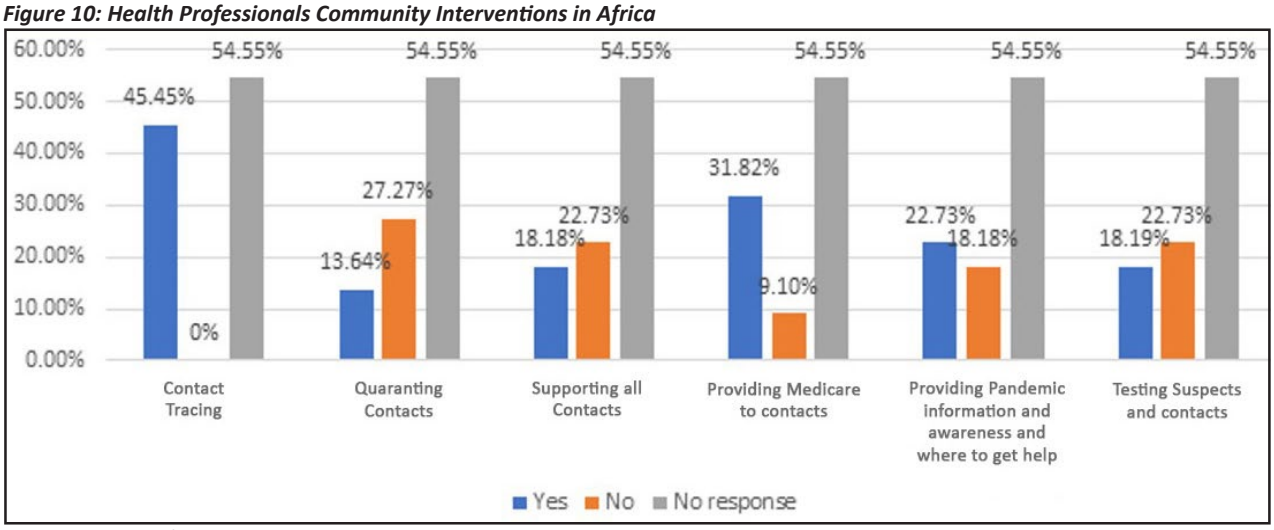
Table 13: Capabilities of Health Professionals to Undertake Interventions Within Community

Intervention	*Can be done efficiently*	
	Yes	No
Capability of tracing contacts of victims	45.45percent	0percent
Capability of quarantining all contacts	13.64percent	27.27percent
Supporting all contacts of the victims	18.18percent	22.73percent
Providing necessary medical care to contacts	31.82percent	9.10percent
Providing pandemic information/awareness/where to get help	22.73percent	18.18percent
Testing suspected cases and their contacts	18.18percent	22.73percent

Note: 55percent of the country study data reveals a No response for all categories

Source: Primary data questionnaire 2020.

Figure 10: Health Professionals Community Interventions in Africa



Source: Primary data questionnaire 2020.

4.12 Critical Technical/Specialist Skills Gaps and Studies on COVID-19 and Past Pandemic

Inquiry into what critical technical/specialist skills are currently lacking among health staff to respond to the health system challenges in fighting the COVID-19 pandemic in countries received zero responses. According to the literature search, studies conducted in African countries to identify skill gaps in health personnel to exclusively combat pandemics indicate that countries have gaps in their health professionals' community interventions (Figure 10).

Critical technical/specialist skills currently are lacking among health staff to respond to the health system challenges in fighting COVID-19 pandemics (see Table 14). Detailed feedback from respondents in the study countries is detailed in Box 5.

Box 5: Critical Technical/Specialist Skills Currently Lacking Among Health Staff

- Nigeria indicated gaps in interpersonal communication, community engagement, surveillance, and proper handling of COVID-19 cases.
- Chad noted a need for more training, motivation, and COVID-19 public and workers awareness using media platforms are required in Chad.
- Democratic Republic of the Congo indicated a lack of equipment and qualified personnel.
- In Mauritania, the frontline health workers indicated raising awareness among the general population against COVID-19 as most needed.
- Kenya indicated the number of health staff holding required critical technical and skills is sufficient - except for a shortage of epidemiologists.

Source: Primary data questionnaire 2020

Table 14: Studies Conducted to Identify Any Gaps in the Skills of the Health Personnel in Country

Questions	Yes	No	No response	Comments
a.) Has there been any study conducted to identify any gaps in the skills of the health personnel in your country in an effort to combat pandemics?			45percent	Four respondents (18percent) from Mauritania did not answer this question.
b.) b) If yes, who conducted the study? Examples - international consultants, national consultants, others (specify…)	9percent	0percent	0percent	Kenya and Democratic Republic of the Congo mentioned Ministry of Health, and Nigeria mentioned Academic Institutions, meanwhile the rest of the respondents did not answer this question (91percent).
c.) Who commissioned the study?	5percent	0percent	0percent	Ministry of Health, Academic Institutions while the rest of the respondents did not answer this question (95percent).
d.) Is this study accessible or available to the public?	0percent	16percent	0percent	No comments from 84percent of the respondents was noted.

Source: Primary data questionnaire 2020.

Table 15: Country Performance on Capacity to Fight the COVID-19 Pandemic in Africa

Country Performance on Capacity to Fight the COVID-19 Pandemic in Africa	Scale 1(poor) – 4 (excellent)
Strategic Planning	2.75
Electronic Monitoring, Trace and Track Systems	1.75
Laboratory Testing Systems	1.5
Communication Systems	2.25
Strategic Online GSM Based Apps	2.5

Source: Primary data questionnaire 2020.

The capacity to fight the COVID-19 pandemic in Africa is ranked on a scale ranging from 1 (poor) to 4 (excellent) along five dimensions of capacity: strategic planning; electronic monitoring, trace, and track systems; laboratory testing systems; and strategic online global messaging systems (GMS)-based apps is limited (see Table 15 and Table 16). Also shown are the types of specialists and expertise needed along each capacity dimension (see Table 17).

Table 16. Countries Performance on Capacity to Fight the Pandemics in Terms of the Intervention Measures

No	*Intervention*	Poor	Fair	Good	Excellent	Overall Responses
1	Strategic Planning	1	2	3	4	Excellent to Poor
2	Electronic Monitoring - Trace and Track Systems	1	2	3	4	Fair
3	Testing Systems	1	2	3	4	Poor
4	Communication Systems	1	2	3	4	Fair
5	Strategic Online GSM Based Apps Like SMS, Etc. Exists	1	2	3	4	Good to fair

Source: Primary data questionnaire 2020.

Table 17. Lists of Experts Required According to the GHS Index

Capacity to fight the pandemics areas	Specialists/experts needed in Africa
• Strategic Planning	WHO specialist, senior medical staff, senior public health scientist, consultant of CDC, statistician, zoonotic/mycology/bacteria disease control scientist, pharmacopeia, epidemiologist, statistician, occupational therapist, pharmacist, physical therapist, physician, respiratory therapist, epidemiologist, anthropologist, counselor, psychologist, and policy regulator, etc. Socio-economist specialists e.g., social protection specialist, traditional leader, religious leader,
• Electronic Monitoring, Trace and Track Systems	Epidemiologist, emergency medical technician big data analyst, computer expert, radio-electronics technician, etc.
• Laboratory Testing Systems	Laboratory technician, virologist, radio-graphic technician, radiologist, pathologist, physician, scientist, medical technologist, medical technician, lab assistant, biologist, chemist, microbiologist, geneticist, and other specialists. Anesthesiologist, cardiac electrophysiologist, cardiologist, immunologist, critical care medicine specialist (intensivist)
• Communication Systems	Communication development expert, engineer, specialists for new and medical diagnostics, equipment, and technologies (repair of redundant equipment's like X-ray machines, ambulances etc.) as well as technician for ambulatory services, referrals, mobile paramedic, and flying doctor/surgeon
• Strategic Online GSM Based Apps	Mobile medical apps, GSM Phones, Web based platforms, Google Maps, Medscape, ECG, CDC COVID-19 tracker, Worldometers, and Mobile apps that: • Are extensions of one or more medical devices • Provide patient-specific analysis and • Provide patient-specific diagnosis, or treatment recommendations • Transform the mobile platform into a regulated medical device • Become a regulated medical device (software)

Source: Compiled by authors.

4.13 Transformational Leadership Skills in Managing Pandemics

Inquiry into the leadership/governance structures used to fight the COVID-19 pandemic in their countries elicited zero responses.

Likewise, the following questions had no responses:

- Who advises the government in fighting COVID-19 pandemics?
- What leadership quality is most required to effectively fight pandemics in your country?
- What have the traditional leaders done during the fight of the COVID-19 pandemic to support the fight against pandemics?
- Describe the availability of the management resources available in your country in the fight against pandemics.

According to the study, the private sector in Africa is 100percent mobilized to fight against the COVID-19 pandemic. This is further confirmed by secondary data reviewed for the desk review. Examples of mobilization include generous donations during the COVID-19 pandemic from: Alibaba; The Mo Ibrahim Foundation; The Dangote Foundation; and several African businesses.

No respondent was able to describe the management resources available in their countries to fight against pandemics. However, the countries are evenly divided about the competence, prudence in accountability of the management of resources meant for dealing with COVID-19. No respondents were able to name the institutions in their countries that fight pandemics, apart from national ministries of health.

Table 18 highlights the importance of leadership at all levels to ensure that countries are well-equipped to build back better and address any challenges future pandemics may offer.

Table 18: Lists of Experts Required According to the GHS Index

Capacity to fight the pandemics areas	Specialists/experts needed
• Political leadership	Transformational and Visionary Leader, Governance and Accountability experts, WHO Country team leaders, Senior Medical staff, Senior Public Health Scientists and consultants of CDC, Traditional leaders, Parliamentary Representatives, Governors, Religious leaders, Policy regulators etc.
• Business leadership	Economists, Bankers, Accountants, Insurance underwriters, Big Data Analytics Experts, Operational Specialists, Human resource managers, Marketing and Advertising, Public Relations, Lawyers, Corporate Attorney, statisticians.
• Traditional/community leadership	Religious Leaders, Faith Based Organization Leaders, CSO Leaders, Chiefs, kings, Queens, Prince, Princess, Clan Leaders, Elders, Herbalists, Celebrities, Good will Ambassadors, Media practitioners, etc.
• Youth/women leadership	Youth Leaders, Women Leaders, Members of Parliament for Youth and Women, Special Interest Groups,
• Civil society leadership	CSO Leaders, Country Representatives, Chief Technical Specialists, Program Managers, M&E Experts and Finance and Operations Managers etc.

Source: Compiled by authors.

4.14 Management of Health Institutions, Coordination, and Planning

One hundred percent of the health institutions in the sample countries hold planning meetings in which all stakeholders are represented. Seventy-five percent of political parties focus on the pandemic as the common enemy, and 75percent of relevant government ministries and institutions take an active role in fighting pandemics in their countries.

4.14.1 Engagement and Mobilization of Communities to Limit Exposure

The study indicates that most communities in the sample countries were, on average, compliant with all ministries of health standard operating procedures (SOPs) during pandemics. Seventy-five percent of respondents agreed that during epidemics, communications about the need to observe preventive behavior regarding hand washing, social distancing, and wearing face masks can be quickly sent to people in local languages so that their everyone can be fully informed. Seventy-five percent of respondents also indicated that COVID-19 toll-free phone lines were established, which communities used to report emergencies. Respondents indicated that health officials and the relevant task teams quickly addressed 100percent of questions and misunderstandings about pandemics and how they are spread.

Respondents indicated that, due to high levels of cooperation and knowledge within the population, no individuals in the community had been arrested for non-compliance with ministry of health standard operating procedures in the fight against COVID-19 (see selected examples on communities' engagement in Bo

Box 6: Illustration of Communities' Engagement in the fight against COVID-19

Senegal, Nigeria, and Chad
In West and Central Africa, misinformation accompanied the spread of COVID-19, creating fear and uncertainty in the communities - especially in Senegal, Nigeria, and Chad. That misinformation was countered through production and dissemination of awareness-raising videos, songs, comic strips and photo campaigns particularly on hygiene measures and supporting the stay-home challenge (IOM UN, 2020). In addition, for communities that lacked access to the internet, risk communications and community engagement was achieved through provision of digital information channels to inform and empower the community regarding protection measures against COVID-19 infection.

In Chad, particularly, dozens of town criers and troubadours have been trained in hygiene and COVID-19 prevention awareness measures as well as in the use of related equipment and deployed to rural areas beyond the range of cell phone towers and radio signals. However, this approach provided lifesaving information and hygiene kits to displaced populations in the Lake Chad Basin region. Furthermore, hundreds of information, communication, and education materials were printed in local languages across the region for all the target audiences such as migrants in transit and vulnerable migrants (IOM UN, 2020).

Egypt
In Egypt, community volunteers put forth a coordinated effort to respond to COVID-19, communicating information about necessary behavioral changes, performing contact tracing, protecting groups at heightened risk of contracting the disease, as well as supporting the poor. Community mobilization efforts included existing community institutions such as women's organizations, and the most vulnerable areas of the country were prioritized (World Bank Document, 2020). More so, UNAIDS Egypt supported the provision and distribution of hygienic materials to people living with HIV and the communities that are home to much of the affected population, worth 10,000 units of hygienic materials for three months. This helped to raise awareness information on COVID-19.

Source: Compiled by the authors.

4.14.2 Community Ability to Identify Cases and Manage Disease Transmission

Results of the study indicate that that approximately 75percent of the countries can identify suspected cases in their communities, yet only 67percent of countries can conduct testing on large numbers and report the outcomes in a timely manner. Almost 75percent of the countries are unable to mobilize testing equipment for the pandemics, while 75percent of the countries can mobilize communities to be on high alert about any suspected cases. Nearly 50percent of the countries can rapidly scale up the workforce and offer training where necessary, while only 25percent of countries can provide personal protective equipment (United Nations Coordinated Appeal, 2020) to all concerned health personnel in African countries and communities. Box 7 presents examples of community training efforts on the identification of COVID-19 cases.

Box 7: Example of a Community's Ability to Identify COVID-19 Case

In Lagos, Nigeria, volunteers were trained on how to conduct contact tracing as well as in identifying symptoms of COVID-19, data collection, referral of patients for testing, infection prevention, and control.

Contact tracing volunteers were taught to communicate accurate information about COVID-19 at the community level, particularly on the importance of hand washing, wearing face masks and social distancing mainly the WHO SOPs (UNICEF Nigeria, 2020).

Source: Compiled by authors

4.14.3 Health Institutions' Ability to Identify Cases and Manage Disease Transmission

The study found an average of 50percent of countries surveyed can adapt population-level distancing measures and 75percent can enforce movement restrictions in addition to other public health and health system measures. Promotion of personal measures that reduce the risk of person-to person transmission, such as hand washing, physical distancing, and respiratory etiquette, is at 100percent; identifying high risk areas/hot spots such as the border points, airports or other immigration points is at 100percent. Finally, support of community-level measures to reduce contact between individuals, such as the suspension of mass gatherings, the closure of non-essential places of work and educational establishments, and reduced public transport is at 100percent.

4.14.4 Weaknesses and strengths of institutions and policy recommendations to fight COVID-19

This section examines the weaknesses and strengths of institutions set up to fight COVID-19 in Africa, including the policy recommendations to address capacity gaps. See from Box 8 to Box 12 for responses provided by countries on the weaknesses and strengths.

Box 8: Weaknesses of institutions in the fight against COVID-19

In Kenya and Democratic Republic of the Congo (9.10percent of respondents) indicated no weaknesses in the institutions that are set up to fight the COVID-19 pandemic. True to the reality, these countries have been battling a lot of disease outbreaks and pandemics such as Ebola, anthrax, and other infectious diseases. Specific responses (18.18percent) below were mentioned in response to institutional weaknesses:

- Nigeria: It was observed that institutions are weak at sub-national levels, policy makers are not quite committed, and there is a lack of funding, accountability, and a misappropriation of funds meant to fight the pandemics, etc.
- Democratic Republic Congo: A lack of resources, staff who had not been trained in COVID-19 response, and the existence of non-functional laboratories was noted.
- Mauritania: It was observed that educational materials raising public awareness of the COVID-19 pandemic were not available.
- The no-response rate out of the 22 respondents was at 72.73percent.

Source: Primary data questionnaire 2020.

Box 9: Strengths and Gaps in institutional coordinating mechanisms in fight against COVID-19

Both strengths and gaps were observed in the institutional coordinating mechanisms used in fighting the COVID-19 pandemic and managing epidemics. The following specific responses (27.27percent) below were mentioned in response to institutional strengths and gaps:

- In Nigeria, respondents noted the following issues: effective multi sectoral coordination at national level; weak coordination at sub-national levels; an inadequately trained and motivated workforce; and slow implementation of programs.
- In Kenya, respondents noted the country and institutions have robust systems for combating the pandemic, which is reflected in the highest Global Health Security (GHS) Index score among the ten sample countries of 47.1 and a GHS Index measure of the robustness of the health sector of 20.7.
- In Democratic Republic of the Congo, respondents noted: lack of involvement of community structures; inadequate capacity of health workers and diagnostics.
- The Mauritanian respondent stated the following: High levels of maternal, infant, and child mortality; morbidity and mortality linked to malnutrition and the main communicable and non-communicable diseases; and limited evidence to inform policy.
- Out of the 22 respondents, 72.73percent offered no response.

Source: Primary data questionnaire 2020.

Box 10: Plans, policies, systems, and processes in place to support pandemics

Examining plans, policies, systems, and processes in place to support pandemics, respondents indicated knowing the existence of the following: Specific responses (18.18percent) mentioned the issues below:

- Democratic Republic Congo respondents said they do not know the government's new policies, plans, systems, and processes to fight COVID-19 pandemics.
- While Nigerian respondent knew of the National Pandemic Influenza Preparedness and Response Plans
- Kenya cited the existence of national and county strategies.
- Mauritania respondent noted that the country has a contingency plan.
- Out of the 22 respondents, there was a no-response rate of 81.82percent.

Source: Primary data questionnaire 2020.

Box 11: Policy recommendations to address priority capacity gaps for effective action of pandemics

Out of the 22 respondents, 27.27percent responded as below:

- The Nigerian respondents stated that a certain percentage of the national budget should be earmarked for pandemic preparedness and response; civil society and private sector should be involved in planning, response, and implementation.
- The Kenyan respondents emphasized the need to strengthen health and community health systems including the linkages between agriculture, health, public health, and water, sanitation, and hygiene (WASH).
- The Democratic Republic Congo respondents noted the need for community involvement alongside the development of health policies and, secondly, the need to strengthen the country's internal resources by granting scholarships for further study to health workers and critical technical frontline staff.
- The Mauritanian respondents noted the need for medical equipment, respect for social distancing, and the need to educate the population on the pandemic.
- Of the 22 respondents, the no-response rate was 72.73percent.

Source: Primary data questionnaire 2020.

Box 12: Capacity development actions raised to address the priority capacity gaps identified

The specific responses (22.73percent) from other countries under study noted the following:

- In Nigeria, respondents noted the need to strengthen pandemic preparedness at the level of African Union and regional economic blocks.
- Kenyan respondents highlighted online programs to exchange information about experiences in combating the pandemic.
- Democratic Republic Congo respondents noted they must identify all layers of communities for full involvement and ownership and retraining health care staff.
- In Mauritania, a respondent observed that strengthening the various components of the health system to allow universal access to preventive and curative service may lead to a sustainable reduction of mortality and morbidity.
- There was a no-response rate of 77.273percent out of the 22 respondents.

Source: Primary data questionnaire 2020.

4.15 South to South Cooperation Response in Tackling the Health Impacts of COVID-19 in Some Selected Countries

The crisis is demonstrating, once again, that having in place state institutions and agencies for rapid response is critical. Administrative capacity has, over decades in many developing countries, been dug out by repeated adjustment programs that are designed to downsize the public sector, erode the regulatory capacities of the state, and generally extend the reach of markets and private firms into the public realm. As a result, developing countries have, in recent years, become more and more dependent on external private finance as a source of resource mobilization (UNCTAD, 2020).

South-South Solidarity Essential for a Sustainable Recovery in the South

The COVID-19 shock has not only exposed the fragile health systems and economic vulnerabilities of the South, it also has revealed the lack of a strong vision that unites developing countries, at all levels, around a shared international agenda. Since the outbreak of the pandemic, although cooperation and coordination among the advanced economies has been disappointing, the leading G20 members have organized a series of meetings and dialogues to discuss their actions. Given the urgency of multiples challenges, it is essential that the Southern countries build a strategic partnership and take coordinated actions without further delay. Beyond the immediate relief packages, there is a need to have in place a plan for recovery and resilience in the South.

As alluded by UNCTAD (2020), cooperation should, therefore, be designed around three basic principles: scaling-up resources; enhancing policy space; and building resilience. Accordingly, a solidarity plan could come in the form of enhanced South-South financial cooperation encompassing initiatives covering mechanisms for both short- and long-term finance; joint action by developing countries for reviving trade and industry; and strengthened South-South cooperation for mitigating the health and food crises (UNCTAD, 2020). In fighting against COVID-19 and future pandemics while tackling both existing and new challenges, enhanced South-South cooperation offers opportunities for African countries and other developing economies.

Chapter V - Readiness and Preparedness for Pandemic and Epidemic Response: Socio-economic Sector Capacity Analysis in Ten African Countries

This chapter first examines key macroeconomic stylized facts of the ten sample countries to gain a better understanding of the macro situation faced by each of them in the wake of the pandemic. The chapter then studies the socio-economic pandemic preparedness and vulnerability of the ten study countries and draws out the capacity implications.

5.1 A Macroeconomic Overview of the Selected Study Countries

To gauge the relative strength of the economic performance of the sample countries prior to the onset of the coronavirus pandemic, this section presents some key macroeconomic indicators for the ten countries over the last 10 years prior to the pandemic.

5.1.1 North Africa Region

Table 19 displays the macroeconomic stylized facts for Egypt and Mauritania. We find that on average, between 2010 and 2019 both countries experienced similar positive GDP growth rates of about 3.80 each. Inflation was higher in Egypt at 12.90percent on average than in Mauritania, which stood at a much smaller rate of 3.69percent during the same period. For both countries, the current account balance to GDP (CAB/GDP) ratio remained negative throughout the period; on average, however, Mauritania's CAB/GDP ratio was much higher at -14.98percent than that of Egypt, which stood at -3.13percent. As for the debt burden prior to the pandemic, the debt service to export ratio for Egypt stood at 11.70percent on average between 2010 and 2019, while it amounted to 10.72percent for Mauritania during the same period.

Table 19: Key Macroeconomic Indicators for Egypt and Mauritania

	Egypt			Mauritania				
Year	GDP Growth	Inflation	Curr Acct Bal/ GDP	Debt Serv/ Exp	GDP Growth	Inflation	Curr Acct Bal/ GDP	Debt Serv/ Exp
2010	5.15	11.27	-2.06	6.21	2.62	6.28	..	4.94
2011	1.76	10.06	-2.32	7.90	4.17	5.69	..	4.04
2012	2.23	7.11	-2.50	6.62	4.47	4.90	-18.22	5.19
2013	2.19	9.47	-1.23	7.65	4.15	4.13	-17.47	5.79
2014	2.92	10.07	-1.95	12.67	4.27	3.53	-22.35	10.87
2015	4.37	10.37	-5.24	9.98	5.38	3.24	-15.50	14.15
2016	4.35	13.81	-6.16	19.50	1.26	1.49	-11.05	15.02
2017	4.18	29.51	-3.37	15.35	3.50	2.28	-10.49	15.72
2018	5.31	14.40	-3.08	15.05	2.12	3.05	-13.80	17.41
2019	5.56	..	-3.37	16.10	5.93	2.30	-10.93	14.07
Average	3.80	12.90	-3.13	11.70	3.79	3.69	-14.98	10.72

Source: World Bank (2021).

5.1.2 West Africa Region

Table 20 presents key macroeconomic indicators for Senegal and Nigeria during the 2010-2019 period. With an average growth rate of 5.14percent, Senegal experienced a higher GDP growth than Nigeria (3.65percent) during the 10-year period prior to the start of the pandemic. The lower average GDP on the part of Nigeria is because the country faced a recession in 2016 after many years of robust growth and has displayed much weaker growth performance since then. Inflation rates over the period were much lower for Senegal, at an average rate of 1.02percent, than for Nigeria, at an average rate of 11.80percent. However, Nigeria's average current account balance to GDP ratio stood at 1.14percent; by contrast, Senegal seemed to have faced current account issues, where the ratio stood at -6.65percent during the same period. The country also faced a heavier debt burden during the 2010-2019 period, where the average debt service to export ratio was 9.75percent, compared to Nigeria's 4.03percent.

Table 20: Key Macroeconomic Indicators for Senegal and Nigeria

	Senegal				Nigeria			
Year	GDP Growth	Inflation	Curr Acct Bal/ GDP	Debt Serv/ Exp	GDP Growth	Inflation	Curr Acct Bal/GDP	Debt Serv/ Exp
2010	3.56	1.23	-3.63	8.91	8.01	13.72	3.63	1.50
2011	1.46	3.40	-6.41	8.90	5.31	10.84	2.63	0.51
2012	5.12	1.42	-8.57	7.68	4.23	12.22	3.81	1.34
2013	2.82	0.71	-8.17	8.89	6.67	8.48	3.74	0.49
2014	6.61	-1.09	-6.80	7.83	6.31	8.06	0.17	5.27
2015	6.37	0.14	-5.32	8.77	2.65	9.01	-3.17	3.21
2016	6.36	0.84	-4.18	9.05	-1.62	15.68	0.67	6.28
2017	7.41	1.32	-7.27	13.39	0.81	16.52	2.77	6.73
2018	6.38	0.46	-9.53	14.33	1.92	12.09	0.98	7.88
2019	5.27	1.76	..	..	2.21	11.40	-3.80	7.09
Average	5.14	1.02	-6.65	9.75	3.65	11.80	1.14	4.03

Source: World Bank (2021.)

5.1.3 East Africa Region

Table 21 reveals that Kenya has posted a robust average GDP growth rate during the 2010-2019 period at 5.84percent; whereas in Sudan, the average growth over the same period stood at 1.47percent. It is to be noted that Sudan faced a recession several times during the same period, particularly in 2011, 2018 and 2019. Inflation rates in Kenya averaged 7.28percent over the 2010-2019 period, but in Sudan inflation was much higher during the same period at 32.16percent. Both countries experienced a negative current account balance (CAB) during the period, with Kenya's CAB/GDP ratio standing at -7.41percent and Sudan's at -8.32percent. However, Kenya faced a heavier debt burden, with its debt service to export ratio standing at 12.60percent, whereas for Sudan it stood at 5.56percent.

Table 21: Key Macroeconomic Indicators for Kenya and Sudan

	Kenya				**Sudan**			
Year	GDP Growth	Inflation	Curr Acct Bal/ GDP	Debt Serv/Exp	GDP Growth	Inflation	Curr Acct Bal/ GDP	Debt Serv/ Exp
2010	8.41	3.96	-5.92	4.40	3.47	13.25	-2.97	4.21
2011	6.11	14.02	-9.10	4.31	-1.97	18.10	-4.65	4.87
2012	4.56	9.38	-8.36	4.80	0.52	35.56	-11.86	7.13
2013	5.88	5.72	-8.79	4.91	4.39	36.52	-10.08	4.91
2014	5.36	6.88	-10.38	11.53	2.68	36.91	-5.46	4.31
2015	5.72	6.58	-6.91	8.47	4.91	16.91	-7.35	10.65
2016	5.88	6.30	-5.83	11.20	4.70	17.75	-8.14	6.34
2017	4.81	8.01	-7.20	14.64	0.77	32.35	-10.24	4.02
2018	6.32	4.69	-5.75	23.55	-2.29	63.29	-14.12	4.20
2019	5.37	..	-5.82	38.20	-2.50	50.99	..	4.92
Average	5.84	7.28	-7.41	12.60	1.47	32.16	-8.32	5.56

Source: World Bank (2021).

5.1.4 Central African Region

Key indicators for the macroeconomic situation in the central African region countries in the study (Democratic Republic of the Congo and Chad) are presented in Table 22. The study strives to present data from the same source for the same variables for harmony and easy of comparability. From that perspective, there are missing data for both countries in Table

22, particularly Chad on the CAB/GDP and Debt Service/GDP measures, and for Democratic Republic of the Congo inflation from 2017 to 2019. Nevertheless, from the available data, we find that Democratic Republic of the Congo experienced an average GDP of 4.75percent over the 2010-2019 period, with negative growth occurring in 2015. For Chad, GDP growth averaged 1.85percent over the same period. From the available data, average inflation rate over the 2010-2019 period was 5.40percent for Democratic Republic of the Congo and 1.47percent for Chad. The current account balance to GDP ratio was -5.18 for Democratic Republic of the Congo on average, and its debt service to export ratio averaged 3.71percent over the same period.

Table 22: Key Macroeconomic Indicators for Democratic Republic of the Congo and Chad

	DRC				Chad			
Year	GDP Growth	Inflation	Curr Acct Bal/ GDP	Debt Serv/ Exp	GDP Growth	Inflation	Curr Acct Bal/ GDP	Debt Serv/ Exp
2010	8.56	7.10	-10.08	3.08	3.00	-2.08	..	..
2011	6.05	15.32	-4.96	2.46	1.69	2.03	..	..
2012	4.46	9.72	-4.30	3.08	1.01	7.52	..	..
2013	11.34	0.81	-9.51	3.33	1.85	0.22	..	..
2014	4.15	1.24	-4.80	3.22	2.45	1.68	..	..
2015	-1.70	0.74	-3.91	3.74	1.33	4.38	..	..
2016	4.30	2.89	-4.05	4.02	1.72	-0.79	..	..
2017	2.90	..	-3.27	3.39	1.80	-1.54	..	..
2018	4.48	..	-3.57	2.33	2.75	4.27	..	..
2019	2.97	..	-3.36	8.39	0.93	-0.97	..	..
Average	4.75	5.40	-5.18	3.71	1.85	1.47	..	..

Source: World Bank (2021).

5.1.5 Southern African Region

For Botswana, GDP growth averaged 4.75percent over the 2010-2019 period and the average inflation rate was 4.84percent. Over the same period Mozambique's growth performance was slightly better at 5.56percent on average, with the average inflation rate at 7.58percent. Botswana is the only country in the sample to post a positive current account balance to GDP ratio over the period, which was 2.11percent compared to -28.86percent for Mozambique. With respect to the debt burden, Botswana is in a relatively more favorable position with an average debt service to export ratio averaging 1.95percent over the period, while Mozambique's average debt service to export ratio stood at 14.52percent over the same period (Table 23).

Table 23: Key Macroeconomic Indicators for Botswana and Mozambique

	Botswana				Mozambique			
Year	GDP Growth	Inflation	Curr Acct Bal/ GDP	Debt Serv/ Exp	GDP Growth	Inflation	Curr Acct Bal/ GDP	Debt Serv/ Exp
2010	8.56	6.95	-6.29	1.41	6.50	12.43	-15.12	24.74
2011	6.05	8.46	-0.72	1.06	7.42	11.17	-23.15	18.32
2012	4.46	7.54	-6.27	0.79	7.26	2.60	-41.53	9.99
2013	11.34	5.88	4.47	2.15	6.96	4.26	-36.84	10.73
2014	4.15	4.40	10.67	0.66	7.40	2.56	-32.72	16.00
2015	-1.70	3.06	2.20	3.33	6.72	3.55	-37.41	15.12
2016	4.30	2.81	7.75	2.00	3.82	17.42	-32.22	14.06
2017	2.90	3.31	5.34	2.47	3.74	15.11	-19.56	9.39
2018	4.48	3.24	1.85	2.44	3.44	3.91	-30.32	10.40
2019	2.97	2.77	..	3.17	2.28	2.78	-19.78	16.42
Average	4.75	4.84	2.11	1.95	5.56	7.58	-28.86	14.52

Source: World Bank (2021).

5.2 Measuring the Socio-economic Pandemic Preparedness and Vulnerability for the Ten Study Countries

Table 24 sheds light on the socio-economic preparedness and vulnerability of the ten countries in the study. Consistent with the UN approach, the framework used for this assessment has three dimensions: the Human Development situation for each country as of 2019; an evaluation of the Economic Vulnerability; and an assessment of the Social Vulnerability for each country prior to the pandemic. The 2019 human development index (HDI)[10] is used as an indicator of the human situation in the sample countries. To measure economic vulnerability, three indicators were used: adjusted net savings as a percentage of Gross National Income (GNI); gross capital formation as a percentage of GDP; and skilled labor force as a percentage of total labor force. And to assess the social vulnerability of each country, four indicators are used: percentage of population below the national poverty line; the dependency ratio (i.e., the number of 65-year-olds and above per 100 persons aged 15-64); and the gender inequality index (average annual change in percentage).

5.2.1 Human Development

On the human development index in 2019, noting that the average for developing countries is 0.689, only two countries in the study sample show scores above the developing country average: Botswana (0.735), and Egypt (0.707). Consistent with this observation, the HDI rankings show that in 2019, two countries in the sample are classified among countries with "High Human Development" in 2019: Botswana (100/189), and Egypt (116/189). Similarly, with a ranking of 143/189, Kenya is classified among the "Medium Human Development" countries. The remaining sample countries are classified among the "Low Human Development" countries in the 2020 HDR. This reveals the overall fragility and challenges faced by the sample countries in terms of the need to improve human development, even prior to the pandemic.

The gender dimension of human development is crucially important to consider. The WHO has estimated that, overall, women account for 40percent of COVID-19 infections in Africa[11]. Further, the WHO notes, "Women are disproportionately affected by lockdowns, and this is resulting in a reduced access to health services."[12] It is also the case that in sub-Saharan Africa, 90percent of the labor force consists of informal workers, most of whom are women. Therefore, women are more likely than men to be more harshly impacted by the economic hardships of COVID-19.[13]

The study uses the Gender Development Index (GDI)[14] to assess the gaps in human development achieved by men and women in the sample as a more specific measure of human development vulnerability. The average GDI for developing countries for 2019 is 0.919. On this index, Botswana, Kenya, and Mozambique show better performance than the developing countries average, with scores of 0.998, 0.937, and 0.912, respectively. Chad displays the lowest GDI among the sample countries, with a score of 0.764. Overall, while not showing perfect equality of development between men and women by any means, most of the sample countries, nevertheless, show a GDI better or close to the average developing countries score in 2019. This is a quick-win area for improvement in gender equality and overall human development if COVID-19 response resources are laser-focused on closing the gaps between men and women in development policy.

5.2.2 Economic Vulnerability

Domestic savings is an important part of countries' ability to create sufficient fiscal space to face the funding requirements of a pandemic response. In a situation of dwindling external financing options as seen in the COVID-19 pandemic, domestic saving adopts an even greater importance, as countries must focus even more on domestic resource mobilization to maximize liquidity availability for the COVID-19 response. In the sample countries, against an average adjusted net savings (as a percentage of Gross National Income) of 15.2percent for developing countries, three sample countries appeared to be in a relatively strong position in the 2015-2018 period, including Botswana (20.5percent), Mauritania (14.8percent), and Senegal (12.5percent). Several other countries in the sample appeared to be in a more vulnerable position with negative net savings rates. These included Democratic Republic of the Congo (-7.9percent), Kenya (-4.4percent), Sudan (-6.2percent), and Nigeria (0.1percent). Mozambique and Egypt showed relatively small but positive savings rates at 5.1percent and 3.6percent, respectively. Overall,

10. Ref 2020 Human Development Report (UNDP)
11.For South Africa women account for 55percent of COVID infections (https://www.afro.who.int/news/who-concerned-over-covid-19-impact-women-girls-africa (accessed on 23 November 2020)
12. https://www.afro.who.int/news/who-concerned-over-covid-19-impact-women-girls-africa (accessed on 23 November 2020)
13.https://openknowledge.worldbank.org/handle/10986/33622 (accessed on 23 November 2020)
14. According to the UNDP, the GDI measures gender gaps in human development achievements by accounting for disparities between women and men in three basic dimensions of human development—health, knowledge and living standards using the same component indicators as in the HDI. The GDI is the ratio of the HDIs calculated separately for females and males using the same methodology as in the HDI. It is a direct measure of gender gap showing the female HDI as a percentage of the male HDI (UNDP, http://hdr.undp.org/en/content/gender-development-index-gdi) (accessed on 23 November 2020)

except for Botswana and Mauritania, with domestic savings rate above or near the developing countries average, the remaining sample countries seemed to be in a relatively vulnerable position in the period just prior to the pandemic from the perspective of domestic resource mobilization.

Gross capital formation (as a percentage of GDP) is the second indicator selected to gauge prior economic vulnerability of sample countries. During the 2015-2019 period, the average rate of gross capital formation (GCF) stood at 33.1percent for developing countries. For the study countries, several performed better or near the developing country average, including Mozambique (43.9percent), Mauritania (40.9percent), Botswana (33.2percent), and Senegal (32.8percent). All remaining countries are above 15percent, indicating a relatively strong performance overall for the GCF indicator. It is important to note, however, that an important portion of countries' gross capital formation is foreign direct investment (FDI), implying that COVID-19 may have put a severe constraint on gross capital formation in countries during the 2019-2020 period, given the likely strong negative impacts of the pandemic on FDI.

The skilled labor force indicator is a measure of economic vulnerability, as it assesses the extent to which countries would have built up the capacity of their work force to quickly recover from the downward of the pandemic on the labor market. During the 2010-2019 period, the average skilled workers as a percentage of the labor force stood at 33.9percent for Developing Countries (DC). Against this background, Egypt (57.6percent), Democratic Republic of the Congo (43percent), Nigeria (41.4percent), Kenya (40.5percent), and Botswana (34percent) posted performance above or near the developing countries average regarding their skilled workforce. Countries showing more vulnerability with respect to skilled labor force include Mozambique (7.1percent), Chad (7.6percent), Mauritania (8.2percent), Senegal (10.8percent) and Sudan (22percent).

5.2.3 Social Vulnerability

On the first indicator of social vulnerability, namely the percentage of the population below the national poverty line, the study countries generally show a higher level of vulnerability than the developing countries' average of 20.7percent during the 2008-2019 period prior to the pandemic. During that same period, for instance, the percentage below the national poverty line was 63.9percent for Democratic Republic of the Congo; 46.7percent for Chad; 46.7percent for Senegal; 46.5percent for Sudan; 46.1percent for Mozambique; and 46percent for Nigeria. The same indicator for Kenya was 36.1percent, while Egypt showed 32.5percent, and Mauritania 31percent. Botswana posted a performance below the DC average on the poverty indicator, with 19.3percent of the population below the national poverty line. Overall, the poverty indicator reveals a high level of social vulnerability for the study countries in the period prior to the COVID-19 pandemic, providing a dire picture of countries facing a severely challenging time in responding to the pandemic, which caused the first recession in Africa in the past 25 years and pushed people further into poverty and vulnerability.

On the dependency ratio, the data indicate the relative youth of the African population. The ratio of persons aged 65-years and above per 100 persons versus those aged 15-64 years is 14.7 for the developing countries, all sample countries display a smaller dependency ratio than the developing countries average; Egypt showed the highest ratio in the sample at 10.2. Hence, judging strictly by the age structure, and given that the most severe health impacts of COVID-19 appear to affect the older populations more, African countries show a relatively lower vulnerability in this respect than the developing countries average.

Table 24: Socio-Economic Preparedness and Vulnerability of the Ten Study Countries

	Human Development			Economic Vulnerability			Social Vulnerability	
Country	Human Development Index (HDI)	HDI Rank (Out of 189)	Gender Development Index (GDI)	Adjusted net savings (percent of GNI)	Gross Capital formation (percent of GDP)	Skilled Labor Force (percent of Labor Force)	Population Below National Poverty Line (percent)	Dependency ratio (65 years old + per 100 people 15-64)
Year/Period	2019	2019	2019	2015-2018	2015-2019	2010-2019	2008-2019	2019
Botswana	0.735	100	0.998	20.5	33.2	34	19.3	8.6
Chad	0.398	187	0.764	..	21.4	7.6	46.7	4.7
DR Congo	0.480	175	0.845	-7.9	25.3	43	63.9	5.9
Egypt	0.707	116	0.882	3.6	16.7	57.6	32.5	10.2
Kenya	0.601	143	0.937	-4.4	17.4	40.5	36.1	5.4
Mauritania	0.546	157	0.864	14.8	40.9	8.2	31	6.2
Mozambique	0.456	181	0.912	5.1	43.9	7.1	46.1	5.1
Nigeria	0.539	161	0.881	0.1	19.8	41.4	46	5.2
Senegal	0.512	168	0.870	12.5	32.8	10.8	46.7	5.8
Sudan	0.510	170	0.860	-6.2	19.3	22.7	46.5	7.1
Developing Countries	**0.689**		**0.919**	**15.2**	**33.1**	**33.9**	**20.7**	**14.7**

Source: Compilation by authors.

5.3 Fiscal Policy Response to COVID-19 in the Ten Study Countries

Sections 5.1 and 5.2 have established the macroeconomic landscape of the ten study countries prior to the COVID-19 pandemic. In this section, the focus turns to the measures adopted by the sample countries in response to the pandemic. Table 25 reveals that all ten study countries enacted fiscal measures geared towards maintaining economic sustainability and reducing the negative economic impacts of the pandemic. Each country in the study announced both an economic stimulus package as well as a health spending package. In dollar amounts, the Egyptian and Nigerian announcements are at the higher end with USD6.3 billion, and USD1.7 billion, respectively. On other hand, Botswana (USD124 million), Chad (USD165 million), and Mauritania (USD260 million) appear to be at the lower end of the stimulus packages announcements. However, in terms of percentage of GDP, Mauritania's stimulus package is the highest at 5percent of GDP, while Nigeria's is the lowest at 0.40percent of GDP.

Regarding COVID-19 health spending announcements, Sudan places highest at 14.70percent of general government total expenditure, while Egypt's health package constitutes 0.40percent of general government total expenditure. In addition to the stimulus and health spending packages, all ten countries adopted corporate tax deferral and exemptions measures, and other support measures for businesses including guarantees and subsidies. Additional social protection measures adopted by countries included direct cash transfers to citizens and unemployment benefits. Chad, Kenya, Senegal, and Sudan also implemented food assistance programs as COVID relief measures (see Table 25).

Table 25: Selected African Countries' Fiscal Policy Response to COVID-19

Country	Announced Economic Stimulus (USD) (excl. new health spending)	Announced Stimulus (percentGDP)	Announced COVID-19 Health Spending (USD)	COVID-19 Health Spending, percent of General Government Total Expenditure	Corporate Tax Deferrals and Exemptions	Additional Corporate Support (incl. guarantees, subsidies, etc.)	Cash Transfers to Citizens (including unemployment benefits)	Food Assistance
Botswana	124 million	0.70percent	39 million	0.80percent	✓	✓	✓	
Chad	165 million	1.50percent	69 million	5.30percent	✓	✓		✓
DRC	-	-	135 million	2.70percent	✓			
Egypt	6,329 million	2.50percent	316 million	0.40percent	✓	✓	✓	
Kenya	534 million	0.60percent	377 million	1.80percent	✓	✓	✓	✓
Mauritania	260 million	5.00percent	80 million	6.20percent	✓	✓	✓	
Mozambique	*USD700mn requested	4.86*	49 million	1.20percent	✓	✓	✓	
Nigeria	1,771 million	0.40percent	1,362 million	3.00percent	✓	✓	✓	
Senegal	801 million	3.40percent	130 million	2.70percent	✓	✓	✓	✓
Sudan	415 million	1.20percent	542 million	14.70percent		✓	✓	✓

Source: Milken Institute (2021).

5.4 Monetary Policy Responses to COVID-19 in the Ten Study Countries

In addition to the fiscal measures, many countries also adopted monetary policy measures consisting of changes to lending rates, capital requirements, liquidity support, etc. The country-by-country monetary policy measures briefs are presented, with additional details presented in Table 26.

Senegal

Senegal is a member of the West African Economic and Monetary Union (WAEMU) with a common Central Bank, the Central Bank of West African States (BCEAO). As part of its COVID19 measures, the BCEAO increased available resources to banks to FCFA 4.750 billion (approximately, USD8.6 million), extended the collateral framework for 1,700 prequalified companies, and announced various credit refinancing frameworks. It also provided FCFA 25 billion (approximately USD45 million) in subsidies to the West African Development Bank (BOAD). The BCEAO also adjusted the ceiling and the floor of the monetary policy corridor downward by 50 basis points (bps), to 4.00 and 2.00 percent, respectively.

Chad

Chad is a member of the Central African Economic and Monetary Community (CEMAC), with a common central bank, the Bank of Central African States (BEAC). In response to COVID-19 the BEAC reduced its policy rate from 3.5 percent to 3.25 percent, decreased the Marginal Lending Facility rate from 6 percent to 5 percent, and increased liquidity provisions to FCFA 500 billion (approximately, USD898 million).

Democratic Republic of the Congo

For Democratic Republic of the Congo, the Banque Centrale du Congo (BCC) decreased the policy rate to 7.5 percent from 18.5 percent. In March, the BCC announced several additional response measures to ensure market stability and increase liquidity, including removal of fees on electronic money transactions, increased use of mobile banking, among other measures.

Table 26: Selected African Countries' COVID-19 Monetary Policy Measures

Country	Current Policy Rate	Lowest Policy Rate in 2020	Reduction in Response to COVID-19	Policy Rate Reduction	Capital Requirement Reduction	Liquidity Support Measures	Loan Deferral/ Refinancing Framework	Exchange Rate Measures	Fintech/ e-Payment Support Measures
Senegal	4.00percent	4.00percent	0			☑			
Chad	3.25percent	3.25percent	0			☑			
DRC	18.50percent	7.50percent	-		☑				☑
Egypt	8.25percent	8.25percent	-3			☑			☑
Kenya	7.00percent	7.00percent	-1			☑			
Mauritania	5.00percent	5.00percent	-1	☑	☑	☑			
Mozambique	10.25percent		-2	☑	☑	☑		☑	☑
Nigeria	11.50percent		-2	☑					☑

Source: Milken Institute (2021).

Egypt

The Central Bank of Egypt (CBE) reduced its policy rate for a third time, by 50 bps to 8.25 percent, on 12 November 2020. The preceding rate cut, also by 50 bps to 8.75 percent, occurred on 24 September 2020. Previously, in March, the CBE announced an extensive debt relief program targeting the tourism and SME sectors and reduced the policy rate by 300 basis points to 9.75 percent.

Kenya

The Central Bank of Kenya reduced the policy rate by 25 basis points to 7.00 percent on 29 April 2020. This was the second rate-cut, following a previous reduction from 8.25 to 7.25 on 24 March 2020.

Mauritania

The Central Bank of Mauritania reduced the key policy rate by 150 bps to 5 percent and established a currency swap facility to prevent exchange rate fluctuation.

Mozambique

Banco de Moçambique further reduced the main monetary policy rate by 100 basis points to 10.25 percent on 17 June 2020. This was the second rate-cut, following a previous reduction from 12.75 percent to 11.25 percent on 16 April 2020.

Nigeria

In addition to the enactment of the Economic Sustainability Plan (ESP), the Central Bank of Nigeria reduced its policy rate by 1percent to 11.5percent, which was the second rate cut since March 2020. The bank created an N50 billion (approximately, USD131 million) targeted credit facility and took other measures to inject liquidity into the banking system.

5.5 Key Socio-Economic Survey Results

After reviewing the socio-economic preparedness and vulnerability as well as the initial fiscal and monetary policy responses of the ten study countries, section 5.5 presents and analyzes the survey responses on in the socio-economic areas of the study. Survey responses were received from the following countries: Chad, Senegal, Democratic Republic of the Congo, Mauritania, Nigeria, Egypt, Mozambique, and Kenya.

5.5.1 Assessing Countries' Financial and Economic Impacts, Value-chains, Innovation, and Support for MSMEs and Youth and Women-led Businesses

Given the severity of the socio-economic impacts of COVID-19, particularly on small and medium-businesses, building the economy back post-COVID will require that particular attention be paid to value chains, both continental value chains particularly with the AfCFTA going into effect, and global value chains. Rapid market assessments help to determine which economic sectors hold the most promise in terms of value-addition for each country and can more easily be integrated into the continental and global value chains.

The agricultural sector holds particular importance in the post-COVID rebuilding efforts for most African countries. Indeed, according to McKinsey, more than 60percent of the population in sub-Saharan Africa are smallholder farmers, and agriculture contributes fully 23percent to the region's GDP. Furthermore, women constitute close to 70percent of the agricultural workforce in Africa. Hence, post-COVID rebuilding policies of the economy in Africa must be concentrated on reenergizing the agricultural sector so that it can become a sustainable source of income for most of the African population who depend upon it. Therefore, several questions in the socio-economic impact analysis address how businesses and people felt the impacts of COVID-19, and countries' response efforts, including assessing their value chains and policies towards supporting MSMEs and women and youth-led businesses.

How Businesses and People Felt the Financial and Economic Impacts of COVID-19

One of the insights drawn from the study concerns how populations and businesses felt the financial and economic impact of COVID-19. Written responses to these questions are included in Box 13.

Box 13: How Populations and Businesses Felt the Financial and Economic Impacts of COVID-19

- Transport became a bit more expensive given the reduction in the number of people that taxis and buses were permitted to carry at a time. Access to markets became difficult.
- This year's educational curriculum could not be followed because of the COVID-19-related disruptions.
- School closures had a tangible, negative impact on households.
- Restrictions on movements were hard on people.
- Manufacturing production was severely reduced due to the financial crisis.
- Curfews and restrictions on movement negatively impacted industrial activities.
- Manufacturing was impacted by supply chain problems.
- The scarcity of foreign exchange and restrictions imposed on sectors exacerbated the financial crisis.
- The necessity of remote work fostered advancements in digital solutions and the use of information technology.
- Insufficient investment curtailed activities in the construction sector.
- Lockdowns and restrictions on movement hurt the hotel and restaurant sectors, deepening the financial crisis in those sectors.
- Border closures negatively impacted trade.

Source: Primary data questionnaire 2020.

Impact on Non-Health Social Sectors

The COVID-19 pandemic will likely produce negative short- and long-term shocks to the education systems in Africa. Most African countries' education systems were not built to handle extended shutdowns, as became necessary during the COVID-19 pandemic. Learning loss will be unavoidable and considerable, disproportionately affecting the disadvantaged. In most countries, neither the teachers nor the students were prepared for digital learning. Most lacked access to a computer let alone a Wi-Fi connection. In this survey, 100percent of respondents affirmed that COVID-19 has had either a destructive or a very destructive impact on the education systems of their countries.

Existence of Value Chains Assessments

To the question of whether a rapid market assessment had been conducted to determine the sustainable value-chain sectors impacted by COVID-19, 75percent of the respondents answered in the affirmative, with air and land transports, hotel and restaurants, construction, food supply chains, and education cited as among the most impacted sectors - which also present the most potential for growth.

To the specific question of whether countries have put in place programs to support effective partnerships around agricultural local value chains, 66percent of the respondents answered affirmatively. When asked what types of mechanisms or platforms exist in countries to strengthen business partnerships to support local value chains in the face

of COVID-19, answers include funding for SMEs (33percent); credit facilities (33percent); and business associations (33percent). The survey indicated that many countries developed programs to assist MSMEs to improve their capacities to adapt during the COVID-19 pandemic, including through the provision of direct funding, the wider access to credit and price subsidies measures. But it is important to note that further studies will need to be conducted to determine the impacts of these programs**.**

Innovation, e-Solutions, Productivity Enhancement, Re-skilling, and Upskilling

When asked if countries have put in place a business transformational change initiative or policies and procedures to ensure innovation in business processes, business models, technologies, productivity enhancements, re-skilling, and up-skilling, only 50percent of the respondents answered in the affirmative. Furthermore, to the question of whether countries have adopted programs to promote and finance innovative e-solutions in the private sector to stabilize supply (e.g., promotion of digital banking and commerce, lowering of internet and ICT taxes), 66percent of respondents answered in the affirmative. However, most respondents indicated that less than 10percent of private companies are equipped with e-capabilities in their countries, and less than 10percent of workers have been trained on or acquired digital skills in their countries (see Figure 12).

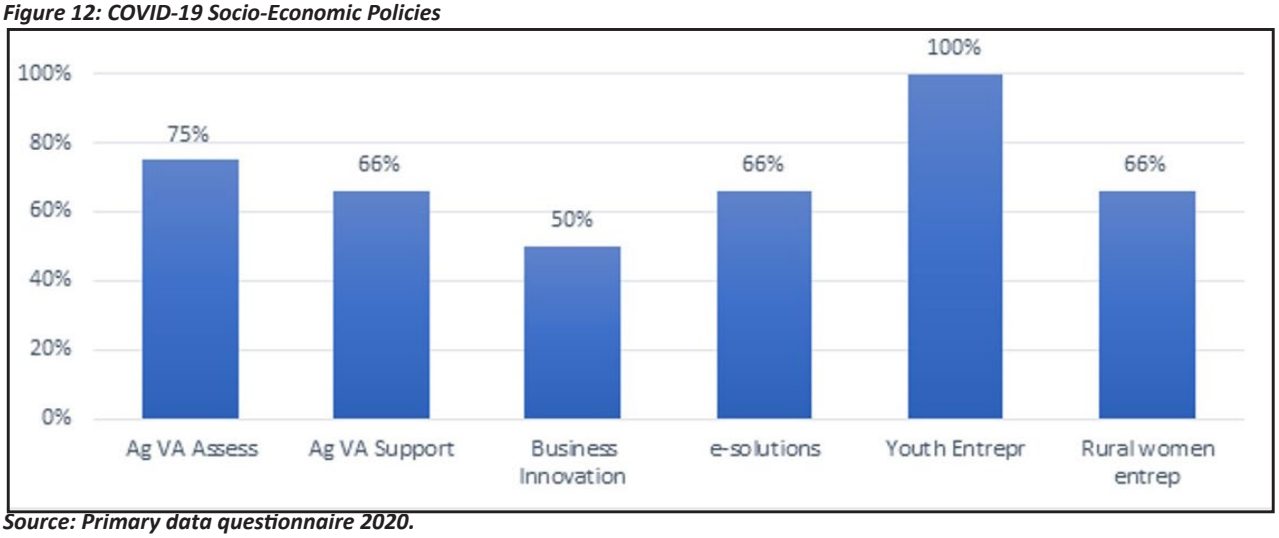
Support for Youth and Rural Women Entrepreneurship

When asked, if countries have in place initiatives to promote entrepreneurship, 100percent of respondents answered positively. Such programs appear to be government-wide in some countries, and/or target particular sectors in other countries. Sixty-six percent of respondents also affirmed that their countries have adopted initiatives to support rural women's entrepreneurship, economic activities, and products, including specific value chains access (see Figure 12).

Social Protection of the Vulnerable Populations

There is global evidence that COVID-19 is exacerbating the poverty, inequality, and vulnerability experienced by individuals and families. Social protection mechanisms are among the most effective interventions in confronting poverty and vulnerability. However, the picture of social protection programs in Africa prior to the pandemic is very sketchy. Some countries, such as Nigeria, did have robust social protection programs in place prior to COVID-19. Nevertheless, the pandemic has revealed the inability of whatever social protection systems may be in place to provide adequate assistance to the most vulnerable segments of the population, including those who had become newly vulnerable because of COVID-19 effects on their businesses and livelihoods.

Figure 12: COVID-19 Socio-Economic Policies



Source: Primary data questionnaire 2020.

When it comes to social protection, as discussed in Chapter III, most African countries, including those in the study sample, have adopted fiscal packages with some social protection components. However, the survey responses indicate that countries still have a lot of work to do to reach a significant number of the vulnerable populations in need of social protection. The survey indicates that fewer than 500,000 people have benefited from such social protection programs in the sample countries.

5.5.2 Debt Management Strategies and Resource Mobilization for Pandemic Financial Resilience

UNCTAD has estimated that COVID-19 will decrease global FDI by -30percent to -40percent during 2020-2021. Further, given the relatively large financing costs of the response to the pandemic, countries will accumulate high public debt and experience rising contingent liabilities, which represent severe adverse shocks to long-term growth and macroeconomic stability. The need for sustainable debt management strategies and restoring macroeconomic stability have become policy imperatives. The survey indicates that most countries in the sample have not yet developed adequate debt management strategies as a means to build resilience to the COVID-19 pandemic, and those who have are only achieving minimal success through implementation of the strategies. It is of note, however, that at least one country respondent identified a reduction in government spending as a major element of that country's debt management strategy.

Pandemic response plans are expensive, and COVID-19 was no different. African countries faced a particularly tough situation as the global nature of the pandemic meant that traditional sources of external funding quickly dried up. Further, there was a need to scale-up and expand resilient and pro-poor social protection systems. This could mean adopting job-protection measures such as incentivizing MSMEs and protecting the most vulnerable productive actors of society in the formal and informal sectors as well. It could also mean increasing public-sector investment in labor-intensive development projects or immediate, short-term job creation schemes in sectors of high priority such as agriculture, rural infrastructure development, artisanal production, among others. Building up financial resilience to face COVID-19 quickly became a critical necessity for countries.

Moreover, COVID-19 has exposed some of the challenges and vulnerabilities faced by the continent, particularly with respect to countries' budgetary positions. The advent of the pandemic has also shown more than ever that traditional resource mobilization methods may not, alone, be the most effective way for Africa to face the COVID-19 financing needs, particularly as one looks towards the post-COVID-19 recovery, rebuilding, preparedness, and resilience requirements. Post-COVID-19 resilience will require not only considerable additional resources from various sources, including innovative sources, but also a better and more efficient use of the existing resources. And in this respect, only 40percent of respondents affirmed that their countries have formulated sustainable revenue mobilization and revenue growth strategies to build financial resilience to COVID-19 and future pandemics.

5.5.3 South-South cooperation and the Socio-economic Response to the COVID-19 Pandemic

The above analysis underlines how the COVID-19 crisis has tested the governance and leadership capacity of African countries in terms of readiness and resilience to epidemics and pandemics. With the pointed difficulty of relying on the traditional partnerships during such a global pandemic, closer South-South cooperation and coordination cannot be more necessary. UNCTAD has estimated that developing countries will need at least USD2.5 trillion in the next two years to recover from the COVID-19 pandemic (UNCTAD, 2020), and closer partnerships between and among countries in the South will be extremely necessary, given the current global context, to build common and collaborative strategic alliances.

Existing cooperative initiatives between countries in Africa, Asia, Latin America. the Caribbean, and the Arab world could be built-upon and expanded, and new initiatives could be developed as well, to ensure that the financial, policy support, and technical needs of otherwise vulnerable countries are met within the framework of South-South cooperation. These South-South cooperative arrangements need not be limited to financial resources alone; indeed, they can extend trade, market access, industrial policies, and social and environmental policies so that countries can emerge stronger from the COVID-19 crisis and emerge better prepared for future crises.

Chapter VI - Challenges, Lessons Learned, and Policy Recommendations and Imperatives to Strengthen Capacity for Pandemic Preparedness in Africa

6.1 Challenges

6.1.1 Health Component

According to a report by the Johns Hopkins Center for Health Security, African countries are the least prepared to respond to COVID-19 health emergencies, treat the sick, and protect health care workers (Johns Hopkins Center for Health Security, 2020). In addition, the continent's weak health systems coupled with a high prevalence of malnutrition, malaria, HIV/AIDS, and tuberculosis have posed significant challenges during the COVID-19 pandemic. Similarly, African countries have very low capacities to provide critical and intensive care services, yet severe COVID-19 cases may cause respiratory insufficiency syndrome that requires ventilation support (World Economic Forum, 2020b).

Most of the African countries failed to establish conducive isolation centers for quarantine of the suspected cases. In addition, there was resistance faced from prohibiting social and religious gatherings across African region as a preventive measure to contain the spread of the COVID-19. The lockdown and stay-home strategies have halted business activities, leaving most of the poor even more vulnerable to economic consequences. This is further posing challenges to adherence to precautionary measures (Lucero-Prisno, Adebisi, and Lin, 2020). The socio-cultural and religious belief, porous international borders, and lack of synergy between federal and state government has affected policies intended to reduce the spread of COVID-19 (HO, 2020b).

Financial resources required to purchase diagnostic kits and other COVID-19-related supplies are very limited, the laboratory infrastructure for processing samples is inadequate, and there are not enough laboratory technicians to process the samples. There is scarcity of personal protective equipment for health care workers within the national health services, and the fear and anxiety of being exposed to COVID-19 infection has posed significant challenge in handling cases of the disease. Furthermore, the myths and misconceptions about the causes of COVID-19, lack of employment opportunities, and poverty has made it difficult to keep those diagnosed with COVID-19 in any type of confinement (Nachega et al., 2020).

Countries such as Egypt and Botswana have comparably strong public health and surveillance system at the national level, but the magnitude of the COVID-19 pandemic has weakened essential public health services. In addition, the cost of training health workers, transporting patients with either a suspected or confirmed case, per diems for health care workers, as well as effectively using smart technologies, present additional challenges to responding to the COVID-19 pandemic across Africa (Winter and Lev, 2020).

6.1.2 Socio-Economic Component

The COVID-19 pandemic is inflicting high and rising human costs worldwide, and the necessary protection measures are severely impacting economic activity. As a result of the pandemic, Global growth is projected to rise from an estimated 2.9 percent in 2019 to 3.3 percent in 2020 and 3.4 percent for 2021—a downward revision of 0.1 percentage point for 2019 and 2020 and 0.2 for 2021. In a baseline scenario that assumes that the pandemic fades in the second half of 2020 and containment efforts can be gradually relaxed, the global economy is projected to grow by 5.8percent in 2021 as economic activity normalizes, helped by policy support (World Economic Outlook, 2021).

In Africa, a recent paper by the World Bank has estimated that 256 million individuals in Ethiopia, Uganda, Nigeria, and Malawi (or 77percent of those countries' total populations) live in households that have lost income during the pandemic. As a result, 33 million households across the four countries have developed strategies for coping with the economic impacts of the pandemic, including relying on savings, selling an asset, reducing food or non-food consumption, and receiving assistance from family members or the government (Josephson, Kilic, and Michler, 2020). Furthermore, a Brookings Institute analysis of data from Nigeria found that more than 70percent of respondents in both rural and urban areas of Nigeria had faced food insecurity since the onset of the pandemic (Madden, 2020).

This study has confirmed the same pattern of challenges in the sample study countries. In addition to challenges countries' populations face due to loss of income, this study also finds that there are many gaps in skills and capabilities that can help MSMEs and youth and women-led businesses to compete better in a post-COVID-19 world. Countries also face the challenge of ensuring that their macroeconomic policies are geared towards maintaining a stable policy environment, including adequate debt management, resilient resource mobilization strategies, and investment in value-chains creation, supporting trade and market access, and in innovation, which are all elements of a comprehensive strategy to confront the socio-economic impacts of the coronavirus.

6.2 Lessons Learned on Pandemic Preparedness and Readiness in African Countries

6.2.1 Health Component

In Africa, multiple lessons were learned from the COVID-19 pandemic including how to leverage existing health structures; ensure the sustainability of the supply chain; expand scope with a proactive, systematic approach; and collaborate effectively at the national and regional levels. The COVID-19 pandemic highlighted the benefits of a sustaining supply chain strategy across the African continent, and various African countries formulated action plans to address the gaps in essential commodity supplies. They also learned that expanding scope with an advance systematic approach builds resilience and improves healthcare systems in the long term (Demissie, Holt, Kimeu, Sun and Okebukola, 2020). The governments of various African countries began determining their commodity and equipment needs by identifying sourcing opportunities and developed plans for importation or local production based on cost-benefit analyses.

African countries have learned that strong collaboration is crucial at the national and regional levels in response to global disease pandemic. In addition, they have learned the importance of advancement in logistics across the entire value chain - such as digital tools for logistics management and information systems - and close collaboration with private sector (Demissie et al., 2020). In addition, the previously existing health infrastructures and programs used for previous outbreaks such as Ebola have been leveraged in the fight against the COVID-19 pandemic. For example in Nigeria, local preparedness, enhanced by the availability of resources meant for fighting wild polio virus (laboratory services, surveillance, risk communication) bolstered Nigeria's response to COVID-19 (Ebenso, 2020).

Furthermore, the ministries of health need functional health facilities to provide treatment for symptomatic and hospitalized patients as well as improved infrastructure, additional equipment, and sufficient human resources to manage disease and prevent mortality. COVID-19 response measures to limit its spread, such as lockdown and movement restrictions, need to be well planned to prevent barriers to accessing other essential health services for children, pregnant mothers, and those with chronic disease conditions. The established COVID-19 country task forces need to be proactive in their distribution of supplies and non-food items for easy adoption of preventive and control measures to the COVID-19 pandemic.

To effectively handle any outbreaks such as COVID-19, governments need to stock their testing and health care centers with enough supplies and essentials to overcome any major outbreak in the future. Otherwise, as it stands in terms of its systems, coordination protocols, governance arrangements and supplies for testing, Africa is the continent least prepared to deal with any pandemic. For example, the humanitarian crisis in the North African region greatly affected their ability to coordinate efforts against the COVID-19 pandemic (Dzinamarira, Dzobo and Chitungo, 2020). There is an urgent need for the re-establishment of effective health care systems in the North African region to appropriately respond to the COVID-19 pandemic.

Some African countries, including the Democratic Republic of the Congo, have strained health care systems due to a high prevalence of HIV and tuberculosis as well as prolonged Ebola virus disease outbreaks. In addition, Democratic Republic of the Congo experienced another Ebola virus disease outbreak in 2018 and is currently facing a major measles outbreaks that claimed approximately 6,000 lives amid the COVID-19 pandemic. Countries with ongoing outbreaks - and those that are still recovering from recent outbreaks - find it difficult to manage the new COVID-19 pandemic due to lack of manpower, infrastructure, and financial resources (Ayebare, Waitt, Okello, Kayiira, Ajok, Nakatudde, Bhadelia, and Lamorde, 2020).

In Botswana, the government has taken important steps to address the COVID-19 pandemic. A multi-disciplinary COVID-19 task force has been established under the leadership of the president of the Republic of Botswana to coordinate preparedness and response. The COVID-19 task force was supported by the public health emergency preparedness and response committee and appropriately formed a multi-disciplinary sub-committee (UNDP Botswana, 2020).

The Government of Botswana restricted travel and cross-border movement of goods into the country. Mandatory quarantine was put in place for any returning citizens, and COVID-19 prevention messages were disseminated by the government through flyers, prints, and broadcast and social media (UNDP Botswana, 2020).

In Mozambique, Mozambique National Disaster Management Agency conducted assessments in the resettlement sites using the displacement tracking matrix. The assessments were used to inform the government and humanitarian partners of the preparedness and precautionary measures available in the resettlement sites that are currently hosting displaced persons due to Idai cyclone (IOM Mozambique, 2020). In addition, the Government of Mozambique set aside approximately USD700 million to face the COVID-19 pandemic as well as address social economic consequences with immediate budget contingencies. Meanwhile, the Ministry of Health included in its coronavirus disease response plan approximately USD260 million for a six-month period to be used for procuring supplies, strengthening preparedness, and social mobilization (UN Mozambique, 2020).

6.2.2 Socio-Economic Component

Important lessons can be drawn from the socio-economic analysis in this study. For instance, the study has uncovered that countries generally lack a functioning social protection scheme, or that they still have a lot of work to do to reach a significant number of the vulnerable populations in need of social protection. Although countries have established support programs for women and youth entrepreneurs, and MSMEs, the efficacy of such programs in light of the coronavirus crisis has yet to be demonstrated. Furthermore, most respondents indicated that less than 10percent of private companies are equipped with e-capabilities in their countries, and less than 10percent of workers have been trained on or acquired digital skills in their countries.

There are wide gaps in the education sector, as most students lacked the access to the internet and to computers that would have been necessary to adapt to the new norms of distance teaching and learning forced on them by the COVID-19 crisis. In fact, all survey respondents affirmed that COVID-19 has had either a destructive or a very destructive impact on the education systems of their countries. Moreover, although countries swiftly adopted fiscal and monetary measures to try to curb and limit the economic impacts of the pandemic, the study reveals that most countries in the study sample scored below the average of developing countries on all metrics of human development, economic vulnerability, and social vulnerability measures considered in the study.

An overall lesson drawn from the study underlines a strong need for planning, programming, and budgeting capacities to be reinforced on the continent, as well as capacity to build and maintain financial resilience, and the leadership capacity to anticipate, plan and ensure readiness and preparedness for future pandemics when they occur.

6.3 Selected Best Practices from Outside the Continent on Pandemic Preparedness and Readiness

6.3.1 Islamic Republic of Afghanistan

Key policy responses of the Government of Islamic Republic of Afghanistan as of 7 January 2021 was the initial allocation of Af 8 billion (USD104,000,000) (0.5 percent of GDP) from contingency funds for emergency pandemic response, of which Af 1.9 billion (USD24,700,000) (0.1 percent of GDP) for urgent health needs, such as establishing testing labs, including at border crossings; setting up special wards to boost hospitalization and care capacity; and procuring critical medical supplies.

On 29 April 2020, the government started providing free bread to the poor in Kabul, later extended to other cities. The program was ended in late June 2020. In May 2020, the government waived electricity bills of less than Af 1,000 (USD13) for a family residence in Kabul for two months and paid utility bills of the previous two months for 50 percent of households in Kabul. The decision benefited more than 1.5 million Kabul residents. Recognizing the liquidity constraints of many taxpayers, the government extended the tax filing deadline for the first quarter by 45 days. No further extensions have been provided. In late 2020, the government offered to waive tax and customs payment penalties if taxpayers clear their due taxes before the end of the fiscal year (21 December 2020). Parliament passed the revised 2020 budget on 28 November, which retroactively approved the following COVID-19 related spending, including those added in the July budget amendment: a health package amounting to Af 6.2 billion (USD80,600,000), including for building hospitals; and a social package, including the now-concluded bread distribution program of Af 2.8 billion (USD36,400,000). Also, a World Bank-supported social distribution program in the amount of Af 20.8 billion (see Box 14), was approved by IMF for COVID-19.

Box 14: Health and Social package to support the impact of COVID-19 in the Islamic Republic of Afghanistan

- Wheat purchase program (Af 1.7 billion) (USD22,100,000).
- Transfers to provinces to finance COVID-19 response amounting to (Af 2.3 billion) (USD29,900,000).
- Package to support agriculture amounting (Af 5.9 billion) (USD76,700,000) and short-term jobs amounting (Af 1.0 billion) (USD13,000,000).
- In 2020, the authorities envisaged to spend up to 2.9percent of GDP pandemic-related spending, with about 15percent directed to the health sector.

Source: IMF (2020)

With the support of the World Bank grant, the authorities are rolling out a relief package, amounting to 1.6percent of GDP, to Afghan households with incomes of USD2 per day or lower (twice the national poverty line). As about 90percent of all households fall below that threshold, the program is near-universal. Households in rural areas will receive an equivalent of USD50 in essential food staples and hygiene products, while those in urban areas a combination of cash and in-kind contributions equivalent to USD100, in two tranches (IMF, 2020).

6.3.2 Bolivia

A key policy response as of 6 January 2021 by the Bolivian government is the provision by authorities of direct relief payments of about USD73 per child to households with children in public schools, a measure calculated to provide most of its benefits to poorer households. This payment was extended to students in private schools from 18 May 2020. In addition, the government instituted a program (Canasta Familiar) to make direct payments for food to 1.5 million families (USD58 per family), pay the electric bills for three months for consumers with lower consumption, and pay 50 percent of the potable water and gas for all households. From 30 April 2020, the government provided USD73 to citizens who do not receive any other benefits or draw a salary from the public or private sector. The authorities also postponed the payment of some taxes (corporate income tax, value-added tax, and transaction tax) with the possibility to pay them in tranches. Payment of corporate income tax was deferred, and independent workers can claim tax deductions against their expenses on health, schooling, food, and related expenditures. The government created a USD219 million fund to support the operations of micro, small and medium enterprises. This fund will provide soft loans to companies to pay wage bills without layoffs for two months (companies can withdraw USD1230 per employee, repayable in 18 months). Imports of USD200 million worth of respiratory equipment were underway at the time of drafting this study, while ICU capacity is being doubled.

The latest transfer to households (Bono Contra el Hambre) became available starting on 1 December 2020. It provides a one-off transfer of about USD146 for all eligible individuals, such as those who receive the universal transfer, mothers who are already recipients of targeted cash transfers, people with disabilities, and citizens over the age of 18 who do not receive any type of public or private salary. On 28 December 2020, the government announced RE-VAT, a measure to refund value-added tax (VAT) equivalent to up to 5percent of an individual's purchase for those with an average monthly income equal to or less than about USD1,311 (IMF, 2020).

6.3.3 Brazil

Key policy responses by the Brazilian government as of 7 January 2021 to mitigate the impact of COVID-19, included the authorities announcing a series of fiscal measures adding up to 12percent of GDP, of which the direct impact in the 2020 primary deficit is estimated at 8.4percent of GDP. Congress declared a state of "public calamity" on 20 March 2020, lifting the government's obligation to comply with the primary balance target in 2020. The government invoked the escape clause of the constitutional expenditure ceiling to accommodate exceptional spending needs. Emergency measures are being included in a separate (so called 'war') 2020 budget, not bound by the provisions of Brazil's Fiscal Responsibility Law and the constitutional golden rule. The fiscal measures included the expansion of heath spending; temporary income support to vulnerable households (cash transfers to informal and low-income workers, bringing forward the 13th pension payment to retirees, expanding the Bolsa Familia program with the inclusion of over 1 million more beneficiaries, and advance payments of salary bonuses to low income workers); employment support (partial compensation to workers who have been temporarily suspended or have suffered a cut in working hours, as well as temporary tax breaks); lower taxes and import levies on essential medical supplies; and new transfers from the federal to state governments to support higher health spending and as a cushion against the expected revenue falls. Public banks expanded credit lines for businesses and households, with a focus on supporting working capital (credit lines add up to 4.5 percent of GDP), and the government has backed over 1percent of GDP in credit lines to SMEs and micro-businesses to cover payroll costs, working capital and investment. Most measures expired at the end 2020 (IMF, 2020).

6.3.4 Chile

On 19 March 2020, the authorities in Chile presented a package of fiscal measures of up to USD11.75 billion (about 4.7percent of GDP) focused on supporting employment and firms' liquidity. The set of measures includes: (i) higher healthcare spending; (ii) enhanced subsidies and unemployment benefits; (iii) a set of tax deferrals; (iv) liquidity provision to SMEs, including through the state-owned Banco del Estado; and (v) accelerated disbursements for public procurement contracts. On 8 April 2020, the authorities announced: (i) additional support for the most vulnerable and independent workers of about USD2 billion; and (ii) a credit-guarantee scheme (of USD3 billion) that could apply to credits of up to USD24 billion for facilitate firms' financing. On 17 May 2020, they announced a program to distribute 2.5 million food baskets to those in need, with an expected fiscal cost of USD100 million. On 14 June 2020, the authorities announced an additional fiscal package in the total amount of USD12 billion over the next 24 months, which encompasses: (i) new tax measures to stimulate the economy and boost the liquidity of SMEs, including a temporary reduction of the corporate income tax rate and allowing for instantaneous investment depreciation (announced on 2 July 2020); (ii) a program of about USD1.5 billion to support the middle class suffering severe income losses, including via soft loans from the treasury, mortgage payment delays, and subsidies for rentals (announced on 5 July 2020); and (iii) a proposal to strengthen the middle-class protection plan, with direct transfers of about USD635 to middle-class workers with severe income losses (announced on 14 July 2020). On 23 July 2020, Congress approved legislation that allowed the first withdrawal of pension funds, with a second withdrawal approved on 3 December 2020 tranches (IMF, 2020).

6.3.5 Trinidad and Tobago

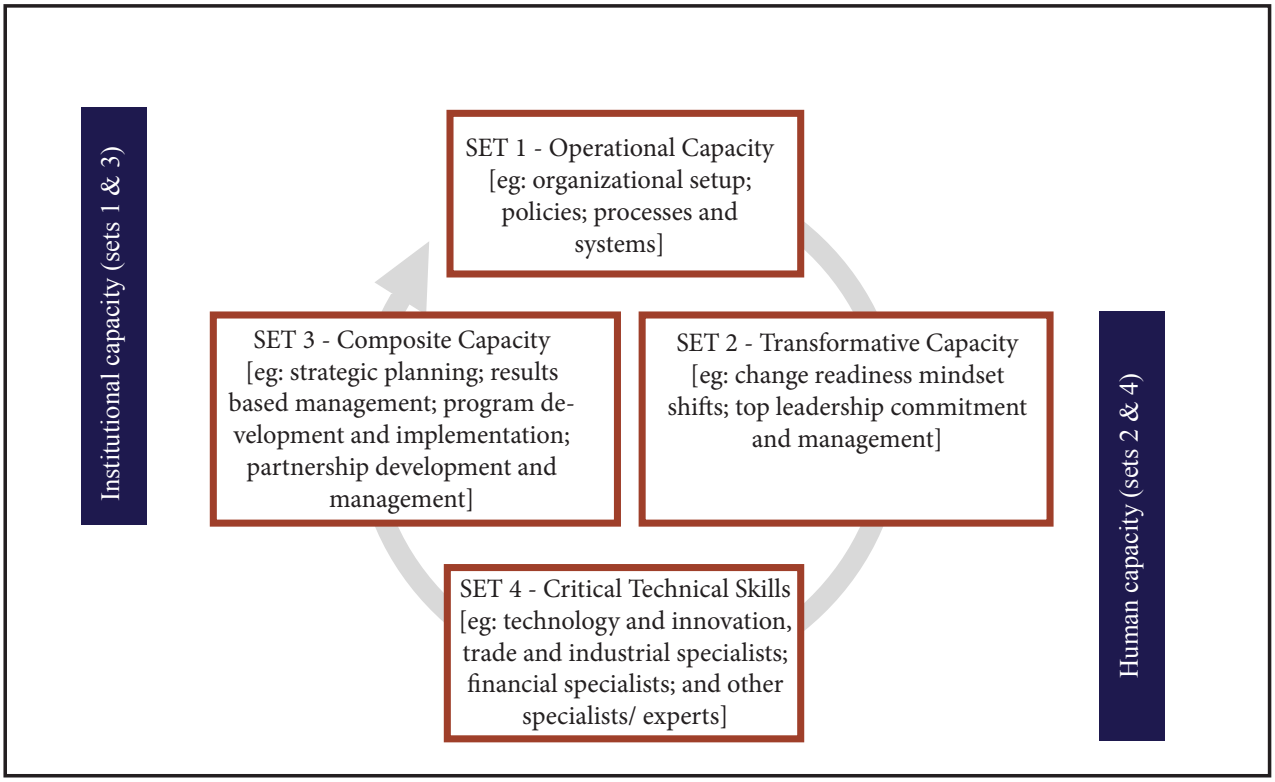
The fiscal package includes (i) salary relief for up to three months to workers who are temporarily unemployed or have reduced income; (ii) VAT and income tax refunds to individuals and SMEs; (iii) liquidity support to individuals and small businesses via credit union loans at reduced interest rates and long repayment periods; (iv) grants to hoteliers to upgrade of their facilities; (v) food, rental, and income support for low-income vulnerable groups; and (vi) import duty and VAT waivers on imports of certain medical and emergency supplies. On 26 March 2020, the Prime Minister announced that the Ministry of Health would receive additional funding to deal with COVID-19, including spending on medical equipment and supplies, human resources, and infrastructure. On 5 October, the Ministry of Finance announced an extension to December 2020 of salary relief and income support grants for workers in the creative and cultural industries (IMF, 2020).

6.4 Key Capacity Development Actions Necessary to Address Pandemic Preparedness and Readiness Capacity Gaps

The majority African countries have not yet met the Abuja Declaration for Public Health Expenditure of 15percent. As a result, the COVID-19 pandemic has negatively strained health care systems with significant negative impact on the socio-economic situation. The gaps that exist in weaker health care and socio-economic systems can be strengthened by the following: political commitment, government funding, increased investment, recruitment of trained personnel, and improvement in real-time data management.

The study reveals the significant institutional and human capacity challenges to be addressed to improve preparedness and to build resilience to respond to future outbreaks and pandemics. Specific recommendations for action, based on the ACBF holistic capacity development framework, are outlined below (see Figure 13).

Figure 13: Capacity Framework



Source: Adapted from ACBF and AUC (2016).

Transformative Leadership

- African countries need political commitment from their governments to address any future infectious disease outbreaks before they become an epidemic.

Critical Technical Skills

- Governments need to fund committed and dedicated public health care workers, epidemiologists, and researchers; help build their careers and capabilities; and improve research and training portfolios in order to combat future outbreaks. See Box 15 for the examples of specialists needing further skills development.

Box 15: Examples of Specialists Needing Additional Skills

- Physicians and Physician Assistants
- Nurses and Nursing Assistants
- Anaesthetists
- Emergency Medical Technicians
- Respiratory Therapists
- Physical Therapist
- Behavioural Health Provider
- Social Worker and Counsellors
- Pharmacists
- Occupational Therapist
- Laboratory Technicians

- A significant increase in governmental and donor investment is required to provide public health workers with surveillance and data analytics capabilities, and state of the art laboratories.
- Well-trained personnel should be recruited to sustain capacity and rapidly respond to outbreaks at their source.
- There is a need to upskill workforces in technical and vocational education and training, explore regional trade partnerships and harmonize trade policies as part of social-economic policies to exploit competitive advantages in different countries (Demissie et al., 2020).
- Institutionalization of community health workers and immediate up-skilling the broader health care workforce as most African countries are facing chronic shortage of health workers.

Operational Capacity

- Africa needs more investment into ONE-HEALTH collaborative activities across its continent to meet the challenges of current and future public health threats.
- An improvement in data management capability and capacity in health care systems is necessary in order to eliminate weak and inaccurate data reporting and to guide decision making during the COVID-19 outbreak.
- Investments should be made in building and sustaining strong national public health capabilities, infrastructure, operational processes, and pre-service and in-service training sessions for health workers.
- Prioritize expanding health budgets and accelerate health sector reforms that have been underway since before the coronavirus disease pandemic struck.
- Socio-economic response measures and policies, including fiscal and monetary/financial measures, as well as socio-protection programs, need to be strengthened across-the-board to reduce the severe economic impacts of pandemics on businesses and individuals.

Composite Capacity

- The African Union needs to have well planned-term strategies that can add value for consolidating African leadership of public health capacity-building, training, and research.
- Build robust and adequately funded emergency preparedness and response mechanisms for future outbreaks as resources required to respond to health emergencies are complex and expensive, particularly when the health care system is ill-prepared.
- Governments need to encourage private sector partnerships to boost technical capabilities and innovations as well as improve quality standards.
- Governments should particularly develop, expand, and strengthen support programs for MSMEs, and youth and women-led entrepreneurs to limit the disruption in their business activities during outbreaks.
- Plans for addressing adjustments in the Education sector that will be necessary during a future pandemic and must be pre-developed so that they are ready to be deployed without delay when needed.
- Given the dire financial and economic conditions in which several African countries found themselves at the outset of the COVID-19 pandemic, moving forward, it will behoove governments to develop sustainable ways and means of resource mobilization, in partnership with the private sector and development partners, to bolster their ability to quickly develop and fund response plans to future pandemics. Such resource mobilization measures should further explore domestic sources as well as innovative sources to maximize the potential for resource mobilization.
- Partnerships - involving governments, non-governmental organizations, multilateral, and bilateral organizations - must be formed and strengthened early based on the lessons learned from the COVID-19 pandemic to better prepare countries to respond swiftly and effectively to future outbreaks.

6.5 Key Actors to Build and Enhance Pandemic Preparedness and Readiness Capacity

Different actors are required to address capacity gaps identified in the previous section to build transformative leadership skills, critical technical skills, operational capacities, and composite capacities. This is necessary to build and enhance capacity for pandemic preparedness - which includes governments, continental organizations, regional economic communities, regional development banks, multilateral development partners and specialized agencies such as WHO and UNICEF. Figure 14 indicates the interrelationship of various stakeholder roles in the response to the COVID-19 pandemic.

Figure 14: Schematic Presentation of the Role of Actors for Preparedness and Readiness Capacity

6.5.1 The Role of Governments

Some of the actions required by governments include but are not limited to the following initiatives, which shall continue:

- African countries initiated public engagement conversations to inform their populations about the new pandemic.
- Public notices have been issued about COVID-19 in sub-Saharan African countries.
- The ministries of health worked with local health authorities, designated medical teams, testing laboratories and clinical facilities for isolation and care for coronavirus patients.
- Countries such as Kenya instituted widespread handwashing stations and use of hand sanitizers in public places such as bus stations and restaurant entrances.
- Health care workers and laboratory technologists were trained on the diagnosis and management of coronavirus infections.

- Across all sub-Saharan African countries, the respective governments created presidential task forces for public health, and pledged millions of dollars directed against the COVID-19 pandemic.
- In addition, the Government of Kenya had a 3-D company making 3-D face shields and printing a prototype for a ventilator adaptor that could allow doctors to treat two patients at the same time.
- In South Africa, the government rolled out mobile testing units to decrease the movement of potentially infected people. The mobile laboratories were deployed nationwide for large-scale screenings to trace and monitor disease propagation.
- In Nigeria, technical working groups for preparedness were established, which addressed the preparedness of the infrastructure's schedule of drugs and points of entry to the suspected cases.

6.5.2 The Role of the Private Sector

- The private sector is expected to complement government efforts by taking a variety of actions including:
- supporting governments in the poorest and most fragile countries with limited fiscal space to help citizens cope with the impact of the pandemic;
- raising funds and supporting national responses,
- investing directly in primary health care, taking critical steps to protect health care employees and communities;
- leveraging capabilities in manufacturing, communications, and supply of health commodities, especially PPEs;
- addressing the gap in resources and the immediacy of the pandemic without losing sight of the existing challenges presented by malaria, HIV, and tuberculosis diseases; and
- galvanizing support among key stakeholders in the private sector, including banks, to raise financial and other resources to support the continental response and procure the necessary medical supplies.

6.5.3 The Role of Civil Society

- The following efforts should be made by the civil society, including:
- combating misinformation during a pandemic and ensuring the availability of information in local languages critical for preserving the health of local communities;
- supporting governments to reach remote and vulnerable communities, such as the elderly and disabled people, for distribution of PPEs (masks, hand sanitizer, etc.), access to water, sanitation, food, and nutrition;
- establishing a COVID-19 recovery fund;
- protecting and providing shelter for victims of domestic violence during COVID-19, particularly among women and girls, to complement government outreach to individuals in abusive households;
- defending human rights and protecting the rights of citizens as governments try to enforce lockdowns and other measures;
- training in cybersecurity and digital skills to protect basic human rights across all online platforms; and
- promoting gender equality, monitoring national COVID-19 budgets, and advocating for equitable policies and actions.

6.5.4 The Role of the African Union in Pandemic Preparedness in Africa

- The AU and its organs play a critical role, including the following interventions (which need to be continuously performed by the continental organ).
- Established the Africa Centres for Disease Control and Prevention regional investment plan to finance project that strengthen disease surveillance, prevention, and emergency response systems across the African continent.
- Financed laboratories, transnational surveillance networks, emergency response mechanisms, and other public health assets designed to manage diseases on regional and continental scales.
- Supported development of guidelines and standards to improve coordination between Africa CDC and national public health institutions across the continent. The AU also facilitated the sharing of public assets and exchange of vital data on infectious diseases.
- Established an African task force for novel COVID-19, to oversee preparedness and response towards the virus ahead of any cases being registered on the African continent.
- Issued a joint continental strategy for the COVID-19 outbreak to promote evidence-based public health practice surveillance, prevention, diagnosis, treatment, and control of coronavirus disease. Updating, fostering implementation, and reporting on the continental strategies will remain an important role for the AU.

6.5.5 The Role of Regional Development Banks

African Development Bank

- The African Development Bank (AfDB) has continuously supported African countries in their efforts to build economic resilience while also mitigating the socio-economic and health impacts of the COVID-19 pandemic.
- The AfDB raised USD 2billion in emergency assistance to bolster the capacity of member countries on infection, prevention, testing and case management. The fund also boosts surveillance systems, procures, and distributes laboratory test kits, and supports coordination at national and regional levels. In the addition, USD13.5 million targets provision of PPEs, testing kits and health care laboratory facilities for Chad, Democratic Republic of the Congo and Central African Republic, which have the fewest number of ventilators on the continent (AfDB, 2020).
- AfDB can play a critical role in supporting key socio-economic sectors – providing infrastructure finance to stimulate growth, expand trade, and catalyze private sector investment to facilitate the recovery from COVID-19 and the to speed up post-COVID-19 recovery and resilience through job creation, entrepreneurship, and agri-preneurship to address the youth bulge through the Jobs for Youth in Africa Strategy and to improve socio-economic systems for future pandemics.
- AfDB has a primary function in the development of African countries, including providing financial resources to build the capacities for pandemic responses to build resilient health systems and to ensure the socio-economic advancement of the regional member countries.

Islamic Development Bank

- The Islamic Development Bank (IsDB) has assisted and continues to assist countries to build resilient economies on solid foundations and catalyze private investment by supporting economic recovery and counter-cyclical spending.
- The IsDB has put in place a USD2.3 billion package to support member countries contain COVID-19. Assistance is provided in three stages (namely, respond, restore, and restart), covering countries' needs in the short, medium, and long-term.
- The IsDB set up a special strategic preparedness and response facility worth USD730 million to mitigate negative health and socio-economic impacts of the COVID-19 pandemic.
- The IsDB also invested in research and development, as well as provided technical assistance support for development of innovative solutions for preventing and containing the pandemic under its science, technology, and innovation policies.
- The Bank also used its reverse-linkage program facility to share lessons, best practices, and technical expertise from other member countries in addressing response and management of COVID-19.
- The value addition of the IsDB is around the vast experience it has on South-South cooperation. Given its diverse membership from the developing world, IsDB considers South-South cooperation as an effective tool for fostering multilateral cooperation, which should be mainstreamed in building the capacity of countries for pandemic responses; member countries have something to share with each other, particularly in health and socio-economic to build resilience for future pandemics.
- To build socio-economic resilience, IsDB areas of interventions could be further developed and expanded. For instance, Islamic Finance can be used to support SMEs and vulnerable populations, including the informal sector, by providing the means to cope with future pandemics. Trade and investment in Africa could be further enhanced to support AfCFTA and to ensure that Africa has adequate industries and technologies to supply the quality and quantity of products needed to tackle future pandemics.
- An important role to be played by the IsDB to build the capacities for pandemic response is mobilizing and providing financial resources to implement capacity development interventions and to ensure the sustainability of capacity development initiatives.

6.5.6 The Role of Regional Economic Communities in Pandemic Preparedness in Africa

- As building blocks toward the African Economic Community, regional economic communities (RECs) play a critical role of coordinating regional efforts and supporting the domestication of continental initiatives aimed at addressing COVID-19 and post-COVID-19 challenges, as well as future pandemics.
- The REC communities shared how they tackled the COVID-19 pandemic and proposed ideas to enhance health integration and overall regional integration amidst the crisis to deal with public health.
- Regarding trade, RECs emphasized the importance of keeping borders open to allow critical supplies like pharmaceuticals, PPE, and food to flow between countries.
- RECs emphasized the importance of facilitating trade at borders while striving for ways to enhance border checkpoints efficiently. In addition, RECs proposed digital platforms, such as e-logistics and e-regulation, to leverage technology in order to facilitate the process and lower the costs to trade.

- In North Africa, multi-sectoral preparedness, operational readiness, and response capacities to limit the spread of COVID-19 were the most effective measures for: controlling disease transmission, early detection of the disease, early isolation, and treatment of positive cases, contact tracing, risk communication, and community engagement.
- In East Africa, RECs recommended a focus on domestic resource mobilization and greater investment in public health systems to expand social protection measures to cover the urban poor.
- RECs emphasized the importance of coordinated regional responses to the pandemic that are critical in the effective control of the coronavirus disease.
- The West African Economic and Monetary Union and Economic Community of West African States (ECOWAS) Commission allowed countries to collaborate to prevent the spread of COVID-19 and mitigate socio-economic effects of the disease on a regional scale.

6.5.7 The Role of Non-State, Bilateral, and Multilateral Partners

The Role of the World Health Organization in Pandemic Preparedness in Africa

- The WHO is at the forefront of the global response to COVID-19. It has supported and will continue to support African countries from monitoring developments and providing daily situation reports to mobilizing resources and expertise, as well as providing guidance to governments and the public.
- The WHO promised to support AU member states on a common preparedness and response strategy and joined health ministers in an emergency meeting about the COVID-19 outbreak on 22 February 2020 in Addis Ababa, Ethiopia.
- The WHO conducted a survey with African countries to assess their readiness for the COVID-19 pandemic, with results revealing a 66percent regional readiness level.
- The WHO assisted countries in coordinating preparation efforts and deployed more than 40 experts to ten African countries to support the coordination, treatment, infection, prevention and control, community engagement, surveillance, and laboratory disease control.
- The WHO assisted countries in building diagnostic capacity for the coronavirus pandemic leading 26 laboratories currently able to test for the new pathogens.

The Role of the World Bank

- The World Bank (WB), together with regional partners, is currently assisting and will continue to play a crucial role in supporting countries to take necessary steps in response to the global threat.
- The Bank has committed USD25 billion to African countries to support their health and economic recovery and expects to commit an additional USD15 billion by June 2021.
- The WB-approved the package of fast-track financing (USD14 billion) to assist companies and countries prevent, detect, and respond to the rapid spread of the coronavirus disease.
- The World Bank released approximately USD370 million to ten African countries (different from the ten sample countries) to fight against the COVID-19 pandemic, and to support and strengthen countries' health systems and regional programs to combat epidemics in Central and West Africa (World Bank, 2020).
- Due to the rapid spread of the COVID-19 pandemic into the developing countries, the WB delivered record levels of support to clients, worth USD160 billion, to boost health financing capacity.
- The WB is supporting over 100 developing countries to save lives through detection, prevention, and response to the coronavirus pandemic. In addition, the WB is helping countries access critically required medical supplies by reaching out to suppliers on behalf of governments.
- The WB offered social protection through cash transfers, poverty alleviation, and policy-based financing to restructure, redeploy, and reallocate existing resources.
- The World Bank is preparing emergency vaccine financing projects in 21 countries in Africa including Democratic Republic of the Congo, Ethiopia, Niger, Mozambique, Tunisia, Eswatini, and Cabo Verde, to name a few. That financing would be on granted on highly concessional terms.
- The International Finance Corporation (IFC), a sister organization of the World Bank, is working to mobilize financing for vaccine production and therapeutics focused on developing countries.

The Role of the US Centers for Disease Control and Prevention (CDC) in supporting Pandemic Preparedness in Africa

- In Africa, the US Centers for Disease Control and Prevention (CDC) provided technical assistance to the African Union to develop and launch the Africa CDC. In addition, the CDC established surveillance and response units to conduct event-based surveillance and emergency preparedness and response activities.
- The US CDC provided technical inputs for the establishment of the five African Centres for Disease Control and Prevention Regional Collaborating Centres (CDC, 2020).
- The CDC supported strategic planning and legislation development as the Botswana government moved towards

establishing its National Public Health Institute Program.

- In Mozambique, the CDC strengthened surveillance for national public health reporting, building workforce capacity to fill strategic gaps in the country's public health system.
- The CDC strengthened capacity for the early detection of emerging infectious diseases and improved collection of data on non-communicable diseases.
- The CDC strengthened the Nigeria Centre for Disease Control (NCDC) as the country's focal point for public health functions, which included activities supporting disease prevention and control, public health emergency preparedness and response, and public health laboratories.

The Role of the United Nations Children's Fund (UNICEF) in Pandemic Preparedness in Africa

- UNICEF is playing an important role in strengthening the capacity for pandemic preparedness in Africa. UNICEF is engaged in various activities including leading the coordination of regional partners to support risk communication and community engagement; co-leading operational coordination, case management, and infection prevention and control; and providing logistical and operational support.
- UNICEF led a nutrition subgroup, under the food security and nutrition working group, to enhance coordination of nutrition interventions regarding coronavirus disease.
- In the East and South African regions, UNICEF addressed the COVID-19 pandemic from three angles, including emergency response to containment measures and response to case management.
- UNICEF conducted external coordination including co-leadership and participation in the COVID-19 technical working groups focused on regional areas; supplies; mental health and psycho-social support (MHPSS); and the continuity of essential services (UNICEF, 2020).
- UNICEF ensured continuity of essential lifesaving services, particularly perinatal and curative services, as well as community treatment for common causes of illness among children under five years of age.
- UNICEF offered guidance on infant and young child feeding in the context of COVID-19, which was shared with countries. A regional statement on infant and young child feeding was developed together with WHO, the United Nations High Commissioner for Refugees (UNHCR) and the World Food Programme (WFP).
- In the North African region, UNICEF worked with ministries and the WHO to coordinate mechanisms for risk communication and community engagement (RCCE) and developed RCCE materials on COVID-19 prevention and risk reduction practices in local languages.
- UNICEF assisted governments with the provision of critical medical, water, sanitation, and hygiene supplies and other related activities in order to improve infection, prevention, and control through the delivery of supplies to ten countries in Africa.
- UNICEF provided technical assistance and developed guidance, standard operating procedures, and guidelines for health workers on the management of COVID-19 among children, pregnant, and breastfeeding women.
- UNICEF supported governments and partnered in the production and dissemination of essential e-learning modules and broadcasting of materials via radio, TV, and online platforms.
- In the West and Central Africa regions, UNICEF is supporting governments in the development and implementation of their COVID-19 response plans, focusing on support for RCCE.
- For deployment efforts in implementing COVID-19 vaccines programs, the World Bank is working with partners such as the WHO and UNICEF. and directly with governments, to finance their purchases from vaccine manufacturers and via COVAX (COVID-19 Vaccines Global Access).

6.5.8 The Role of Academic Institutions and Think Tanks in Pandemic Preparedness

Think tanks helped to set research priorities that will be relevant and impactful in a post-COVID-19 pandemic world. They organized ethics and human rights protections of the research process during periods that were not busy. In addition, think tanks engaged in global and regional consultations on the issues that affect countries to redirect human resources in the event they are not able to conduct field activities. Think tanks can become formidable partners for countries, as they can constitute fertile incubators of ideas and methods in mounting effective responses to the coronavirus pandemic, particularly from in the long run. Think tanks generally focused leadership on science and fact-finding, including the need to invest in research and the necessity of producing and using data for evidence-based policy-making. This is highly relevant for COVID-19, as Africa may quickly fall behind the curve in the types of scientific-based solutions needed to combat such a pandemic, including vaccine production, if it does not strengthen and reinforce its partnerships with think tanks, universities, and researchers.

6.6 The Role of South-South cooperation in Pandemic Preparedness

Some of the key goals of South-South cooperation include:

- *"To strengthen the capacity of developing countries to identify and analyze together the main issues of their development and to formulate the requisite strategies in the conduct of their international economic relations, through pooling of knowledge; and*
- *To strengthen existing technological capacities in the developing countries… to improve the effectiveness with which such capacities are used and to create new capacities and capabilities and, in this context, to promote the transfer of technology and skills."*[15]

In the post BAPA+40[16] era, South-South and triangular cooperation strives to achieve several objectives under those goals, including:

- spurring concerted and collaborative actions by developing countries, through partnerships involving all stakeholders;
- bolstering the role of South-South cooperation and triangular cooperation in the implementation of the 2030 Agenda for Sustainable Development;
- providing a platform for all relevant actors to contribute to further shaping the South-South cooperation and triangular cooperation agenda by enhancing its conceptual framework, taking into consideration its expanded scope, the proliferation of its actors and its increasing impact; and
- providing a platform for all relevant actors to contribute to further shaping the South-South cooperation and triangular cooperation agenda by enhancing its conceptual framework, taking into consideration its expanded scope, the proliferation of its actors and its increasing impact.

By recognizing that there is a need to build capacities in developing countries to support national plans and mobilize resources to implement their development priorities, South-South cooperation allows partners to draw mutual benefits from the comparative advantages and opportunities that it offers. It is particularly relevant for African countries as they work towards a post-COVID-19 recovery. Indeed, South-South, and triangular cooperation initiatives can take on different forms, including technical cooperation, trade, investment, finance, and infrastructure investment.

Additionally, with contributions and participation from a diversity of partners and stakeholders, including the private sector, the financial sector, civil society organizations, philanthropic organizations, academia and think tanks, South-South cooperation can present an optimum platform allowing African countries to scale up the means of implementation of their COVID-19 response programs, and find mutually beneficial solutions to their capacity needs in reducing vulnerability and assuring their readiness for future pandemics.

15. BAPA: Buenos Aires Plan of Action (1978)
16. Buenos Aires Plan of Action (+ 40 years)

Chapter VII. - Conclusion

The study found that most African countries had put in place measures to control the spread of COVID-19. These measures included: establishment of lockdowns; reduction of interest rates on loans; delayed payment of loans; and partnering with non-state actors to establish and strengthen health care systems during the COVID-19 pandemic. Furthermore, significant institutional and human capacity gaps exist in health care systems in Africa, including sustainability of strong supply chains; mobilization of resources; availability of funding for health emergency responses and research and development; and funding for education.

There is an on-going need for implementation of WHO-SOPs in the following areas: population-level distancing measures; enforcement of movement restrictions; promotion of personal hygiene measures to reduce the risk of person-to person transmission; use of PPEs; wearing of face masks, handwashing practices; use of hand sanitizers; social/physical distancing; and face shield and respiratory etiquette. In addition, assistance in identifying high risk areas/hot spots such as the border points, airports, or other immigration points, is a priority in limiting transmission.

It is noted that the expensive costs and lack of PPEs, N95 face masks, hand washing equipment, hand sanitizers, face shields and respirators are factors likely to hinder the fight against COVID-19 in Africa. It is recommended that investments and support is received from the private sector to locally produce these critical supplies.

There is a need for countries to continue to maintain a strong macroeconomic environment, as was the case prior to the pandemic. Additionally, countries must strengthen their capacity in widening the fiscal space to better prepare to face future pandemics like COVID-19. This includes robust debt management strategies, prudent budget management, heightened resource mobilization capacity, and strengthened partnerships with private and non-state actors, including bilateral and multilateral partners, think tanks, and academia, as well as taking advantage of the opportunities offered by South-South cooperation.

In Africa, the overall number of facilities handling COVID-19 and infectious diseases per country varies between 1 and 99. This constitutes only 20percent of all health facilities. Therefore 80percent of health facilities are ill-equipped. This presents an urgent need for institutional and human capacity development to build and equip infectious disease hospitals and train professionals to avoid new episodes of COVID-19, reinfections, and deadly disease outbreaks.

Supporting community-level measures is crucial to reduce contact between individuals. Prohibiting mass gatherings, eliminating employees in non-essential workplaces, temporary closures of educational establishments, and reducing public transport needs to be practiced in all countries. The WHO Africa and Africa CDC must move to accelerate the education of the population on SOPs for COVID-19 and other infectious diseases, provide PPEs, and establish quarantine and isolation centers at points of entry and in rural and urban populated areas.

The following capacity development issues need to be addressed in the health sector: ***healthcare systems need to be energized and modified; health finance systems need funds and accountability; new and up-to-date medical equipment and technologies need to be provided; and significant improvement needs to be made to health service delivery including use of ambulatory services, referrals, mobile paramedics, and mobile medical providers***. Furthermore, the WHO Standard of 1:1,000 practitioners needs to be achieved through provision of specialized medical training in management of infectious diseases, increased recruitment and remuneration, provision of biosafety training, and practitioner retention. Additionally, health ministries, governments and other stakeholders in Africa urgently need to build more infectious disease facilities and equip the facilities with adequate devices necessary for management of infectious diseases.

It is recommended that ***African countries leverage their novel medical research capacity by utilizing the existing structures and mechanisms that have been put in place over many years fighting other public health threats such as Ebola, HIV, tuberculosis, and malaria***. African countries have failed to establish networks of multidisciplinary health care workers competent in multi-tasking, such as community education and testing in a multi-disease approach in an effort to manage staff shortages. Therefore, Africa needs robust investment and political will to continue its upward path to align public health resources, public-private partnerships, and scientific expertise to prevent, control, and manage future outbreaks before they become an epidemic.

Transformational leadership skills, as well as governance and accountability structures, need to be further strengthened in many government-driven projects in Africa. This is to avoid poor performance and response to the COVID-19 pandemic, misappropriation of COVID-19 funds, and political denials. A continent-wide leadership for pandemic control activities involving the medical and scientific communities may play an important role in the national strategies and decision-making process in this regard.

The leadership within the ministries of health must ensure there is strong collaboration and cooperation among the WHO Africa, ACDC, and other stakeholders in the management of health institutions - especially in the areas of planning, coordination, engagement, community mobilization, and management - to achieve lower infection/transmission rates within health facilities, quarantine centers, and isolation centers.

On the socio-economic front, the advent of the coronavirus pandemic has uncovered several vulnerabilities in African countries in human development, and economic and social sectors. These vulnerabilities, including low human development and high poverty levels, have hampered countries' ability to implement policies and measures to adequately address the precarity of the vulnerable businesses and populations. Nevertheless, despite these challenges, virtually all countries quickly recognized the devastating nature of the disease and undertook strong measure initially to try to respond to its socio-economic impact. These measures have not proven sufficient or effective in the long run in the face of the sheer massive numbers of people, households and businesses that have been affected.

It, therefore, behooves countries to ***develop and strengthen partnerships both within existing bilateral and multilateral frameworks, as well as South-South cooperation, to quickly and sustainably mobilize the financial and technical resources needed to boost resilience most effectively to the current pandemic and ensure readiness for future such crises***.

Lastly, the ***WHO Africa should reinforce its partnerships with UNICEF, ACDC, CDC Atlanta, CDC Europe, CDC China, etc. to enhance COVID-19 pandemic prevention, management, and control efficiency in Africa and, most importantly, to ensure equitable vaccine development and production in Africa to avoid a threat of global vaccine nationalism.*** Furthermore, stakeholders should ensure transparent vaccine procurement, promote advocacy, and support free vaccinations against COVID-19 in Africa due to the indebtedness of its populations. Donors need to ensure governments and political leadership focus on addressing COVID-19 as a priority to achieve United Nations Sustainable Development Goals.

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Annexes

Annex A: Summary of African Government COVID-19 Responses

Annex A 1: African Countries' Fiscal Policy Response to COVID-19

Country	Announced Economic Stimulus (USD) (excl. new health spending)	Announced Stimulus (percentGDP)	Announced COVID-19 Health Spending (USD)	COVID-19 Health Spending, percent of General Government Total Expenditure	Corporate Tax Deferrals and Exemptions	Additional Corporate Support (incl. guarantees, subsidies, etc....)	Cash Transfers to Citizens (including unemployment benefits)	Food Assistance
Algeria	323 million	0.20percent	29 million	0.10percent	✓		✓	
Angola	67 million	0.10percent	120 million	1.20percent	✓			
Benin	148 million	1.00percent	99 million	4.50percent	✓	✓	✓	
Botswana	124 million	0.70percent	39 million	0.80percent	✓	✓	✓	
Burkina Faso	-	-	-	-	✓	✓		✓
Burundi	28 million	0.80percent	-		✓		✓	
Cabo Verde	21 million	1.10percent	1 million	0.10percent	✓	✓	✓	✓
Cameroon	724 million	1.90percent	101 million	1.50percent	✓	✓	✓	
CAR	48 million	2.10percent	69 million	23.10percent	✓		✓	
Chad	165 million	1.50percent	69 million	5.30percent	✓	✓		✓
Comoros	25 million	2.10percent	-	-	✓		✓	
Cote d'Ivoire	1,350 million	3.10percent	158 million	1.70percent		✓	✓	
Congo (Rep)	165 million	1.40percent	-	-	✓			
DRC	-	-	135 million	2.70percent	✓			
Djibouti	70 million	2.40percent	-	-				✓
Egypt	6,329 million	2.50percent	316 million	0.40percent	✓	✓	✓	
Equatorial Guinea	137 million	1.00percent	137 million	6.00percent	✓	✓	✓	
Eritrea	143 million	-	-	-				
Eswatini	53 million	1.10percent	5 million	0.40percent	✓	✓		✓
Ethiopia	1,210 million	1.50percent	430 million	4.00percent	✓	✓	✓	✓

Country	Announced Economic Stimulus (USD) (excl. new health spending)	Announced Stimulus (percentGDP)	Announced COVID-19 Health Spending (USD)	COVID-19 Health Spending, percent of General Government Total Expenditure	Corporate Tax Deferrals and Exemptions	Additional Corporate Support (incl. guarantees, subsidies, etc....)	Cash Transfers to Citizens (including unemployment benefits)	Food Assistance
Gabon	178 million	1.10percent	109 million	4.20percent	✓	✓		✓
Gambia	26 million	1.70percent	19 million	6.30percent			✓	✓
Ghana	1,931 million	3.00percent	600 million	5.40percent	✓	✓		
Guinea	378million	3.10percent	47 million	2.60percent	✓	✓	✓	
Guinea-Bissau	1 million	0.10percent	5 million	1.70percent				✓
Kenya	534 million	0.60percent	377 million	1.80percent	✓	✓	✓	✓
Lesotho	63 million	2.30percent	37 million	4.10percent	✓	✓	✓	
Liberia	-	-	-	-				
Libya	-	-	693 million	2.00percent				
Madagascar	100 million	0.80percent	4 million	0.20percent	✓		✓	
Malawi	50 million	0.70percent	20 million	1.10percent	✓		✓	
Mali	165 million	1.00percent	86 million	2.70percent	✓	✓	✓	✓
Mauritania	260 million	5.00percent	80 million	6.20percent	✓	✓	✓	
Mauritius	736 million	5.20percent	33 million	1.10percent		✓	✓	
Morocco	1,942 million	1.60percent	1,942 million	6.00percent	✓	✓	✓	
Mozambique	*US$700mn requested	4.86*	49 million	1.20percent	✓	✓	✓	
Namibia	304 million	2.10percent	115 million	3.30percent	✓	✓	✓	
Niger	121 million	1.30percent	-	-		✓	✓	✓
Nigeria	1,771 million	0.40percent	1,362 million	3.00percent	✓	✓	✓	
Rwanda	314 million	3.30percent	-	-	✓	✓	✓	✓
Sao Tome & Principe	-	-	-	-		✓	✓	
Senegal	801 million	3.40percent	130 million	2.70percent	✓	✓	✓	✓
Seychelles	90 million	5.70percent	69 million	11.50percent		✓		
Sierra Leone	245 million	6.00percent	8 million	1.10percent		✓		

Country	Announced Economic Stimulus (USD) (excl. new health spending)	Announced Stimulus (percentGDP)	Announced COVID-19 Health Spending (USD)	COVID-19 Health Spending, percent of General Government Total Expenditure	Corporate Tax Deferrals and Exemptions	Additional Corporate Support (incl. guarantees, subsidies, etc....)	Cash Transfers to Citizens (including unemployment benefits)	Food Assistance
Somalia	-	-	-	-	✓			
South Africa	37,879 million	10.30percent	-	-	✓	✓	✓	✓
South Sudan	3 million	0.10percent	13 million	0.80percent				
Sudan	415 million	1.20percent	542 million	14.70percent		✓	✓	✓
Tanzania	408 million	0.70percent	12 million	0.10percent	✓	✓	✓	
Togo	131 million	2.40percent	187 million	15.60percent	✓		✓	
Tunisia	862 million	2.20percent	-	-	✓	✓	✓	
Uganda	288 million	1.00percent	81 million	1.50percent	✓	✓	✓	✓
Zambia	142 million	0.50percent	35 million	0.90percent	✓			
Zimbabwe	50 million	0.20percent	5 million	0.50percent	✓	✓	✓	✓

Source: Milken Institute (2021).

Annex A2. African Countries' COVID-19 Monetary Policy Measures

Country	Announced Monetary Policy Measures	Current Policy Rate	Lowest Policy Rate in 2020	Reduction in Response to COVID-19	Policy Rate Reduction	Capital Requirement Reduction	Liquidity Support Measures	Loan Deferral/ Refinancing Framework	Exchange Rate Measures	Fintech/ e-Payment Support Measures
Algeria	Banque d'Algérie reduced its policy rate by 25 bps to 3.00 percent on 30 April 2020. This was the second rate cut in response to COVID-19, following a previous reduction from 3.75 to 3.25 on 15 March.			-1	✓	☑				
Angola	Banco Nacional de Angola maintained the policy rate and established a special liquidity facility in the amount of Kz100 billion.						☑			?
Benin Burkina Faso Cote d'Ivoire Guinea-Bissau Mali Niger Senegal Togo	The Central Bank of West African States (BCEAO) increased available resources to banks to FCFA 4.750 billion, extended the collateral framework for 1,700 prequalified companies, and announced various credit refinancing frameworks. It also provided FCFA 25 billion in subsidies to the West African Development Bank (BOAD). The BCEAO adjusted the ceiling and the floor of the monetary policy corridor downward by 50 bps, to 4.00 and 2.00 percent respectively			0			☑			

Country	Announced Monetary Policy Measures	Current Policy Rate	Lowest Policy Rate in 2020	Reduction in Response to COVID-19	Policy Rate Reduction	Capital Requirement Reduction	Liquidity Support Measures	Loan Deferral/ Refinancing Framework	Exchange Rate Measures	Fintech/ e-Payment Support Measures
Botswana	The Bank of Botswana reduced the policy rate by 50 bps to 3.75 percent on 8 October 2020. This was the second rate cut in response to COVID-19, following another 50-bps cut to 4.25 percent on 30 April 2020.			-1	☑	☑	☑	☑		
Cabo Verde	The Banco de Cabo Verde reduced the policy rate by 125 basis points to 0.25 percent and reduced banks' reserve requirement rates.			-1	☑	☑	☑			
Cameroon CAR Chad Congo Equatorial Guinea Gabon	The Bank of Central African States (BEAC) reduced the policy rate from 3.5 percent to 3.25 percent, decreased the Marginal Lending Facility rate from 6 percent to 5 percent, and increased liquidity provisions to FCFA 500 billion.			0			☑			
Democratic Republic of Congo	The Banque Centrale du Congo increased the policy rate to 18.5 percent from 7.5 percent. In March, the BCC announced several additional response measures to ensure market stability and increase liquidity.			-		☑				☑

Country	Announced Monetary Policy Measures	Current Policy Rate	Lowest Policy Rate in 2020	Reduction in Response to COVID-19	Policy Rate Reduction	Capital Requirement Reduction	Liquidity Support Measures	Loan Deferral/ Refinancing Framework	Exchange Rate Measures	Fintech/ e-Payment Support Measures
Egypt	The Central Bank of Egypt reduced its policy rate for a third time, by 50 bps to 8.25 percent, on 12 November 2020. The preceding rate cut, also by 50 bps to 8.75 percent, occurred on 24 September 2020. Previously, in March, the CBE announced an extensive debt relief program targeting the tourism and SME sectors and reduced the policy rate by 300 basis points to 9.75 percent.			-3			☑			☑
Eritrea	No monetary policy measures in response to COVID-19.	-	-	-						
Eswatini	The Central Bank of Eswatini reduced the policy rate by 25 basis points to 3.75 percent on 24 July 2020. This was the fourth rate cut, following a previous reduction from 4.5 percent to 4.0 percent on May 22.					☑	☑			☑
Ethiopia	The National Bank of Ethiopia took steps to encourage the broader use of mobile banking in the country and announced a BIRR15 billion liquidity facility.	-	-	-						

Country	Announced Monetary Policy Measures	Current Policy Rate	Lowest Policy Rate in 2020	Reduction in Response to COVID-19	Policy Rate Reduction	Capital Requirement Reduction	Liquidity Support Measures	Loan Deferral/ Refinancing Framework	Exchange Rate Measures	Fintech/ e-Payment Support Measures
Gambia, The	The Central Bank of The Gambia further reduced the policy rate by 2 percentage points to 10 percent on 28 May 2020. This was the second rate cut, following a previous reduction from 12.5 percent to 12 percent on 27 February 2020.			-2	☑					
Ghana	The Bank of Ghana lowered the key rate from 16 percent to 14.5 percent and bank reserve requirement to 8 percent to support the financial sector.			-1	☑	☑				☑
Guinea	The Central Bank of Guinea (BCRG) initially reduced the policy rate by 100 basis points to 11 percent and implemented market liquidity support programs in April 2020. Later, in June, the BCRG increased the policy rate by 50 bps to 11.5 percent.			-1			☑			
Kenya	The Central Bank of Kenya reduced the policy rate by 25 basis points to 7.00 percent on 29 April 2020. This was the second rate cut, following a previous reduction from 8.25 to 7.25 on 24 March.			-1			☑			

Country	Announced Monetary Policy Measures	Current Policy Rate	Lowest Policy Rate in 2020	Reduction in Response to COVID-19	Policy Rate Reduction	Capital Requirement Reduction	Liquidity Support Measures	Loan Deferral/ Refinancing Framework	Exchange Rate Measures	Fintech/ e-Payment Support Measures
Lesotho	On 28 July 2020, the Central Bank of Lesotho announced a further reduction of the policy rate by 25 basis points, from 3.75 percent to 3.50 percent. This was the fourth rate cut, following the 22 May reduction from 4.25 percent.							☑		☑
Liberia	On 29 May 2020, the Central Bank of Liberia decided to reduce the policy rate to 25 percent, and has made policy changes to encourage mobile money transactions and to alleviate repayment pressures for borrowers in affected sectors, among other measures				☑					☑
Libya	On 16 December 2020, the Central Bank of Libya modified the Libyan dinar's official exchange rate for the U.S. dollar and international special drawing rights.			-						
Madagascar	The Central Bank of Madagascar provided a A420 billion liquidity injection to the market and took steps to encourage the use of mobile money, among other measures.			-			☑			☑

Country	Announced Monetary Policy Measures	Current Policy Rate	Lowest Policy Rate in 2020	Reduction in Response to COVID-19	Policy Rate Reduction	Capital Requirement Reduction	Liquidity Support Measures	Loan Deferral/ Refinancing Framework	Exchange Rate Measures	Fintech/ e-Payment Support Measures
Malawi	The Reserve Bank of Malawi reduced the policy rate by 150 bps to 12 percent on 23 November 2020, citing favorable inflation developments. Previously, in April, the Bank injected K12 billion into Malawi's banks and reduce the Lombard rate (interest rate charged by central bank) by 50 percent, to 0.2 percent above the policy rate.			-1	☑	☑	☑	☑		☑
Mauritania	The Central Bank of Mauritania reduced the key policy rate by 150 bps to 5 percent and established a currency swap facility to prevent exchange rate fluctuation.			-1	☑	☑	☑			
Mauritius	The Bank of Mauritius reduced the Key Repo Rate to 1.85 percent on 16 April. This was the second-rate cut, following a previous reduction from 3.35 percent to 2.85 percent on 10 March.			-1	☑		☑			

Country	Announced Monetary Policy Measures	Current Policy Rate	Lowest Policy Rate in 2020	Reduction in Response to COVID-19	Policy Rate Reduction	Capital Requirement Reduction	Liquidity Support Measures	Loan Deferral/ Refinancing Framework	Exchange Rate Measures	Fintech/ e-Payment Support Measures
Morocco	On 16 June 2020, the Bank Al Maghrib reduced the policy rate by 50 basis points to 1.5 percent. This was the second rate cut in response to the COVID-19 pandemic. Additional announced policy response measures have included liquidity facilities targeting both local and foreign currency supplies.			-1		☑	☑	☑	☑	
Mozambique	Banco de Mozambique further reduced the main monetary policy rate by 100 basis points to 10.25 percent on 17 June 2020. This was the second-rate cut, following a previous reduction from 12.75 percent to 11.25 percent on 16 April 2020.			-2	☑	☑	☑		☑	☑
Namibia	The Bank of Namibia reduced the repo rate to 3.75 percent on 19 August 2020. This was the fourth rate cut in response to the global economic impacts of COVID-19.			-3		☑				

Country	Announced Monetary Policy Measures	Current Policy Rate	Lowest Policy Rate in 2020	Reduction in Response to COVID-19	Policy Rate Reduction	Capital Requirement Reduction	Liquidity Support Measures	Loan Deferral/ Refinancing Framework	Exchange Rate Measures	Fintech/ e-Payment Support Measures
Nigeria	The Central Bank of Nigeria reduced its policy rate by 1 percent to 11.5 percent, which was the second rate cut since March 2020. The bank created an N50 billion targeted credit facility and took other measures to inject liquidity into the banking system.			-2	☑					☐
Rwanda	The National Bank of Rwanda (BNR) reduced the policy interest rate by 50 bps to 4.5 percent on 29 April 2020. Previously, the BNR had announced an RWF 50 billion liquidity facility for banks and lowered the reserve requirement ratio by 100 basis points to 4 percent, among other measures.			0	☑	☑	☑			☐
Seychelles	The Central Bank of Seychelles further cut the policy rate by 100 basis points to 3 percent on 22 June 2020 to support the domestic economy. This was the second-rate cut, following a prior rate cut to 4 percent on 22 March 2020.			-2	☑					
Sierra Leone	The Bank of Sierra Leone set up a Le 500 billion dedicated loan fund for the private sector and lowered the policy rate by 150 basis points to 15 percent, among other measures.			-1	☑	☑	☑			

Country	Announced Monetary Policy Measures	Current Policy Rate	Lowest Policy Rate in 2020	Reduction in Response to COVID-19	Policy Rate Reduction	Capital Requirement Reduction	Liquidity Support Measures	Loan Deferral/ Refinancing Framework	Exchange Rate Measures	Fintech/ e-Payment Support Measures
Somalia	The Central Bank of Somalia has introduced about USD3 million in lending support for SMEs.	-	-	-			☑			
South Africa	The South African Reserve Bank again reduced the repo rate to 3.50 percent, effective 24 July 2020 to support the market liquidity. This was the fourth rate cut in response to COVID-19, following the reduction to 3.75 percent from 4.25 percent on 22 May 2020.			-3		☑	☑			
South Sudan	The Bank of South Sudan increased the policy rate from 10 percent back to its pre-pandemic level of 15 percent on 6 November 2020, citing constrained financial system performance and the need to mop up excess liquidity in the banking sector. In July, the Bank had reduced the benchmark interest rate by 3 percent to 10 percent. In April, the Bank had cut the policy rate from 15 percent to 13 percent.			-5		☑				
Tanzania	The Bank of Tanzania reduced the policy rate by 200 basis points to 5.00percent and increased mobile money transaction limits, among other measures.			-2	☑	☑		☑		☑

Country	Announced Monetary Policy Measures	Current Policy Rate	Lowest Policy Rate in 2020	Reduction in Response to COVID-19	Policy Rate Reduction	Capital Requirement Reduction	Liquidity Support Measures	Loan Deferral/ Refinancing Framework	Exchange Rate Measures	Fintech/ e-Payment Support Measures
Tunisia	The Central Bank of Tunisia reduced the policy rate by 50 basis points 6.25 percent. This was the Bank's second-rate cut, following a 100-basis point cut to 6.75percent in March, when the Bank also provided credit guarantees in the amount of TND500 million, among other measures.			-1	☑		☑	☑		☑
Uganda	The Bank of Uganda further reduced the policy rate to 7 percent on 8 June 2020. The Central Bank initially reduced the policy rate from 9 to 8 percent on 6 April 2020.			-2	☑		☑	☑		☑
Zambia	Bank of Zambia reduced the policy rate by a further 125 basis points to 8 percent. Among other measures, the Bank of Zambia announced the establishment of a refinancing facility in the amount of K10 billion, revised loan classifications, and urged commercial banks to waive bank transaction fees.			-3	☑		☑			☑

Country	Announced Monetary Policy Measures	Current Policy Rate	Lowest Policy Rate in 2020	Reduction in Response to COVID-19	Policy Rate Reduction	Capital Requirement Reduction	Liquidity Support Measures	Loan Deferral/ Refinancing Framework	Exchange Rate Measures	Fintech/ e-Payment Support Measures
Zimbabwe	The Reserve Bank of Zimbabwe increased the policy rate back to 35 percent due to pressing macro-financial pressure on 1 July 2020. The Reserve Bank earlier reduced the policy rate from 25 to 15 percent on 1 May 2020.			-20	☑	☑	☑		☑	

Source: Milken Institute (2021).

Annex B: Survey Instruments

QUESTIONNAIRE (Health Component)

Title: Capacity Imperatives of Pandemic Responses: Building resilient health, social, and economic systems and ensuring socio-economic transformation in Africa

Introduction

This study is conducted by the African Capacity Building Foundation (ACBF) in partnership with the Islamic Development Bank (ISDB) with a major goal of informing policy and reforms in the preparedness and response of the health, social, and economic sectors in your country towards COVID-19 pandemics. The purpose of this survey is to help build resilient health systems and resilient economic and social systems to ensure there is socio-economic transformation in Africa. You are, therefore, required to share an accurate record of the following information as it stands today regarding the Health sector in your country.

Please note that the information you provide will only be used for the purpose of attaining the goal of the study. As such, ***your responses will be treated with the greatest level of confidentiality. Your inputs are highly appreciated.***

Choices of suggested countries for the research to be contacted are:

Region	Countries Chosen for Study
Northern Africa	1. Mauritania, 2. Egypt
Western Africa	1. Nigeria, 2. Senegal
Central Africa	1. Congo Democratic Republic, 2. Chad
Eastern Africa	1. Kenya 3. Sudan
Southern Africa	1. Botswana, 2. Mozambique

Country respondents:

- Country-specific COVID19 pandemic teams
- World Health Organization, INGOs, and CBOs
- Parliamentarians, Ministers, Cultural Leaders, and Faith-based Organizations
- Allied Health Professionals, Key Informants, Focal Groups, and Junior Professionals
- Healthcare Workers, Patients, and Health Ministry Officials etc.
- Research Institutions/Think tanks
- Socio-economic Experts
- Ministries in Charge of Economic and Social Policies

Section A: Background Information

A1- Name of Country……

A1a. What is your place of residence?

Rural area -------1
Urban area …….2

A2- Institutional affiliation (Health or Socio-economic) body that you represent or work for.....

A3- Your gender

Male	Female
1	2

A4- What is your age group?

21 – 30 yrs.	31 – 40 yrs.	41 – 50 yrs.	Over 50 yrs.
1	2	3	4

HEALTH SYSTEMS

(To be filled by the responsible Government Health Personnel in your country)

SECTION B: Health Facilities Available (*Please fill in the figures for the items*)

B.1- Number of government-funded/owned hospitals.
B.2- Number of government-funded/owned hospitals equipped to competently handle. pandemics
B.3 The number of health personnel/specialists in pandemics in the country
B.4- Ratio of health personnel to patients in case an emergency broke out is 1 to: (1:1000 WHO standard golden rule)

a.) Less than 1001 b.) 1001 - 2000 c.) 2001-3000 d.) Over 3000

B.5- Does your country have a written pandemic response plan/ strategy/policy, and systems and processes?

Yes_____ No_____

If yes indicate the name/ reference of the response approach……

Section C: COVID-19-impact on the Health Systems.

C1- Has the COVID-19 pandemic affected the health systems in your country regarding the following:

s/n		Yes	No
1	Commitment of the health institutions to fighting other diseases		
2	Resources meant for fighting of other diseases		
3	Availability of staff to help deal with COVID-19		

Other than the issues you have raised above, how else has COVID-19 affected the health system in your country?

……..

C2- What implications for capacity development in African countries does the COVID-19 pandemic pose considering its effects on the following health system components in your country?

- Healthcare system leadership and governance……
- Health information systems……
- Health system financing……
- Human resources for health……
- Essential medical products and technologies……
- Healthcare service delivery……..

……..

C3- What critical technical/specialist skills are required in your countries to fight pandemics……..

……..

Assessment of priorities for building human and institutional capacities for African countries in the fight against pandemics such as COVID-19.

Section D: Human/Critical Technical/Specialist Skills

D1-To what extent has the health personnel in your country been trained to combat pandemics without calling on persons from outside the country? On a scale of 0 - 10 where 0 means NOT AT ALL and 10 means TO A GREAT EXTENT, please rate this aspect. ……

D2- To what degree can the political leaders in your country respect and adhere to the health personnel recommendations regarding the response to pandemics?

Great extent _____ Some Extent_____ Minimal Extent_____

D3- To what extent are your health personnel preventing community transmission by rapidly finding and isolating all cases in the event of a pandemic?

Great extent _____ Some Extent_____ Minimal Extent_____

Please justify your answer……..

D4- To what extent are your health personnel providing pandemic victims with appropriate health care?

Great extent _____ Some Extent_____ Minimal Extent_____

Please justify your answer……..

D5- To what extent can your health personnel develop safe and effective vaccines and therapeutics that can be delivered at scale and that are accessible based on need?

Great extent _____ Some Extent_____ Minimal Extent_____

D6- In the event of a pandemic, our health professionals can easily do the following.

Intervention	*Can be done efficiently*	
	Yes	No
Tracing contacts of victims		
Quarantining all contacts		
Supporting all contacts of the victims		
Providing necessary medical care to contacts		
Providing pandemic information/awareness/where to get help		
Testing suspected cases and their contacts		

D7-What critical technical/specialist skills are currently lacking among your health staff to respond to the health system challenges in fighting COVID-19 pandemics in your country?

.....

.....

D8-a.) Has there been any study conducted to identify any gaps in the skills of the health personnel in your country to combat pandemics?

Yes_____ No_____

b.) If yes, who conducted the study? Examples - international consultants, national consultants, others (specify…)

c.) Who commissioned the study?

Ministry of Health_____ International Partner(s)____ Private Sector____ Other (specify)_____

d.) Is this study accessible or available to the public?

Yes_____ No_____

If yes, please provide further information on how to access the study.

.....

.....

D9- How do you rate your country's performance on capacity to fight the pandemics in terms of the measures indicated in the table below?

	Intervention	Poor	Fair	Good	Excellent
1	Strategic Planning	1	2	3	4
2	Electronic Monitoring - Trace and Track Systems	1	2	3	4
3	Testing Systems	1	2	3	4
4	Communication Systems	1	2	3	4
5	Strategic Online GSM Based Apps Like SMS, Etc. Exists	1	2	3	4

Section E: Transformative leadership capacity

E1- Describe the leadership/governance structures used to fight covid-19 pandemic in your country?
……
……

E2- Who advises the gov't in fighting covid-19 pandemics?……
……

If yes, please briefly explain……
……

E3-What leadership quality is most required to effectively fight pandemics in your country? ……
…… ……

E4-What have the traditional leaders done during the fight of the covid-19 pandemic to support the fight against pandemics?……
……

E5 – Is the private sector effectively mobilized to the fight against pandemics?
Yes_____ No_____

If **yes/no**, please explain briefly?……

E6- a.) Describe the availability of the management resources available in your country in the fight against pandemics.
……

b.) Do you feel that there is proper accountability in the management of resources when your country is dealing with pandemics? Yes_____ No_____

c.) If your answer is **No**, what do you feel should be done to make the leadership more accountable to the management of resources when pandemics break out?……
……

Section F: Institutional Operational capacity

F1- What institutions exist to fight pandemics in your country?.....
Which of these aspects can be managed very well by your health institutions?

(Please tick appropriately)

	Coordination and Planning	*Yes*	*No*
1	Our institutions can hold planning meetings at which all stakeholders are represented.	1	2
2	All political parties focus on the pandemic as the common enemy.	1	2
3	All relevant government ministries / institutions take an active role in fighting pandemics in this country.	1	2
	Engage and mobilize communities to limit exposure		
1	Communities in our country are compliant with Standard Operating Practices (SOPs) during pandemics.	1	2
2	In the event of an epidemic, communications can quickly be sent out by the concerned stakeholders to the masses in local languages so that masses can understand the need for cautious behavior.	1	2
3	There are always toll-free active lines which communities can use to report emergencies such as a pandemic.	1	2
4	Questions and misunderstandings about pandemics and how they are spread, are quickly addressed in this country by the health officials and the relevant task teams.	1	2
5	Individuals in the community do not have to be arrested and compelled in the fight against epidemics.	1	2
	Identify cases and management of disease transmissions		
	Our institutions can easily;		
1	Identify suspected cases in the communities.	1	2
2	Conduct test on big numbers and report back the outcomes in a timely manner.	1	2
3	Mobilize testing equipment for the pandemics.	1	2
4	Mobilize communities to be on high alert about any suspected cases.	1	2
5	Rapidly scale up the workforce and offer training where necessary.	1	2
6	Provide personal protective gear to all concerned health personnel.	1	2
	Suppressing community transmission		
1	Adapt population-level distancing measures.	1	2
2	Enforce movement restrictions in addition to other public health and health system measures.	1	2
3	Promote personal measures that reduce the risk of person-to person transmission, such as hand washing, physical distancing, and respiratory etiquette.	1	2
4	Identify high risk areas/hotspots such as the border points, airports, or other immigration points.	1	2
5	Support community-level measures to reduce contact between individuals, such as the suspension of mass gatherings, the closure of non-essential places of work and educational establishments and reduced public transport.	1	2

F2-Describe the weaknesses in these institutions that you have set up to fight COVID-19 pandemic.

.....

F3- What are the strengths and gaps you have observed in institutional coordinating mechanisms fighting the pandemics in your country?.....

.....

F4- a.) What plans, policies, systems, and processes are in place to support pandemics in your country?

.....

.....

b.) How adequate are the policies, systems, and processes?.....

c.) What changes, if any, are required to make these policies, systems, and processes more effective?……

……

Section H. Implications for capacity development and policy recommendations

H1.) What capacity development actions can be raised to address the priority capacity gaps identified for effective action of parties such as governments and non-state actors, regional economic communities, continental bodies in the event of an epidemic? ……

……

H2.) What policy recommendations can be raised to address the priority capacity gaps identified for effective action of parties such as governments and non-state actors, regional economic communities, continental bodies in the event of an epidemic? ……

……

Thank you very much for taking part in this survey!
The End

QUESTIONNAIRE (Socio-Economic Systems)

Title: Capacity Imperatives of Pandemic Responses: Building Resilient Health, Social and Economic Systems and Ensuring Socio-Economic Transformation in Africa

Introduction

This study is conducted by the African Capacity Building Foundation (ACBF) in partnership with the Islamic Development Bank (ISDB) with a major goal of informing policy and reforms in the preparedness and response of the health, social and economic sectors in your country towards COVID-19 Pandemics. The purpose of this survey is to help build resilient health systems and resilient economic and social systems, to ensure there is socio-economic transformation in Africa. You are therefore required to share an accurate record of the following information as it stands today regarding the economic and social sectors in your country.

Please note that the information you provide will only be used for the purpose of attaining the goal of the study. As such, ***your responses will be treated with the greatest level of confidentiality. Your inputs are highly appreciated. Choice of suggested countries for the research to be contacted are:***

Region	Countries Chosen for Study
Northern Africa	1. Mauritania, 2. Egypt
Western Africa	1. Nigeria, 2. Senegal
Central Africa	1. Congo Democratic Republic, 2. Chad
Eastern Africa	1. Kenya 3. Sudan
Southern Africa	1. Botswana, 2. Mozambique

Country respondents

- Country specific COVID19 Pandemic teams
- World Health Organizations, INGOs, and CBOs
- Parliamentarians, Ministers, Cultural Leaders, and Faith Based Organizations
- Allied Health Professionals, Key Informants, Focal Groups, and Junior Professionals

- Healthcare Workers, Patients, and Health Ministry Officials etc.
- Research Institutions/Think tanks
- Socio-economic Experts
- Ministries in charge of Economic and Social Policies

SOCIAL AND ECONOMIC SYSTEMS QUESTIONNAIRE

(To be filled by the responsible Government Personnel in your country in charge of Economic, Finance, and/or Social Affairs)

Section A: Background Information

A1- Name of Country……

A1a. What is your place of residence?

Rural area -------1

Urban area …….2

A2- Institutional affiliation (Health or Socio-economic) body that you represent or work for.....

A3- Your gender

Male	Female
1	2

A4- What is your age group?

21 – 30 yrs.	31 – 40 yrs.	41 – 50 yrs.	Over 50 yrs.
1	2	3	4

Section B- Support for SMEs to Support Post-COVID Growth and Recovery

B1-a.) Has a Rapid Market Assessment been conducted in your country on potential sustainable value chains since the start of COVID-19?

Yes_____ No_____

b.) If you answered **Yes** to **A1**, what are some of the main findings of the Rapid Market Assessment?.....

……

……

B2-Does your country have in place a program to support effective partnerships around agricultural local value chains?

Yes_____ No_____

If YES, indicate the name of the Program…….

B3- Does your country have in place a business transformational change initiative or program to ensure innovation in business process, business model, technologies, productivity enhancement, re-skilling, and up-skilling?

Yes_____ No_____

If YES, indicate the name of the Program:…….

B4- Has your country adopted programs to promote and finance innovative e-solutions in the private sector to stabilize supply (e.g., promotion of digital banking and commerce, lowering of internet and ICT taxes)?

Yes_____ No_____

If YES, indicate the name of the Program…….

B5- Does your country have in place youth-led initiatives which promote entrepreneurship?

Yes_____ No_____

If YES, indicate the name of the Program:……

B6- Has your country adopted initiatives to support rural women businesses, economic activities, and products, including specific value chains access?

Yes_____ No_____

If YES, indicate the name of the Program:……

B7- Please answer the following questions:

- What is the number of start-ups supported as part of Government support for microbusiness/small and medium-size enterprises (MSMEs) in response to COVID-19? _____
- How many MSMEs have survived closure because of their access to Government-supported finance for innovative e-solutions in your country in response to COVID-19? _____
- How many SMEs have improved their capacity to tender for public sector contracts, including through collaborative approaches as part of Government support for COVID-impacted businesses? _____
- How many women-owned businesses have increased their capacity to access business promotion services and financial support offered by your Government because of COVID-19? _____
- How many youth-led enterprises have increased their capacity to access business promotion services and financial support offered by your Government because of COVID-19? _____
- What types of mechanisms or platforms exist in your country to strengthen business partnerships to support local value chains in the face of COVID-19? Choose all that applies.

1	Funding for SMEs	3	Business Associations and Clubs	5	ICT Price Subsidies
2	Credit facilities	4	Others (Please Specify)	6	None

Section C. Strengthening Private Sector and Business Resilience in Response to Pandemics

C1- Which sectors in your country's economy show the most potential for growth? (Please choose only two)

1	Food supply chain	3	Education	5	Manufacturing
2	Financial Services	4	ICT	6	Transport sector
7	Construction	8	Others (Please Specify)		

C2- Smart specialization is a policy framework combining industrial, innovation as well as educational policies (including their design, implementation, and evaluation) to promote new growth opportunities based on innovation and knowledge (OECD). Does your country currently have in place a **Smart Specialization Strategy and Action Plan** to build business resilience in the face of a pandemic?

Yes_____ No_____

If YES, indicate the name of the Program:……

C3- In your country, has the **private sector** adopted innovative technologies (e-commerce, digitization of business processes and value chains) for economic growth?

Yes_____ No_____

C4- Based on your answer to question **C3**, please answer the following questions:

- What proportions of private enterprises are equipped with e-capabilities in your country?

Less than 11percent	11percent - 20percent	21percent -30percent	31percent - 40percent	Over 40percent
1	2	3	4	5

- What proportions of workers have been trained on/acquired digital skills in your country?

Less than 11percent	11percent - 20percent	21percent -30percent	31percent - 40percent	Over 40percent
1	2	3	4	5

Section D: Macroeconomic Response and Debt Management Strategies

D1. a.) Has your country developed a debt management strategy to strengthen resilience in the face of COVID-19?

Yes_____ No_____

- If YES, indicate the name of the strategy: .....

- If YES, how successfully has the strategy been implemented?

Very successfully _____ With some success_____ With minimal success_____

- If your answer to D1.a. is YES, then describe the key elements of your country's debt management strategy to strengthen resilience in the face of COVID-19 _____
_____
_____

D2. a.) Has your country formulated sustainable revenue mobilization and revenue growth strategies to build financial resilience to COVID-19 and future pandemics?

Yes_____ No_____

b.) ***If yes,*** then describe the key elements of your country's revenue mobilization and revenue growth strategies to build financial resilience to COVID-19 and future pandemics _____
_____
_____

Section E: Protection for the Poor and Vulnerable Groups and People in the Face of a Pandemic

E1. a.) Has your country established humanitarian cash transfer programs to help poor households?

Yes_____ No_____

b. If YES, indicate the name of the Program:.....

c. **If yes,** then how many households have benefited from such welfare programs to date?

(Note m=million)

Less than 0.5m	0.5m – 1.0m	1.1m – 1.5m	1.6m –2.0m	Over 2m
1	2	3	4	5

E2. a.) Does your country have emergency social protection packages to address the needs of vulnerable populations, including people of old-age, women, girls, and people with disabilities?

Yes_____ No_____

b. If YES, indicate the name of the Program:.....

c. **If yes,** then answer the following question: How many vulnerable people benefited from such emergency social protection packages?

(Note m=million)

Less than 0.5m	0.5m – 1.0m	1.1m – 1.5m	1.6m –2.0m	Over 2m
1	2	3	4	5

E3. a.) Does your country provide direct support to vulnerable people to start and maintain income generation activities to recover after COVID-19 crisis?

Yes_____ No_____

b. If YES, indicate the name of the Program:.....

c. **If yes,** then answer the following question: How many vulnerable people benefited from such direct support programs to vulnerable people for income post-COVID19 income generation activities?

(Note m=million)

Less than 0.5m	0.5m – 1.0m	1.1m – 1.5m	1.6m –2.0m	Over 2m
1	2	3	4	5

E4. a.) Has your country designed regulations and instructions to establish workflows, protocols and mechanisms that enable access of vulnerable communities to quality integrated social care services in times of crises, including establishment of hotlines?

Yes_____ No_____

b.) **If yes,** then describe the most important regulations and instructions _____

_____

E5. a.) Has your country developed and endorsed standards and protocols for models of integrated health, social care, inclusive education, and employment services?

Yes_____ No_____

b.) **If yes,** then describe the most important standards and protocols. _____

_____

_____

Section F: COVID 19-impact on the Social and Economic Systems of your country

F1- a.) How would you rate the impact of Covid-19 on the following socio-economic activities (Please indicate by selecting one option for each of the items below)?

		Very Destructive	Destructive	No Effect
1	Food supply chain	1	2	3
2	Education	1	2	3
3	Manufacturing	1	2	3
4	Financial Services	1	2	3
5	ICT	1	2	3
6	Transport sector	1	2	3
7	Construction	1	2	3

8. Hospitality (hotels, holiday/tour operators, restaurants, etc.)
1 2 3

9. Others (Please specify) 1 2 3

b.) **Below please expand on your answers and provide examples from F1 for each activity:**

i.) Food supply chain. .....

ii.) Education .....

.....

iii.) Manufacturing.....

.....

iv.) Financial Services .....

.....

v.) ICT .....

.....

vi.) Transport Sector.....

.....

vii.) Construction.....

.....

viii.) Hospitality (hotels, holiday/tour operators, restaurants, etc..) .....

.....

xix.) Others (Please specify) .....

F2- What critical technical/specialist skills are currently available to respond to the socio- economic challenges in fighting pandemics in your countries? .....

F3-What are the gaps that you have observed in your country in the critical technical and specialized skills in social and economic policy areas necessary to effectively fight pandemics? .....

.....

F4- What implications for capacity development in your country does the Covid-19 Pandemic pose considering its effects on the social and economic systems in your country? .....

.....

Section G: Institutional Operational capacity

G1- What economic and social institutions exist to help fight pandemics in your country? .....

.....

.....

G2- What are the gaps you have observed with the institutional coordinating mechanisms that exist to fight pandemics in your country? .....

.....

.....

G3- a.) What socio-economic plans, policies, systems, and processes are in place to support the fight against pandemics in your country? .....

.....

b.) Are the existing social and economic policies, systems, and processes in your country adequate in fighting COVID-19 and future pandemics?.....
.....

c.) What changes are required to make these socio-economic policies, systems, and processes more effective?.....
.....

Section H. Implications for capacity development and policy recommendations

H1.) What capacity development actions can be raised to address the priority capacity gaps identified for effective action of parties such as governments and non-state actors, regional economic communities, continental bodies in the event of an epidemic? .....
.....

H2.) What policy recommendations can be raised to address the priority capacity gaps identified for effective action of parties such as governments and non-state actors, regional economic communities, continental bodies in the event of an epidemic? .....
.....
.....

Thank you very much for taking part in this survey!

The End

Annex C: Correlation of analysis for percentage deaths confirmed cases, and overall GHS Index, and GHS Index measure of robustness of health sector in the selected study countries

Correlation between percentage deaths per confirmed cases and overall GHS Index and GHS Index measure				
		Percentage	**Overall GHS Index**	**GHS Index measure**
Percentage	Pearson	1	-0.155	-0.295
	p-value		0.669	0.408
	N	10	10	10
Overall GHS Index	Pearson	-0.155	1	0.625
	p-value	0.669		0.053
	N	10	10	10
GHS Index measure	Pearson	-0.295	0.625	1
	p-value	0.408	0.053	
	N	10	10	10

Correlation between percentage deaths per confirmed cases and overall GHS Index				
		Percentage	**Overall GHS Index**	
Percentage	Pearson	1	-0.155	
	p-value		0.669	
	N	10	10	
Overall GHS Index	Pearson	-0.155	1	
	p-value	0.669		
	N	10	10	

Correlation between percentage deaths per confirmed cases and overall GHS Index				
		Percentage	**GHS Index measure**	
Percentage	Pearson	1	-0.295	
	p-value		0.408	
	N	10	10	
GHS Index measure	Pearson	-0.295	1	
	p-value	0.408		
	N	10	10	

Correlation between percentage deaths per confirmed cases and GHS Index measure					
		Percentage	**Overall GHS Index**	**GHS Index measure**	**Population**
Percentage	Pearson Correlation	1	-0.155	-0.295	0.013
	p-value		0.669	0.408	0.971
	N	10	10	10	10
Overall GHS Index	Pearson Correlation	-0.155	1	0.625	0.490
	p-value	0.669		0.053	0.150
	N	10	10	10	10
GHS Index measure	Pearson Correlation	-0.295	0.625	1	0.422
	p-value	0.408	0.053		0.224
	N	10	10	10	10
Population	Pearson Correlation	0.013	0.490	0.422	1
	p-value	0.971	0.150	0.224	
	N	10	10	10	10

Source: Authors' calculations using data from GHS Index (2020) and WHO (2021).

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The African Capacity Building Foundation (ACBF) is the African Union'sSpecialized Agency for Capacity Development. ACBF vision is an Africa capable of achieving its own development. Established in 1991, ACBF works by enabling the effective delivery of Africa's continental development priorities such as Agenda 2063, providing country-to-country support, spurring the private sector and civil society to effectively contribute to development and producing evidence-based knowledge for capacity development.

The Islamic Development Bank (IsDB) is an international financial institution with a current membership of 57 countries. Its mission is to promote comprehensive human development, with a focus on the priority areas of alleviating poverty, improving health, promoting education, improving governance, and prospering the people. IsDB supports its member countries to enable them to grow their economies and societies, so they are ready to embrace the challenges and opportunities of the modern world.