Africa's Pulse

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AN ANALYSIS OF ISSUES SHAPING AFRICA'S ECONOMIC FUTURE

FOOD SYSTEM OPPORTUNITIES IN A TURBULENT TIME

WORLD BANK GROUP

A PRODUCT OF THE OFFICE OF THE CHIEF ECONOMIST FOR THE AFRICA REGION

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Executive Summary

Economic activity in Sub-Saharan Africa is slowing amid global headwinds, putting a halt to poverty reduction

- Economic growth in Sub-Saharan Africa is expected to slow to 3.3 percent in 2022, from 4.1 percent in 2021, a downward revision of 0.3 percentage point from the April 2022 *Africa's Pulse* forecast. The downward revision is on the back of multiple shocks affecting the economy, which include the slowing down of the global economy, tightening global financial conditions, elevated inflation driven by rising food and fuel prices exacerbated by the war in Ukraine, adverse weather conditions, and rising risk of debt distress.
- The estimated per capita income growth of 0.7 percent for the region in 2022 is insufficient to meet the challenging goals of poverty reduction and boosting shared prosperity in the medium to long term. Instead, poverty reduction trends, which were already derailed by the pandemic, have slowed further. The pandemic has induced a lasting impact on long-term growth, particularly affecting the poorest people and increasing extreme poverty. The slow recovery of the per capita income growth rate, at 0.9 percent next year and 1.3 percent in 2024, still falls short of putting the continent back on the pre-pandemic path of poverty reduction. The challenge is compounded by the relatively weak relationship between economic growth and poverty reduction in Sub-Saharan Africa.
- Consistent with rising poverty rates, inequality within countries in the region has widened with rising fuel and food prices exacerbated by the war in Ukraine. The economic divide between the rich and poor in Sub-Saharan Africa rose substantially during the COVID-19 pandemic following job and income losses, especially among less skilled workers in the informal sector. Rising unemployment was particularly sizable across genders, with women being the most affected. The weak rebound of the regional economy in the aftermath of the pandemic along with the setback from rising inflation was insufficient to undo pandemic-induced job and income losses. Rising public debts and limited fiscal space inhibited Sub-Saharan African countries from providing support to the most affected people at the same magnitude as the support deployed in advanced economies. The gap between rich and poor has widened further with the war in Ukraine as commodity prices jumped and reinforced the lingering adverse effects of the pandemic. Lack of adequate social protection and feeble per capita income growth constitute major vulnerabilities for the poor. This pattern is expected to persist over the short to medium term as it is unlikely that most countries will regain the losses caused by the impact of school closures on human capital.
- The economic performance of the Sub-Saharan Africa is not uniform across subregions. The real gross domestic product (GDP) growth of the West and Central Africa (AFW) subregion is estimated at 3.7 percent in 2022, 0.7 percentage point higher than that of East and Southern Africa (AFE). In per capita terms, the AFE subregion has been disproportionately affected, registering dismal per capita income growth of 0.4 percent, lower than the regional average. The performance is expected to remain subdued in the near term, increasing gradually to 1.2 percent in 2024. This outlook poses challenges to policy makers who seek to accelerate the recovery, reduce poverty, and put the economy on a sustainable growth path. Although the per capita growth of AFW (1 percent in 2022) is slightly higher than that of AFE this year and in the coming years, the subregion faces similar challenges.

Rising inflation is weighing on economic activity in Sub-Saharan Africa

- The upward trend of inflation following the post-pandemic period was exacerbated by the war in Ukraine, soaring to record highs in many countries. The escalation of the war has fueled a rise in commodity prices, particularly food and energy prices. High pass-through of food and fuel prices to consumer prices has caused headline inflation to spike. Inflation breached the ceiling of the central bank's target in the vast majority of countries. Only four of 33 countries with high-frequency data available registered annual headline inflation below 5 percent in July. The number of countries (17) with double-digit inflation almost doubled in July 2022 from January (10). Despite the aggressive monetary policy used by several countries, inflation has remained stubbornly high in most of them.
- Rising inflation erodes households' purchasing power, and it disproportionately affects the most vulnerable segments of the population. The urban poor were the hardest hit by the pandemic and the assistance provided through fiscal support was not sufficient to help them recover from the crisis. The compound effects of inflation have raised levels of food insecurity sharply in many countries as average households allocate a large proportion of their spending to food. On top of rising fuel and food prices triggered by the war in Ukraine, adverse weather conditions amplified inflationary pressures across the Horn of Africa. Millions of people—especially women, children, and the elderly—have been driven into extreme poverty, food insecurity, and acute hunger and malnutrition. Faced with the challenge of de-anchoring inflation expectations, central banks reacted swiftly and aggressively by raising policy rates to levels not seen in many years. This in turn further slowed private consumption and investment, and ultimately growth dwindled.

Food insecurity is rising sharply, affecting the poor disproportionately, and raising social tensions

- *The number of people facing severe food insecurity in Sub-Saharan Africa has increased sharply*, with more than one in five people facing hunger and more than a quarter billion people being undernourished. Food security crises are becoming more frequent and more acute. About 140 million people are estimated to be acutely food insecure in the region in 2022, up from 120 million in 2021. In East Africa alone, an estimated 55 million people will be acutely food insecure—up from 41 million in 2021. Food insecurity crises are also becoming more frequent and deeper in the continent. In AFE, severe food crisis episodes are taking place every 2.5 years in the 2000s, as opposed to one every decade previously.
- *Food insecurity was rampant in Sub-Saharan Africa even before the onset of the COVID-19 pandemic and the war in Ukraine*. Climatic shocks and conflicts have contributed to the recent steep increase in food insecurity and malnutrition in the region. Climatic shocks to food production have continued in Sub-Saharan Africa—for instance, droughts in the Horn of Africa and the Sahel and floods in AFE. Maintaining long-term per capita production growth is becoming increasingly difficult with more frequent weather-induced setbacks, as food security is estimated to decline by 5-20 percent on average with each major episode of flooding or drought. The resurgence of violent conflict in recent years has disrupted transportation of food to markets and destroyed infrastructure and other forms of capital critical for crop production and income growth. Food price spikes and acute food shortages, in turn, have triggered social unrest and conflict.

- *Food insecurity is also driven by structural factors associated with low agricultural productivity, lack of infrastructure (transportation, water, and energy), and food waste*. Policy distortions also contribute to the insufficient supply response to growing food consumption needs. Agricultural growth in the region has mainly come from expansion of farmland. Technology and efficiency gains have made small contributions. For instance, total factor productivity grew at an average annual rate of 0.2 percent in Sub-Saharan Africa over 2000–19. The lack of basic infrastructure services, such as energy, irrigation provision, or roads and transportation, contributes to the vulnerability of African countries to hunger. Poor roads make it difficult to get food from farms to the people who need it the most. Unreliable energy provision hinders irrigation. Inefficient processing and drying, poor storage, and insufficient infrastructure can lead to food waste in Africa. Policy distortions have also contributed to a poor food supply response. A significant share of the scarce public resources allocated to agriculture goes to poorly targeted input subsidies. Public investments to transform food systems and adapt to climate change are extensively underfunded. Some countries in the region restrict food trade, exacerbating price volatility and creating disincentives for future supply responses. In some countries, input subsidies aimed at boosting cereal supply response have been partially undermined by simultaneous export restrictions (Malawi and Zambia).

The fiscal space to respond to growing challenges is almost depleted in some countries

- Faced with these multiple challenges, policy makers have few coping mechanisms. The fiscal space to mount effective responses today is gone because of high levels of debt across Sub-Saharan African countries, rising borrowing costs, and depleted public savings. The region's primary deficit expanded during the pandemic to 6.3 percent of GDP in 2020 (from 4.1 percent of GDP in 2019) as governments frontloaded support to the most vulnerable segments of the population and affected firms. As a result, debt, which was already rising since 2011, jumped further and is projected to remain elevated at 59.5 percent of GDP in 2022. The consolidation efforts to bring down debt are projected to lower the primary deficit slightly to 4.8 percent of GDP on average in the region.
- Given the elevated debt levels, African governments allocated a larger share of their revenues to servicing external debt (16.5 percent in 2021, up from less than 5 percent in 2010). The compounding effects of high debt service costs along with a domestic currency depreciation have increased exchange rate risks for countries with high external debt. Tightening financial conditions have widened sovereign spreads in countries with a developed financial sector as a result of large capital outflows from global investors searching for high yields. This in turn exerted pressure on the domestic currencies, caused debt service costs to rise, and raised interest rate risks. Commercial domestic and international rates have increased markedly. In Kenya, for example, interest rates paid for Eurobonds have doubled (to 12 percent) from last year's issuance (6 percent).
- Assistance extended by multilateral institutions to the poorest countries in the form of the Debt Service Suspension Initiative was dwarfed by the scale of the problem. As a result, the number of countries in or at high risk of debt distress continues to rise as the risk of a financial crisis mounts. Sixteen of 38 International Development Association (IDA) eligible countries are at moderate risk of distress, up from 15 previously. The number of countries at high risk of distress stood at 14 in July, while eight countries continue to be in debt distress.

- There is no sign of significant improvement in the reduction of debt levels and/or vulnerabilities. The fiscal consolidation process adopted by many countries following the pandemic crisis was postponed or at best softened. This suggests that countries with rising inflation as well as elevated debt have little room to maneuver given that they do not have any fiscal space. The situation could worsen, especially for countries that have lost access to the credit market and are in or at risk of debt distress. The current resolution mechanisms need to be strengthened to effectively address a potential debt crisis, and additional instruments may need to be set in motion. If they are not addressed, debt dynamics could escalate into a full-blown crisis, setting countries even further back. Support for international debt restructuring might be required.

POLICY RESPONSES

- African economies are facing a series of challenges to their post-pandemic recovery. The economic fallout from the multiple crises affecting the region has lowered household incomes, increased poverty, widened inequality, and heightened food insecurity. Gains in poverty and inequality reduction, human capital, and sustainable development achieved by the region over the past decade are under serious threat because of the economic consequences of the COVID-19 pandemic, climate change, and (external and domestic) conflict. A series of short-term measures combined with medium- to long-term ones can strengthen African countries' capacity to build resilience and seize opportunities to unlock productivity-enhancing growth while protecting the poor and vulnerable.

Achieving price stability while protecting the poor and vulnerable is essential to protect development gains

- African policy makers are confronting difficult choices to mitigate the impact on their population of rising inflation—and particularly, higher food and fuel prices. The high inflation experienced by countries in the region disrupts households' and firms' spending decisions, thus leading to slower economic growth. The surge in prices of the most basic foodstuffs is disproportionately affecting the poor—as they spend a greater share of their budget on food—and resulting in greater food insecurity. In this context, macroeconomic policies need to be geared toward reducing and stabilizing inflation while protecting the poorer households from soaring food and energy costs.
- *Restore price stability*. Against the looming threat of stagflation, Sub-Saharan African central bankers are facing the dilemma of supporting growth in economic activity versus fighting rising inflation. As inflation hits record levels across countries in the region, this dilemma is gradually shifting toward anchoring inflation expectations to restore price stability. However, the macroeconomic policy mix undertaken is shaped by the extent of monetary and fiscal space available—and coordination between monetary and fiscal policy is critical to reduce inflation while shielding the most vulnerable households. Countries in the region where inflation is above their central bank targets are opting to hike interest rates to reduce inflation. A combination of more restrictive monetary and fiscal policy might be warranted in countries where monetary policy alone is less effective. For countries in the Economic and Monetary Community of Central Africa and the West African Economic and Monetary Union—without an independent national monetary policy—fiscal consolidation may constitute the bulk of anti-inflationary

efforts. Some countries have introduced a variety of complementary measures to limit the rise of inflation—especially food inflation—such as temporary waivers of tariffs and levies and direct price subsidies, among others. However, these measures can create additional pressure on the budget—especially for those governments with almost depleted fiscal space.

- Countries where inflation is still under control due to windfall gains from elevated commodity prices and a strong domestic currency could adopt accommodative monetary policy. However, this should be conducted in a way that ensures that inflation expectations remain anchored within the central bank's objective. In addition to subdued inflation, some commodity exporting countries have recorded fiscal surpluses from rising government receipts. For these countries, the generated fiscal revenues should be used wisely to alleviate the effects of rising fuel and food prices on poor people without forgoing macroeconomic stability. Finally, this favorable terms of trade shock offers an opportunity for commodity exporting countries to embark on structural reforms that promote the emergence of non-extractive sectors and reduce overreliance on the commodity sector.
- *Maintain or expand support to the poor.* Preserving the gains achieved over the past years should be a priority for policy makers. This would require using, and where affordable expanding, government support to the poor and vulnerable. The pandemic has underscored the critical importance of safety net delivery systems and timely disbursements of cash transfers and services to address extreme poverty, help households better manage risks, and build resilience to cope with more frequent and disruptive shocks—for instance, the Emergency Cash Transfer program in Sierra Leone and Togo's Novissi program in response to COVID-19. A rising number of governments in the region are providing cash transfers coupled with productive inclusion measures such as micro-entrepreneurship trainings, lump sum capital provision, and savings facilitation. Ethiopia's rural Productive Safety Net Program focuses its public works program on community integrated and participatory management in Dire Dawa, with better outcomes in water and soil conservation, as well as diversified household livelihoods. African governments should advance and fully embrace the potential of adaptive social protection as systems that deploy resources in response to shocks such as extreme weather events, conflicts, or natural disasters. In response to rising inflation, countries should use and expand, if affordable, their social safety nets to support the most vulnerable with targeted cash transfers. In countries with food security problems, additional support may be warranted through in-kind transfers, and use of food reserves when available.

Amid shrinking fiscal space and mounting spending needs, it is imperative that governments boost the quality of their investments

- Government spending supports the delivery of critical public services (such as education, health, public transportation, and water and waste management), connects households and firms to economic opportunities, and can be an important engine of growth. The economic and social impact of public investment, however, depends critically on its efficiency. Evidence shows that improvements in public investment management systems—more specifically, institutions and procedures shaping the planning, allocation, and implementation of public investments—have large economic dividends. If a government improves the quality of its spending from the lowest

efficiency quartile to the highest one, its output multiplier will double. In fragile countries—particularly, the Sahel—addressing peace and security challenges is essential to ensure the stability of the state and its social compact. Security expenditure (military and police) competes for the scarce public resources; however, if efficiently deployed, it can create an environment of greater resilience that attracts private investors.

- *Given the difficult context characterized by rising debt vulnerabilities, rising interest rates, and constrained external financing options, one area where policy makers have space for action is how to allocate the spending under their control.* This is crucial for overall spending as well as within-sector spending. It is particularly urgent and critical for boosting agricultural productivity growth and building sustainable food systems. The lesson from regions that have transformed their agricultural and food systems is that enhancing the quality of spending and the efficiency of resource use is even more important than addressing the level of spending (which stands at 6 percent of the government budget on average in the region). Raising the efficiency and effectiveness of public spending will be critical to unlock agricultural growth and job creation while meeting the challenges arising from climate change. A large share of spending on agriculture is currently allocated to subsidies for a narrow set of inputs or crops. Agricultural subsidies in Sub-Saharan Africa amount to 25 percent of agricultural spending. Yet, the benefits of such spending have not yielded lasting improvements in productivity. Repurposing public support to agriculture toward high-value investment (technology generation and diffusion, soil conservation and irrigation infrastructure, climate change adaptation, and market connectivity) will yield massive benefits. For instance, one dollar invested in agricultural research creates, on average, (a net present value of) future benefits equivalent to $10. Gains from investments in irrigation are also potentially high in Sub-Saharan Africa, with returns ranging from 17 percent for large-scale schemes to 43 percent for small-scale schemes. Such reprioritization maintains the level of spending in the sector, under difficult fiscal conditions, to support the achievement of the stated goals of African governments—raising productivity, building resilience to climate change, and achieving food security for all.
- *Appropriate investments in the agriculture sector can help the food systems adapt by increasing productivity, resilience, and resource-use efficiency.* Evidence indicates that financing adaptation to climate change will be more cost-effective than financing increasingly frequent and severe crisis response, disaster relief, and recovery pathways. Scaling up climate-smart agriculture is critical for sustainable growth and fostering resilience in Sub-Saharan Africa. Leading adaption options for agri-food systems include (1) conducting research and extension to respond to emerging risks and gain better understanding of climate risks; (2) lowering the barriers to scaling up farmer-led irrigation (for instance, through water harvesting reuse and carefully managed solar groundwater pumping); (3) promoting food value chain solutions; (4) scaling up sustainable soil, land, and forest management practices; and (5) using clean technologies along the agri-food value chain.
- *Cutting-edge technologies can boost productivity while enhancing the climate resilience of food systems in the region*. Precision agriculture is an example of productivity-enhancing disruptive technologies. Many precision innovations can be developed by startups as they require little capital. For instance, *HelloTractor*, a sharing application, allows smallholder farms to request and pay for tractor services through text messages on a just-in-time basis. Farmers have seen yield increases of as much as 200 percent since its launch in 2014. Mobile-based extension and other

e-services have increased smallholders' productivity and resilience to climate risks. Greater access to mobile phones allows the delivery of timely and customized information at scale, contributing to timely farming and market decisions. In Kenya, digital technologies are being leveraged through the World Bank partnerships with 15 agricultural technology startups to transform the delivery of inputs, soil testing, crop insurance, credit, extension advice, and market connectivity.

- *Improved water management with small-scale renewable technologies could strengthen smallholder farms*. The adoption of small-scale irrigation farming as a climate-smart agricultural practice is essential in Sub-Saharan Africa. Irrigation can increase agricultural yields by up to 50 percent. Using renewable energy (solar and wind) in groundwater pumping and irrigation reduces greenhouse gas emissions and lowers energy costs for farmers, thus boosting their incomes. Renewable energy could also benefit regions that are off-grid or without reliable access to electricity. Adoption of efficient methods of irrigation, like drip irrigation, can save valuable water resources and increase the use of arable land for irrigated crops.
- Promoting the development of (whole) agri-food value chains is also critical for the transformation of agricultural and food systems. Whole value chains have a large job multiplier effect—thus, offering options for productive inclusion and the incorporation of additional rural youth. The transformation of agri-food value chains—and, particularly, their midstream segments (processing, storage, transport, wholesale, retail, and food services)—enables small farms and firms to add value (through canning, milling, packaging, and other services) and attract investments, as well as increase dietary diversity and nutritional outcomes. New equipment and products as well as enhanced management practices improve the quality and reduce the cost of processing, storage, transport, retail, and food services. The transformation of processing and trading systems as well as changes in the organization model of supply chains will enable farmers to access (domestic and global) higher value markets, both domestically and globally, and improve the standards of their products (for example, the teff value chain supplying Addis Ababa, Ethiopia).
- *Renewable energy and low-carbon solutions can support the transformation of midstream segments of agri-food value chains.* Public investments in agri-food systems in the region should crowdsource such technologies that can rapidly and effectively enhance the food and agricultural services provided to producers and consumers. For instance, innovative logistics solutions, such as solar-powered storage solutions in off-grid areas or areas with unreliable or expensive electricity, may offer opportunities to make use of new information and communication technology innovations as well as support otherwise risky interventions in food production, irrigation, and processing. In Uganda, stand-alone solar systems are being used in segments of the value chain, such as pumping and irrigation systems, refrigeration units, milling and other processing equipment, and to maintain connectivity. Innovative technology applications using renewable energy can improve the effectiveness of service delivery—especially in remote areas.
- *Reducing food loss and waste across the value chain is critical for Africa—and globally—to achieve a sustainable food future.* Food loss and waste (in farms, storage, and markets) has been estimated to be as high as 30-50 percent of production. Solutions to this problem include: (1) minimizing storage losses with appropriate technologies (variety selection, biological control, improved storage structures, modified atmosphere facilities, and indigenous technologies, among others); (2) improving post-harvest and transport infrastructure (for instance, cold storage such as small-scale dryers, threshers, and storage bags); and,(3) developing a circular economy where

byproducts can be transformed into useful agricultural products with ample opportunities for turning waste into useful products—which can drive innovation and create sustainable jobs. Implementation of these technologies could reduce storage losses for cereals (maize and rice) from about 26 to 5.6 percent, for roots and tubers from 44 to 7 percent, and for fruits and vegetables from 56 to 25 percent.

Domestic resource mobilization is essential to finance Sub-Saharan Africa's development agenda

- *The economic fallout from the pandemic and the current food and energy crisis are challenging Africa's efforts to increase domestic resource mobilization.* The current environment makes an already fragile fiscal balancing act more difficult, for raising development spending, increasing tax revenue mobilization, and alleviating debt vulnerabilities. In this context, fiscal consolidation and domestic resource mobilization are critical for countries whose fiscal and debt sustainability are at risk. Governments should avoid the temptation of resorting to central bank financing of public deficits, which could exacerbate macroeconomic instability.
- *Boosting resource mobilization requires a set of policy tools that may need to be tailored to country-specific needs and conditions, including the strength of the ongoing recovery.* In slow-recovery countries, measures to improve the efficiency of tax collection and administration are key. For instance, leveraging data and digital technologies to improve tax administration (such as taxpayer registration, e-filing, and e-payment of taxes) may help minimize costs and processing time and reduce the incidence of corruption and evasion. Once the economic fallout from the strong global headwinds dissipates, policy makers will need to address the structural problems associated with government revenues. Governments may need to redesign their tax incentives toward growth-enhancing activities such as research and development and the digital economy, among others. Efforts to design more progressive tax systems and boost tax collection—particularly, property and/or land taxes—will help. Country experiences suggest that reforms at the subnational level (digitizing fiscal cadasters and linking them to the legal cadasters in land registries) and national level support in legal, institutional, and technical areas to subnational tax administration entities are critical.

Diversifying trading partners offers an opportunity to enhance resilience and supply new markets

- *In the current uncertain trade environment, Africa can step into opportunities to be suppliers of goods that are in high demand (minerals for green technologies and transition energy such as gas, among others).* Trading partner diversification can potentially increase knowledge spillovers from trade (through exports of final goods, intermediate goods, or re-exports). It also exposes exporters to an expanded array of potential buyers with alternative consumer preferences, regulatory frameworks, and business practices. The complexity of competition resulting from an enhanced trading network will heighten for direct and indirect trading partnerships. Global evidence shows that a one standard deviation increase in trading partner diversification is associated with a 1-1.5 percentage point increase in growth. Policies need to support the free flow of goods and services across borders. Fostering competitiveness and market contestability are critical to incentivize private sector participation.

- *Trading partner diversification is particularly important for agriculture in Sub-Saharan Africa.* The region remains a net importer of basic foodstuffs (including cereals, dairy products, edible oils and fats, and meat and meat products) despite its great agricultural potential. Most food imports come from trading partners outside the region. This offers a unique opportunity to strengthen the capacity of Sub-Saharan Africa's farmers to ramp up food production and facilitate international trade—especially within the region. Optimizing food safety measures and removing other non-tariff barriers (NTBs) can help foster trade. Estimates show that domestic prices in the region are, on average, 13 percent higher due to sanitary and phytosanitary measures alone. Other NTBs account for 50-60 percent of marketing costs and increase domestic transportation costs. Addressing regulatory barriers and poor compliance will reduce the trade costs of agricultural services and increase competitiveness. Additionally, the African Continental Free Trade Area can be leveraged to coordinate and scale up regional investment in infrastructure, technological generation and diffusion, and innovation dissemination—thus, fostering participation in regional value chains.
- *Deepening trade in agricultural products, inputs, and technologies within Sub-Saharan Africa and beyond can create and expand business opportunities*, as well as enhance the resilience of agri-food systems to international market shocks (such as price and/or supply shocks arising from global weather shocks or external conflicts). By exploiting economies of scale, intraregional trade in agriculture and food may lower the unit cost of marketing and distributing food, thus creating additional incentives for investments in transport and other logistics that facilitate the trade of goods and inputs within and across borders. Despite its potential benefits, agricultural goods trade within Africa remains among the lowest in the world, with regional trade in agricultural raw materials being much lower.
- *Strengthening the national capacity for food and commodity production for regional markets will provide a solid foundation for nations to boost regional trade.* Africa has vast land and untapped water resources where, for instance, cereal production could take place—with some countries having the potential to become a major source of grain supply if the right policies are put in place (Ghana and Zambia). Removing tariff barriers and NTBs as well as investing in regional trade facilitation measures is essential to build resilient regional food systems. Digital technologies can provide market information to small farmers and retailers, as well as eliminate cumbersome documentation requirements and inspection and clearance processes that often curtail the seamless movement of agricultural goods and inputs. Enhancing food control systems is also critical for growing and sustaining the expansion of intraregional agricultural trade in Africa. Hence, there is a need to strengthen the capacity of countries to comply with food safety standards.

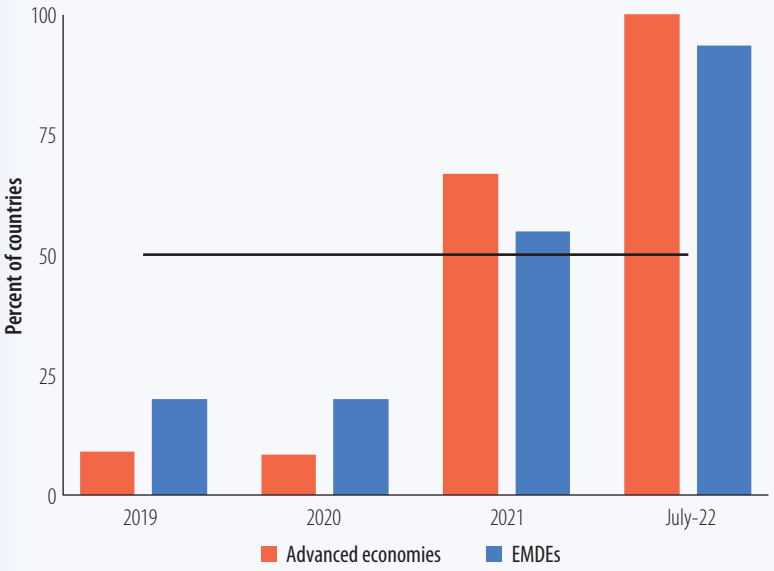
Section 1. Recent Trends and Developments

1.1 GLOBAL TRENDS

The global economy is in the midst of a period of slowing growth, elevated inflation, and tightening financial conditions. The global recovery from the pandemic-induced recession of 2020 was already slowing when the Russian Federation's invasion of Ukraine disrupted economic activity further, most notably through sharply higher prices for many commodities. To prevent elevated inflation from becoming entrenched, central banks are aggressively tightening monetary policy. The combination of slow growth and tightening financial conditions amid high levels of debt is likely to lead to fiscal pressures, rising corporate defaults, and weak investment in many countries.

Global consumer price inflation is above central bank targets in almost all countries that have them (figure 1.1). Global median headline Consumer Price Index (CPI) inflation rose to 9.5 percent (year over year) in July 2022, its highest level since 2008. Aggregate inflation in emerging markets and developing economies (EMDEs) reached over 10.1 percent—its highest level since 2008—while inflation in advanced economies, at 9.1 percent, is the highest since 1982. Inflation has been driven up by a combination of surging commodity prices, persistent supply disruptions, firming demand and, in some countries, tight labor markets (figure 1.2).

FIGURE 1.1: Countries with Inflation above Target

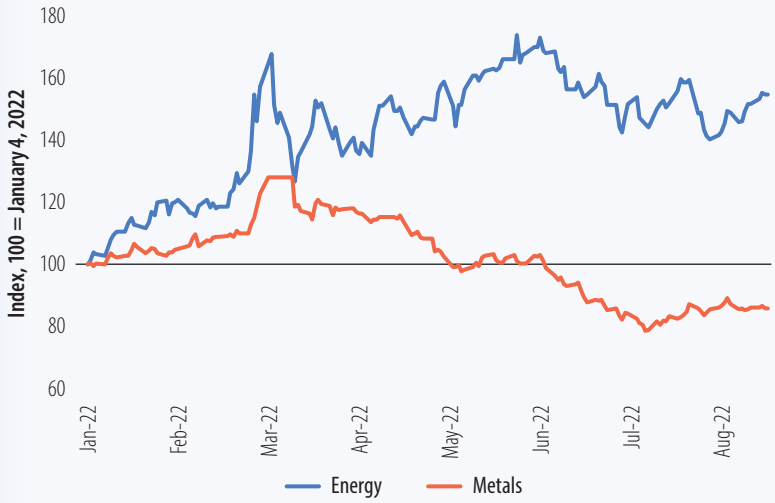


Inflation rates exceed central bank targets in most advanced and emerging market and developing countries.

Sources: International Monetary Fund; World Bank.

Note: Bars show the share of inflation-targeting economies with average inflation during the course of the year (or month) above the target range. Sample includes 12 advanced economies and 31 EMDEs. EMDEs = emerging market and developing economies.

FIGURE 1.2: Energy and Metals Prices



Commodity prices have diverging paths: energy prices remain elevated, metal prices have softened in the second half of 2022.

Sources: Bloomberg; World Bank.

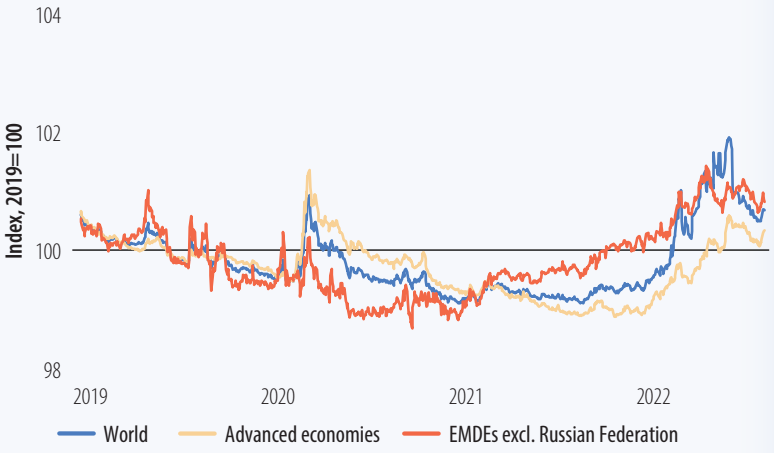
Note: Daily data, the last observation is August 24, 2022. Energy is the weighted index of crude oil, coal and natural gas prices. Metals is a weighted index of aluminum, copper, lead, nickel, tin and zinc prices.

Food and energy prices have played a major role in the acceleration of global inflation, but core inflation has also increased rapidly in recent months.

Rising inflation has led to rapid and broad-based monetary policy tightening around the world. The U.S. Federal Reserve has increased policy interest rates by 300 basis points since March, reduced the size of its balance sheet, and communicated its intention for further tightening. In July, the European Central Bank (ECB) ended its net asset purchases and increased its policy rate for the first time since 2011. Central banks in all other major economies except China, Turkey and Russia have also tightened policy rates in recent months. Tightening monetary policy and rising risk aversion have weighed on equity market valuations and caused financing conditions to tighten (figure 1.3). Global equity prices have tumbled, the U.S. dollar has strengthened to multi-decade highs against many EMDE currencies, and high-yield credit spreads have widened considerably. Sovereign spreads have increased across EMDEs, but by considerably more for commodity importers compared to commodity exporters.

Contractionary monetary policy and rising risk aversion have caused global financing conditions to tighten.

FIGURE 1.3: Financing Conditions

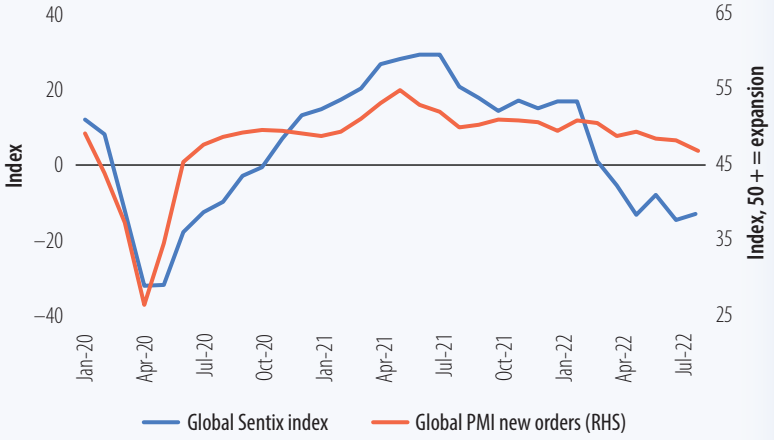


Sources: Bloomberg; Goldman Sachs; World Bank.

Note: Higher index numbers reflect tighter financial conditions. The aggregates are computed using gross domestic product weights at 2010–19 prices and market exchange rates, based on 25 economies (including the euro area)—12 advanced economies and 13 EMDEs. The last observation is August 24, 2022. EMDEs = emerging market and developing economies.

Global sentiment has declined amid high inflation and tightening financial conditions while the global PMI reached its lowest level since mid-2020.

FIGURE 1.4: Global Sentix Index, PMI New Orders



Sources: Haver Analytics; World Bank.

Note: The chart shows the global Sentix index (left axis) and Purchasing Managers' Index (PMI) new orders (right axis). A PMI above 50 (below 50) indicates expansion (contraction). The latest data available are for August 2022 for the Sentix and July 2022 for PMI new orders.

Global sentiment has declined precipitously in the face of high inflation and rapidly tightening financial conditions. The global composite Purchasing Managers' Index (PMI) slowed to its lowest level since mid-2020 in August and global investor confidence has plummeted, reflecting high inflation and tighter financing conditions (figure 1.4). All three of the world's largest economies have shown signs of weakness. The U.S. economy contracted in both the first and second quarters of 2022, and the University of Michigan Consumer Sentiment Index fell to a record low in August. The euro area is struggling

with severe disruptions to its energy supplies, with the price of natural gas rising to more than 10 times its normal level. Growth in China has further slowed at a sharp rate as a result of COVID-19 lockdowns and strains in the housing market.

Weak incoming data have led to rising fears that the global economy may be approaching recession. Weak growth and rising interest rates following increases in many countries' debt burdens during the pandemic risk triggering financial stress. Historically, EMDE financial crises have been more likely when U.S. monetary policy is pursuing an aggressive tightening stance, as is currently the case. Alternatively, further supply disruptions following the pandemic and the war in Ukraine could usher in a period of stagflation reminiscent of the 1970s, with persistently low growth and high inflation.

Commodity Market Developments

Commodity prices have diverged since June, with energy prices remaining elevated in the second half of 2022 and non-energy prices softening. Oil prices averaged nearly US$100 per barrel while coal and natural gas prices reached new all-time highs in the second half of 2022, primarily due to a shortfall in supply. Russian oil and gas exports have seen a material decline as European bans came into effect. Metal prices fell in the second half of 2022, reflecting concerns about the global economy and waning demand from China (figure 1.2). Agricultural prices have also declined modestly, particularly for wheat and vegetable oils, owing to higher-than-expected crop yields in Canada, Russia, and the United States. Grain prices, notably wheat, have been aided by the partial reopening of the Black Sea export routes.

While energy prices as a group are expected to ease somewhat in 2023, their forecasts have been upgraded compared to the earlier assessments (April 2022 *Commodity Markets Outlook* and June 2022 *Global Economic Prospects*), as an upward revision to natural gas and coal offsets a slight downward revision to oil prices. Crude oil prices are forecast to moderate in 2023. That said, surging oil use for power generation and gas-to-oil switching will continue to support oil demand into 2023, while supply will increase modestly, mainly accounted for by U.S. shale growth.

There are considerable risks to the energy prices, and they mainly reflect supply factors—U.S. shale growth could disappoint, spare capacity among Organization of the Petroleum Exporting Countries (OPEC) members is minimal, OPEC Plus (OPEC+) members continue to produce well below target, and strategic inventories have been drawn down, leaving limited buffers in the event of new unexpected shocks. The main downside risk is a further slowdown in global growth in economic activity. Energy prices, especially natural gas and to a lesser extent oil, could be affected by the war in Ukraine. An escalation could push them higher, or a resolution could bring them down.

Agricultural prices have generally moderated from their increases at the onset of the invasion of Ukraine but remain high. Agricultural prices are expected to experience a slight decline in 2023 after an estimated increase of almost 15 percent in 2022, largely reflecting better prospects for global production and easing input costs in line with a moderation in fertilizer prices. Upside risks to food prices include a reversal of the recent moderation in fertilizer prices due to higher gas prices, La Niña's return in 2022, as well closure of Black Sea ports. Continuation of China's lockdown could also affect food prices, as a reduction in labor mobility could affect production in that country. Food insecurity remains a critical challenge in some EMDEs, reflecting the growing number of food trade restrictions, weather-related events, and the continued impact of the invasion of Ukraine and conflict elsewhere.

Metal prices are expected to decline marginally in 2023 reflecting weaker global growth and slowing activity in China, especially for base metals such as aluminum and copper, where the country plays a large role (more than half of global metals supplies are consumed by China). However, an upside risk is the closure of smelters due to soaring energy costs, which could reduce production of refined metals.

1.2 COVID-19 RECENT DEVELOPMENTS

The fifth wave of COVID-19 infections in Sub-Saharan Africa (April-May 2022), primarily driven by the BA.4 and BA.5 subvariants of Omicron, has been milder than the four previous waves of the coronavirus. First detected by scientists in South Africa during April 2022, these latest variants have led to not only fewer infections but also fewer deaths and hospitalizations than previous variants of the virus.

At its peak, around 8,600 daily infections were reported during the fifth wave (first half of May)—with most of the infections being reported in East and Southern Africa (AFE).[1] This number of daily cases dwarfs in comparison to the peaks of nearly 30,000 to 40,000 cases reported in the third and fourth waves (figure 1.5).[2] Daily deaths attributed to the pandemic also declined significantly during the fifth wave, decreasing to a peak of 44 deaths per day from peaks of about 700 and 300 deaths during the third and fourth waves, respectively (figure 1.6)

These differences might indicate that growing population immunity is mitigating the immediate consequences of the pandemic surges. Vaccine distribution has helped to minimize hospitalizations and casualties. At the same time, the symptoms of COVID-19 might be weakening over time. Still, it is vital to strengthen African

FIGURE 1.5: Daily New Cases of COVID-19 in Sub-Saharan Africa and Subregions (number of people)

The fifth wave of COVID-19 infections in Sub-Saharan Africa has been milder than the previous waves.

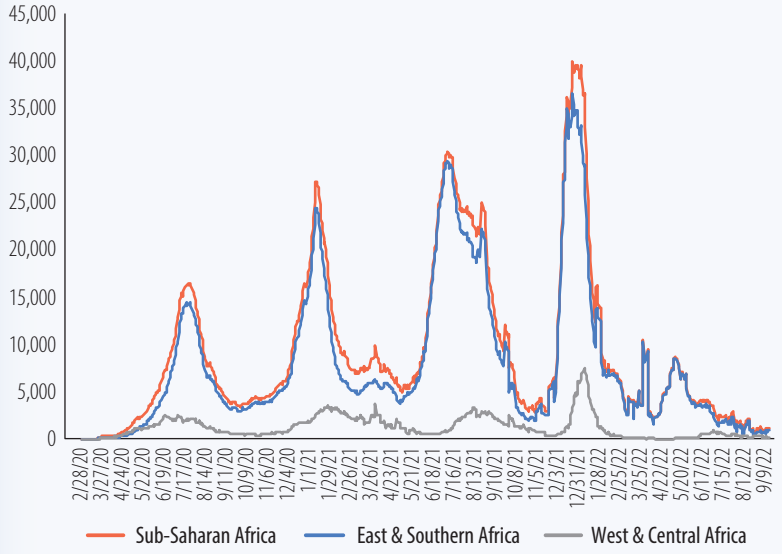
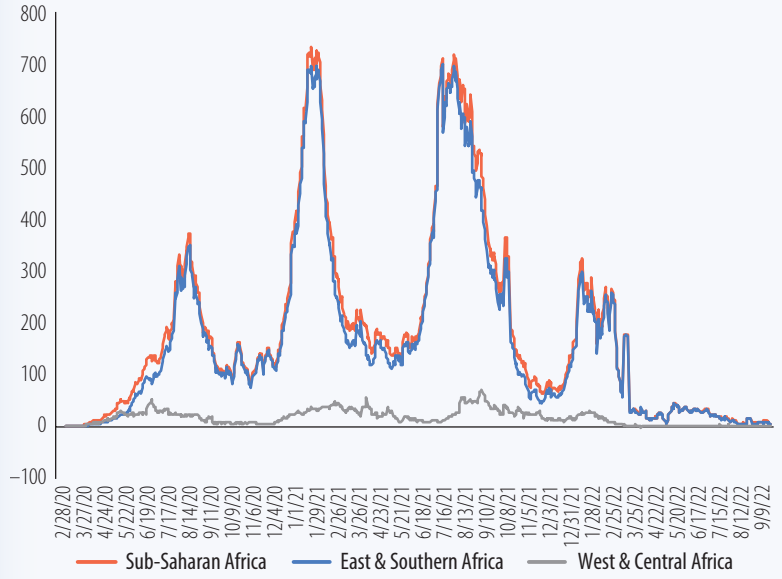


FIGURE 1.6: Daily New Deaths from COVID-19 in Sub-Saharan Africa and Subregions (number of people)

Daily death rates have substantially reduced.



Source: Our World in Data, Coronavirus Pandemic (COVID-19) Statistics.
Note: Values are smoothed seven-day moving averages. Data are as of August 17, 2022.

1 Nearly 85 percent of the infections reported in South Africa.
2 These figures still need to be taken with caution as many countries in Africa—and around the world—have relaxed or even dropped their testing and surveillance protocols to monitor the virus.

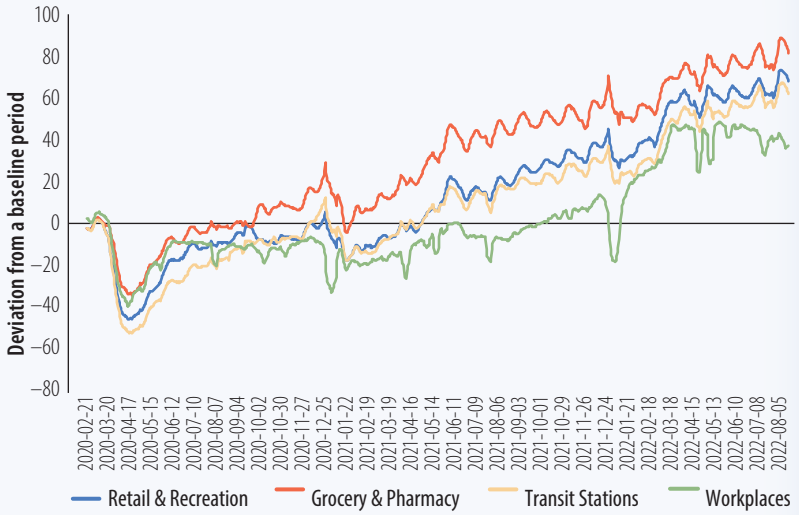
countries' health care systems to prepare for any possible future outbreaks due to variants of COVID-19 and/or any possible epidemics such as Ebola. Vaccination campaigns can also help reduce the likelihood of new variants detected in the region.

Social activities and mobility have recovered as the peak of the pandemic wave shrunk in Sub-Saharan Africa. For instance, community mobility has continued surging as high-frequency data points to an upward trend in mobility toward retail and recreation places (say, restaurants, cafes, shopping centers, theme parks, museums, libraries, and movie theaters) and public transport hubs (say, subway, bus, and train stations). Mobility levels during the fifth wave increased above the pre-pandemic baseline and have more than doubled the levels experienced during the Omicron wave at the start of 2022 (figure 1.7). Although upward trends in community mobility were relatively similar for both the AFE and West and Central Africa (AFW) subregions, mobility in AFW appears to be greater for activities related to grocery stores and pharmacies (figure 1.8).

Vaccination continues its slow distribution process across countries in the region. For example, 25.4 percent of the population of Sub-Saharan Africa has received at least one dose, while 19.8 percent have been fully vaccinated, according to the World Health Organization (WHO) Regional Office for Africa. Fifteen of 48 countries in the region met or exceeded the WHO target of 40 percent of the population having a first dose of the coronavirus vaccine by the end of 2021, while only four countries (Rwanda, the

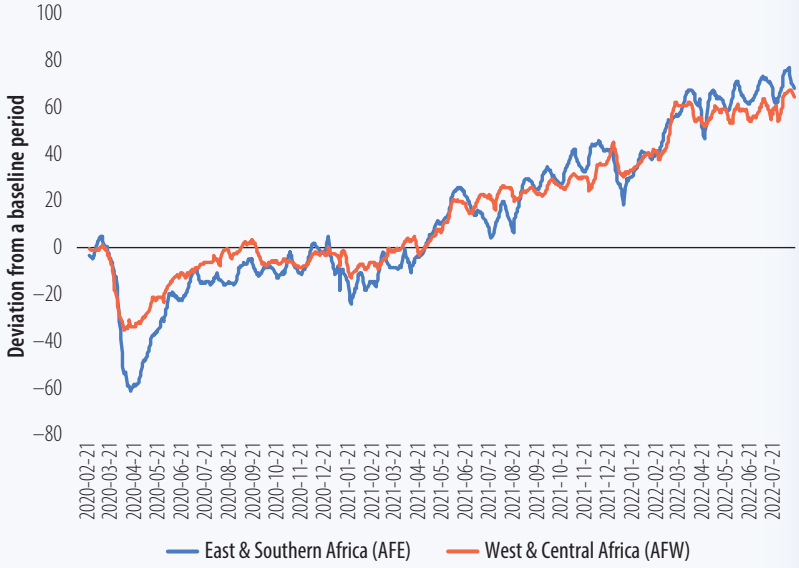
Community mobility has surpassed the pre-COVID levels.

FIGURE 1.7: COVID-19 Community Mobility Report in Sub-Saharan Africa (index)



Community mobility in West and Central Africa is higher than that in East and Southern Africa.

FIGURE 1.8: COVID-19 Community Mobility Report in AFE and AFW (index)

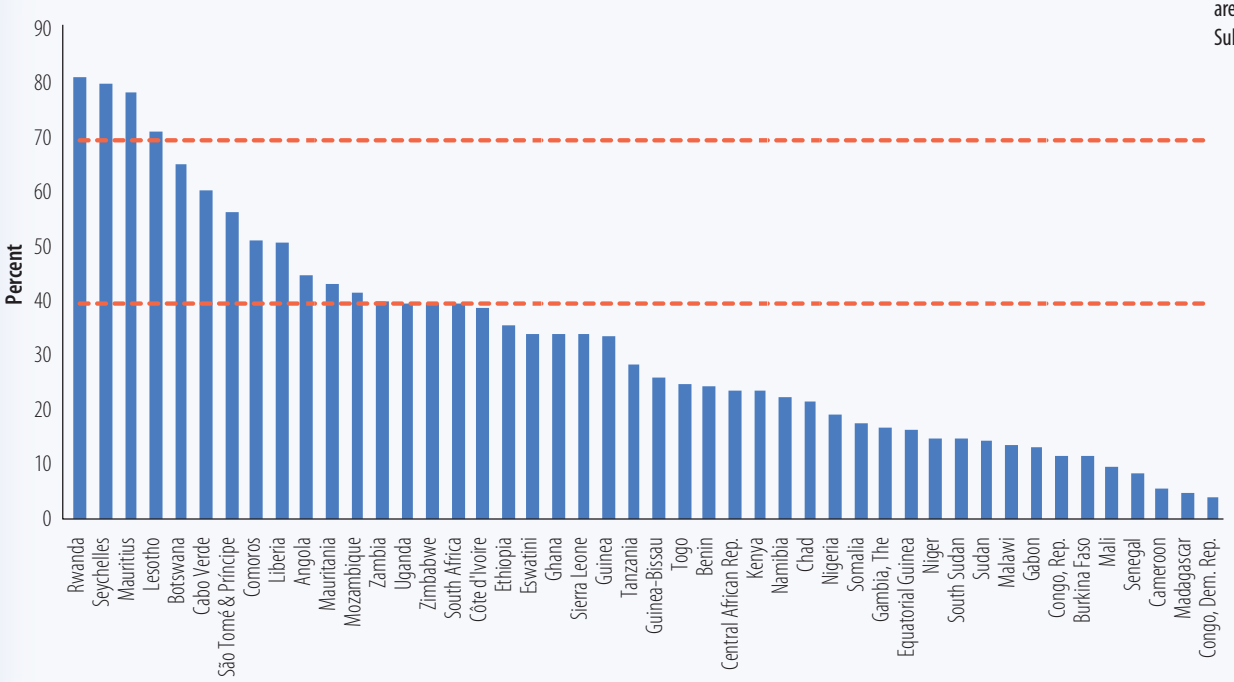


Source: Google COVID-19 Community Mobility Reports (https://www.google.com/covid19/mobility/).
Note: Values are smoothed seven-day moving averages. Data are as of August 14, 2022.
AFE = East and Southern Africa; AFW = West and Central Africa.

Seychelles, Mauritius, and Lesotho) reached the 70 percent target by mid-2022. At the lower spectrum, in five countries in the region, less than 10 percent of the population has had at least one dose (figure 1.9). Under these circumstances, Africa's manufacturing of COVID-19 vaccines took a hit as Aspen Pharmacare (South Africa) was hit by a severe slump in orders of J&J COVID-19 vaccines that threatened the future of the plant. Aspen subsequently reached a 10-year agreement with the Serum Institute of India on vaccine manufacturing in the continent.

FIGURE 1.9: Percentage of People in Sub-Saharan Africa Who Have Had at Least One Dose of the COVID-19 Vaccines

Vaccination levels are still low across Sub-Saharan Africa.



Source: World Health Organization Regional Office for Africa.

Note: Vaccination figures are as of August 22, 2022. The dotted lines represent the World Health Organization targets of full primary immunization against coronavirus of 40 percent by end-2021 and 70 percent by mid-2022.

Evidence shows that vaccine hesitancy in the continent has been driven by fear of adverse effects following vaccination, distrust toward the pharmaceutical industry, and myths surrounding immunization. Identifying the drivers of hesitancy is essential to reduce vaccine hesitancy, and hence revamp current and future vaccine rollouts.[3] Educational campaigns are essential for sharing correct information with the population.

Improving Africa's health system is critical in the short, medium, and long terms as it was already struggling prior to the pandemic. Given the recurrent outbreaks of epidemics as well as the demand for essential health services, there are increasing needs to build resilience to respond to emergencies and continue essential health services. Effective economic policies

3 Ackah et al. (2022).

will help curb public health concerns by establishing functional emergency operation centers, modeling service delivery to guarantee the provision of necessary health care, while investing in human capital by training personnel. In the long term, the public sector should help boost workforce capacity and capabilities (for example, task-sharing with community health workers), expand the use of digital health solutions, and design alternative models of health financing.[4] At the regional level, institutions like the Africa Centres for Disease Control and Prevention are essential to innovate and adapt responses to the continent's needs. Regional institutions can help coordinate health programs and policies—including disease surveillance—and support local production of vaccines, therapeutics and diagnostics to reduce procurement costs and provide speedier responses.[5]

4 McKinsey (2020).
5 Nkengasong (2021).

1.3 ECONOMIC DEVELOPMENTS

Slow Growth amid Various Challenges

The Sub-Saharan African economy continues to experience setbacks stemming from the slowdown in global growth, rising global inflation exacerbated by the war in Ukraine and adverse weather conditions, tightening in global financial conditions, and rising risk of debt distress. Two years after the first recession in 25 years, the recovery in economic activity has been derailed by weaknesses in all three of the region's largest regional trade partners—the euro area, China, and the United States. The spillover of weak demand from the major trade partners operates directly through foreign trade and investments, and indirectly via their impacts on commodity prices. The slowdown of China's economy will weigh on commodity prices, particularly metals, as the country accounts for a large share in consumption of most commodities.[6] China's weak demand for metals coupled with fears of global recession have driven copper prices down by 22 percent since March 2022.[7] In turn, the collapse of metal prices is holding back growth momentum in metal exporting countries. These countries benefited from the rally in metal prices observed since the downfall of prices in March 2020 triggered by the pandemic shock.

Russia's invasion of Ukraine has accelerated an already upward-trending inflation in the region. Elevated international commodity prices (primarily food and fuel) are the main contributors to the acceleration in headline inflation. In Sub-Saharan Africa, inflation dynamics are predominantly explained by an overreliance on imported food and fuel for consumption. The high pass-through of food and fuel prices to consumer prices has caused inflation to soar to record highs in many countries, breaching the ceiling of central bank targets in most countries that have them.

The vast majority of the population in Sub-Saharan Africa is affected by the high food prices as they allocate over 40 percent of total spending to food. Elevated food prices are causing hardships with severe consequences, including food shortages, social unrest, and political instability. In turn, the mounting cost of living has weighed on economic activity and further derailed the recovery process. Inflation operates as a regressive tax, disproportionately affecting the poor. Prior to the war, the recovery was already affected by several supply shocks in the second half of 2021. In addition to the direct transmission to consumer prices, inflationary effects are magnified indirectly through the impact of food and fuel prices on the current account balance as import bills rise. A widening current account deficit puts pressure on the domestic currency, which leads to depreciation of the exchange rate that feeds back into higher inflation.

The effects of rising commodity prices in the region vary across countries, depending on whether a country is a net commodity importer or exporter. While inflation has jumped among net importers, it has declined slightly among net exporters thanks to windfall gains associated with favorable terms of trade on the back of elevated commodity prices. This has been particularly the case for oil-rich countries that benefited from soaring oil prices, which saw the Brent crude oil price peak at $120 per barrel in June 2022—the highest since March 2012. This in turn resulted in the appreciation of their domestic currencies. Consequently, inflation contracted

6 China represents about 50 percent of global consumption of metals (Kabundi et al. 2022).

7 Aluminum and gold prices were down by 31 and 9 percent, respectively.

in Angola. Similarly, favorable terms of trade generated a current account surplus in most mineral and metal exporting countries with favorable outcomes on the exchange rate and inflation. For example, in Zambia the currency appreciated, prompted by high copper prices which pushed down inflation.

Adverse weather conditions, particularly across the Horn of Africa, have exacerbated inflationary pressures caused by supply chain disruptions and the war in Ukraine. The East African region—which includes Ethiopia, Kenya, Somalia, South Sudan, Sudan, and Uganda—is experiencing the worst drought in four decades and bracing for its fifth consecutive failed rainy season, with close to 20 million people facing starvation. This is the third severe drought in a decade. Millions of people—especially women, children, and the elderly—have been driven into extreme poverty, food insecurity, and acute hunger and malnutrition. In Ethiopia, the conflict in the northern region has aggravated the situation.

Faced with mounting inflationary pressures and fears of large capital outflows associated with widening spreads, central banks reacted swiftly and aggressively, raising policy rates to levels not seen for several years. High policy rates in countries with advanced capital markets have contributed somewhat to leaning against the tightening of financial conditions and prevented massive capital outflows. This constrains the exchange rate from depreciating further. For example, in South Africa, the gradual rising cycle that started in 2021 was successful in mitigating depreciation of the currency. By contrast, in Ghana, the central bank delayed interest rate hikes until inflation soared from 13.9 percent in January 2022 to 19.4 percent in March, followed by a massive depreciation of the cedi. Then, the monetary policy authority reacted aggressively with two consecutive rate hikes of 250 and 200 basis points in March and May, respectively. These marked rate increases proved to be insufficient in curbing rising prices as inflation reached an all-time high of 33.9 percent in August. This prompted the central bank to surprise the market with a rate hike of 300 basis points in August. In addition, the central bank announced a staggered increase in banks' reserve requirement from 12 to 15 percent, to further slow credit growth. However, interest-based monetary policy seems to be a less effective tool for many countries in the region that are characterized by shallow capital markets and a large informal sector. Instead, they have resorted to complementary policy measures—such as fuel and agricultural subsidies—to shield consumers from the impact of elevated food and fuel prices.

Efforts to mitigate the effects of high inflation with fiscal policy weighed on public finance, which jeopardized the fiscal consolidation process that countries initiated in the aftermath of the pandemic. Countries implemented containment measures, such as regulating fuel price movements, waiving import duties on cereals (especially wheat), and subsidizing fertilizers and cooking gas, to safeguard against inflationary pressures. In addition, cash transfers and other social safety nets were provided to the most affected people. As result, the fiscal deficit rose, exhausting fiscal space, and pushing up public debt to unsustainable levels in many International Development Association (IDA) eligible countries.

Tightening financial conditions have widened sovereign spreads in countries with a developed financial sector as a result of large capital outflows from global investors searching for high

yields.[8] In turn, this exerted pressure on the domestic currency, caused debt-service costs to rise, and raised interest rate risks. The compounding effects of high debt-service costs and a domestic currency depreciation have increased exchange rate risks for countries with high external debts. Debt vulnerability concerns in the region predated the Russia-Ukraine conflict.

Public debt in the region was on an upward trajectory following the collapse of commodity prices in 2014 and deteriorated with the COVID-19 pandemic as countries deployed fiscal support to mitigate the impact the pandemic on vulnerable people. Countries with high public debt as a percentage of the gross domestic product (GDP) include Eritrea (234.9), Sudan (183.8), Cabo Verde (147.7 percent), Ghana (104.6 percent), and Mozambique (102.6 percent). Sudan is at risk of both food and debt crises, and Somalia is in both debt and food distress. Debts accumulated prior to the civil war, which are being addressed through the Heavily Indebted Poor Countries initiative. In addition, the country has recorded an unprecedented fourth consecutive failed rainy season. As of August, an estimated 7.8 million people are affected (which is just under half of the population) and over 1 million displaced. Projections suggest that Somalia is heading to a fifth failed rainy season. This prevailing situation constrains policy makers from providing adequate assistance to offset the lingering effects caused by the COVID-19 pandemic on human capital due to the lengthy period of school closure.

Assistance extended by multilateral institutions to IDA eligible countries in the form of the Debt Service Suspension Initiative was dwarfed by the scale of the problem. As a result, the number of countries in or at high risk of distress continues to rise as the risk of a financial crisis mounts. Across the subregions, debt edged up in AFW, while it contracted slightly in AFE. Excluding Nigeria, oil-exporting countries are expected to reduce government debt significantly.

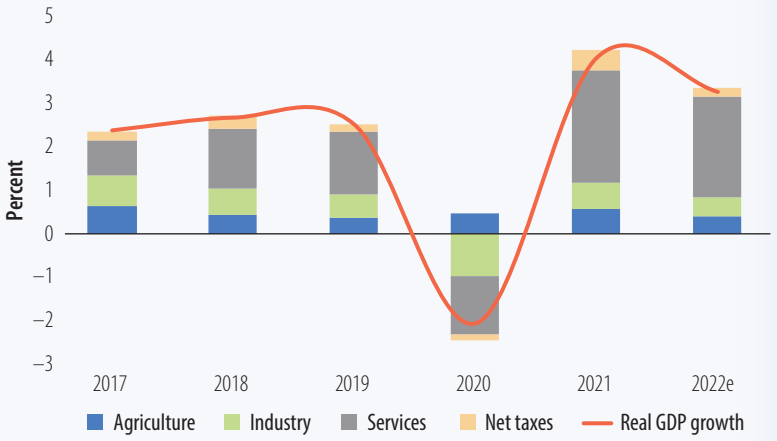
Alternative mechanisms to alleviate debt burdens have been less promising. Little progress has been made in attempting to bring together multilateral and private creditors under the Common Framework to speed up the debt restructuring process for countries in or at high risk of distress. Instead, failure to agree on the roadmap to resolve debt sustainability has magnified the risk of distress. A glimmer of hope on the debt restructuring resolution emerged recently for Zambia as the country secured financial assistance amounting to $1.3 billion from the International Monetary Fund (IMF) and discussion with all creditors is underway.

Against this backdrop, growth of the regional economy is expected to slow to 3.3 percent, from 4.1 percent in 2021, a downward revision of 0.3 percentage point from the April 2022 *Africa's Pulse* forecast. Economic growth continues to be supported by high commodity prices, global trade, and domestic demand. Note that the downward revision from the April *Africa's Pulse* forecast is on the back of multiple shocks affecting the economy, which include the conflict in Ukraine, rising food and fuel prices, elevated public debt, and the slowing down of the global economy. On the production side, regional growth reflects strong performance of the service sector and moderate contributions of the industrial and agriculture sectors (figure 1.10). Adverse weather conditions kept the agriculture sector subdued. On the expenditure side,

8 Spreads have been elevated in Ethiopia, Ghana, Kenya, and Zambia. Ethiopia and Zambia are seeking debt restructuring under the Common Framework.

Growth of the regional economy is projected to slow to 3.3 percent in 2022, from 4.1 percent in 2021.

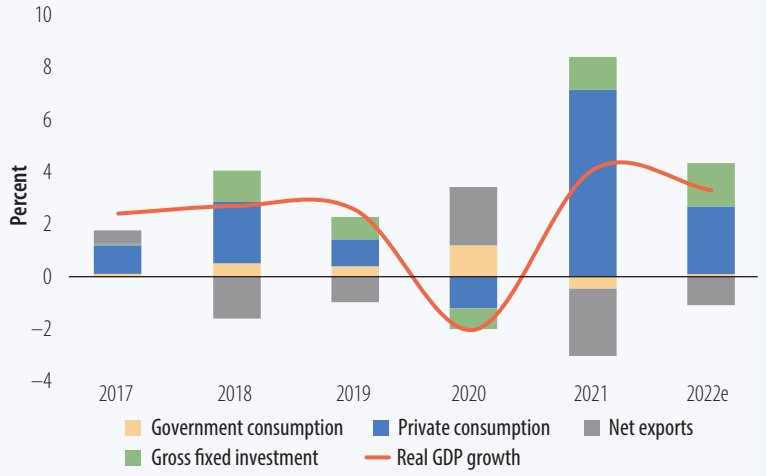
FIGURE 1.10: Contribution to GDP Growth, Production Side (% points)



Source: World Bank staff projections.
Note: GDP = gross domestic product.

The region's growth is supported by private consumption and gross fixed investment, while public expenditure and net exports are holding it back.

FIGURE 1.11: Contribution to GDP Growth, Demand Side (% points)



Source: World Bank staff projections.
Note: Change in inventories and statistical discrepancy are not displayed. GDP = gross domestic product.

private consumption and gross fixed investment have been the key driving forces behind the expansion, while government expenditure and net exports have held back growth (figure 1.11). Private consumption expenditure grew less than the performance in 2021 amid actions taken by monetary policy authorities to combat inflation and rising food and fuel prices. The current account deficit declined from the previous year as exports picked up. It is more likely that elevated interest rates will drag down investment in the near term.

The prospects for the region vary considerably across countries. Among Africa's three largest economies, growth is subdued in Nigeria and South Africa, while the Angolan economy gained from elevated oil prices, increased oil production, and good performance of the non-oil sector. The terms of trade shocks benefited commodity exporting countries by increasing fiscal and external revenues while lowering inflationary pressures. Meanwhile, high and volatile food and energy prices along with trade disruptions (due to supply chain problems and other restrictions) pose significant challenges in food importing countries as they increase import bills, weigh on public finance, and fuel inflation.

Sub-Saharan Africa's Three Largest Economies[9]

Annual growth in Nigeria slowed from 3.6 percent in the first quarter of 2022 to 3.4 percent in the second quarter. The non-oil sector continued to support economic activity as oil production struggles to meet the OPEC+ quota of 1.8 million barrels per day. The non-oil sector grew by

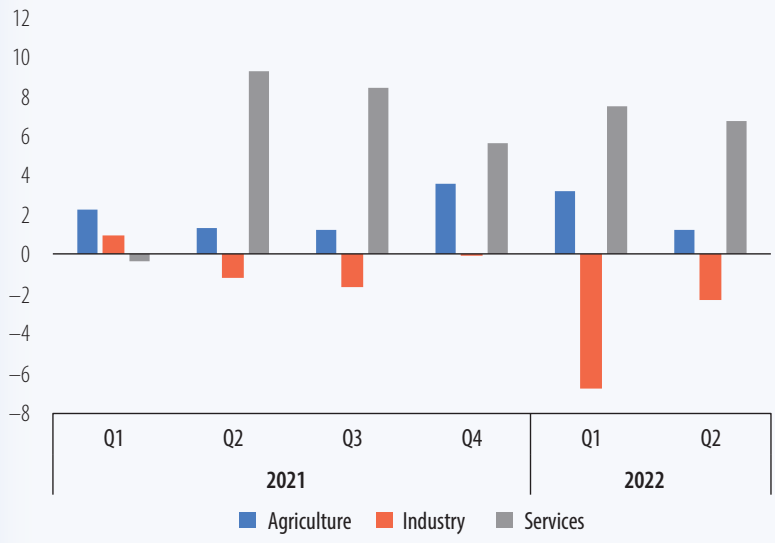
9 To avoid cyclical effects on rank ordering, the selection of the three largest economies in the region is based on 10-year average GDP using purchasing power parity.

4.8 percent in the second quarter of 2022 compared to 6.1 percent in the first quarter. The key contributors to the expansion were the information and communications, finance and insurance, transportation, agriculture, and manufacturing sectors.

Economic growth in Nigeria continues to suffer from an underperforming oil sector. Oil output was down by 11.8 percent year-on-year in the second quarter of 2022 against 26 percent in the first quarter. After dropping for the fifth consecutive quarter (from 1.4 million barrels per day in the first quarter to 1.2 million in the second quarter), oil production slowed further in August to a 50-year low of 1.13 million barrels per day, behind Angola (1.17 million). It continues to lag the production levels of last year (1.6 million barrels per day). Despite elevated oil prices, the country's (net) official oil earnings have not increased. Several headwinds, such as increasing petroleum product subsidies (deducted directly from the gross oil earnings), limited investment in oil infrastructure, and theft on the pipelines, prevent the economy from realizing gains from rising oil prices. Real GDP growth is expected to slow from 3.6 percent in 2021 to 3.3 percent in 2022, 0.5 percentage point lower than the April 2022 *Africa's Pulse* forecast.

Due to its heavy reliance on imported petroleum products and constrained oil production, Nigeria did not benefit from favorable terms of trade induced by the Russia-Ukraine conflict. The downward revision partly reflects headwinds from rising food and fuel prices and a contractionary monetary policy. On the demand side, economic growth was supported by a moderate uptick in private consumption and investment, which have been held back by monetary policy tightening and insecurity. Direct central bank lending to the agriculture and manufacturing sectors provided some support to private investment. Net exports benefited somewhat from elevated oil prices; however, rising import bills dragged them down. Government spending rose to cover the large public-sector wage bill, spending for security, and interest costs. On the production side, the service sector has been the key driver of growth over the past year (figure 1.12). The industrial sector suffered from a series of obstacles, including among others, power shortages, insecurity, and low oil production. The minor contribution of the agriculture sector was partly due to limited formal land and import restrictions.

FIGURE 1.12: GDP Growth in Nigeria by Sector (%)



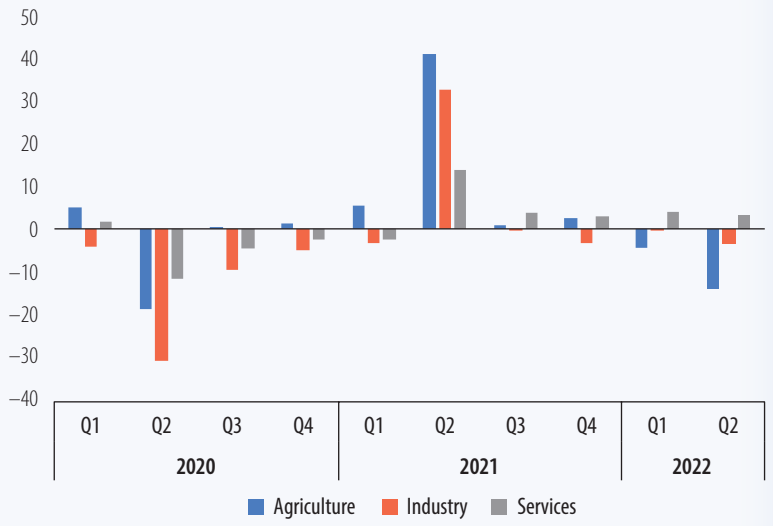
Real GDP growth is expected to slow in Nigeria, partly because of constrained oil production. Growth is supported by the service sector.

Source: Nigeria National Bureau of Statistics.
Note: GDP = gross domestic product.

Growth of South Africa's economy slowed to 0.2 percent year-on-year in the second quarter of 2022, from 2.7 percent in the previous quarter. The worst power outages on record and flooding in Kwazulu-Natal province were key factors that held back economic performance in the second quarter. On the demand side, the growth slowdown was mainly due to a decline in net exports and weaker consumption. Private investment increased at a slower rate. Private consumption growth was impacted by the acceleration in food and fuel prices. The supply side of the economy was supported by the service sector, while the agriculture and industrial sectors contracted (figure 1.13).

South Africa's growth is expected to slow due to contractions in agriculture and the industrial sector.

FIGURE 1.13: GDP Growth in South Africa by Sector (%)



Source: Statistics South Africa.
Note: GDP = gross domestic product.

Despite the favorable terms of trade from the rally in commodity prices, the country faced rising food and fuel prices, causing a big leap in inflation, which breached the ceiling of the central bank's target range (6 percent) in May for the first time since March 2017. Inflation reached a 13-year high of 7.8 percent in July 2022 before easing slightly to 7.6 percent in August, despite the central bank's consecutive rate hikes since 2021. The monetary policy authority surprised the market with a rate increase of 75 basis points in the July meeting, taking cumulative hikes to 200 basis points since the beginning of the tightening cycle in November 2021. The economy is projected to grow by 1.9 percent this year, a downward revision of 0.2 percentage point relative to early projections in April.

The Angolan economy is one of the major beneficiaries of favorable terms of trade, which translate into real growth of 3.1 percent in 2022, from 0.8 percent in the previous year. The 0.2 percentage-point upgrade in growth relative to the April projections reflects the contribution of a higher-than-expected rally in oil prices, averaging about $100 per barrel in 2022. On the demand side, the performance of the economy is on the back of rising private consumption, government expenditure, and current account surplus. The government has started reaping the benefits from its efforts to improve revenue mobilization by increasing the efficiency of tax collection and reducing tax evasion. As a result, the fiscal balance recorded a surplus of 1 percent of GDP. Loose monetary and fiscal policies, in response to declining inflationary pressures, have shored up consumption expenditure. The central bank kept the policy rate unchanged in six consecutive meetings. Inflation plunged from 27.7 percent in January to 19.8 percent in August—the lowest level since March 2020—on the back of a strong kwanza. High oil prices coupled with partial recovery in production boosted external revenues, which exceeded the

downward pressure exerted by rising import bills. The current account registered a record high surplus of 15.2 percent. In addition to the strong performance of the oil sector, the agriculture and service sectors grew, yet by less than their performance in 2021.

Excluding the three largest economies in the region, variation in performance across countries emerged from the impact of the terms of trade shock arising from the surge in commodity prices. Economic growth for the region excluding Angola, Nigeria, and South Africa is projected to slow to 3.8 percent in 2022, from 4.4 percent in 2021, but higher than the regional growth of 3.3 percent. The growth rate is revised down from the forecast of 4.1 percent in the April 2022 *Africa's Pulse*, mostly owing to the impact of commodity prices, which varies across countries. Similar to most EMDEs, fluctuations in commodity prices explain more than 50 percent of the variation in business cycles in Sub-Saharan African countries.[10] Commodity price movements trigger inflationary pressures in low-income countries where a large share of income is spent on food and fuel. They are also associated with exchange rate volatility, which exacerbates price effects and poses challenges to policy makers (Drechsel, McLeay, and Tenreyro 2019). For commodity exporting countries with more liquid financial markets, rising commodity prices can trigger large capital inflows, which in turn can lead to a banking or sovereign default crisis if they are not invested wisely (Eberhardt and Presbitero 2021; Reinhart, Reinhart, and Trebesch 2016).

Resource-Rich Countries

The impact of high commodity prices on resource-rich countries depends highly on the net effects on trade. The countries where the increase in external revenues surpasses rising import bills will see an expansion of their economies, whereas the opposite is true in countries with widening current account and fiscal deficits. Specifically, oil exporting countries are experiencing rising external and fiscal revenues, which has led to current account and fiscal surpluses or declining deficits. This in turn supported economic activity in 2022, which is projected to grow at 3.1 percent, up from 2.7 percent in 2021. Chad and the Republic of Congo are set to emerge from two- and seven-year recessions in 2022 and are expected to grow by 3.1 and 1.9 percent, respectively. This good performance reflects a combination of soaring oil prices, the stable oil production, and strong performance of the non-oil sector. Small current account and fiscal surpluses are expected in Chad, while the surpluses registered last year widen in the Republic of Congo. Similarly, the economic expansion in Equatorial Guinea in 2022 (3.2 percent) is expected to benefit from higher oil prices, although subsidies to mitigate against rising food prices will weigh on public finances and narrow the budget surplus.

Mineral and metal resource-rich countries are forecast to grow at 4.5 percent, down from 5.1 percent in 2021. The growth projected in April is revised down by 0.2 percentage point as the external receipts from high metal prices proved insufficient to make up for rising import bills. After exhibiting double-digit growth in 2021 (12.1 percent) following a severe contraction a year earlier (-8.5 percent), the economic growth rate in Botswana is set to moderate in 2022 (3.2 percent). Growth is supported by increased diamond and copper production alongside high metal prices, the relaxation of restrictive measures on the tourism industry, and favorable weather conditions for the agriculture sector. However, fiscal measures that have been adopted

10 See Mendoza (1995), Kose (2002), and Aguiar and Gopinath (2007). Di Pace, Juvenal, and Petrella (2020), and Kabundi et al. (2022) provide more detailed analysis of the impact of commodity prices on the business cycles of EMDEs.

to combat inflation weighed on public finance and hold back growth. Economic slowdown in South Africa translated into low revenue receipts from the Southern African Customs Union.

The Namibian economy struggled to pick up speed, up from 2.7 percent (2021) to 2.8 percent (2022). The growth is on account of good performance of the mining sector, particularly, rising output of diamonds, copper, and uranium. However, contractionary monetary policy to maintain parity with the South African rand and to fight rising inflation may drag down growth. The twin deficits recorded last year will persist in 2022. After emerging from the recession in 2020, growth in Zambia is projected to moderate this year at 3.3 percent. The strong momentum in services supports economic activity, while challenges in mining and agriculture hold back growth. The current account continued to record a surplus, while the budget deficit narrowed as the government consolidated in line with the expected debt-restructuring program. Likewise, economic activity is expected to expand in the Democratic Republic of Congo (6.1 percent), Guinea (4.6 percent), Liberia (3.7 percent), and Sierra Leone (3.7 percent). Hence, growth in resource-rich countries is expected to edge down (2.9 percent) in 2022.

Non-Resource-Rich Countries

Non-resource-rich countries are disproportionately affected by the Russia-Ukraine conflict owing to the deterioration in terms of trade as import bills rise. Output is expected to plunge by 0.8 percentage points to 3.9 percent in 2022. The inflation outlook has deteriorated in many countries; current account deficits have widened, putting more pressure on the domestic currencies; and policy makers have reacted aggressively with contractionary monetary policy, which weighs on economic activity. For example, the average growth forecast among West African Economic and Monetary Union (WAEMU) countries is expected at 4.9 percent, down from 5.9 percent in 2021, and 0.2 percentage point lower than the April 2022 *Africa's Pulse* forecast.

GDP growth is set to decline by more than 1.2 percentage points in Benin (5.7 percent), Burkina Faso (4.3 percent), Côte d'Ivoire (5.7 percent), Guinea-Bissau (3.5 percent), Mali (1.8 percent), and Senegal (4.8 percent), while a mild slowdown—less than 0.5 percentage point—will be observed in Togo (4.8 percent). By contrast, growth in Niger is expected to jump by 3.6 percentage points to 5.0 percent on the back of expansion of the agriculture sector after a severe drought that dragged down growth in 2021. Investment in several infrastructure projects, particularly the construction of the oil pipeline and the Kandadji Dam, boosted growth on the demand side. The subregion is characterized by a twin deficit attributed to government interventions to contain inflation that has breached the regional target of 3 percent. Since the activation of the escape clause allowing WAEMU countries to increase the government deficit above the convergence target of 3 percent, the consolidation process has been delayed to 2027.

Outside the WAEMU, growth in Ghana is expected to slow in 2022 to 3.5 percent, far below the country's average pre-pandemic performance (7.0 percent). The economy has been struggling with various setbacks, including rising public debt (104.6 percent of GDP), elevated inflation (33.9 percent in August), and a depreciating currency. To curb elevated inflation, the central bank raised the policy rates at three consecutive meetings to a record high. Real GDP growth dropped sharply by 2.8 and 2 percentage points in Ethiopia and Kenya, respectively. In

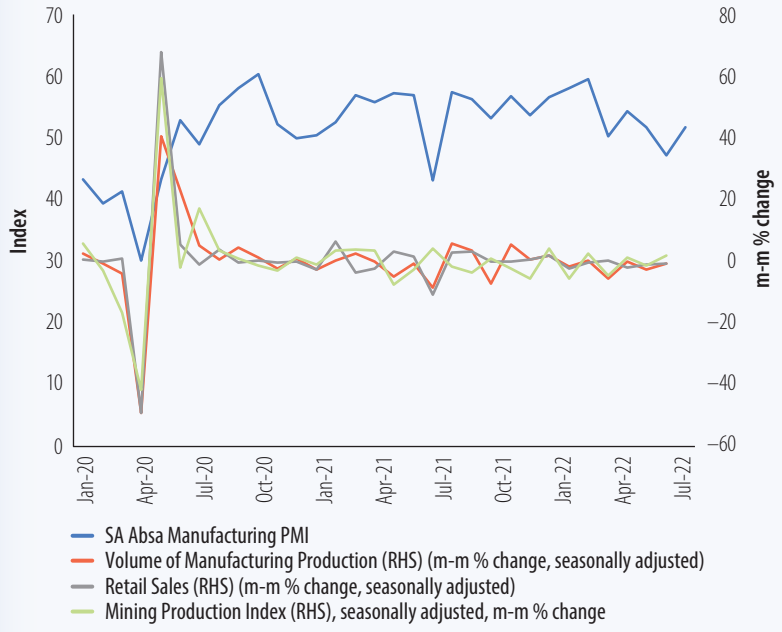
addition to the high consumer prices induced by the war in Ukraine, headline inflation climbed further due to drought. Similar to other non-resource-rich countries, Ethiopia and Kenya are characterized by a widening current account deficit mimicking the surge in import bills for fuel, fertilizer, and food. The government deficits nudged down but remain elevated, as revenue collection continued to be slack for Ethiopia. By contrast, economic activity picked up in Mozambique and Mauritius, growing 3.7 and 5.8 percent, respectively. Growth in Mozambique stemmed from the increase in coal and aluminum output thanks to high global demand and high prices. Mauritius benefited from the recovery in tourism assisted by progress made with a high rate of vaccination. A similar pattern is seen in the Seychelles with a leap in growth from 7.9 percent in 2021 to 11 percent in 2022.

High-Frequency Data

Overall, incoming data point to persistent weakness in economic activity in the third quarter of 2022 amid the escalation of the conflict in Ukraine combined with fears of recession in the euro area and the United States, and subdued growth in China. At the subregional level, AFE countries are experiencing rising inflation above central bank targets. Central banks across the subregion have embarked on a tightening cycle of monetary policy, which in turn holds back economic activity.

In South Africa, the breakdown of inflation reveals that food and fuel prices were the key underlying drivers behind the rising inflation. The increase in the price of fuel jumped from 45.3 percent in June to 56.2 percent in July, contributing 0.5 percentage point to the increase in inflation. Rising food prices added 0.2 percentage point. High-frequency data suggest that economic activity continues to disappoint in the third quarter after underperforming in the second quarter. Retail sales slipped for three consecutive months, 1.2, 0.4, and 0.1 percent (month over month) in May, June, and July, respectively (figure 1.14). The slowdown in industrial production was associated with a contraction in manufacturing production by 0.2 percent (month over month). The rebound in mining production (2.3

FIGURE 1.14: South Africa: PMI, Manufacturing Production, Mining Production, and Retail Sales (net balance)



Economic activity continues to be weak in the third quarter of 2022, on account of a slippage in retail for three consecutive months.

Sources: Statistics South Africa; Haver Analytics, 2022.

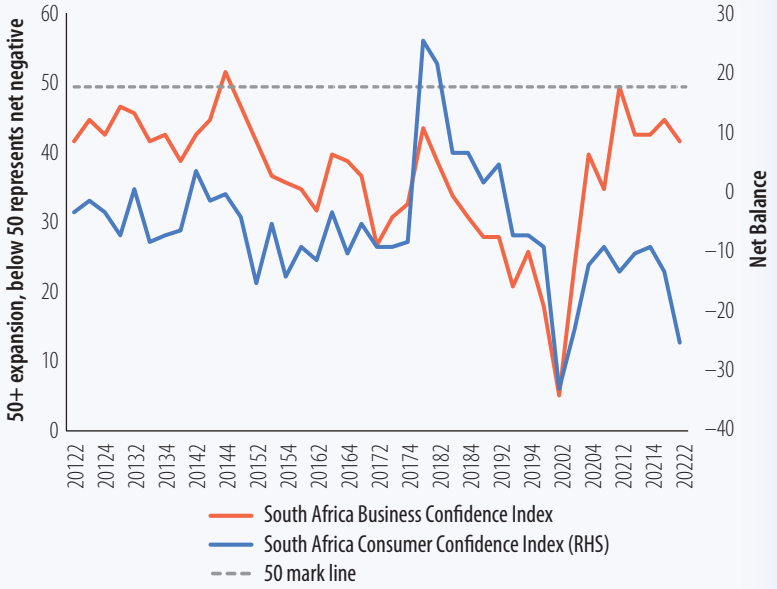
Note: Consumer confidence is expressed as a net balance derived as the percentage of respondents expecting an improvement less the percentage expecting a deterioration. m-m = month-over-month; PMI = Purchasing Managers' Index; SA = South Africa.

percent month over month) still fell short of pre-pandemic levels. In addition to global factors, the PMI fell below the 50-point mark to 47.6 in July, reflecting dismal performance of the economy, mainly due to idiosyncratic factors, which include the damage caused by flooding in Kwazulu-Natal and the worst power outages on record. However, it recovered in August to 52.1, reflecting easing of power outages—thus pointing to a mild slowdown in the third quarter.

Business sentiment deteriorated as the RMB/BER business confidence index in South Africa dropped for two quarters in a row from 42 in the second quarter of 2022 to 39 in the third quarter—the lowest since the first quarter of 2021 (figure 1.15). The FNB/BER Consumer Confidence Index improved slightly, from -25 in the second quarter of 2022 to -20 in the third quarter, which was far below the historical average reading of +2. Consumers are negatively affected by contractionary macroeconomic policies along with weakness in the global economy.

Business sentiment deteriorated in South Africa as the RMB/BER business confidence index dropped to 39 in the third quarter—the lowest since the first quarter of 2021.

FIGURE 1.15: South Africa: Business and Consumer Confidence Indexes



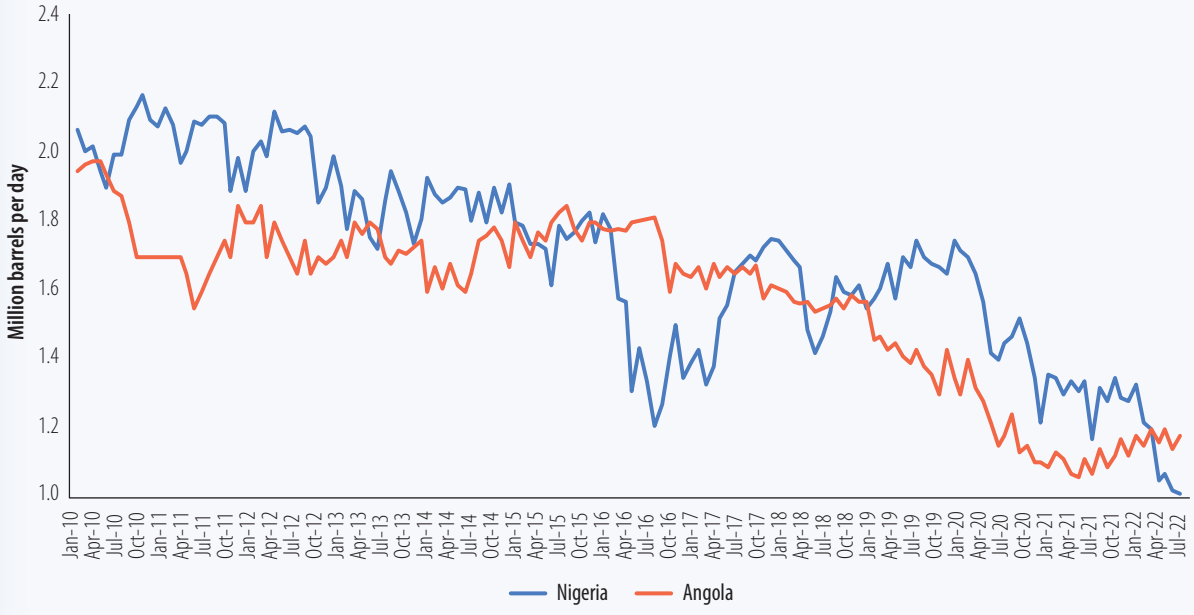
Sources: Bureau of Economic Research.

Note: Consumer confidence is expressed as a net balance derived as the percentage of respondents expecting an improvement less the percentage expecting a deterioration.

In Angola, oil production nudged down from 1.18 million barrels per day in June 2022 to 1.17 million in August. The country's oil output remains far below the OPEC+ quota of 1.5 million barrels per day (figure 1.16). Substantial investments are needed to shore up production. The government is expected to benefit from the diversification of oil imports from Russia. In addition, reforms initiated in the oil sector, which include a halving of royalties and income tax on marginal discoveries, will attract foreign direct investments. The uptick in production and high oil prices continue to support the economy. The fiscal surplus alongside the positive economic growth rate and strengthening of the kwanza—which appreciated by 30 percent this year—will help to bring public debt down in the near future.

The Ethiopian economy has been severely hit by the driest rainy season on record with the loss of livestock—more than 2.5 million deaths—and crops—more than 70 percent failed between March and May. Agriculture, which makes up 37 percent of GDP, has been the sector most affected by the adverse weather conditions. In addition, ongoing internal conflict in the northern region remains a major obstacle for the country to regain the exceptional average annual growth of 10 percent as it raises uncertainty and drives out foreign investments. Likewise, Kenya's rebound from the pandemic has been weakened by severe drought and the global headwinds. The PMI continues its downward trajectory for the sixth successive month, down to

FIGURE 1.16: Angola and Nigeria: Oil Production (million barrels per day)



Oil production declined slightly in Angola to 1.17 million barrels per day in August, well below the OPEC+ quota of 1.5 million barrels per day, and more than Nigeria (1.13 million barrels per day).

Source: U.S. Energy Information Administration.

44.2 in August from 46.3 in July. This decline reflects weakness in private sector activity, down for five successive months, associated with uncertainty about the election and reining in inflation. Industrial production in Rwanda was up by 33.3 percent (year over year) in July after an upturn in June (1.1 percent year over year), supported by rising manufacturing production, electricity, and mining and quarrying.

By contrast, incoming data from Uganda send mixed messages. On the one hand, activity shows signs of recovery after the upturn in the PMI, just above the 50-point mark (50.5) in August, from three straight months of contraction. On the other hand, business confidence continued its downward path in August (52.8). Output plummeted due to accelerating inflation, which breached the upper limit of the central bank's target range (7 percent) to 7.9 percent in July. The monetary policy authorities reacted by raising the policy rate 250 basis point since January. In Mozambique the PMI decreased steadily to 50.8 in August, marking the seventh consecutive month of decline in private sector activity. The PMI for Zambia edged down to 50, after showing signs of expansion for two months in a row, rising slightly above the 50-point mark. Strong demand despite elevated costs pushed up production and new orders. The central bank kept the policy rate unchanged for three successive meetings to support economic growth as inflation dropped to single digits (9.9 percent) for two straight months, closer to the upper bound of the official target band of 6 to 8 percent.

In AFW, incoming data point to further weakening of activity reflecting the spillover of global shocks, which include uncertainty arising from the prolonged conflict between Russia and Ukraine and risk of recession in advanced economies alongside the monetary policy tightening cycle. In Nigeria, the Stanbic IBTC Bank PMI decreased to 52.3 in August, after an uptick in the previous month (53.2). The sentiment of weakness in the private sector reflects feeble recovery

in output, inflows of new orders, and purchasing activity. Despite the economic expansion in the second quarter, the oil sector continues to struggle to regain its performance of the pre–oil collapse era of 2014, which was characterized by the production of 2 million barrels per day. The downward trend in production recorded after the plunge in oil prices in 2014 persists in the third quarter of 2022 (figure 1.16). This low production prevents the country from benefiting from elevated oil prices. Oil accounts for 80 percent of Nigeria's external revenues.

In Ghana, the S&P Global PMI dropped from 48.8 in July to 45.9 in August—the lowest reading in 28 months. The subdued level of the PMI reflects private sector weakness—with activity being held back for seven straight months. New orders and output have been trending down for many months. Rising input costs, on the back of high fuel and raw material prices, compelled businesses to cut workers for the first time in about a year. The central bank of Ghana has hiked the interest rate by 750 basis points since the start of the year, in an attempt to stop the steep rise in inflation and keep the cedi from depreciating further.

High-frequency data reveal weak performance of WAEMU countries in the third quarter of 2022, dragged primarily by rising prices, which erode households' purchasing power, lead to contractionary macroeconomic policies and weak demand from the rest of the world, and threaten stability in the Sahel region. The data suggest that the weakness of the Senegalese economy observed in the first quarter of this year persisted over the second quarter. Industrial production dropped for three consecutive months, by 8.5 percent in June, after a plunge of 13.8 percent in May. Both mining (-31.1 percent) and manufacturing (-2.9 percent) activity dragged industrial production. The expansion of Jihadist attacks in Mali poses a risk to stability in the region, which may delay foreign direct investment inflows as uncertainty mounts.

In Côte d'Ivoire, growth of industrial production increased from 10.1 percent (year over year) in April to 12.4 percent in June. However, month-over-month growth points to a decline of 3.1 percentage points, after a big drop of 9.7 percent in April. This performance indicates that activity slowed in the second quarter. Declining cocoa prices since May 2022 could hold back growth. Côte d'Ivoire also faces threats to stability from Jihadist activities in Mali and Burkina Faso, which could pose challenges to growth in the medium term. Data from Burkina Faso and Mali show signs of contraction in growth partly due to instability. The economy contracted by 0.4 percent (year over year) in Burkina Faso in the first quarter of 2022. Gold production was down by 10.3 percent, construction dropped by 13.7 percent (year-over-year), and the agriculture sector faces challenges from conflict and related internal displacements due to loss of available farmland. Rising prices of fertilizers and unfavorable weather conditions add to the existing setbacks for the agriculture sector.

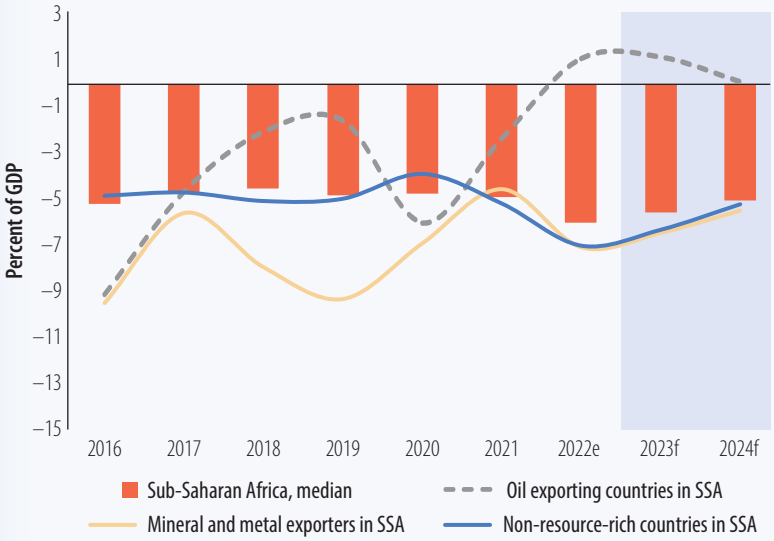
Overall, the Economic and Monetary Community of Central Africa (CEMAC) countries continue to enjoy the benefits of high oil prices with twin surpluses, causing an increase in foreign reserves and providing an opportunity to reduce debt. This, in turn, has contributed somewhat to containing inflationary pressures. Average inflation in CEMAC is projected at 4.6 percent for 2022, lower than the regional median of 8 percent. Nevertheless, countries in the region have failed to capitalize on elevated commodity prices. Oil production falls short of the OPEC+ quota. For example, production in the Republic of Congo was steady for two months at 261,000 barrels

per day in May, down from 275,000 barrels per day in January, which is still low compared to the level of output in 2018, at 349,000 barrels per day. The production is constrained by maturation of oilfields and slowdown in upstream development, which necessitates new investments.

External Position

Given the rising import bills, the regional current account deficit is projected to widen this year to 6 percent of GDP, from 4.9 percent in 2021. The deficit is set to narrow marginally, as commodity prices recede, to 5.5 and 5.0 percent in 2023 and 2024, respectively (figure 1.17). The current account is expected to register a surplus (1.1 percent of GDP) for oil-rich countries, reflecting the gap between the increase in oil prices relative to other commodities. The surplus is set to widen to 1.2 percent in 2023 before narrowing to 0.1 percent in 2024. In Angola, the surplus will reach 15.2 percent, up from 10.1 percent the previous year, but it is expected to revert in 2024 as oil prices subside because of decreasing global demand. Nigeria, the largest African oil producer, is set to emerge from the current account deficit of -0.4 percent of GDP in 2021 to a surplus of 1.1 percent in 2022, and edge up to 1.2 percent in 2023. The current account balance is expected to improve in 2022 and 2023 relative to 2021 due to higher oil prices, which offset lower oil output. Higher import prices of food and refined petroleum products weigh on the current account surplus. A mega-refinery project that is expected to be completed in 2023 will boost external earnings by drastically reducing imports of fuel and at the same time contribute to the regional supply of petroleum products. The Republic of Congo is forecast to reach a record surplus of 18.1 percent of GDP in 2022.

FIGURE 1.17: Evolution of the Current Account (% of GDP)



Source: World Bank staff projections.
Note: e = estimate; f = forecast; GDP = gross domestic product; SSA = Sub-Saharan Africa.

The regional current account deficit is projected to widen this year on account of rising import bills, except for oil exporting countries, which are expected to register a surplus.

Unlike oil-rich countries, mineral and metal resource–rich countries fail to gain from high commodity prices. They are expected to register a widening current account deficit of 7 percent of GDP as export earnings from rising metal prices are not sufficient to compensate for the significant increase in import bills. The deficit will narrow in 2023 to 6 percent, echoing the fall in commodity prices. In South Africa, incoming data for July provide evidence of a softening current account surplus owing to slowing export growth, while import growth hastened. Exports suffered partly from the flooding in KwaZulu-Natal province, which caused considerable damage at the Durban port. The current account surplus is projected to soften to 0.2 percent of GDP

in 2022 (from 3.7 percent of GDP in 2021), before the balance reverts to deficits of 1.6 and 2.1 percent of GDP in 2023 and 2024, respectively. The downward trajectory of the trade balance is driven by the deterioration in terms of trade as rising import prices outweigh the increase in export prices as well as the volume gap. In Zambia, the current account surplus is expected to shrink from the double-digit reading of two successive years to 2.6 percent of GDP in 2022 as copper prices drop, imports pick up, and the debt restructuring plan remains unresolved. Zambia's current account surplus is projected to bounce back next year to 2.8 percent, before falling to 1 percent in 2024.

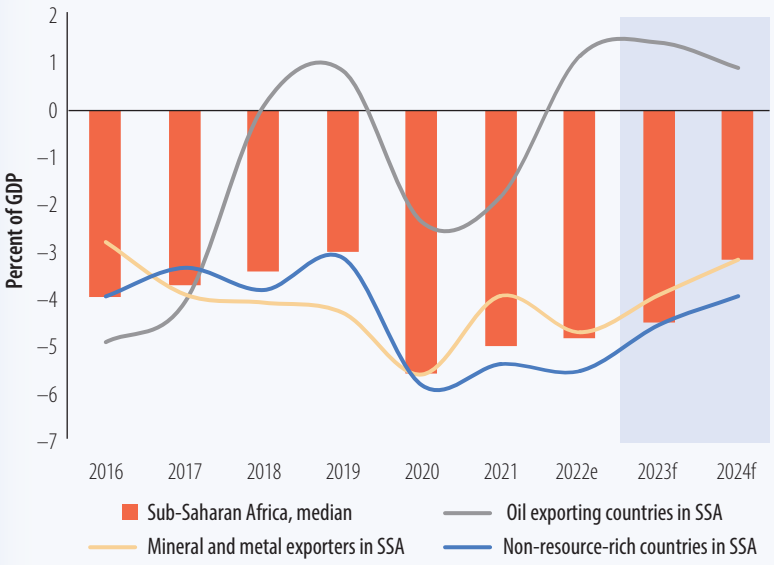
Similarly, the current account deficit will widen for non-resource-rich countries due to rising import bills fueled by soaring food and fuel prices, yet the size of the deficit is expected to narrow to 5 percent in 2024, from 7 percent in 2021(figure 1.17). More than two-thirds of countries with double digit current account deficits are non-resource-rich countries, and the remaining are mineral and metal resource-rich countries. Mozambique is expected to have the highest deficit in the region (-46.6 percent) in 2022, with no sign of abating in the near term. The country has been having structural current account deficit issues for a prolonged period. However, the deficit is projected to more than double this year and will remain elevated at about 40 percent of GDP for the remainder of the forecast period. The large deficit is largely due to rising import spending on capital goods coupled with higher fuel and food prices. The Seychelles comes second with a current account deficit projected at 22.4 percent of GDP. Likewise, the Seychelles suffers from the structural deficit of the current account, which seems likely to remain unresolved over the forecasting horizon, reflecting heavy reliance on imported food, fuel, and capital goods. Unlike Mozambique and the Seychelles, which typically run double-digit current account deficits, the deficit for Ghana has been hovering below 4 percent of GDP since 2017. However, Ghana's current account deficit is set to widen to 5.8 percent this year, before narrowing slightly to 5.2 percent in 2024. The deterioration in the current account balance is consistent with the combination of skyrocketing import bills and the fall of the cedi. Finally, WAEMU countries will experience an uptick in their deficit from 4.1 percent in 2021 to 6.3 percent in 2022, and back to 4.6 percent next year.

Fiscal Deficit

Following an accommodative fiscal policy that was warranted in the aftermath of the COVID-19 pandemic to support the most vulnerable segments of the population, mostly the urban poor, Sub-Saharan African countries opted for fiscal consolidation to prevent public debt from rising further. But the war in Ukraine disrupted the consolidation plan by fueling already elevated inflation. As food and fuel prices climbed across the continent, policy makers were left with limited options other than frontloading support in the form of subsidies and cash transfers to those who needed them the most, the poor. This delays the consolidation process as the fiscal deficit remains mostly unabated. The fiscal deficit for the region is projected to ebb slightly from 5 percent of GDP in 2021 to 4.8 percent in 2022 (figure 1.18). It is set to shrink next year to 4.5 percent, and further to 3.2 percent in 2024. The small retreat represents the surplus in oil-rich countries (1.2 percent of GDP). Excluding Nigeria (-5.9 percent) and South Sudan (-3 percent), oil-rich countries are projected to register fiscal surpluses this year. Although revenue from the oil sector constitutes half of the government revenue in Nigeria, the government deficit will stay elevated throughout the forecasting horizon mainly due to persistent problems in the oil

industry, since the non-oil sector has not been able to make up for the loss. The deficit is predicted to remain stable in non-resource-rich countries, at 5.5 percent in 2022. It will widen in mineral and metal resource-rich countries by 0.8 percentage point this year and narrow to 3.9 percent of GDP in 2024 as the consolidation process becomes effective.

FIGURE 1.18: Fiscal Balance in Sub-Saharan Africa (% of GDP)



Source: World Bank staff projections.
Note: e = estimate; f = forecast; GDP = gross domestic product; SSA = Sub-Saharan Africa.

The fiscal deficit for the region is projected to ebb slightly down to 4.8 percent in 2022. Oil producers are expected to register a surplus of 1.2 percent of GDP.

The Republic of Congo will enjoy the biggest surplus of 4.8 percent of GDP in 2022, which is expected to dissipate gradually and settle at 2.6 percent in 2024. This performance is on account of rising revenue propelled by increasing oil prices. In addition, reforms undertaken by the country that have supported revenue growth include improving the efficiency of government spending, promoting a moderate rise in the public sector wage bill, introducing electronic payment systems, and collecting tax arrears. Similarly, Angola (1 percent), Chad (2.8 percent), Equatorial Guinea (1.3 percent), and Gabon (1.2 percent) will record fiscal surpluses this year, which will gradually decline over time. By contrast, the deficit in Ghana will remain elevated (-7.9 percent).

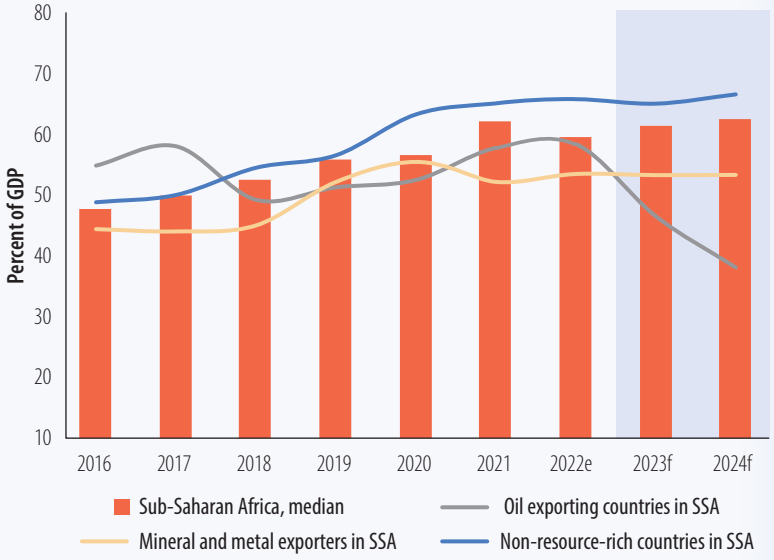
The country with the highest fiscal deficit is Zambia (9.3 percent), followed by Cabo Verde (9 percent). The deficit rose sharply in Cabo Verde after the pandemic crisis of 2020, jumping from 1.7 to 9.1 percent of GDP in 2020, and it is projected to stay elevated until 2023. Fiscal consolidation will eventually bring the deficit down to 5.8 percent in 2024. Across WAEMU members, the deficit is set to widen back to the pre-pandemic levels, at 4.1 percent, far above the convergence target of 3 percent. In South Africa, fiscal consolidation will be gradual. Higher government spending on social grants, reconstruction of infrastructure after flooding, increased interest expenditure, wage pressures, and the cut in the fuel levy will weigh on the budget deficit this year and next year. The deficit is projected at 5.8 percent of GDP in 2022.

Debt Levels and Debt Vulnerabilities

Rising debt in the Sub-Saharan Africa region predated the COVID-19 pandemic. Countries benefited from low interest rates globally, which entailed low debt servicing cost. Public debt rose sharply with the pandemic as policy makers stepped up to alleviate the effects of the health crisis and the subsequent economic implications for the hardest hit. Government debt is forecast to remain elevated across the continent at 59.5 percent of GDP, down from 62 percent in 2021, and to stabilize at a high level for the remainder of the forecasting period

Over two-thirds of the countries in the region with elevated debt—above 70 percent of GDP—are non-resource-rich countries.

FIGURE 1.19: Government Debt in Sub-Saharan Africa (% of GDP)



Source: World Bank staff projections.
Note: e = estimate; f = forecast; GDP = gross domestic product; SSA = Sub-Saharan Africa.

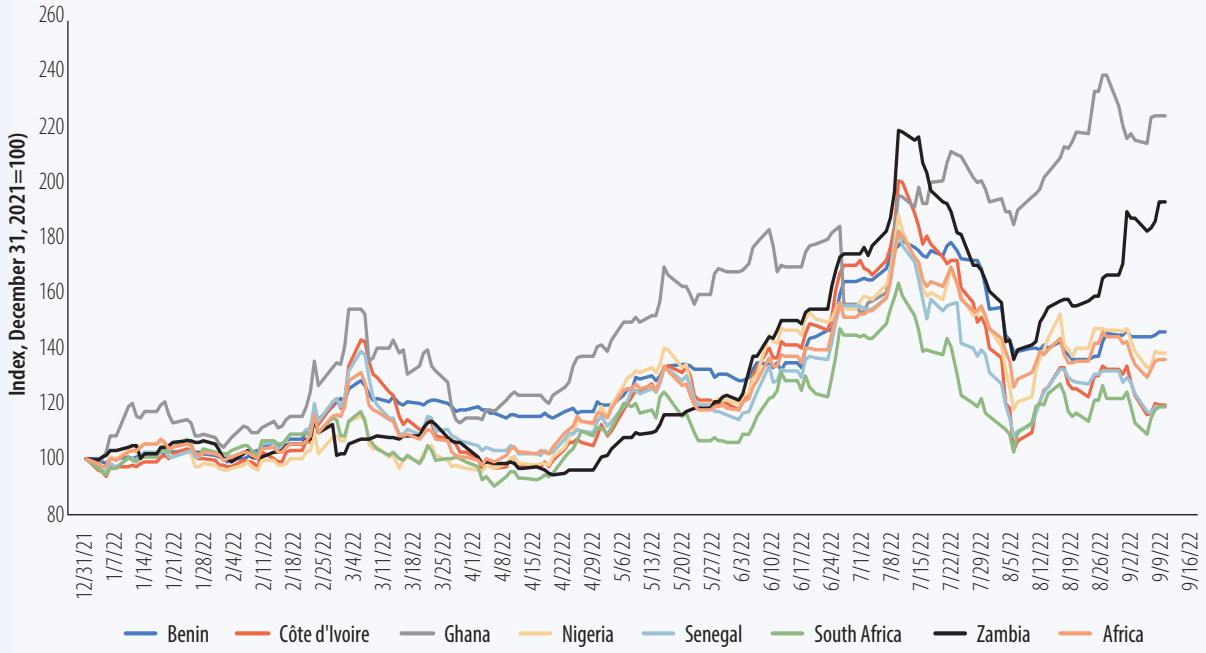
(figure 1.19). Debt dynamics in the region are partly associated with movements in commodity prices. A higher debt burden is also associated with rising policy rates in advanced economies—which push up debt servicing costs—and weak growth for most countries. Over two-thirds of the countries with elevated debt—above 70 percent of GDP—are non-resource-rich countries. Five countries—Eritrea (234.9), Sudan (183.8), Cabo Verde (147.7), Ghana (104), and Mozambique (102.6)—will register debt-to-GDP ratios above 100 percent. The Republic of Congo is the only oil-rich country that makes the list with public debt expected at 84 percent of GDP. The country has been struggling with high public debt since the collapse of oil prices in 2014, as it jumped from 42.3 to 74.2 percent of GDP in 2015. It rose further to 113.2 percent in 2020 as the pandemic broke out and has since been on a downward trajectory. It is projected to decline further to 76.3 percent in 2024. Mozambique's deal with the IMF should help the country's management of public finance, containing debt from rising further, and freeing fiscal space. The favorable terms of trade arising from high coal and aluminum prices will provide ample fiscal revenue, which is essential to reduce the country's debt.

Excluding South Sudan, debt is set to decline for oil-rich countries to 51.5 percent of GDP in 2022, from 59 percent in 2021. In addition to the gain the countries will receive from export earnings boosted by high oil prices, they have initiated reforms to increase revenue. Debt will decline by double digits in Angola (23.8 percentage points), the Republic of Congo (18.2 percentage points), and Equatorial Guinea (12.9 percentage points). In Angola, a strong kwanza as well as the external receipts from high oil prices will help to bring debt down to 61.9 percent from 85.7 percent recorded in 2021. Debt rose sharply above the 100-percent mark in 2019 and firmed with the pandemic to 130.7 percent of GDP. Albeit at a low level (37.6 percent), public debt in Nigeria is a concern as the country recorded a high debt service-to-revenue ratio (118.9 percent) between January and April. Debt pressures have increased as debt service to revenue is projected to increase to 102.3 percent by end 2022. This suggests that high oil prices do not translate into government receipts due to elevated subsidies for petroleum products. The combination of low production in the oil industry and unsustainable subsidies is one of the main obstacles to attaining debt sustainability.

Among countries with debt-to-GDP ratios above 70 percent, one-fifth are mineral and metal resource-rich countries.[11] Debt is expected to increase this year (53.4 percent) and stay elevated throughout the forecasting horizon. In Sierra Leone, persistent fiscal deficits, a depreciating currency, and reliance on non-concessional loans alongside domestic borrowing to finance budget deficits have kept government debt high. It is therefore unlikely that debt will decrease over the forecasting horizon for these countries. In Zambia, the expected decline in public debt in 2022 is just a blip, despite being supported by stronger-than-expected output growth, appreciation of the kwacha, and high revenue collection. Debt dynamics are expected to resume the upward trajectory after this year. The debt restructuring process that is underway would be helpful for the government as close to 40 percent of its spending in 2021 went to servicing debt instead of supporting development projects, which are needed given several headwinds the country is facing. The IMF agreed to a $1.3 billion extended credit facility, which will provide breathing space for the government.

Public debt is projected to nudge up in non-resource-rich countries, up to 65.6 percent of GDP in 2022 from 65.1 percent in the previous year. Debt is expected to jump in Ghana to 104.6 percent of GDP, from 76.6 a year earlier amid a widened government deficit, massive weakening of the cedi, and rising debt service costs. The country's debt is expected to remain elevated at 99.7 and 101.8 percent of GDP in 2023 and 2024, respectively. Tightening of financial conditions globally along with the fall of the domestic currency widened the sovereign spread by 233 basis points since December 2021 (figure 1.20).[12] As a result, the

FIGURE 1.20: Sovereign Spreads in Selected Countries in Sub-Saharan Africa



Tightening of financial conditions globally and the fall of domestic currencies have widened the sovereign spread since December 2021.

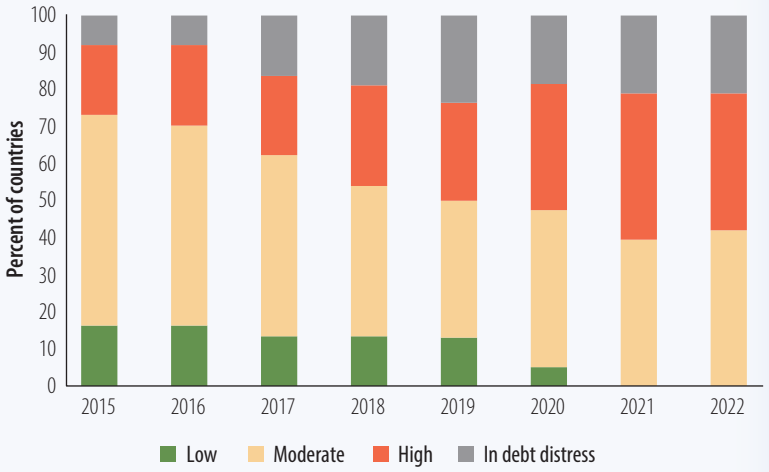
Sources: Bloomberg; World Bank staff estimates.
Note: Data are as of August 31, 2022.

11 They include Sierra Leone (81 percent), Namibia (78.9 percent), Zambia (74.8 percent), and South Africa (71.8 percent).
12 Sovereign spreads declined sharply in July 2022, but have increased slightly since August.

country lost access to international markets. Nevertheless, despite the negotiation with the IMF, investors remain nervous about the country's debt sustainability. These concerns were expressed by the country's local and foreign currency ratings downgrade from B-/B to CCC+/C. As a result, despite the news, the cedi fell further with ripple effects on inflation.

Among -IDA eligible countries in the region, eight countries are in debt distress while fourteen are at high risk of joining them.

FIGURE 1.21: Evolution of Risk of External Debt Distress among SSA LICs



Source: World Bank staff estimates as of June 2022.

Note: The data cover joint World Bank–International Monetary Fund debt sustainability analyses for low-income countries in Sub-Saharan Africa. The number of countries varies by year.

The Democratic Republic of Congo, Kenya, Tanzania, and Uganda secured deals with the IMF, which freed up fiscal space and allowed these countries to navigate better through multiple shocks with limited concerns about reaching debt unsustainability. The classification of countries in terms of distress level has remained mostly unchanged from the April 2022 *Africa's Pulse* (figure 1.21). Sixteen of 38 IDA countries are at moderate risk of distress, up from 15 previously. The number of those at high risk of distress went down to 14 from 15, while eight countries persist in debt distress.

Inflation and Exchange Rates

Inflation in the region was trending upward before Russia's invasion of Ukraine amid supply chain disruptions caused by restrictions to avoid escalation of COVID-19 cases, and the economic fallout from the pandemic. In addition, commodity prices, particularly food and oil prices, rose from a rebound in global demand, and oil prices rose from an OPEC+ agreement to cut production. These effects were amplified by the war in Ukraine. Food and fuel prices as well as the depreciation of domestic currencies are the dominant factors underpinning inflationary pressures in the region (figures 1.22 and 1.23). The worst performing currencies in the region since the beginning of the year include those of Ghana (with a depreciation of 60 percent), South Sudan (50.8 percent), Sudan (28.6 percent), Malawi (25.4 percent), and CFA Franc (13.3 percent).[13] In addition, an increasing food and fuel pass-through made a large contribution to inflation. Food prices have increased sharply in Kenya (21 basis points), Uganda (20 basis points), and Zambia (14 basis points) since the beginning of the year (figure 1.23). In turn inflation erodes the purchasing power of poor people, increases poverty, amplifies food insecurity, and widens inequality.[14] It is therefore imperative to tame inflationary pressures; otherwise

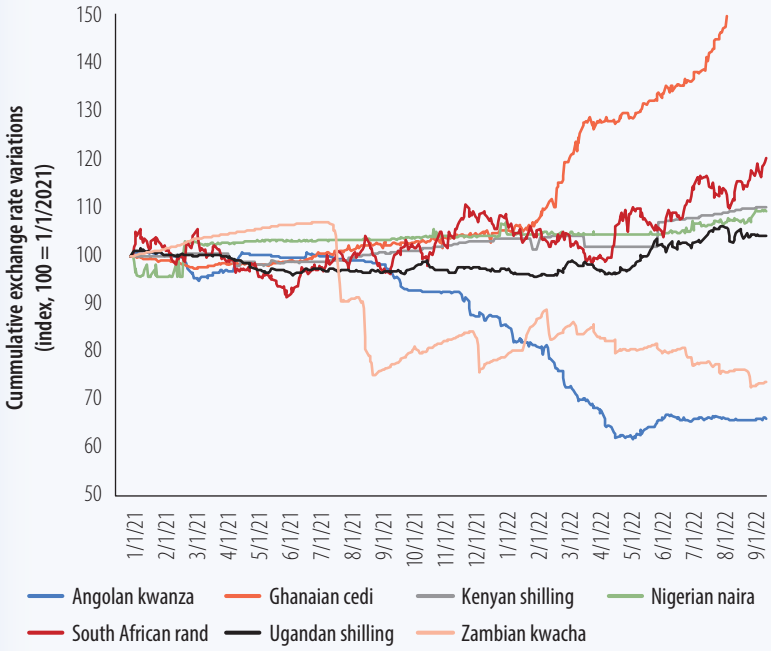
13 The domestic currency appreciated from January to June in Angola (23.4 percent), the Seychelles (4.8 percent), and Zambia (3.4 percent). In Malawi, the parallel exchange rate at forex bureaus depreciated by 42 percent over the same period.

14 See section 2 for detailed analysis on food insecurity.

inflation could lead to social unrest, intensify conflict, and ultimately ignite political instability.

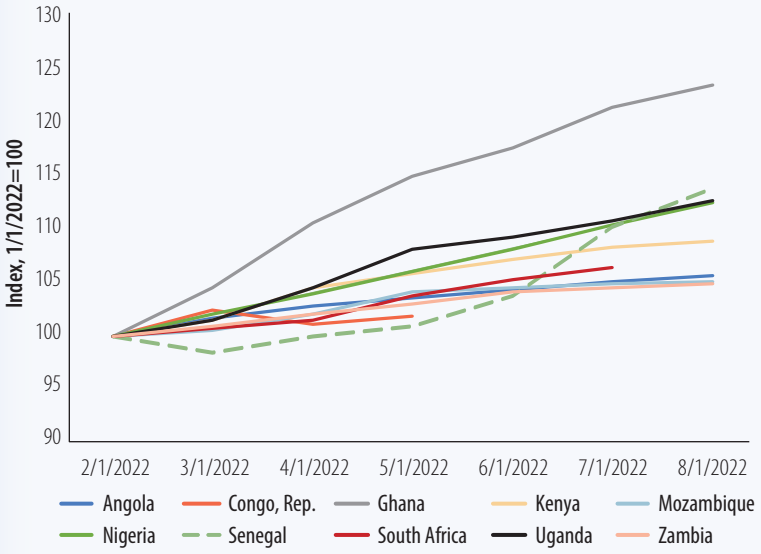
The average inflation rate in the region jumped from 7.8 percent in January to 12.6 percent in July. Four of 33 countries with high-frequency data available registered annual headline inflation below 5 percent in July.[15] The median inflation rate for the region is projected at 8 percent in 2022 (up from 4.6 percent). The slowdown in global demand, drop in commodity prices, and effects of contractionary monetary policy across the continent will lower inflation to 6.9 percent in 2023, and further to 5 percent in 2024. Overall inflation breached the ceiling of the central bank target bands for all countries with an explicit nominal anchor. In Nigeria, headline inflation started the year above the central bank limit of 9 percent and accelerated to 20.5 percent in August 2022—the highest since September 2005. Food and fuel prices were the key factors behind the rally in inflation. Inflation is projected to average 18.5 percent this year, before contracting to

FIGURE 1.22: Exchange Rates in Countries in Sub-Saharan Africa (local currency vis-à-vis US dollar)



Since the start of 2022, the worst performing currencies in the region include those of Ghana, South Sudan, Sudan, Malawi, and the CFA franc.

FIGURE 1.23: Food Price Index in Countries in Sub-Saharan Africa (January 2022=100)



Since the start of 2022, food prices have increased sharply in many countries, particularly in Kenya, Uganda, and Zambia.

Sources: Bloomberg Analytics (exchange rates); Haver Analytics (food prices).
Notes: Exchange rate data are as of August 31, 2022.

15 Conversely, countries with stronger currencies experienced declining inflation. They include Benin (-1 percent), the Seychelles (3.5 percent), Niger (3.8), and Tanzania (4.5 percent).

15.5 percent next year, followed by a further retreat to 13.5 percent a year later. The downward trajectory reflects decreasing commodity prices associated with the slowdown of the global economy, particularly China, and the effects of rate hikes.

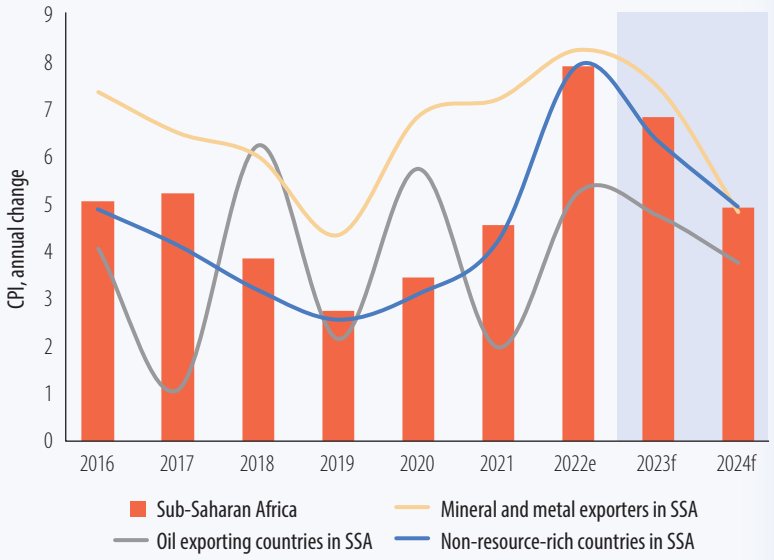
Higher food and fuel inflation are the main drivers of the steep rise in headline inflation in South Africa. In general, the average inflation rate for 2022 is expected to hover above the 6-percent threshold at 6.8 percent and down within the central bank's band (3-6 percent) at 5.7 percent in 2023 and settle just above the mid-point of the target range in 2024. Aggressive monetary policy, the decline in commodity prices, and weakness in the domestic demand will drag down inflation over the forecasting period.

Unlike Nigeria and South Africa, headline inflation in Angola is projected at 22.6 percent this year (down from 25.8 percent). The disinflation is expected to pick up speed next year, with price growth forecast to drop to 14.1 percent in 2023, and 8.9 percent in 2024. A similar pattern is expected in Zambia as inflation was down from 15 percent (January) to just above the upper bound of the official target range (6-8 percent) at 9.8 percent in August. This year's predicted annual reading is 12.0 percent, and it is forecast to drop to around 10 percent in 2023/24.

The divergence across countries in the external and fiscal balance and debt dynamics is also present in the inflation rate. Inflation is expected to be contained in resource-rich countries, especially oil-rich countries where the impact of food and fuel inflation has been constrained, as is appreciation of the currency, which preceded the war in Ukraine and has persisted during the war. Median inflation is expected to start at a low level (5.3 percent) in 2022 and edge down gradually to 4.8 percent in 2023 (figure 1.24). In Gabon, for example, starting at 3.5 percent (2022), inflation will steadily decline to 3.2 and 2.5 percent in 2023 and 2024, respectively. By contrast, inflation will initially be elevated and proceed to decline slowly from 8 (2022) to 6.4 percent (2023) in non-resource-rich countries. The inflation dynamics of non-resource rich countries are illustrated by WAEMU countries, while the inflation dynamics of resource-rich countries correspond to CEMAC countries, where the majority of countries are abundant in oil. The former group is expected to witness a fast disinflation

Inflation is expected to be contained in resource-rich countries, especially oil-rich countries, due to the appreciation of the domestic currency.

FIGURE 1.24: Inflation in Sub-Saharan Africa, 2016–2024f (median)



Source: World Bank staff projections.

Note: Inflation is measured by percentage changes in the CPI using the World Bank Macro-Fiscal Model database. CPI = Consumer Price Index; e = estimate; f = forecast; SSA = Sub-Saharan Africa.

process, starting from high inflation of 7.5 percent in 2022 and declining to 4.7 percent in 2023. Meanwhile, the latter is set to exhibit a slow disinflationary process, where inflation will contract to 4.1 percent in 2023 (down from a low 4.6 percent).

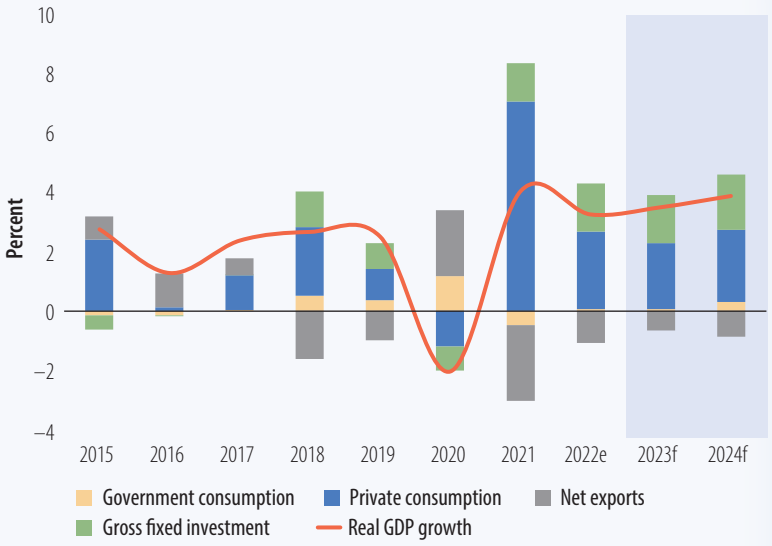
An additional factor that has contributed to rising inflation, especially in the Horn of Africa, is adverse weather conditions related to the worst drought in over four decades. The most affected countries include Ethiopia, Kenya, and Somalia. Ethiopia has been struggling with double-digit inflation since July 2017. Inflation increased sharply in 2021 from about 19.3 percent in January to 35.1 percent in December and remained steady at this level throughout 2022. Several factors contributed to the elevated inflation figures. They include the conflict in the northern region, rising global food and fuel prices, currency depreciation, and unfavorable weather conditions. Inflation is set to decline sharply to 25.6 percent in 2023 (from 33.7 percent in 2022) and again to 16.9 percent in 2024. In Kenya, inflation climbed from 5.4 percent at the beginning of the year to 8.5 percent in August, breaching the ceiling (7.5 percent) of the central bank target band. The same underlying factors driving inflation in Ethiopia are at play in Kenya. Similarly, a disinflationary process is also expected in Kenya, with inflation decreasing to 6.4 and 5.5 percent in 2023 and 2024, respectively.

1.4 OUTLOOK

The escalation of the Russia-Ukraine conflict is holding back the Sub-Saharan African economy, which was on a recovery path from the economic fallout from the pandemic. After growing at 4.1 percent in 2021, economic activity in the region is expected to decelerate to 3.3 percent in 2022, a downward revision of 0.3 percentage point from the April 2022 *Africa's Pulse* prediction (figure 1.25). The revision reflects the impact of the war in Ukraine on food and fuel inflation worldwide, persistent supply disruptions from lockdowns in China, and monetary policy tightening in advanced economies. Growth is projected to bounce back in 2023 (3.5 percent) and 2024 (3.9 percent). On the expenditure side, the outturn is supported by a timid recovery in gross fixed investment and subdued private consumption, reflecting the end of the tightening cycle of monetary policy as inflationary pressures subside and commodity prices retract. Net exports will drag down the recovery on the back of weak commodity prices with implications for declining external earnings, while import bills will remain elevated. On the production side, an uptick in industry alongside a modest recovery in agriculture will somewhat support growth in 2023 and 2024 (figure 1.26). The service sector will retreat in 2022 before recovering in 2024. Excluding the three largest economies—Angola, Nigeria, and South Africa—economic activity is set to expand by 4.6 percent (2023) and 5.2 percent (2024), which is above with the regional performance. Non-resource-rich countries are forecast to grow 4.7 and 5.3 percent in 2023 and 2024, respectively. The stronger performance for this group is due to gains enjoyed from lower import

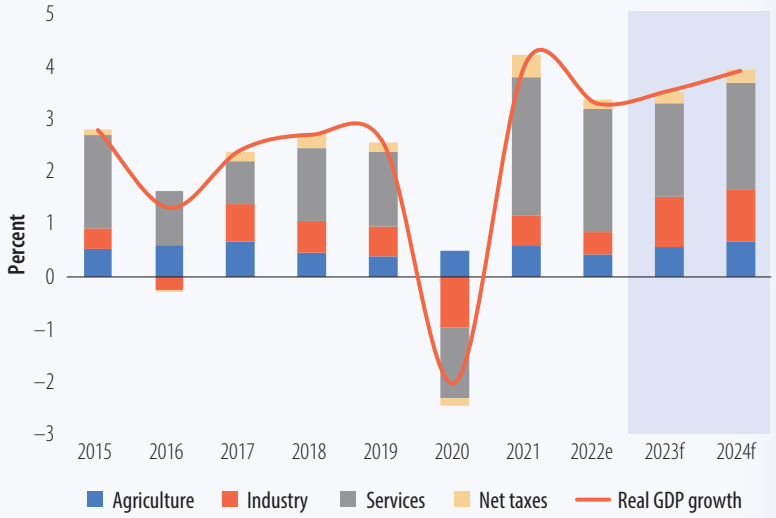
On the demand side, economic growth in 2023 and 2024 is supported by a timid recovery in gross fixed investment and private consumption.

FIGURE 1.25: Contribution to GDP Growth, Demand Side (%)



On the production side, an uptick in industry alongside a modest recovery in agriculture will support growth in 2023 and 2024.

FIGURE 1.26: Contribution to GDP Growth, Supply Side (%)



Source: World Bank staff projections.

Note: Change in inventories and statistical discrepancy are not displayed in Figure 1.26.
e = estimate; f = forecast; GDP = gross domestic product.

bills and expansion of the service sector. However, real GDP growth in resource-rich countries will remain subdued at 2.8 percent, down from the previous year, but it will rebound in 2024 at 3.0 percent, below the rate of growth in 2021 (3.7 percent). Growth for this group is dragged down by falling commodity prices, pointing to strong dependence on the extractive sector.

Aggregate growth for the region hides considerable heterogeneity in the performance of individual countries. Starting with the big three, Angola's growth rate is expected to decline to 2.8 percent (from 3.1 percent) and stabilize at 2.9 percent in 2024. The weak performance is accounted for by lower oil prices as the economy continues to rely on the oil sector for growth. Growth of government expenditure is expected to drop to 3.3 percent (from 9.7 percent) in 2023 as the country consolidates to prevent public debt from rising. It will rise again to 5.2 percent in 2024. Private investment will remain mostly unchanged in 2023, at growth of 5.1 percent. Oil production and diamond production are expected to pick up in 2023. This suggests that declining oil prices will bring down external receipts substantially since they will not be offset by an upturn in production. The current surplus will narrow slightly to 14 percent of GDP (from 15.2 percent) on account of declining exports. On the production side, the agriculture and service sectors will remain robust for the forecasting horizon, with growth increasing to 6.9 and 5.2 percent in 2024, from 5.6 and 3.8 percent in 2022, respectively.

Similarly, the Nigerian economy is projected to slow in 2023, down to 3.2 percent (from 3.3 percent) and persist at this level the following year. Growth will be supported mainly by the rebound in private consumption prompted mostly by accommodative monetary policy as inflationary pressures subside. Private consumption expenditure is forecast to decrease this year and grow next year. This performance will likely continue in 2024. On the production side, growth in 2023 will be supported by industry (with growth of 5.1 percent) with the mega-refinery project.

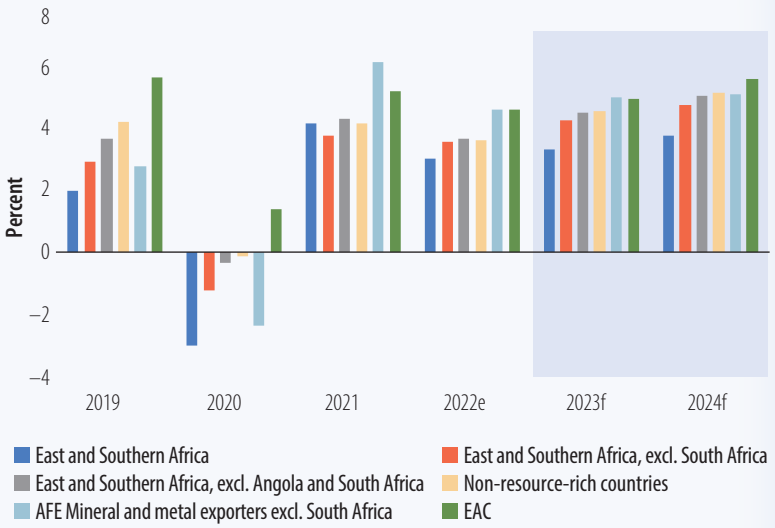
The South African economy is projected to weaken further as structural constraints and headwinds persist throughout the forecasting period. Growth will be down to 1.4 percent in 2023, from 1.9 percent, and will rebound to 1.8 percent in 2024. This weak performance is insufficient for the country to address the socioeconomic problems of high unemployment and rising inequality. Private consumption expenditure growth will moderate from the rebound in 2021. While the recovery from the pandemic shock is incomplete, higher inflation, which reduces consumers' disposable income, lingering effects of aggressive monetary policy, the deteriorated labor market, and weak confidence will weigh on growth in private consumption. It is set to decline from growth of 2.6 percent (2022) to 2.2 percent (2023) and further down to 2.0 percent (2024). After rebounding to growth of 4.2 percent in 2022, from a low base, investment growth will increase next year to 4.9 percent. Infrastructure plans, including in the energy sector, augur well for this prospect. Although private investment has improved, public investment continues to disappoint. By contrast, fiscal consolidation is set to reduce government spending next year (-1.9 percent), with a negligible recovery in 2024. On the supply side, the agriculture sector will support growth in 2023, with growth of 2.5 percent, up from 0.9 percent. Industry will recover slightly in 2023 from a contraction of 2.5 percent in 2024. The service sector, which has been supporting growth since 2021, is set to moderate in 2023 before recovering in 2024 (2.0 percent).

Excluding South Africa and Angola, the AFE subregion is expected to grow at 4.5 percent next year, up from 3.6 percent, and 5.0 percent in 2024 (figure 1.27). The performance is above

regional growth and consistent with the earlier forecast, with a minor downward revision of 0.1 percentage point for 2023. Kenya is set to grow at 5.0 percent in 2023 (down from 5.5) and back up to 5.3 percent in 2024. The slowdown in economic activity reflects weak private consumption associated with contractionary monetary policy as inflation remains elevated. Growth of private consumption will decline next year to 5.0 percent. Investment will remain subdued because of tight financing conditions, growing by 7.5 percent in 2023, up from 7 percent. On the production side, overall growth reflects strong growth in the agriculture and service sectors at 3.8 and 5.8 percent, respectively. The agriculture sector is expected to benefit from favorable weather conditions as the effects of the drought dissipate. However, Ethiopia will struggle to regain its pre-pandemic performance due to the prolonged conflict in the northern region, which drives out investment. The country's real GDP is expected to grow steadily from 5.3 percent in 2023 (up from 3.5 percent) to 6.1 percent in 2024. On the demand side, the expansion is on the back of a recovery in investment (7.2 percent) after weak performance in 2022 (1.6 percent). On the supply side, the agriculture sector will pick up due to improved weather conditions. Botswana and Zambia will grow by 4.0 percent in 2023, from 3.2 and 3.3 percent, respectively, in 2022. While growth is projected to edge down in Botswana (3.7 percent) in 2024, it is forecast to pick up to 4.2 percent in Zambia. Private consumption and investment will support growth in Botswana, while fiscal consolidation continues. On the supply side, growth is buoyed by the industrial and service sectors. In Zambia, the economy will benefit from accommodative monetary policy, which is set to persist through 2023 and beyond. Fiscal policy will benefit somewhat from external earnings from elevated copper prices as well as assistance received from the IMF. Growth will stand on strong performance of the agriculture and service sectors. An upturn in industry from growth of 3.3 to 3.5 percent will be an additional contributor.

Excluding South Africa and Angola, the AFE subregion is expected to grow 4.5 percent next year, up from 3.6 percent, and 5.0 percent in 2024.

FIGURE 1.27: GDP Growth Forecasts for East and Southern Africa

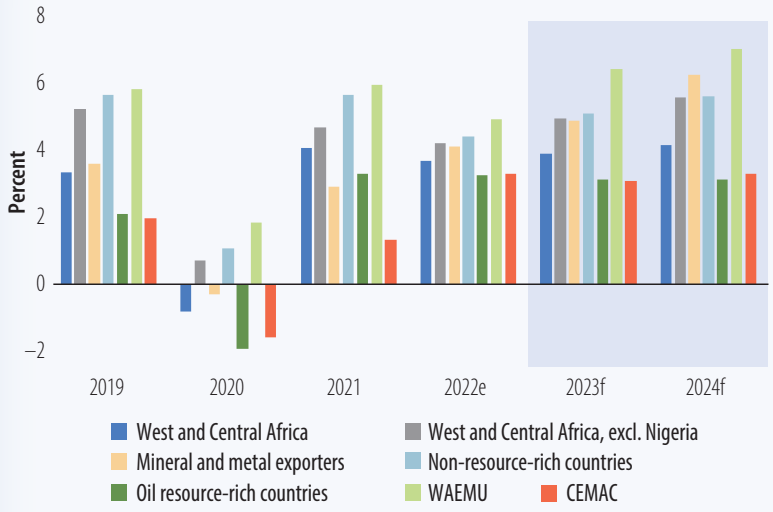


Source: World Bank staff projections.
Note: AFE = East and Southern Africa; e = estimate; EAC = East African Community; f = forecast; GDP = gross domestic product.

Excluding Nigeria, AFW's growth is projected at 5 percent in 2023 (up from 4.2 percent), and growth will firm in 2024 (5.6 percent). Growth in 2023 and 2024 is forecast to lose 0.6 and 0.4 percentage point, respectively, from the April forecasts (figure 1.28). These revisions are accounted for by elevated inflation associated with the war in Ukraine, contractionary macroeconomic policies, escalation of conflict in the Sahel region, and slowdown of the global economy. The expansion of the AFW subregion (3.9 percent) is higher than its counterpart in AFE (3.3 percent).

WAEMU countries are set to recover in 2023 from the slowdown in 2022 (4.9 percent), up to 6.4 percent, and firming further in 2024 to 7 percent. Countries will gain from a decline in food and fuel inflation, loose monetary policy, recovery of the global economy, and investment in infrastructure. Growth in Côte d'Ivoire is projected to bounce back from 5.7 percent in 2022 to 6.8 percent, before edging down to 6.6 percent. The economic expansion will gain from strong investment (12.3 percent) and a moderate performance of private consumption, on the demand side. Gross fixed investment will benefit from continued business-friendly reforms. The growth reflects improved performance in the industrial and service sectors. Oil production is projected to increase, prompted by a large offshore oilfield developed by Eni. In addition, the government plans to increase cocoa production as well as outputs of other cash crops. After slowing to 4.8 percent in 2022, growth in Senegal is projected to jump to 8.0 percent in 2023 and firm to 10.5 percent in 2024. The strong growth is expected to come from investment and the recovery in private consumption. Ongoing investment in electricity, transport, and information technology will boost growth in the coming years. Construction of the deepwater port at Ndayane is expected to be in full operation in 2026. Finally, Senegal is investing in agriculture to withstand the negative effects from climate change, in particular droughts. On the production side, the industrial sector will grow strongly on the back of increasing production of oil and gas. The country will gain from the diversification of oil and gas imports in an attempt to reduce reliance on imports from Russia.

FIGURE 1.28: GDP Growth Forecasts for West and Central Africa



Excluding Nigeria, AFW's growth is projected at 5 and 5.6 percent in 2023 and 2024, respectively.

Source: World Bank staff projections.

Note: CEMAC=Economic and Monetary Community of Central Africa; e = estimate; f = forecast; GDP = gross domestic product; WAEMU = West African Economic and Monetary Union.

Unlike WAEMU countries, CEMAC countries are expected to exhibit weak performance in 2023 (3.1 percent), from 3.3 percent in 2022. Commodity prices, particularly oil, will drop with the slowdown in global demand. In Cameroon, the economy will maintain its steady post-pandemic growth in 2023 (4.3 percent) and 2024 (4.6 percent), buoyed by investment and private consumption. The expansion of the Kribi port and connecting rail infrastructure will underpin growth. On the production side, all sectors will support growth. Production of liquefied natural gas, oil, and other mining commodities is expected to increase. Like Cameroon, Gabon is expected to continue trending upward, yet at a slow pace. Growth is projected at 3.0 percent in 2023 (up from 2.7 percent). Growth in investment will decrease from 9.2 percent in 2022 to 2.2 percent in 2023, while government spending will increase from 1.0 to 2.2 percent. Private consumption will remain weak. On the production side, the agriculture and industrial sectors will be the main contributors to growth, while the service sector's contribution will be minimal. Oil production will pick up as investment in the sector increases. In addition, the economy will be supported by growth in the timber and construction sectors.

1.5 RISKS TO THE OUTLOOK

Risks to the outlook for Sub-Saharan Africa, external and internal, are skewed to the downside. Further slowdown of China's economy, stemming from preventing the spread of the coronavirus, will have an adverse impact on global trade as well as commodity prices. A prolonged conflict between Russia and Ukraine will push up food and fuel prices to record highs if trade patterns continue to remain dislocated. Internal risks include elevated public debts in Sub-Saharan Africa, which constrain countries from frontloading needed spending for development. Worsening of weather conditions, especially in the Sahel region and the Horn of Africa, may also weigh down the outlook.

External Risks

The region is dependent on demand from the rest of world for its exports. An intensified weakness of global demand, particularly the increasing likelihood of recession in the euro area and the United States, will reduce commodity exports and suppress growth. This shock could also operate through its effects on commodity prices. Approximately 50 percent of the fluctuations in the business cycle of African countries can be explained by terms of trade. Unfavorable terms of trade will directly affect growth, inflation, public debt, and to some extent access to financial markets.

China has tight trade and financial linkages with most African countries. It is not only a major trading partner of the majority of countries in the region, but also a top creditor and source of foreign direct investment for many of them. Thus, an extension of China's zero-COVID-19 policies—in the form of lockdowns, massive testing, suspension of public transportation, and school closures—will continue crippling its growth prospects. In turn, this will have adverse consequences on global trade, and particularly direct trade with African countries. Furthermore, these stringent restrictions will affect supply chains, with repercussions on domestic inflation. Finally, commodity prices will plummet, and economic activity in commodity-dependent countries will contract.

Escalation of the conflict between Russia and Ukraine will induce a further rise in food and fuel prices. Countries in the region are already experiencing elevated rates of inflation that have reached record levels. Despite the aggressive monetary policy used by several countries, inflation has remained stubbornly high in most of them. A further rise in inflation could lead to financial crisis. In addition, food insecurity will intensify, which could result in riots, violence, conflict, and political instability. The lack of adequate coping mechanisms to address food security would lead to rising undernourishment among the poorest households—with children being at greater risk.

Internal Risks

Debt levels and/or vulnerabilities remain high in the region, with no sign of significant improvement. The fiscal consolidation process adopted by many countries following the pandemic crisis was postponed or at best softened. This suggests that countries have little scope to maneuver given that they do not have any fiscal space. The situation could worsen, especially for countries that lost access to the credit market and are in or at risk of debt distress. The international community needs to find more adequate ways to resolve the issue of debt restructuring. The current resolution mechanisms need to be strengthened to effectively address a potential debt crisis, and additional instruments may need to be set in motion. If not addressed, debt dynamics could escalate into a full-blown crisis, setting countries even further back.

An additional year of severe weather conditions in the Horn of Africa or the Sahel will aggravate the humanitarian situation. The number of people facing starvation, malnutrition, and acute food insecurity will increase further. As food security crises in the region become more frequent and deeper, it is estimated that about one-quarter of the population will be undernourished by 2030. With poor social safety nets, and the lack of appropriate health systems, the poorest households will resort to unhealthy restrictions in consumption, and emigration will increase further.

1.6 POLICIES

African economies are facing a series of challenges to their post-pandemic economic recovery. Policy makers need to strengthen their countries' capacity to absorb and recover from idiosyncratic and global shocks while seizing opportunities to generate inclusive and productivity-enhancing growth. Inflation rates, fueled by rising food and energy prices, still remain high. Fiscal space remains limited in most countries. Public debt continues to be elevated and is reaching distress levels in some countries. Global headwinds—as manifested by slower global growth and tight financial conditions—and climatic shocks will continue to weigh on economic activity across the continent, with disproportionate impacts on the most vulnerable segments of the population. Against this background, actionable policies to build economic resilience are essential. Policy makers need to implement coherent monetary, fiscal, and debt policies to bring down inflation and generate fiscal space. Measures to boost inclusive, productivity-enhancing growth (particularly in the agri-food industry) are conducive to sustained economic transformation. They should be complemented, in the short term, with policies that maintain support to the poor and vulnerable.

Gearing policies to reduce and stabilize inflation. Amid fears of stagflation, central banks face the dilemma of supporting weak growth vis-à-vis fighting rising inflation. As inflation hits record levels across countries in the region, the dilemma is shifting toward anchoring inflation expectations to restore price stability. However, policy responses are shaped by countries' monetary arrangements. Countries in the region with inflation targets are opting to hike interest rates to combat inflation.[16] A combination of more restrictive monetary and fiscal policy could be warranted in countries where monetary policy alone appears to be less effective in bringing down inflation. In countries with hard pegs, like the CEMAC and WAEMU countries, fiscal consolidation will shoulder the anti-inflationary efforts and, to a certain extent, help support the currency.

Rebuilding fiscal space and managing debt portfolios. Fiscal consolidation and domestic resource mobilization are essential for countries at risk of fiscal and debt sustainability. By all means, governments should avoid the temptation of resorting to central bank financing of public deficits, which could exacerbate macroeconomic instability. The array of policy tools used will be tailored to country-specific needs and conditions, including the strength of the ongoing recovery. In slow-recovery countries, measures to improve the efficiency of the fiscus are key. For instance, adopting digital solutions to improve tax administration (taxpayer registration, e-filing, and e-payment of taxes) may help minimize costs and processing time, and reduce the incidence of corruption and evasion. Digital technologies also enhance the targeting of social protection programs (beneficiary registration, e-transfers).

Governments may also need to improve the quality of their spending. It is essential to have transparent and intertemporally consistent public expenditure plans. Reallocating resources toward supporting growth (infrastructure, water management, and irrigation) and social

16 Monetary policy rates may constitute a blunt tool for reducing inflation, as monetary policy transmission may not be as effective due to the presence of supply factors driving inflation or structural features of the economy (large informal sectors and/or shallow financial markets).

protection programs (to protect the most vulnerable) is crucial. Once the economic fallout from the strong global headwinds dissipates, policy makers need to address structural problems associated with government revenues. Governments may need to redesign their tax incentives toward growth-enhancing activities such as research and development and the digital economy, among others. Efforts to design more progressive tax systems and boost their collection—particularly, property and/or land taxes—will help (box 1.1).

On public debt management, momentum toward greater transparency in the availability, completeness, and timeliness of public debt statistics and debt management reports should continue building. Prudent debt management practices to reduce currency, interest, and rollover risks are crucial. This includes the development of local currency securities markets over the medium to long term. Surveillance of government debt positions (debt sustainability analysis) should be conducted periodically and timely. International financial institutions can play this surveillance role. Finally, the international community should find mechanisms to engage with debtors and creditors on debt restructuring. Reforms in mechanisms for debt renegotiation and resolution are needed, especially to address debt problems in countries thar are at high risk or already in debt distress.[17]

Diversification of trading to mitigate adverse international shocks. Diversifying trading partners can be a tool for hedging, diversifying, and pooling risks arising from international trade (for instance, lower global growth).[18] A greater extent of market diversification would also help distribute inflationary and exchange rate risks among trading partners—especially in countries with shallow financial systems.[19] It also offers the opportunity to sell African export products (oil and gas, food, minerals) to new markets. In this context, regional and trade integration within the continent offers a unique opportunity to enhance the resilience of African economies—especially in agriculture and food systems at scale. The African Continental Free Trade Area (AfCFTA)—including economic communities within subregions— provides a platform to remove trade and technical barriers that restrict food trade as well as coordinate investments in regional infrastructure (irrigation, roads). Coordination and commitment at the regional level need to be strengthened. Investments in regional trade facilitation are also essential to build resilient regional food systems, with digital technologies playing a critical role. Finally, countries should foster competition by avoiding the imposition of roadblocks to movement of goods and investments across borders.

Seizing opportunities to build more resilient agricultural food systems. Agriculture in Sub-Saharan Africa is underfunded, and the scarce resources are inefficiently allocated. This represents an opportunity to improve the quality of public spending to unlock agricultural growth—and its job creation potential—amid a restricted fiscal space. Evidence shows that shifting public spending toward an increased provision of high-quality public goods lifts incomes of the rural population.[20] Hence, investing in high-return core public goods and policies (research and

17 Structural reforms that deliver inclusive productivity-enhancing growth are essential to boost the repayment capacity of borrowing countries..

18 Svaleryd and Vlachos (2002).

19 Bailliu, Lafrance, and Perrault (2003).

20 Reallocating 10 percentage points of public expenditures from subsides to public goods provision in Latin America would raise agricultural income per capita by 2.3 percent without raising total spending (Lopez and Galinato 2007; Valdes 2008).

development and extension, water management and irrigation, market connectivity, among others) can yield massive dividends. Additionally, evidence shows that repurposing public spending for investment in productivity-enhancing and emissions-reducing technology in agriculture and food systems can help accelerated the economic transformation of countries in the region.[21] Section 2 discusses more extensively the policies needed to seize opportunities in agriculture and food systems amid turbulent times.

BOX 1.1: Improving Property Tax Collection

Taxation of land and property provides an effective mechanism to support local governments world-wide. In industrialized countries, revenues from property taxation constitute more than 2 percent of GDP, but only 0.6 percent in developing countries and much less, 0.38 percent of GDP, among African countries.[a] Adopting digital technologies would help diversify tax collection, and hence improve public revenues. This box highlights success stories at the local and national levels.

Global evidence suggests that cross-country differences in property tax collection can be attributed to: (i) broad coverage; (ii) digital record keeping that maximizes interoperability, facilitates updating of records, and allows regulatory oversight; (iii) transparency through public access to registry data; and (iv) integrated workflows to support record updating and tax enforcement. If African countries could overcome these four factors, they could generate incremental revenue of US$60 billion annually for the continent.[b c]

There is growing evidence of successful reforms in Sub-Saharan Africa at the city level. For instance, revenue was enhanced through regular supplementary valuations, capturing new high-value construction in the tax base in Kitwe (Zambia). The creation of the Kampala Capital City Authority (Uganda) provided political and institutional support to property tax collection. Investments in technology and skills to introduce a computer-assisted mass appraisal (CAMA) system in Cape Town (South Africa) facilitated the valuation of more than 800,000 properties in three-year cycles, with few objections on property values from the owners. In Tanzania, the Local Government Revenue Collection Information System (LGRCIS), developed with the support of the World Bank, has helped increase revenues from property tax (and other sources) in cities like Arusha.[d] The state of Lagos (Nigeria) has undertaken reforms including the development of a comprehensive tax map and digital records, and 13 other states in Nigeria are learning from its experience to develop their own tax maps and GIS centers as springboards for digital fiscal cadasters. [e] While these reforms at the sub-national level have been successful, they are not enough to push the country's collection to exceed the average for developing countries (0.6 percent of GDP); except for South Africa.

21 Relative to a business-as-usual scenario, repurposing public spending toward green innovation will boost global real income by 1.6 percent over the next two decades. It will also cut emissions from agriculture by more than 40 percent (Gautam et al. 2022).

BOX 1.1
Continued

At the national level, successful reforms were undertaken in South Africa and Mauritius. These two countries implemented reforms in all key areas including completing and updating tax maps and valuation rolls; and digitizing both their fiscal (tax) and legal (land registries) cadasters, inter-linking them and availing them to the public.[f] Mauritius's Land Administration, Valuation, and Information Management System (LAVIMS) has improved access to information for all its departments and created a complete and up-to-date national valuation roll. In South Africa, the modernization of fiscal and legal cadasters has been driven by municipalities in cities and towns, led by Cape Town, with development of advanced systems for the fiscal and legal cadaster including for valuation with sophisticated approaches for CAMA, the first in Africa.

Finally, recent technological development boosts the collection of property taxes. Progress toward achieving this goal requires two broad measures: (1) strengthen reforms at the sub-national levels, where property taxes are mostly administered in Sub-Saharan Africa—including completing and keeping updated tax maps and valuation rolls, and digitizing fiscal cadasters and linking them to the legal cadasters in land registries; and (2) strengthening national-level support to subnational tax administration entities in legal, institutional, and technical areas while also continuing the drive to digitize land registries.[g]

[a, d, f] Franszen and McCluskey (2017). [b, g] Deininger and Goyal (forthcoming).
[c, e] Deininger, Awasthi, and McLuskey (2021). [f] Deane, Pattison, and Luchoo (2016).

Section 2. Food System Opportunities in a Turbulent Time

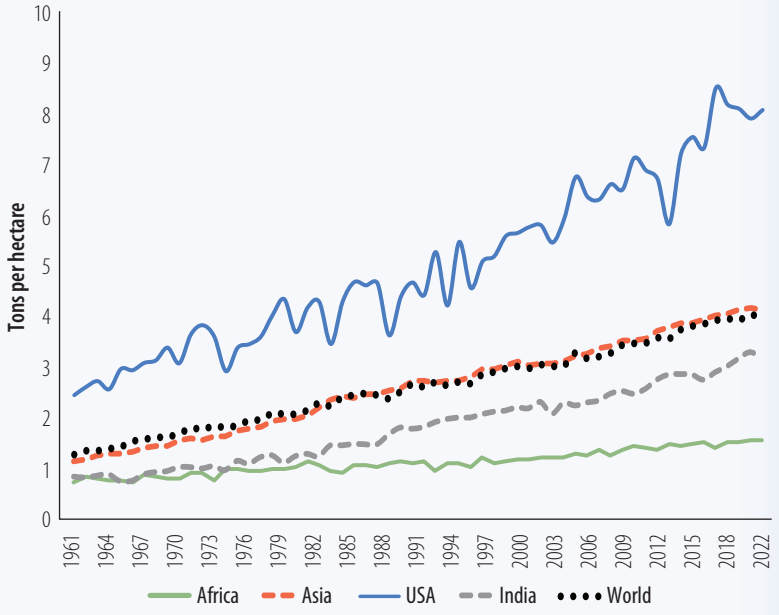
2.1 MOTIVATION

Achieving food security in Sub-Saharan Africa requires abundant, affordable, and nutritious food for the growing population. By 2050, the population of the region is expected to double, reaching 2.2 billion. This implies that nearly one in four people in the world will be living in Sub-Saharan Africa in 2050. The growing population, urbanization, and rising incomes experienced in the continent are driving the demand for food in the region, which continues to grow at a fast pace—and has the potential to open substantive market and job opportunities.[22] For instance, Sub-Saharan Africa's demand for cereals is projected to triple between 2010 and 2050[23] and demand for meat to quadruple.[24]

Sub-Saharan Africa's production of crops and livestock must increase sustainably if the region is to meet the growing demand for food. Over the past decades, agricultural growth in the region has mainly come from the expansion of land and depletion of natural resources rather than increases in total factor productivity (TFP).[25] Although technology and efficiency gains have been the main drivers of agricultural growth in all developing regions, their contribution to growth in Sub-Saharan Africa has been limited.[26] Furthermore, while crop yields have increased in Africa, they still trail significantly those of the rest of the world (figure 2.1).[27] For instance, the average yield of cereals in Africa doubled over the past half century—surging from 0.81 ton per hectare (t/ha) in 1961 to 1.65 t/ha in 2020—while the average yield of cereals in the world has tripled over the same time period—from 1.35 t/ha in 1961 to 4.07 t/ha in 2020.[28] The average cereal yield across the continent in 2020 was half that of India (3.28 t/ha), about one-fourth that of China (6.30 t/ha),

Average cereal yields are significantly low in Sub-Saharan Africa.

FIGURE 2.1: Average Cereal Yields in Sub-Saharan Africa and Other World Regions, 1961–2020



Source: FAOSTAT 2022 database, Food and Agriculture Organization, http://www.fao.org/faostat/.

22 These trends have induced a dietary shift to agricultural products that are richer in proteins (meat and dairy, eggs, and pulses), nutrients (fruits and vegetables), and calories (oils and fats and sugars). They also further increase the demand for processed, packaged, and prepared foods (Cockx, Colen, and De Weerdt 2018).

23 van Ittersum et al. (2016).

24 CGIAR (2022).

25 Agricultural growth in the extensive margin is not sustainable as it has negative implications for the environmental footprint and the slower release of labor to nonfarm sectors of economic activity.

26 TFP grew at an annual average rate of 0.2 percent in Sub-Saharan Africa during 2000–19, compared to 1.8 percent in Latin America and the Caribbean, 2.5 percent in East Asia, 2.4 percent in South Asia, and 1.5 percent in the world (USDA 2022).

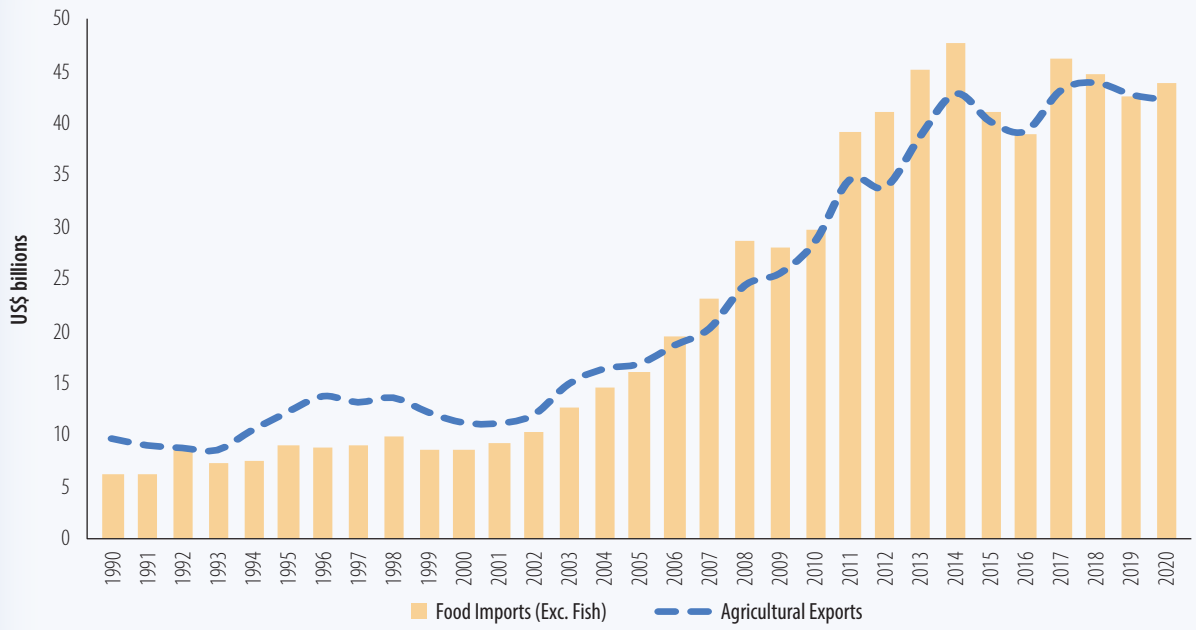
27 Tian and Yu (2019).

28 In other words, average crop yields in the region have failed to converge to those of most of the other regions across the world. The gap in cereal yields between Africa and the rest of the world has widened: the average yield of cereals in Africa has declined from 60 percent of the world average in 1961 to 40 percent in 2020.

and one-fifth of the yield in the United States (8.18 t/ha).[29] Scant evidence points out at a much larger productivity gap for livestock production. For instance, African milk yield (0.19 t/head) is estimated at about 15 percent of the world's average (1.23 t/head).[30] In sum, there is still great potential to boost agricultural productivity in Africa.

Consequently, many countries in the region depend on food imports given their current consumption and production patterns. As a result of the rising divergence between supply and demand, Africa's food import bill has increased by about US$35.7 billion over the past quarter century—from US$7.9 billion during 1993–95 to US$43.6 billion during 2018–20 (figure 2.2). This increase is primarily driven by growing imports of cereals and vegetable oil and fats—which explain nearly 30 and 20 percent of the higher import bill, respectively. Rising food imports do not pose a threat to a country's foreign exchange if they can be financed by exports.[31] In the Sub-Saharan Africa region, these exports have typically been other agricultural products and extractive natural resources (for example, crude oil, natural gas, metals, and mineral ores).[32] Still, food imports account for more than 50 percent of total merchandise export revenues in 14 countries—mostly small, non-resource-rich countries—thus putting pressure on external macroeconomic imbalances and diverting much-needed foreign exchange reserves from importing capital goods and technology.[33]

FIGURE 2.2: Rising Import Bill in Sub-Saharan Africa, 1990–2020



Sub-Saharan Africa's import bill has increased sharply over the past three decades.

Source: FAOSTAT 2022 database, Food and Agriculture Organization, http://www.fao.org/faostat/.

29 FAOSTAT, https ://www.fao.org/faostat/en/.

30 OECD and FAO (2022).

31 Collier and Dercon (2014).

32 The region's major agricultural exports include typical cash crops (such as cotton and tobacco), beverages (cocoa, coffee, and tea), and horticultural products (fruits, vegetables, and flowers).

33 During 2016–20, food imports (excluding fish) exceeded 50 percent of the merchandise exports of the following countries: Benin, Burundi, Cabo Verde, the Central African Republic, the Comoros, Ethiopia, The Gambia, Guinea-Bissau, Liberia, Niger, São Tomé and Príncipe, Sierra Leone, Somalia, and Sudan. The data was taken from FAO statistics.

Recent shocks have exposed the challenge of African food systems to meeting rising demand. Climatic shocks (including rising temperatures, reduced rainfall, and extreme weather events such as droughts and floods), regional conflicts (for example, in the Sahel), epidemics (for example, Ebola), and shocks to global food systems (for example, the COVID-19 pandemic and the Russian Federation–Ukraine war) have had adverse impacts on food security in the region. Record high international food and fuel prices—especially during the first quarter of 2022—triggered a global crisis that is threatening to increase extreme poverty, worsen hunger and malnutrition, and redirect already limited fiscal resources. The war in Ukraine, supply chain disruptions, and the continued economic fallout from the COVID-19 pandemic are reversing years of development gains and pushing prices to all-time highs.[34] High fertilizer and input costs, rising interest rates, and supply disruptions are also putting the next planting season at risk in much of the world.

Food systems in the region faced significant long-term challenges even prior to the pandemic, including climate change and natural resource degradation. Sub-Saharan Africa is already one of the world's most food insecure regions. By the end of the century, massive changes in agricultural suitability can be expected across the continent, with farming systems, food production, and import dependency changing beyond recognition.[35] The current global energy and food crisis adds to these trends. Acute hunger has sharply increased in recent years, driven by the pandemic, regional and global conflicts, extreme weather, and locust infestations. Current actions to build resilience to climate change and related shocks across Africa's food systems are promising, but not nearly enough to meet the scale of the problem. Unless African policy makers take urgent action, food security will continue to worsen—with devastating consequences for the poorest and most vulnerable people in Africa.[36]

Africa's rising divergence between food demand and supply creates an opportunity to accelerate poverty reduction through food import substitution. Food self-sufficiency is not an essential requirement for food security in the region.[37] However, much scope remains for improving food security and reducing poverty across countries in the region by boosting agricultural productivity.[38] Recent output growth in maize, cassava, and rice—including through better yields—confirms the potential for a more robust supply response across countries in the region. The comparative advantage of many African countries in production of staple crops, but also of non-staple crops and processed foods, can be instrumental for economic growth and job creation, which will contribute to poverty reduction through improved intraregional agricultural trade.[39] An example is the potential for increased soybean trade as animal feed for poultry production between Zambia and South Africa.[40]

In sum, the equation for African policy makers is how to provide affordable, nutritious food to feed the growing urban and rural populations in the region while creating incentives to

34 Volume 25 of Africa's Pulse describes in detail African countries' exposure to imports of food, fertilizers, and fuel products from Russia and Ukraine (World Bank 2022a).

35 As of today, the frequency of climate shocks has already increased from once every 12.5 years (1982-2006) to once every 2.5 years (2007-2016). Food security declines by 5%–20% with each flood or drought, while the region experiences about a 1.4% reduction in food calories per year from key food security crops.

36 By 2030, more than 400 million people will be undernourished—a 75 percent increase compared to pre-pandemic levels (FAO 2020b).

37 Self-sufficiency for low-income developing countries is of great concern because many lack adequate foreign exchange reserves to pay for food imports and infrastructure to store and distribute them efficiently. Substantial reliance on food imports is only possible if economic development is sufficient to afford them, and economic development of low-income countries to support such imports does not occur without strong agricultural development (van Ittersum et al. 2017).

38 Beegle and Christiaensen (2019).

39 World Bank (2012a).

40 Ncube (2018).

sustainably boost agricultural productivity and build the resilience of food systems. The policy challenge in the region is how to reduce the gap between the supply and demand for food, through a good mix of increasing supply and trade. The question then becomes, what are the appropriate actionable policies needed to increase the supply of food and secure trade (both interregional and intraregional trade)? Against this background, this special focus section addresses the following questions:

- What is the incidence of food insecurity in Sub-Saharan Africa? What are the areas in the region with greater food insecurity? What is the impact of rising food and fuel inflation on the poorest households?
- What policies can Africa's policy makers implement to alleviate the effects of deteriorating food security (including rising food and energy prices) on the most vulnerable population? What are the right policies to transform agriculture and food systems?

The main messages from this section are the following:

First, the number of people facing severe food insecurity in Sub-Saharan Africa has increased sharply, with more than one in five people facing hunger and more than a quarter billion people being undernourished. Moreover, food security crises are becoming more frequent and more acute in the subcontinent. In East and Southern Africa (AFE), an episode of severe food security crisis took place every 2.5 years in the 2000s, compared to one every 10 years previously.

Second, agriculture and food security challenges in the region preceded the economic fallout from the COVID-19 pandemic and the war in Ukraine. Urgent action is required from policy makers to tackle the short- and long-term drivers of food insecurity, such as rising food and energy prices, climatic shocks, natural degradation, and lack of effective public policies in agriculture. Otherwise, the situation will continue to deteriorate, disproportionately affecting the poorest and most vulnerable households in the region. For instance, food- and fuel-driven consumer price inflation tends to affect more significantly the poorest households than the richer ones. This impact is exacerbated by the fact that the poorest households have detrimental coping responses, such as reducing the amount and frequency of food intake or going a whole day without food, among others.[41]

Third, social protection programs should be used and, if affordable, expanded to protect the most vulnerable from food security crises. Social safety nets are high-impact and cost-effective when they provide rapid assistance to acutely food insecure households. To build resilience against the increasing exposure to shocks, African governments should consider advancing and fully embracing the potential of *adaptive social protection*. Multilateral institutions and donor countries can play a role in supporting social safety nets in countries with very limited fiscal space (for instance, *Baxnaano* in Somalia).

Fourth, in an environment with scarce public sector resources, there is an urgent need to improve the quality of government spending on agriculture and strengthen incentive alignment. In the current context, repurposing public funding for agriculture and food systems—to

41 For instance, more than half of the households had a member that skipped at least one meal in Chad, Mozambique, São Tomé and Príncipe, Benin, and Tanzania in the presence of shocks that constrained resources.

boost investments in high-value activities (for example, technology research, soil and water management, market connectivity, among others)—and simultaneously addressing structural policy distortions can unlock agricultural growth and its job creation potential, as well as adapt to climate change. Financing these investments implies repurposing distorting subsidies—such as those linked to outputs, inputs, and land—as well as market price support provided by tariff and non-tariff barriers to trade. Agricultural subsidies come at a high fiscal cost in countries in the region. Across Sub-Saharan African countries with available data, the amount of farmer subsidies ranged from 9 to 45 percent of public agricultural spending (an average of 1.5 percent of gross domestic product (GDP)) in 2014.[42]

Fifth, trade integration—including within Africa—offers a unique opportunity to enhance the resilience of food systems to international shocks. The existing regional economic communities (RECs) and the African Continental Free Trade Area (AfCFTA) can be leveraged to coordinate investments in regional infrastructure and innovation dissemination (thus fostering participation in regional value chains). Removing trade and technical barriers to food trade, investing in regional trade facilitation, and enabling the free flow of capital across borders (foreign direct investment) are essential for building resilient regional food systems, with digital technologies playing a critical role.

Finally, the transformation of the agri-food value chains plays a critical role in accelerating the structural transformation of African economies. The food security debate in policy and academic circles has mainly focused on the farm sector and foreign trade, the upstream of food systems (farming intensification), growth of input markets (water, land, and improved seeds), and the downstream of domestic food systems (for example, the supermarket revolution). Policy makers need to pay more attention to the transformation of midstream segments of agri-food value chains (for example, processing, storage, transport, wholesale, retail, and food service, among others). Midstream segments account for up to 40 percent of gross production in food value chains and have a large job-multiplier effect. They enable farmers to access (domestic and global) higher value markets while meeting higher standards in their products. They also provide an opportunity for many small and medium-sized enterprises (SMEs) to add value (through canning, milling, packaging, and other services) and to mobilize food from rural to urban areas, thus having the potential to generate employment.

42 These figures correspond to 2014 (Sayeh 2021). More recent evidence shows that agricultural subsidies in Zambia (fertilizers, food security packs, and strategic food reserves) amounted to 3 percent of GDP in 2021–22, while those in The Gambia (input subsidies for groundnuts and other products) totaled 4.2 percent of GDP in the same period (Baptista et al. 2022).

2.2 FOOD INSECURITY IN SUB-SAHARAN AFRICA: STYLIZED FACTS

Hunger across the world continued to increase in 2020-22 amid a series of global shocks affecting the supply of food, including COVID-19-related supply chain problems, extreme weather events, and more recently high food and energy prices exacerbated by the war in Ukraine. Across the globe, the prevalence of undernourishment increased from 8 percent in 2019 to 9.8 percent in 2021—thus leading to an increase of about 150 million undernourished people.[43] In Sub-Saharan Africa, 140 million people were acutely food insecure in 2022 according to the Integrated Food Security Phase Classification (IPC)[44] Phase 3 or above, up from 120 million in 2021, and about 284 million of Africa's population are undernourished.[45] In East Africa alone, the number of people in IPC Phase 3 or above is estimated at 55 million in 2022, up from 42 million in 2021. It is also estimated that 25 percent of the population in the region will be undernourished by 2030, up from 18 percent in 2015. Food security crises are becoming more frequent and deeper in the continent.

Severe food insecurity and undernourishment have risen in Sub-Saharan Africa.[46]

After trending downward in the early years of the twenty-first century, the prevalence of undernourishment in Sub-Saharan Africa started to climb in 2014 in the wake of several domestic and global shocks. Undernourishment has risen even further in more recent years with the multiple challenges that African economies have faced. For instance, 46 million more people faced hunger in 2021 relative to 2019 (rising from 214 million in 2019 to 261 million in 2021). More than half of this increase is attributed to 28 million more people in West and Central Africa (AFW) and 17 million more people in East Africa (figure 2.3).

Severe food insecurity. In 2021, the number of people in Sub-Saharan Africa suffering from severe food insecurity amounted to 294 million—up from 243 million in 2019. Of the 51 million additional people with severe food insecurity, more than 50 percent lives in AFW (27 million), and 44 percent (23 million) lives in East Africa (figure 2.4). In recent years, the rise in acute hunger has been driven by conflict (for example, in Chad, Mali, and Central Africa), extreme weather events (for example, droughts in East Africa and the Sahel region), and locust infestations. In 2021, more than 135 million people in AFE were food insecure or had insufficient food consumption. With nearly 155 million people with insufficient food consumption, the AFW subregion is also facing a major food security crisis.

Children are at great risk of malnourishment. In Northeastern Nigeria, 1.74 million children under age 5 years suffer from acute malnutrition, while 1.34 million children suffer in South Sudan. In the Comoros, only 7 percent of children ages 6-23 months receive the required food for healthy development. In addition, the percentage of children under age 5 years who are

43 The prevalence of undernourishment is defined as the percentage of the population whose habitual food consumption is insufficient to provide the dietary energy levels that are required to maintain a normal active and healthy life.

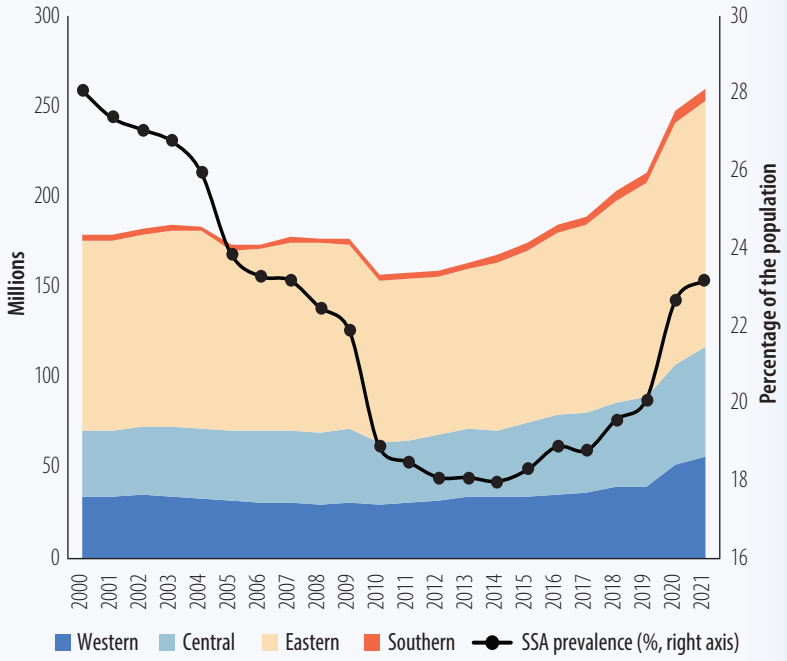
44 The Integrated Food Security Phase Classification (IPC) is a common global scale for classifying the severity and magnitude of food insecurity and malnutrition. Classified IPC Phase 3 or above characterizes a crisis situation.

45 This share is more than double that of any other region in the world (FSIN and Global Network Against Food Crises 2022a b).

46 Undernourishment means that a person is unable to acquire enough food to meet the daily minimum dietary energy requirements over a period of one year. Severe food insecurity means that at times during the year, a person has experienced increasing difficulties in accessing food, such as reducing the quantity of food, skipping meals, having gone hungry, or having to go for a whole day without eating because of a lack of money or other resources.

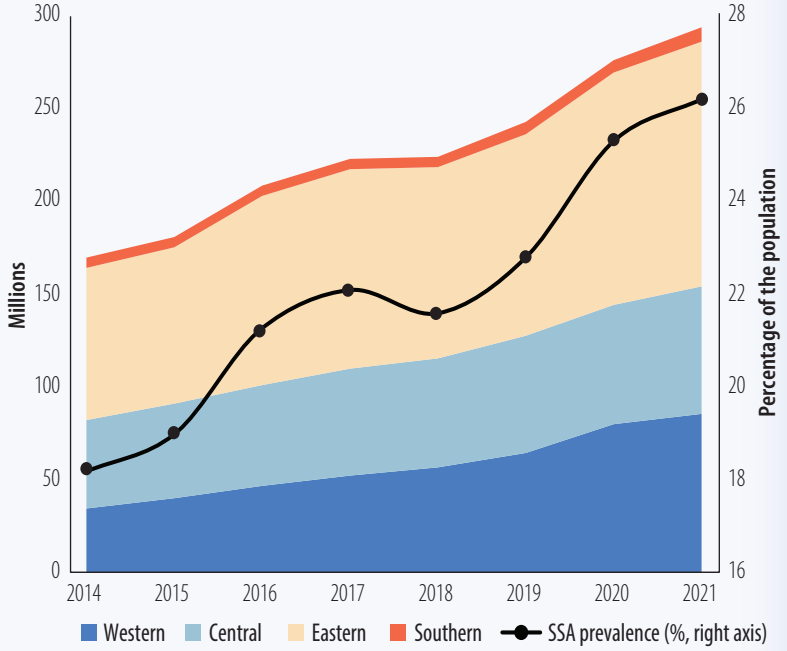
Undernourishment has increased significantly in Sub-Saharan Africa, with 28 million more undernourished people in West and Central Africa and 17 million more in East Africa.

FIGURE 2.3: Undernourishment in SSA, 2020–21: People and Prevalence



In 2021, the number of people in Sub-Saharan Africa suffering from severe food insecurity amounted to 294 million—up from 243 million in 2019.

FIGURE 2.4: Severe Food Insecurity in SSA, 2014–21: People and Prevalence



Source: FAOSTAT 2022 database, Food and Agriculture Organization, http://www.fao.org/faostat/.
Note: SSA = Sub-Saharan Africa.

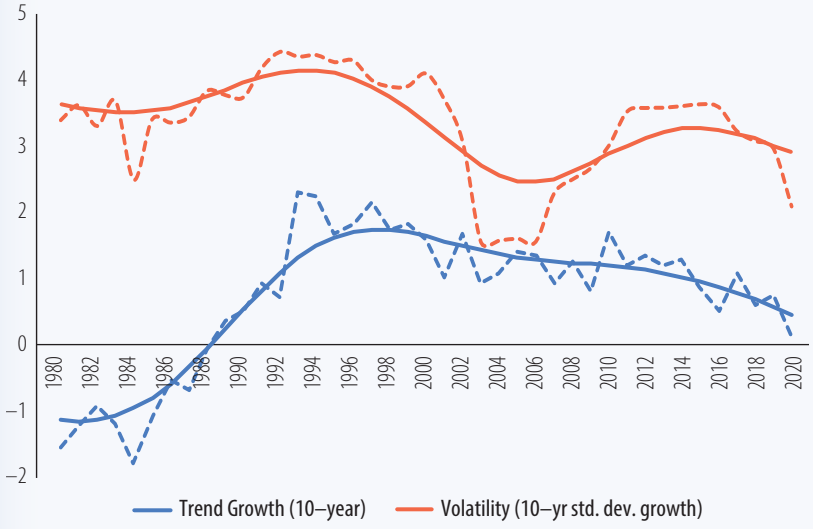
stunted exceeds 40 percent in countries like Burundi, the Democratic Republic of Congo, and Madagascar. Early childhood malnutrition contributes to perpetuating low productivity—for instance, a child born in a Sub-Saharan African country in 2020 is expected to achieve only 40 percent of her future productivity if she were to enjoy full health and complete education.[47]

Food production in Africa was already facing significant long-term challenges before the COVID-19 pandemic and the current global food and energy crisis, and it will continue to deteriorate if no actions are implemented to reverse this trend. By 2030, there will be almost half a billion more people to feed, a 45 percent increase from today. The prevalence of undernourishment may reach 29.4 percent (411.8 million people) by 2030, with the largest contributions coming from the AFW subregion (209.3 million) and East Africa (191.6 million).[48] Since the early 2000s, the rate of growth of food production per capita in Sub-Saharan Africa has been declining, while its volatility has remained high (figure 2.5).

47 World Bank (2020d).
48 FAO (2020b).

Finally, in Africa like in the rest of the World, food insecurity is systematically more severe for women than men. Women tend to be more vulnerable to food shortages and scarcity conditions in crisis situations like the pandemic because they have less access to resources, opportunities, and information. Box 2.1 discusses the role of gender inequalities in food insecurity in Sub-Saharan Africa.

FIGURE 2.5: Growth and Volatility Trends in Food Production per Capita in Sub-Saharan Africa, 1980–2020 (percent)



Source: FAOSTAT 2022 database, Food and Agriculture Organization, http://www.fao.org/faostat/.

Growth of food production per capita has exhibited a downward trend in Sub-Saharan Africa since the mid-1990s.

BOX 2.1: Gender and Food Security: How Closing Gender Gaps Can Ensure More Productive and Resilient Societies

Gender inequalities play a significant role in food insecurity in Sub-Saharan Africa by influencing the level of food insecurity as well as women's ability to cope with food insecurity. Conversely, with the right policies in place, addressing gender gaps and reducing gender inequalities could strengthen food security in Sub-Saharan Africa and bolster the resilience of its population when food and other shocks do happen.

Gender inequality contributes to the damaging divergence between food supply and food demand captured in this report. These impacts can be seen on the supply side as well as the demand side of the equation. On the supply side, there is consistent evidence of women farmers across the region achieving lower levels of productivity. For example, the gender gap in yields between female and male plot managers is as high as 24 percent in Ethiopia, 33 percent in Uganda, and 66 percent in Niger.[a] These gaps are underpinned both by women's lower access to productive inputs (such as farm labor, fertilizer, and land) as well as their lower returns to these inputs. Moreover, compared to men, women tend to be more concentrated in food crop production, thus their productivity has particularly critical implications for national food security. Beyond the farm, women also play an important role in the efficient functioning of local food markets as small-scale informal traders, so the barriers they face to engaging in entrepreneurship are also important.

On the demand side, the high level of fertility observed across Sub-Saharan African countries, a major contributor to population growth and food demand, is underpinned by a wide range of gender inequalities. They include inequalities in access to education (with girls dropping out and starting families early), access to economic opportunities (which impact perceived returns to education), access to health services including reproductive health and family planning, and inequalities in women's decision-making agency. Partly owing to these inequalities, the 20 countries in the world with the highest total and adolescent fertility rates are in Sub-Saharan Africa.

BOX 2.1
Continued

Gender inequality means that women are often particularly vulnerable to the effects of deteriorating food security. First, with their lower participation in formal employment, women are less likely to be reached by formal social protection mechanisms. Beyond contributory social protection programs, women are also less able to access some non-contributory safety nets. For example, public works employment opportunities are widely used across the region, yet the types of work involved (heavy, manual labor), as well as the location and timing of the work often make it difficult for women to participate given their childcare responsibilities, concerns around gender-based violence (GBV), and social norms on the types of work that are suitable for women. Second, weaker ownership of various productive assets and lower ability to save also reduce women's ability to cope with shocks, such as food price increases.

The picture presented here raises the importance of integrating gender into policy responses to food insecurity. To improve women's agricultural productivity, there is a growing body of evidence on a range of interventions, including: financial incentives and informational nudges to increase the co-titling of husbands and wives on land titles;[b] freeing up women's time for providing and supervising farm labor through community-based childcare centers;[c] efforts to better design agricultural extension services to reach women and meet their specific needs, such as by using more female extension agents[d] or by using ICT-based extension delivery to enable women to participate more easily,[e] and investments in women's basic literacy and numeracy.[f]

To improve women's control over their reproductive choices and enable countries to seize the demographic dividend, a multisectoral approach is needed, as set out in the World Bank's Africa Human Capital Plan.[g] Among others, this includes interventions to keep girls in school, reduce child marriage, address social norms on fertility, improve access to sexual and reproductive health care, reduce child mortality and malnutrition, and boost women's employment.

To improve women's ability to cope with food and other shocks, targeting women with cash transfers has been shown across many contexts to increase women's employment, entrepreneurship, and household nutrition[h] and to reduce women's exposure to GBV.[i] Cash transfers can be bundled with other support, such as behavioral nudges to increase cooperation between spouses.[j] Public works opportunities can also be designed to better allow for women's participation, such as through provision of on-site childcare, the option for flexible working hours, and inclusion of a wider range of tasks that might be more socially acceptable for women.[k]

[a] Gender gaps are estimated after controlling for region and for various farmer and plot level characteristics (World Bank, ONE Campaign 2014).
[b] Cherchi et al. (2019).
[c] An earlier baseline report can be found at Donald et al. (2018). Working paper with results is forthcoming.
[d] Kondylis et al. (2016).
[e] Zossou et al. (2009).
[f] Aker and Ksoll (2016).
[g] Available at: https://www.worldbank.org/en/publication/worldbank-africa-human-capital-plan.
[h] Bastian et al. (2017).
[i] Buller et al. (2018).
[j] Ambler et al. (2021).
[k] Ajayi et al. (forthcoming).

Food and fuel inflation is exacerbating food insecurity, especially among the already vulnerable.

Headline inflation across many countries in Sub-Saharan Africa has remained elevated; however, the impact of food and fuel prices may vary not only across countries and over time (see box 2.2), but also across the income distribution.

BOX 2.2: How Much of Rising Global Food and Fuel Prices Are Passed on to African Consumers?

Rising global food prices—which were already observed in the pre-pandemic period—have accelerated since the onset of the Russian Federation's invasion of Ukraine and the lockdowns due to the zero-COVID-19 policy followed by China amid new COVID-19 outbreaks. Since many countries in Africa are dependent on food and fuel imports, the impact of global commodity prices on domestic food, energy, and consumer prices is likely to be large.[a] This box documents the recent evolution of the pass-through of global to domestic prices, measured by changes in the ratio of relative prices over two periods: (1) December 2021 versus December 2020 (2021), and (2) June 2022 versus January 2022 (2022H1).[b]

Overall, the pass-through from changes in commodity prices to inflation behaves differently across country groups in Sub-Saharan Africa. This heterogeneity can be attributed to differences in the economic structure and coping policies to deal with food and fuel prices.

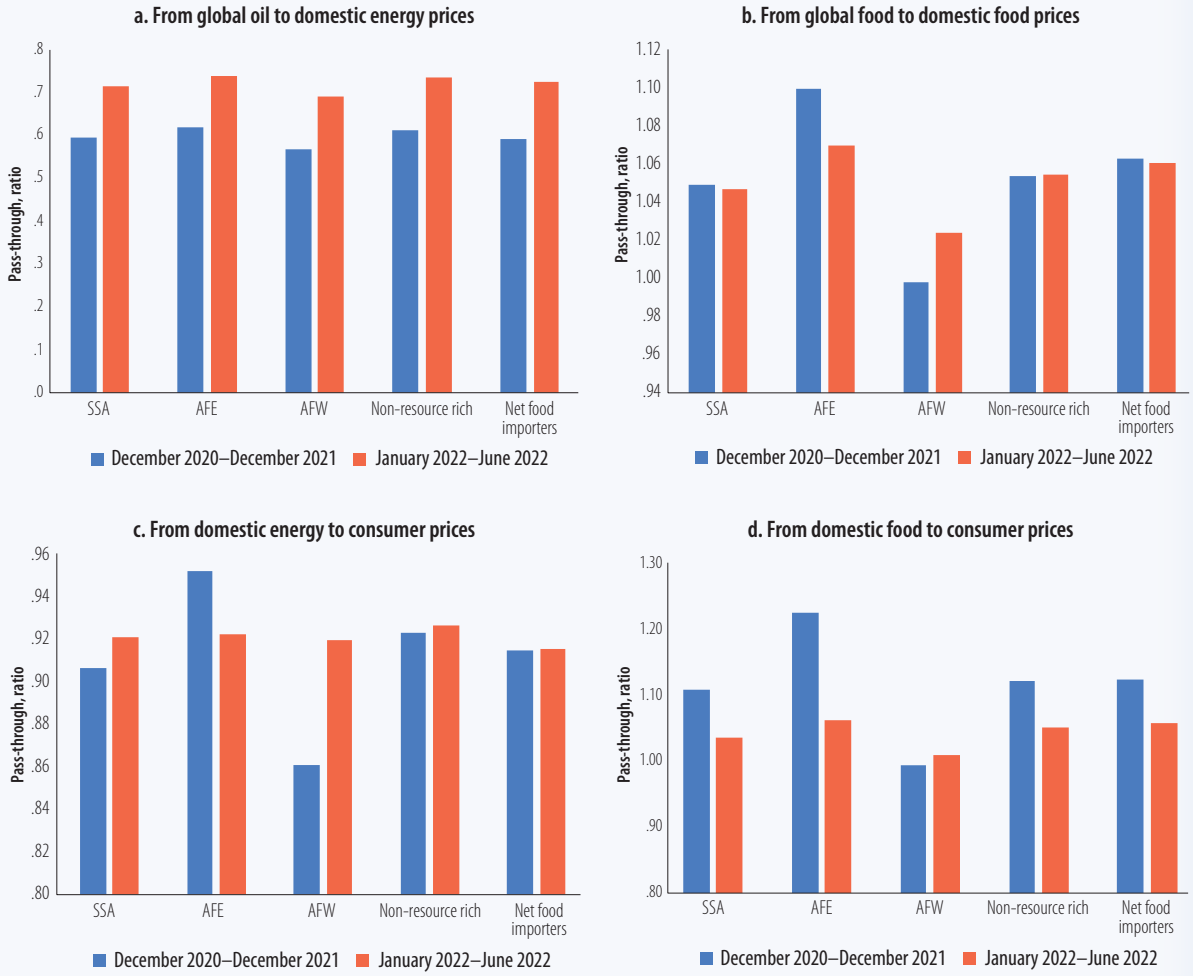
For the region as a whole, the pass-through from international to domestic prices has increased over time for oil, while it has remained relatively stable for food (figure B2.2.1). The responsiveness of domestic food and energy prices to the consumer price index (CPI) is high, and it has increased slightly in the case of food (0.9 in 2021 and 0.92 in 2022H1).

Across the subregions, the pass-through from global to domestic oil prices has increased over time in East and Southern Africa (AFE) and West and Central Africa (AFW). The pass-through from global to domestic food prices has increased only for AFW (figure B2.2.1). The largest increases in the pass-through of global to domestic food prices took place in Burkina Faso, Ghana, and Rwanda. The domestic food and fuel pass-through to the CPI is still high in both subregions. It has increased for fuel among AFW countries and decreased slightly for AFE countries. In the case of food, although it is still very high, the pass-through has declined substantially for AFE countries, particularly Ethiopia and Zambia.

Among net food importers, the pass-through from global to domestic prices increases for fuel, while it remained high but constant over time for food (about 0.92). On the transmission to the CPI, the fuel pass-through remained high but invariant, while that of food has declined in 2022H1 versus 2021, although it remains very high. Net food importers with a declining pass-through from domestic food prices to CPI inflation include Nigeria and Sudan. For non-resource-rich countries, the pass-through from global to domestic prices increased for fuel and remains high and invariant for food, and the transmission to the CPI remains high and invariant for fuel, while it has declined for food.

BOX 2.2
Continued

FIGURE B2.2.1: Pass-Through from Fuel and Food to Consumer Price Inflation



Sources: Ha, Kose, and Ohnsorge 2021; Haver Analytics; World Bank staff estimates.

Note: The pass-through is computed for two periods, January to June 2022 and December 2020 to December 2021. For instance, for the January to June 2022 period, panel (a) shows the cumulative variation in domestic energy prices vis-à-vis the December 2021 to May 2022 cumulative variation in global oil prices (lagged one month). Similar calculations are made for panels (b), (c), and (d). AFE = East and Southern Africa; AFW = West and Central Africa; SSA = Sub-Saharan Africa.

[a] Monthly information on the energy, food, and headline (domestic) consumer price indexes was gathered from Ha, Kose, and Ohnsorge (2021) and complemented with data from Haver Analytics as well as national sources. Global food prices were taken from the United Nations Food and Agriculture Organization, and international oil prices are from the World Bank's Commodity Outlook.

[b] The pass-throughs were computed for various country groups in the region, such as the East and Southern Africa and West and Central Africa subregions, resource-rich versus non-resource-rich countries, and net food importers versus net food exporters.

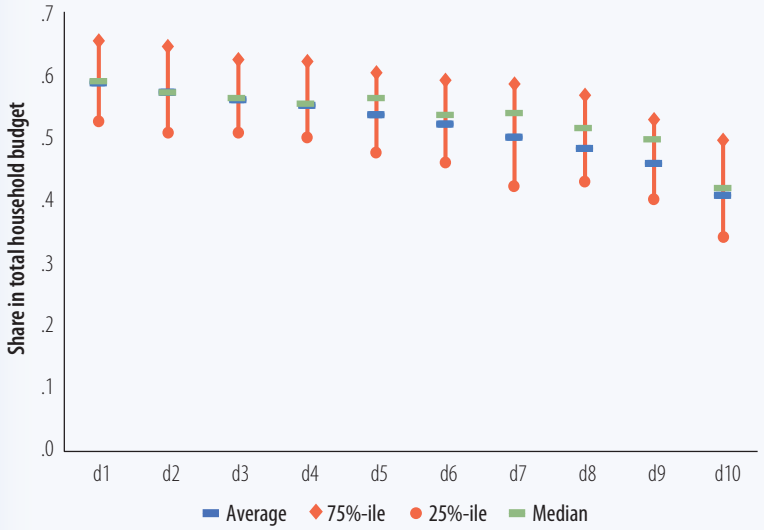
The poorest households are the most affected by the rising food and fuel prices. Food expenditure shares tend to decline as income grows across countries in the region. Figures 2.6 and 2.7 present selected statistics (average, median, and 25th and 75th percentiles) on the food and fuel shares, respectively, in household budgets by income decile across countries in the region.[49] The median budget share of the poorest deciles (d1 and d2) fluctuates between 57 and 59 percent, while that of the richest decile (d10) is 42 percent (figure 2.6). At the same time, the dispersion of food expenditure shares across countries in the region is higher among the medium and high deciles than among the lowest deciles of the income distribution. The interquartile range

49 Household surveys in Sub-Saharan Africa provide information on food shares for 35 countries and fuel shares for 30 countries.

of food expenditure shares is 13 percentage points for the poorest income group (d1) and 16 percentage points for the upper-middle-income and high-income groups (d7 and d10).

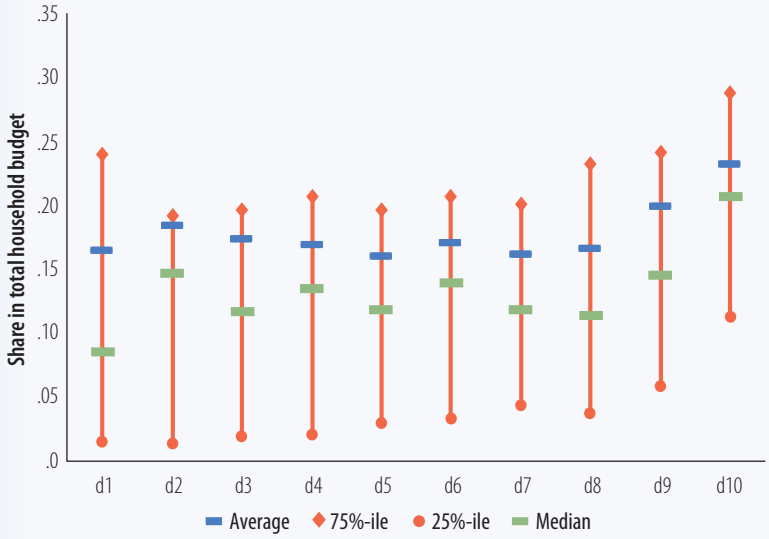
The fuel share of household expenditures across countries in the region, in contrast, tends to increase—although non-monotonically—as household income improves.[50] The median fuel share for the poorest income group (d1) is 8.5 percent, while that of the highest income group (d10) is 21 percent (figure 2.7). Furthermore, the dispersion of fuel shares across countries in the region tends to be higher among lower income than higher income households. The interquartile range of fuel expenditure shares is about 23 percentage points for the lowest decile of the distribution (d1) and about 18 percentage points for the highest decile (d10).

FIGURE 2.6: Food Share in the Household Budget across Deciles of the Income Distribution in Sub-Saharan Africa



Poor households have a higher food share in the household budget across Sub-Saharan Africa.

FIGURE 2.7: Fuel Share in the Household Budget across Deciles of the Income Distribution in Sub-Saharan Africa



Poor households tend to spend less of their budget on fuel across Sub-Saharan Africa.

Source: International Household Survey Network, Various Years.

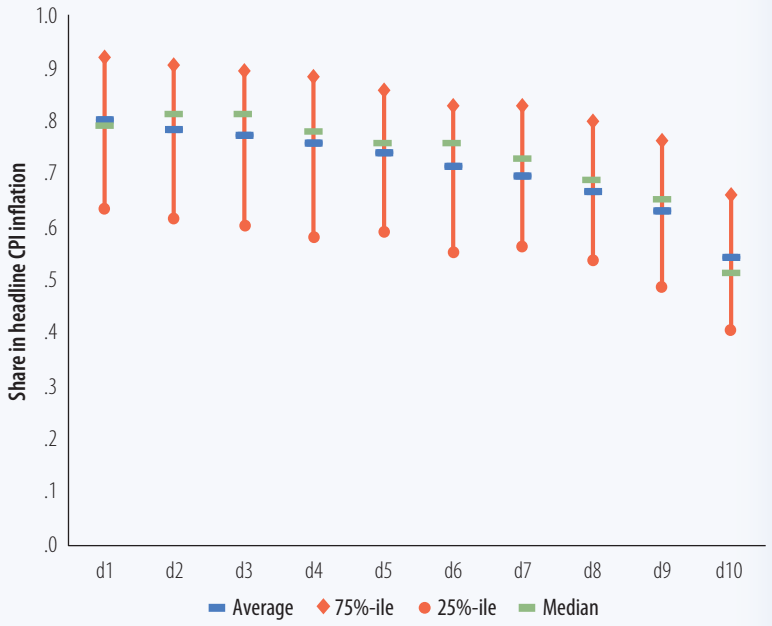
The findings presented are consistent with evidence from high-frequency phone surveys showing that: (1) price increases of major food items consumed by households across countries in the region were one of the most prevalent shocks since the start of the pandemic,[51] and (2) consumer price increases have had an adverse effect on households' food security—especially those in the lower end of the consumption distribution or those that cannot produce their own food (figures 2.8 and 2.9).

50 Fuel shares include expenditure on liquefied petroleum gas and gas, gasoline, diesel, kerosene, and transportation fuel.

51 During July 2020, two-thirds of households in Malawi reported an increase in the price of key consumption goods. The same was true for 90 percent of Nigerian households (Amankwah and Gourlay 2021).

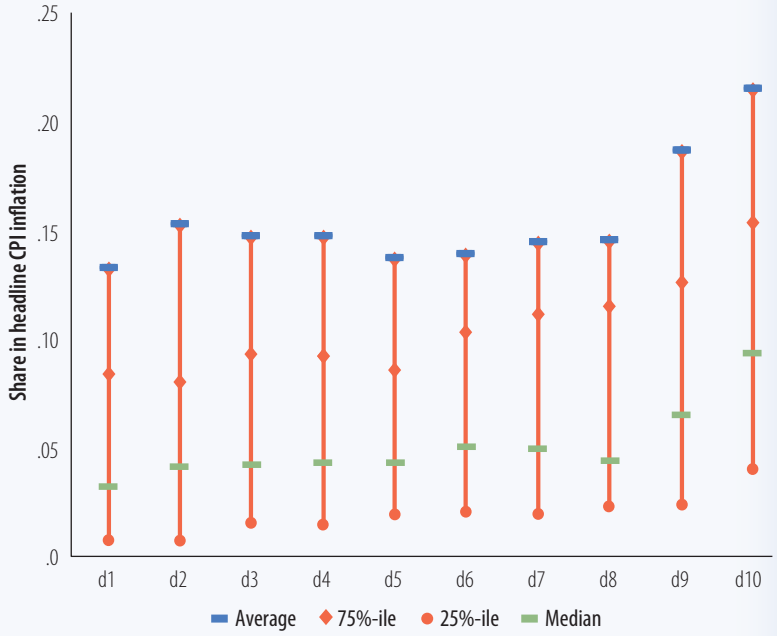
The relative contribution of food price increases to overall inflation decreases across the income distribution in Sub-Saharan Africa.

FIGURE 2.8: Relative Contribution of Food Inflation to Headline Inflation across Income Deciles in Sub-Saharan Africa



The relative contribution of fuel price increases to overall inflation increases across the income distribution in Sub-Saharan Africa.

FIGURE 2.9: Relative Contribution of Fuel Inflation to Headline Inflation across Income Deciles in Sub-Saharan Africa



Source: World Bank.

Households' coping strategies are detrimental to address food security.

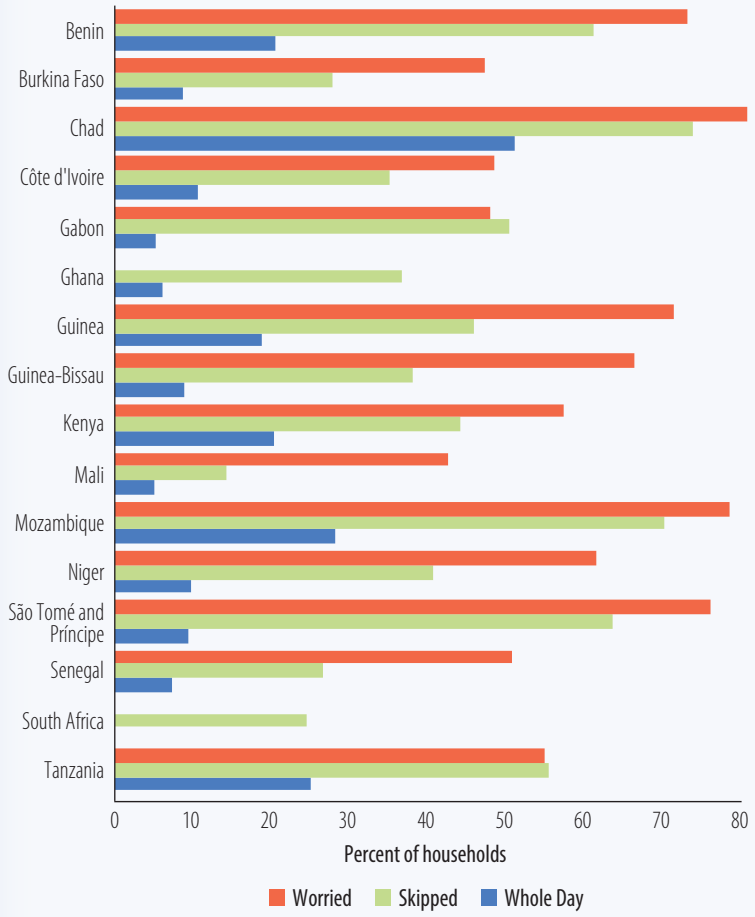
Amid a series of shocks that constrain resources, households' ability to cope with hunger and food insecurity is limited. Households use a wide array of detrimental coping mechanisms to address food insecurity concerns, such as reducing the amount and frequency of food intake, going an entire day without food, borrowing food and money, food aid, and migration, among others. Some of these coping mechanisms increase the risk of undernourishment, malnutrition, and related diseases. At the household level, survey questionnaires can help in evaluating the degree to which households restrict food consumption amid a series of shocks.[52] Food consumption is a major source of worry for most households across the region, with as many as 81 percent of households having at least one member worrying they would not have enough food to eat during the past 12 months prior to the survey (Chad). In countries like Mozambique, São Tomé and Príncipe, Benin, and Guinea, the proportion of households worrying about food security exceeds 70 percent (figure 2.10).

52 The Food Insecurity Experience Scale Survey Module of the household survey consists of eight questions on people's access to adequate food. The module asks if, during the past 12 months, there was a time when, because of lack of money or other resources: (1) You were worried you would not have enough food to eat? (2) You were unable to eat healthy and nutritious food? (3) You ate only a few kinds of foods? (4) You had to skip a meal? (5) You ate less than you thought you should? (6) Your household ran out of food? (7) You were hungry but did not eat? (8) You went without eating for a whole day?

Households that were worried about food security also had at least one member who was forced to skip at least one meal. In five of the African countries surveyed (Chad, Mozambique, São Tomé and Príncipe, Benin, and Tanzania), more than half of the households had a member who skipped at least one meal. That proportion was about one-third of the households in Côte d'Ivoire and Ghana, and one-quarter of the households in Senegal and South Africa (figure 2.10). Restrictions on food consumption were acute for a larger share of households, with about 50 percent of households having at least one member going at least one whole day without eating in Chad. Between 20 and 30 percent of households reported having a member who went without eating for a day in Kenya, Benin, Tanzania, and Mozambique (figure 2.10).

FIGURE 2.10: Incidence of Food Insecurity across Sub-Saharan African Households

Fear of food insecurity has increased across Sub-Saharan Africa.



Source: International Household Survey Network, various years.

Note: The figure depicts the incidence of households with at least one member worried about food, skipping a meal, or going a whole day without eating in the 12 months prior to the interview.

Recent evidence from high-frequency phone surveys corroborates the worsening of food insecurity across households in selected countries in the region (Uganda, Nigeria, Malawi, Ethiopia, and Burkina Faso) after the onset of the COVID-19 pandemic.[53] There has been a significant transition from food security to insecurity, as 43 percent of households that were not facing severe food insecurity in 2018 were estimated to be severely food insecure in January 2020—with food insecurity increasing at a faster pace among rural households than urban ones.[54] Restrictions in food consumption was a lever commonly used by many households to cope with the economic fallout from the pandemic, with the more vulnerable households being more disproportionately affected.[55] Note that the situation could be worse than the high-frequency phone surveys reveal, as they do not represent the poorest households without phone access.

53 Amankwah and Gourlay (2021) also use the Food Insecurity Experience Scale questionnaire module for reporting on the Sustainable Development Goals to estimate the overall food insecurity rates for both moderate and severe food insecurity among the adult population.

54 Amankwah and Gourlay (2021); Rudin-Rush et al. (2022).

55 In July 2020, two-thirds of Nigerian households reduced food consumption in response to a variety of shocks. The same was true for 9 percent of households in Malawi and 16 percent of households in Uganda.

2.3 POLICY DISCUSSION

Much has been said, written, and advocated about alleviating the food security crisis in the region over the past decades. The reality is that solving this equation is complex, and even more so amid climate change, the COVID-19 pandemic, and current food and energy crises. Magical silver bullet(s) do not exist. Yet evidence from other continents and the region have demonstrated that a series of emergency, short-term measures combined with medium- to long-term measures can altogether build resilience in agriculture and food systems. In this light, the following policy dimensions stand out as the most realistic and efficient paths within the current environment.

In the short term, social safety nets play an important role of protecting the most vulnerable people through a series of targeted cash or in-kind transfers during periods of heightened food insecurity. Beyond providing a protective floor, safety nets can be used to foster human capital accumulation and agricultural production (cash transfer "plus" programs) as well as provide job opportunities (through labor market programs and temporary wage subsidies paid to employers).

Over the medium- to long-term, building resilience in agriculture and food systems requires measures that boost productivity in agriculture and accelerate the structural transformation process.

- In an environment with limited fiscal space, there is a need for policies that improve the quality of spending. Hence, reallocating government funds to investments that have high value (technology generation and diffusion, soil conservation and irrigation infrastructure, climate change adaptation, and market connectivity) and repurposing market-distorting policies is critical for productivity-enhancing growth.
- Fostering trade and regional integration can help African countries increase their resilience to shocks affecting global agri-food systems. Leveraging regional trade agreements and the AfCFTA can help coordinate investment and production at the regional level—thus fostering participation in regional value chains. A more holistic approach to regional integration and cooperation may also include transborder natural resource management, knowledge and innovation dissemination, weather and market information, and so on.
- The development and modernization of midstream segments of agri-food value chains (for example, processing, storage, transport, wholesale, retail, and food service, among others) is essential to enable farmers to access (domestic and global) higher value markets while meeting higher standards in their products. It creates opportunities for productive inclusion and the incorporation of additional rural youth.

Finally, the adoption of digital technologies by governments can increase the efficiency of all these policies. Digital technologies play an important role in improving the targeting of social safety nets through (digital) registries of beneficiaries and platforms for electronic payments. They also support the improvement of public investment management systems, targeting of

input subsidy programs, and trade facilitation measures (automated customs procedures and electronic certificates of origin), among others. Digital tools can also be adopted to improve access to information on upstream and downstream markets, as well as enhance quality control and the traceability of foodstuffs (via distributed ledger technologies).[56]

2.3.1 Addressing Food Insecurity and Increasing Resilience through Social Protection Programs

Households across all income levels have been impacted by rising inflationary pressures, but the poorest households are particularly vulnerable to threatening levels of food insecurity as they allocate a larger share of consumption expenditures to food.[57] Lessons learned from past crises show that households turn to detrimental coping mechanisms, such as skipping meals, pulling children out of school, or selling productive assets or livestock, which reduce human capital and increase the risk of intractable poverty with intergenerational impacts.[58]

To tackle the ongoing food security crisis, the World Bank announced a comprehensive global response and has made available US$30 billion in finance through existing as well as new projects in the areas of agriculture, nutrition, water, and irrigation to support activities ranging from food and fertilizer production to enhancing food systems and facilitating greater trade to supporting vulnerable households and producers.[59] A pillar of the Africa region's overall policy response to the crisis is in the area of social protection. Social safety nets and social protection systems have a demonstrable track record in reducing food insecurity in Africa in recent years and in fostering resilience among the region's most vulnerable households. Social protection systems have demonstrated high impacts in three key areas during recent multifaceted crises.

A. Social Safety Net Interventions Reduce Food Insecurity among Vulnerable Households

In recent years, impact evaluations using rigorous randomized controlled trials have shown that social safety nets can reduce food insecurity in African countries. For example, in northern Nigeria, which suffers from high rates of child malnutrition and extreme poverty, a large-scale, randomized intervention was implemented. The intervention, which provided unconditional cash transfers and information on nutrition to pregnant mothers, led to substantial and sustained improvements in the health and nutrition of targeted children, including an 8 percent reduction in stunting four years after the intervention.[60] In Zambia, the Social Cash Transfer program was found to have a positive impact not only on food security, but also on human capital accumulation and agricultural production. Among Social Cash Transfer beneficiaries, there were 19 and 8 percent increases in households eating more than one meal and more than two meals per day, respectively, and a 22 percent increase in the number of children ages 6-12 months receiving minimum feeding requirements. The transfers also led to households increasing land use for farming by 18 percent, maize production by 8 percent, and livestock by 21 percent.[61]

56 For more details on the various channels through which digital technologies influence agricultural productivity, see Deichmann, Goyal, and Mishra (2016); Begazo-Gomez, Blimpo, and Dutz (2022); and previous issues of Africa's Pulse (April 2019, April 2021, and October 2021).

57 World Bank (2022a).

58 World Bank (2021f).

59 World Bank (2022d)

60 Carneiro et al. (2021).

61 Handa et al. (2016).

Similarly, evidence from rural Niger highlights that cash transfers raised consumption and reinforced shock coping mechanisms. Evaluation of a government-led cash transfer program found that transfers increased household consumption by about 10 percent on average, and this increase was mostly concentrated among households affected by drought shocks, for whom the welfare impacts were larger than the transfer amounts. Transfers also helped households protect earnings in agriculture when shocks occurred.[62]

In Malawi, the World Bank estimates that 36 percent of the very poor were lifted from extreme poverty due to social safety nets.[63]. Despite modest transfer levels, Malawi's Social Cash Transfer Program (SCTP) has increased food consumption for beneficiaries by 23 percent,[64] while also contributing to increases in school enrollment rates, school attendance, and education-related expenditure for children. SCTP also positively changed health treatment seeking behavior among beneficiaries,[65] and increased beneficiaries' microentrepreneurial activity and investments in livestock holdings, durable assets, and fertilizers.[66] In addition, the new model climate-smart Enhanced Public Works Program (EPWP), which was recently assessed, demonstrated increases in beneficiaries' financial inclusion and household diet, and the creation of assets that directly benefit their households and their community and have the potential for improving the environment and climate resilience.

In times of crisis, social safety net interventions provide governments a rapid, effective, and well-tested mechanism to get cash transfers and other forms of in-kind support to food insecure households. Although the expansion of social safety nets across the world has been increasing gradually, it accelerated during and in the aftermath of the global food, fuel, and financial crises of the 2000s. Prior to the COVID-19 pandemic, 45 countries in Sub-Saharan Africa—three times as many as those at the end of the 1990s—had introduced social safety net programs to tackle chronic poverty by increasing consumption among poor and vulnerable people.[67]

The COVID-19 pandemic led to an unprecedented expansion of social safety net programs across the globe, including through platforms built in the past two decades in Africa.[68] The expansion covered new target populations, namely, the urban poor and workers in the informal sector, who had typically been left out of the first-generation safety net programs, but who are only one shock away from falling back into poverty. Alongside this expansion of social safety nets, investments in delivery systems for household identification, targeting, and payments led to innovations in the expansion and use of social registries and digital payment delivery. This "big push" in developing and expanding safety net systems over the past two years provides an opportunity for further using, improving, and scaling up these systems to respond to the ongoing food security crisis.

Social safety nets are practical, high-impact, and cost-effective solutions available to governments for providing rapid assistance to households during episodes of high food

62 Premand and Stoeffler (2020).

63 See: https://www.worldbank.org/en/topic/safetynets#1.

64 Ralston, Andrews, and Hsiao (2017).

65 Malawi Cash Transfer Evaluation Team (2018).

66 de Hoop et al. (2020).

67 World Bank (2018a).

68 In response to the COVID-19 pandemic, 48 countries expanded existing cash transfer programs, started new ad hoc programs, or used social protection delivery systems such as social registries to provide timely support to more households and individuals (Gentilini et al. 2022).

insecurity. Other measures, such as grain storage policies, place a much larger fiscal burden on national governments, whereas trade liberalizations may take time to generate impact.[69] Targeted social safety nets are widely considered progressive and efficient in directly providing cash to the poorest households. Humanitarian relief through United Nations agencies or nongovernmental organizations is also important in situations of overwhelming need, but it is less rapid and cost-effective than using existing safety nets built before the crisis and further expanded to respond to shocks.

Notwithstanding their comparative advantage as a crisis response tool, while cash and other targeted transfers were the largest measures announced to respond to the recent episode of food and fuel price hikes in advanced economies, developing and emerging markets still rely heavily on regressive measures such as trade restrictions and price support measures.[70] However, a few countries in Africa have embarked on reforms to move away from regressive subsidies. For example, in Malawi, as part of a broader effort to reform agricultural subsidies, safety net programs have been expanded given their track record of effectively targeting the poorest households with income support to smooth consumption and enhance household-level human capital investments.

B. New Generation Social Protection Programs to Boost Resilience

Social protection helps households build resilience and can be leveraged to respond to shocks. Adequate and predictable transfers can rebuild asset stocks, reduce debt burdens, and have greater impacts on nutrition, investments, and productivity as well as economywide multipliers, with long-term consequences. For example, evidence shows that every US$1 spent on social protection and resilience programs in Ethiopia, Kenya, and Somalia results in a multiplier effect of between US$2.3 and US$3.3 of growth in local economies—as recipients tend to spend the cash transfers they receive on local goods and services.[71] Moreover, proactive social protection response reduces the cost of humanitarian interventions by avoiding income and asset losses by households that, in the absence of early interventions, resort to negative coping strategies.[72]

Social protection delivery systems that were established in the years prior to the COVID-19 pandemic were scaled up during the crisis to offer immediate assistance to individuals and households. Countries are strengthening these systems and have deployed them to lessen the impacts of other kinds of shocks, such as those caused by climatic events like droughts, floods, or forced migrations due to crises, conflicts, or natural disasters. These systems are often referred to as adaptive or shock responsive social protection systems, whereby existing safety nets can expand vertically (offering higher transfer amounts) and/or horizontally (to more beneficiaries) in response to a shock.

To help safety net systems reach their full potential in Africa, policy makers must adopt larger goals that go beyond the social protection programs' conventional focus on chronic poverty and instead address shock vulnerability and productive inclusion. Labor-intensive public works initiatives, which are intended to provide temporary job opportunities to underprivileged

69 Trueblood and Shapouri (2001).
70 Amaglobeli et al. (2022).
71 Venton (2018).
72 Wylde, Carraro, and McClean (2020).

communities through building and maintaining climate-smart infrastructure, can be considered one such example of an *adaptive* safety net program. It can be leveraged to increase resilience to climate change while increasing short-term food security. For instance, Ethiopia's Productive Safety Net Program aims to maintain food consumption and prevent asset depletion for rural food insecure households in a way that boosts markets, improves access to services and natural resources, and restores and enhances the environment. An assessment of the program's public works component in 2008 indicated that the intervention boosted access to water supply and increased use of small-scale irrigation.[73]

Similarly, countries are increasingly supplementing cash transfers through a new generation of accompanying ("plus") measures to boost human capital outcomes, empower women, and improve livelihoods. For example, the Sahel Adaptive Social Protection Program was launched in 2014 to strengthen adaptive social protection programs and systems in six countries in the Sahel (Burkina Faso, Chad, Mali, Mauritania, Niger, and Senegal). These programs aim to help poor and vulnerable households become more resilient to the effects of climate change by supporting the diversification of household livelihoods. The programs provide a proven package of productive inclusion measures, including a cash grant, coaching, savings group facilitation, community sensitization, life skills and micro-entrepreneurship training, and access to markets. More than 50,000 beneficiaries, over 90 percent of whom are women, have benefited so far. A multi-country impact evaluation project has found considerable increases in consumption, food security, business revenues, and various measures of well-being among participating households.[74] Evaluations of such productive inclusion programs around the world show that they significantly increase poor people's incomes, savings, and spending on food and other essentials and increase their productive assets, like livestock. The programs also help the poor diversify their income sources, which is especially important in the context of climate change. Many of these impacts were found to be sustained in the medium term, three to four years after the project.[75]

Finally, school feeding programs are another form of safety net that have proven highly effective in alleviating food insecurity but also at increasing human capital and boosting local economic activity.[76] As the most widespread form of in-kind benefits globally, they have proved to be a formidable instrument to increase school attendance and enrollment, while improving child nutrition and learning. They encompass a diverse array of designs, implementation arrangements, and management structures. The strongest and most sustainable programs are those that respond to a community need, are locally-owned, and incorporate some form of parental or community involvement.[77] Home Grown School Feeding programs have been shown to effectively benefit farmers and drive the transformation of local food systems. Efficient programs are estimated to have yield returns of up to US$9 for every US$1 invested.[78]

73 World Bank (2012b).

74 See the overview of the productive inclusion measures in the Sahel at: https://www.worldbank.org/en/programs/sahel-adaptive-social-protection-program-trust-fund#6, and Bossuroy et al. (2022).

75 Andrews et al. (2021).

76 Bundi et al. (2018).

77 Drake et al. (2016).

78 Bashir et al. (2018).

C. Partnerships to Reduce Response Fragmentation

Sustained investments in national social protection systems over the past two decades have allowed African governments to build institutional memory and technical know-how, including by learning from responses to past crises. One such area where learning from past experience is reflected is better coordination and synergy of actions between social protection stakeholders. Lessons learned from recent safety net expansions are beginning to show a departure from the fragmented and piecemeal approaches of the past, to a more coherent approach to crisis response with the aim of supporting a unified national social protection system. For example, in response to the COVID-19 pandemic, the Liberia Social Safety Nets Project launched the government's first-ever urban cash transfer program. It provided emergency cash transfers for close to 15,000 households living in vulnerable communities in the Greater Monrovia area. The transfers provided to the urban cash transfer beneficiaries were fully financed by the United Kingdom's Foreign, Commonwealth & Development Office. The development of the social registry digital intake tool was financed by the United States Agency for International Development. As a result, the broader Liberia Social Safety Nets Project, financed by a US$10 million credit from the International Development Association, leveraged co-financing of US$8.9 million from the UK Foreign, Commonwealth & Development Office and U.S. Agency for International Development to support vulnerable households as well as strengthen existing social protection delivery systems in Liberia.[79]

Effective coordination is particularly beneficial for countries in fragile and conflict-affected situations, where up to two-thirds of the global extreme poor are expected to live by 2030.[80] Countries in fragile and conflict-affected situations often require a high degree of cooperation across government agencies, humanitarian actors, and international donors, not just in terms of leveraging investments, but also for information sharing. For example, in Somalia, a combination of instability, conflict, and climate change–induced extreme weather conditions has led to repeated episodes of food insecurity. Currently, the World Bank supports *Baaxnano*, the Somalian government-led safety net program that aims to support the poorest and most vulnerable households via direct cash transfers, through the Shock Responsive Safety Net for Human Capital Project. The project was recently scaled up to support almost 500,000 households, including through two rounds of additional financing. The project leverages partnerships with the World Food Programme and the United Nations Children's Fund as part of the broader Famine Action Mechanism, a global partnership dedicated to scaling up anticipatory and early action to protect lives and livelihoods from emerging food security crises. Among others, the partnership provides a model for sharing information on food insecurity situations and mobilizing anticipatory action before the onset of major shocks.

In sum, the COVID-19 pandemic has firmly underscored the importance of the social protection systems in Africa and shown how crucial they are for equity, resilience, opportunity, and jobs. Many countries have seen a return on their prior investments in building the foundations for targeted cash transfer programs and associated delivery systems, as they were able to

79 World Bank (2022c).
80 Corral et al. (2020).

successfully use these programs to shield their citizens from the worst impacts of the pandemic. The recent rise in global food and fuel prices provides further opportunity to test and scale these systems to support vulnerable households, while continuing to advocate for increases in domestic ownership and financing to these initiatives.

2.3.2. Transforming Agriculture and Food Systems

Africa has the potential to contribute to feeding nine billion people across the globe by 2050 as it has a significant amount of underutilized land and water resources. Agriculture remains a pivotal sector for Sub-Saharan African development to provide calories and nutrition for 294 million severely food insecure Africans, and as a source of employment opportunities for nearly two-thirds of the 11 million young people in the region who will be joining the job market every year over the next decade.[81] Finally, the sector plays a key role in effectively adapting to climate change and improving the lives of the extremely poor.

Food demand in Sub-Saharan Africa will continue to grow at a fast pace as the trends in population growth and urbanization persist. This offers a unique opportunity for farmers in the continent to step up efforts to meet this growing demand. In turn, meeting such demand requires the reorientation and/or implementation of policies and investments that transform agriculture and food systems along the value chain—with important implications for strengthening urban-rural linkages. This agenda will include the following:

First, the implementation of measures and systems that improve the quality and effectiveness of government support to agriculture. While fiscal space remains limited for many countries in the region, governments need to repurpose (the scarce) resources toward investments in high-quality, high-return public goods such as research and development (R&D), human capital (including education, training, and extension services), technology (including green innovations), energy, transport and water-efficient irrigation infrastructure, as well as actionable climate change adaptation policies, and the strengthening of sanitary, phytosanitary, and veterinary systems.

Second, government efforts to boost agricultural output and productivity—especially for food staples—need to be complemented with policies that enable the free flow of foodstuffs and agricultural innovations (for example, certified seeds) across borders in the continent. Promoting trade in agricultural products, inputs, and technologies within Sub-Saharan Africa and beyond provides an opportunity to enhance the resilience of agri-food systems to international market shocks (such as price and/or supply shocks arising from global weather shocks or external conflicts). Leveraging existing regional trade agreements and the AfCFTA offers an opportunity to coordinate and commit to the organization of production and trade—particularly, fostering the development of regional value chains. Removing trade and technical barriers, improving trade facilitation, and enabling the free flow of investments across borders are essential.[82]

Third, the transformation of agri-food value chains requires an increased focus on the development of whole value chains, rather than a production-centric view of agriculture. Whole value chains have a large job-multiplier effect, with activities potentially more attractive to the

81 Filmer and Fox (2014).

82 The regional strategy can potentially absorb smallholder farmers and micro, small, and medium-sized enterprises and connect them to the larger private sector that dominates input and output markets. In addition, the rising integration of stakeholders along agri-food value chains (say, from farmers to processors, transporters to retailers, among others) has the potential to create jobs, improve agricultural productivity, and guarantee food security.

youth than on-farm work. They enable smallholders to add value and attract investments, as well as increase dietary diversity and nutritional outcomes. Seizing this opportunity requires policies that support the transformation of the midstream segments of agricultural chains—namely, processing, storage, transport, wholesale, retail, and food services, among others. New equipment and products as well as enhanced management practices improve the quality and reduce the cost of processing, storage, transport, retail, and food services. The transformation of processing and trading systems as well as changes in the organization model of supply chains will enable farmers to access (domestic and global) higher value markets and improve the standards of their products (for example, the teff value chain supplying Addis Ababa, Ethiopia).

Overall, transformation and modernization of agriculture is crucial to foster an inclusive, climate-smart, and productivity-enhancing structural transformation across Sub-Saharan African economies. The continent needs to develop a new agrarian system—one that combines smallholder farmers with a new dynamic generation of medium-sized and large commercial farmers while preserving its natural capital.[83] This emerging segment of dynamic, commercially-oriented, small/medium-sized farmers can become a significant source of demand for innovation, capital investment, and service provision, which together will drive productivity growth.[84]

A. Boosting the Quality of Public Investment to Raise Agricultural Productivity

Public policies have an essential role in building sustainable food systems, and they are crucial for enhancing agricultural productivity growth. There is a need to spend more public funds on agriculture to meet the *Comprehensive African Agricultural Development Programme* target of 10 percent of the total budget. However, the current environment of restricted fiscal space caused by the pandemic and the energy and food crises requires Sub-Saharan African countries to improve the quality of spending and use the scarce resources more efficiently. On average, countries in the region spend around 6 percent of their total budgets on agriculture,[85] and this funding level may remain in place for the foreseeable future. Hence, improving the efficiency and effectiveness of public spending will be critical to unlock the potential of agricultural growth and job generation, while meeting the climate change challenges.. Countries would need to reallocate funds to high-return investments in public goods that will advance the long-term food systems transformation agenda.

The effectiveness of high-quality public spending in bolstering growth has strong empirical validation.[86] Although many studies find quite low returns to aggregate spending on agriculture, almost all find high returns to specific types of spending, such as investments related to technology generation and diffusion, market linkages, and irrigation infrastructure. However, currently a large part of the spending in some countries goes to low-return expenditure programs, such as variable input subsidies (fertilizers). They provide incentives for unsustainable patterns of production and consumption, and are dragging down the overall returns relative

83 Medium-scale farms (5-100 hectares) now control roughly 20 percent of total farmland in Kenya, 32 percent in Ghana, 39 percent in Tanzania, and over 50 percent in Zambia. In Tanzania, medium-sized farms generate 13 million labor days per year. This trend in most cases reflects increased interest in land by urban-based professionals or influential rural people. About half of these farmers obtained their land later in life, financed by nonfarm income. A greater share of savings in urban areas is being reinvested in farming and agribusiness.

84 Jayne et al. (2019).

85 This figure is taken from Pernechele et al. (2021).

86 For example, see Gautam et al. (2022).

to what they could be if public spending were allocated to more productive investments. This offers a unique opportunity to reorient public expenditures toward high-return activities.

Research from Latin America and the Caribbean shows that it is essential to shift public spending from providing goods and services to specific groups of producers toward the increased provision of public goods. On average, 51 percent of total government spending in rural areas was on subsidies to private goods from 1985 to 2001. A reallocation of 10 percentage points of public expenditures from subsidies to public goods provision would increase per capita agricultural income by about 2.3 percent without increasing total spending.[87] These findings are consistent with the large productivity-enhancing effects of spending on rural infrastructure and agricultural research and dissemination during the Green Revolution in Asia. The evidence from periods of high agricultural growth in South Asia shows that fertilizer subsidies played little or no role in substantially boosting productivity.[88] Studies in four Asian countries—Bangladesh, India, Indonesia, and Pakistan—conclude that fertilizer subsidies were not significant in farmers' adoption of technology. The studies instead identify technology research, irrigation expansion, and other investments, such as roads, as the main drivers. At the height of the Green Revolution, farmers in three of the four countries (except Bangladesh) were net taxed for fertilizer (that is, domestic prices of fertilizers were higher than the world market prices), indicating that it was profitability and not subsidies that drove technology adoption during the Green Revolution (see box 2.3).[89]

BOX 2.3: Reform Policies and Invest Well: Lessons from Asia's Agricultural Transformation

Many parts of Asia have achieved impressive gains in agricultural productivity and poverty reduction over the past half century. By contrast, sustained productivity growth remains elusive in most of Africa. What can African policy makers learn from Asia's experience? Conditions naturally differ in many respects between Africa and Asia, but it is instructive to understand the mix of public investments and policies of many Asian countries, and their relative importance in driving growth and reducing poverty. In India, the relative performance of subsidies evolved over time, with higher returns in the early years of the Green Revolution but declining thereafter. Fertilizer, power, and irrigation subsidies were among the least significant contributors over the four decades. The findings of these studies provide potentially important implications for promoting agricultural growth and poverty reduction in Africa (table B2.3.1). Although the regions differ in important respects, there are strong reasons to believe that the policy reforms and investments that generated high payoffs in Asia are likely to drive growth and reduce poverty in most of Africa as well.

87 Lopez and Galinato (2007); Valdes (2008).
88 Fan, Gulati, and Thorat (2008).
89 Rashid et al. (2013).

TABLE B2.3.1: Returns to Agricultural Growth and Poverty Reduction from Investments in Public Goods and Subsidies in the Phases of the India's Green Revolution, 1960–2000

BOX 2.3 *Continued*

	1960-69	1970-79	1980-89	1990-99
Returns in agricultural GDP *(Rs produced per Rs spent)*				
Road investment	8.79	3.8	3.03	3.17
Educational investment	5.97	7.88	3.88	1.53
Irrigation investment	2.65	2.1	3.61	1.41
Irrigation subsidies	2.24	1.22	2.28	..
Fertilizer subsidies	2.41	3.03	0.88	0.53
Power subsidies	1.18	0.95	1.66	0.58
Credit subsidies	3.86	1.68	5.2	0.89
Agricultural R&D	3.12	5.9	6.95	6.93
Returns in rural poverty reduction *(number of poor per million Rs spent)*				
Road investment	1,272	1,346	295	335
Educational investment	411	469	447	109
Irrigation investment	182	125	197	67
Irrigation subsidies	149	68	113	..
Fertilizer subsidies	166	181	48	24
Power subsidies	79	52	83	27
Credit subsidies	257	93	259	42
Agricultural R&D	207	326	345	323

Source: Hazell 2009.
Note: GDP = gross domestic product; R&D = research and development.

*Reprioritize the composition of spending***.** Input promotion during periods of high agricultural productivity in Asia and South America, for instance, addressed systemic constraints to productivity through integrated investments in new technologies, extension support, irrigation, and market linkages. Countries in Sub-Saharan Africa could get a bigger impact within the existing expenditure envelope by rebalancing the composition of public agricultural spending. They could start by moving away from a heavy focus on input subsidies, toward a package of complementary investments. The dividends from investments to strengthen markets, expand and improve soil and irrigation management, and develop and disseminate improved technologies can be enormous.[90] For instance, investment of US$1 in agricultural research, on average, generates a stream of future benefits equivalent to US$10 (in net present value terms).[91] The benefits from investments in irrigation are potentially high—with returns in Sub-Saharan Africa ranging from 17 percent on large-scale schemes to 43 percent for small-scale schemes. Finally, US$1 spent on a set of high-impact nutrition interventions can generate, on average, US$18 worth of economic returns.[92] The lesson from regions that have transformed their agriculture sectors is that addressing the quality of public spending and the efficiency of resource use is even more important than addressing the level of spending.

90 Goyal and Nash (2017).
91 Alston, Pardey, and Rao (2021).
92 You et al. (2011).

Several countries that have also implemented changes to improve the efficiency and effectiveness of input subsidy programs hold lessons for the way forward. In many Sub-Saharan African countries, input subsidies accounted for a large share of public spending on agriculture (crowding out more productive public investments).[93] The subsidies have focused primarily on major cereals, which has limited the diversification needed to improve nutritional outcomes and climate resilience (see box 2.4 for an example from Senegal). Countries have replaced public with private procurement and delivery mechanisms, and even put in place electronic delivery systems (that is, e-vouchers) for subsidies (as in Nigeria). The evidence from Zambia, which rolled out its e-voucher system in 2017, shows that this subsidy delivery mechanism created about 23,000 jobs in small, rural agro-dealerships as opposed to traditional input delivery mechanisms that rely on a few large input suppliers. The e-voucher system was also more cost-effective in its service delivery mode, crowded in more private sector participation in input distribution and marketing, and promoted agricultural diversification (in addition to fertilizer and maize seeds, farmers could redeem the e-vouchers for other farm inputs for a range of crops and veterinary drugs and dip chemicals), thus contributing to more climate resilient production systems. If implemented well, the system has the potential to ensure efficient use of fiscal resources through reduction in procurement, distribution, and other administrative costs. Spending fewer fiscal resources on managing farmer input support programs would make resources available to help farmers in other ways, such as scaling up extension services, research, irrigation development, mechanization, and rural feeder roads.[94]

BOX 2.4: Agricultural Policy Transformation toward Crop Diversification in Senegal

Since 2000, Senegal's agricultural policies have been premised on supporting a move from smallholder family agriculture toward industrial, commercial, and competitive agriculture. Price support measures and fiscal subsidies on variable inputs and on-farm capital inputs were revamped following the 2007–08 world food price crisis, when an input subsidy scheme was reintroduced within the framework of the cereal (mainly rice) self-sufficiency policy.[a] In 2014, more ambitious policies for the agriculture sector were introduced under Senegal's new flagship program, the Programme d'accélération de la cadence de l'agriculture sénégalaise (Program of Acceleration of the Rate of Senegalese Agriculture (PRACAS)). One of its main objectives is to accelerate agricultural diversification away from groundnut production, which then accounted for around 40 percent of cultivated land and had long dominated the rural economy.[b]

Key drivers behind this diversification effort were the decline in world demand for groundnuts—a vital product for farmers' incomes and food security in Senegal—which resulted in significant losses for domestic producers and rising concerns about natural resource degradation, such as soil depletion.[c] The priority commodities for diversification under PRACAS are rice, onions, and off-season fruits and vegetables. The horticultural sector, in particular, has expanded rapidly over the past decade, with Senegal moving into the production of high-value niche products such as tomatoes, butternut squash, peppers, and sweet potatoes, which have significant export potential, especially for European markets.[d]

93 About 23 percent of budgets on food and agriculture in Sub-Saharan Africa were spent on input subsidy programs during 2004–18, with high variability between countries (Pernechele et al. 2021). In Zambia, the government spent about 44 percent of its public agricultural spending on fertilizer subsidies, and in Malawi this figure was about 52 percent in 2014, yet, both countries have seen increasing food insecurity and stagnant staple crop yields over the period in which the subsidies have been increasing. At the same time, both countries suffer from low levels of spending on climate resilient agricultural research and extension services, and investments in irrigation (only 3 percent of arable land in Zambia has some form of irrigation), rural roads, and post-harvest storage and processing—that is, the biggest source of food waste in Sub-Saharan Africa (Goyal and Nash 2017).

94 World Bank (2021b).

BOX 2.4 *Continued*

While input subsidies and price interventions still remain in place, Senegal's agricultural policy now targets a broader spectrum of agricultural crops beyond groundnuts. Budget transfers specific to rice, fruits and vegetables, and other cereals, such as maize and millet, have increased significantly in recent years. Another strategic axis of PRACAS focuses on knowledge-generating activities, as well as training and extension. Public expenditure on these services, along with those targeting the provision of agricultural infrastructure (such as roads and irrigation) has also increased since 2010, while input subsidies have declined.[e] In this sense, the Senegalese experience represents a good practice, whose effects are yet to be fully assessed, of reforming input subsidies and public spending in favor of agricultural diversification.

[a] Baborska (forthcoming).
[b] Kray et al. (2018).
[c] Kray et al. (2018).
[d] World Bank (2018b).
[e] Baborska (forthcoming).

Promote input and output market competition. A shift from distorting forms of agricultural producer support (for example, price incentive measures and subsidies) to well-targeted and productivity-enhancing government support that reduces negative environmental impacts would require complementary actions that: (1) remove distorting policies, (2) foster more competitiveness in domestic and foreign agricultural and food markets, and (3) strengthen safety nets to protect consumers from potential increased vulnerability to global market shocks. Improvement of the policy environment through trade and regulatory policy reforms complements spending, by enhancing the incentives for producers and innovators to take advantage of public goods that crowd in private investment. Coherence across fiscal tools is essential to avoid a costly and inefficient policy mix. Reallocating resources to the provision of public goods and services for agriculture, such as technology, R&D, training, infrastructure, climate adaptation, and risk management tools, including market information systems,[95] can drive agricultural transformation—a key for food security and nutrition. Finally, strategies to repurpose agricultural producer support must account for smallholder farmers (especially women)—as they have an important role in addressing food security and engineering a shift to healthier, more efficient, equitable, and sustainable food systems.[96]

Some policies implemented to specifically address food security can distort output markets and absorb excessive fiscal resources if they are not efficiently managed. For instance, Strategic Grain Reserves are considered instrumental in coping with emergency food crisis; however, they can become distortive and extremely costly if used to support farmer prices. In Zambia, over US$36 million was allocated to finance the Food Reserve Agency grain reserve operations in 2020. The Agency's price stabilization policy has been shown to adversely impact the private sector; to have depressed investments in the maize sector, depleting long-term productivity growth; and (together with a large input subsidy program) to have fostered maize specialization with

95 For instance, the FAO's Global Information and Early Warning System (GIEWS).

96 Small farms account for 84 percent of farms worldwide, and they produce nearly 35 percent of the world's food (Lowder, Sánchez, and Bertini 2021). Women account for 37 percent of the rural agricultural workforce worldwide, and that share is up to 48 percent for low-income countries (FAO 2020a).

negative effects on crop and dietary diversification. Consequently, Zambia suffers increasing malnutrition and food insecurity despite possessing consistent, large maize surpluses. The situation is similar in Zimbabwe.[97]

The current agricultural support policies that are prevalent across countries in the region are blunt tools to address the challenges of food security and nutrition as well as climate change adaptation. On the back of very limited fiscal space, shifting agricultural policies toward investments that facilitate the adoption of productivity-enhancing and emissions-reducing technologies for agri-food systems can lead to massive gains for the people and the planet.[98] The need for repurposing agricultural policies and spending was considered an action item in the Joint Ministerial Declaration and Action Agenda that was issued following the Joint Virtual Meeting of the African Ministers Responsible for Agriculture, Trade and Finance on the Impact of COVID-19 on Food and Nutrition Security in Africa in July 2020. The Joint Ministerial Declaration recognizes that fiscal policy and investment response strategy require repurposing existing public resources to support essential public services such as climate adaptation, while addressing existing policy distortions. Countries such as Zambia and Sierra-Leone are currently making big strides to implement this agenda.

*Invest to build resilience to climate change***.** Reprioritized public resources for agriculture and food systems should place food systems on a more efficient and resilient development pathway that is aligned with the formulation of robust nationally determined contributions under the Paris Agreement, while leveraging private sector financing.[99] Recent evidence shows the benefits arising from repurposing the equivalent of 1 percent of farm output value from the current government support for agriculture to invest in productivity-enhancing and emissions-reducing technologies—more specifically, R&D oriented to the generation of green innovations.[100] Simulations show that relative to business-as-usual scenarios, global real income would be 1.6 percent higher in 2040 thanks to large efficiency gains, while global extreme poverty would drop by 1 percent. Finally, emissions from agriculture will decline by more than 40 percent between 2020 and 2040, while 105 million hectares of agricultural land would be released for restoration to natural habitats.[101]

These findings suggest a greater public sector support to the adoption of climate-smart and regenerative agricultural practices. In Tanzania, for instance, existing climate-smart agriculture plans had near to zero impact in the field due to lack of public funding. The country's cost of inaction in agriculture has been conservatively estimated at $1.41 billion by 2040.[102] Hence, a shift to these improved agronomic practices requires a series of complementary actions, such as investments in R&D (technology, seed quality, animal feed), modernization of extension services, enhanced access to credit and other capital goods (for example, machinery), as well as development mechanisms to improve the uptake and promotion of climate-smart

97 World Bank (2021g).

98 Gautam et al. (2022).

99 If current government practices to support agriculture and food consumption remain "business as usual," emissions from agricultural production may double by 2040, and an additional 56 million hectares of new land would be converted to agriculture between 2020 and 2040 (Gautam et al. 2022).

100 In this scenario, a portion of current domestic support would be repurposed for increased spending on green innovations; that is, the development, diffusion, and adoption of new technologies that both reduce emissions and boost productivity. The remainder would be returned to taxpayers and would be potentially available to deliver as non-distorting transfers to producers and other stakeholders. This could be used to compensate them for potential losses due to this reform, and to spend on rural infrastructure and other essential public goods and services that foster agricultural and rural development (Gautam et al. 2022).

101 Gautam et al. (2022).

102 World Bank and FAO (2022), https://openknowledge.worldbank.org/handle/10986/37991.

agriculture.[103] Another proven effective area of public investment to strengthen resilience to climate change is the development of regional early warning information systems (on weather or pests, for instance) and digital climate advisory services. Such tools help farmers adapt and build resilience to weather variability and climate change by receiving timely and site-specific agronomic recommendations. They enable beneficiaries to better manage risks and reduce uncertainties that often constrain decision-making.

Beyond fostering sustainable productivity despite more extreme weather, investing in agricultural climate change adaptation increasingly matters for peace and stability. In a drier environment that does not allow for sedentary livestock, pastoralist move their herds according to the availability of water and pasture. Tensions around natural resource availability are a major cause of conflict in Sub-Saharan African pastoralists communities. Examples of successful interventions addressing both livestock development and natural resource management exist and can be built upon, as witnessed by a pilot conducted in the disputed Abyei area of South Sudan.[104] In Burkina Faso, Chad, Mali, Mauritania, Niger, and Senegal, the Regional Sahel Pastoralism Support Project (PRAPS) protects pastoral systems by improving resource management and animal health, facilitating access to markets, diversifying sources of income for pastoral households, and managing conflicts.

BOX 2.5: Building Climate Resilient Food Systems

Securing long-term per capita food production growth in Sub-Saharan Africa is becoming increasingly harder with more frequent weather-induced setbacks. As a result of climate change, farming systems, food production, and import dependency can be expected to change significantly. Without further action, Sub-Saharan Africa is projected to surpass Asia as the most food insecure region in the world, with 40-50 percent of people being undernourished by 2080. Adapting Africa's food system to climate change is not a choice but an imperative. Food security deteriorates by 5-20 percent with each flood or drought, while the region experiences a 1.4 percent reduction in food calories per year from key food security crops.[a] To help food systems adapt, adequate investments and policies are needed in the agriculture sector to raise productivity, improve resilience, and boost the efficiency of resource utilization.

Financing climate change adaptation in agriculture and food systems will be more cost-effective than financing increasingly frequent and severe crisis response, disaster relief, and recovery pathways. Estimates suggest that the future cost of climate inaction may be as high as US$201 billion, while the cost of adaptation (for example, public investment in research and development, water, infrastructure, sustainable land management, and climate information) is only US$15.5 billion. Scaling up climate-smart agriculture is a key lever for sustainable growth and fostering resilience. The leading adaptation policies for food systems are well defined on technical grounds, build on evidence, and are cost-effective.[b] Cost-effectiveness estimates of priority public sector investments are presented in figure B2.5.1.[c] They comprise public policy solutions, food value chain and livelihood solutions, and on-farm and productive landscapes solutions.

103 Box 2.5 highlights the cost-effectiveness of climate adaptation policies in agriculture.
104 Eliste et al. (2022).

BOX 2.5
Continued

While its levels currently fall far short of the needs, leveraging climate finance for African agriculture is an opportunity to mitigate climate change, improve adaptation, and increase economic gains for farmers. Climate finance includes local, national, and international financial flows that can stem from public, private, or blended sources and are directed toward low-carbon and climate-resilient development interventions with direct and indirect greenhouse gas mitigation and adaptation benefits.[d]

FIGURE B2.5.1: Estimates of the Cost-Effectiveness of the Priority Public Sector Investments

Source: Global Center on Adaptation, The State and Trends in Adaptation Report 2021: Africa.

Total annual climate finance flows in Africa are estimated at US$30 billion, compared to an estimated need of US$250 billion to implement Africa's nationally determined contributions.[e] Approximately 7 percent of the flows were tracked to adaptation of the agriculture sector in Africa,[f] a strikingly low share compared to the sector's needs and economic weight. Yet, opportunities and innovations to make climate finance work for agriculture are well documented.[g]

The growing momentum on climate adaptation policies for agri-food systems in the region needs to go further to support small-scale producers who are at the core of building the resilience of African rural communities. Increasing and targeting flows of capital to these farmers, pastoralists, fishers, and small businesses will require designing new financing mechanisms and overcoming long-standing technical, policy, and institutional barriers.

a Kray et al. (2022).
b World Bank (2020b).
c Global Center on Adaptation (2021).
d World Bank (2021e); CPI (2022); UNFCCC (2019).
e Climate Policy Initiative, 2022, https://www.climatepolicyinitiative.org/publication/climate-finance-needs-of-african-countries/.
f Climate Policy Initiative, 2022, https://www.climatepolicyinitiative.org/gca-africa-adaptation-finance/sectors/agriculture/.
g Sadler (2016); World Bank (2021e).

In sum, reallocating expenditures from inefficient and/or ineffective input subsidies and state marketing programs to resilience-building investments in public goods, such as climate-smart technologies, R&D and extension, and irrigation and transport infrastructure, could bring major food security gains and promote the efficient use of scarce public resources.[105]

105 This includes the opportunity to repurpose traditional input subsidies into more cost-efficient safety nets to protect the vulnerable from food insecurity.

B. Increasing Intraregional Trade to Strengthen Food Security

Trade affects several dimensions of food security through its effects on incomes, prices and inequality, supply stability, linkages between food deficit and food surplus areas, food safety, and food quality and variety, among others. In this context, the local, regional, and global trade policy architecture is an essential part of the food security ecosystem. If it is properly designed, trade policy plays an important role in ensuring long-term food security by signaling the proper incentives for agricultural production. Efforts to support food security in Sub-Saharan Africa require reforming trade and investing in trade facilitation and market information systems at the local, regional, and global levels.

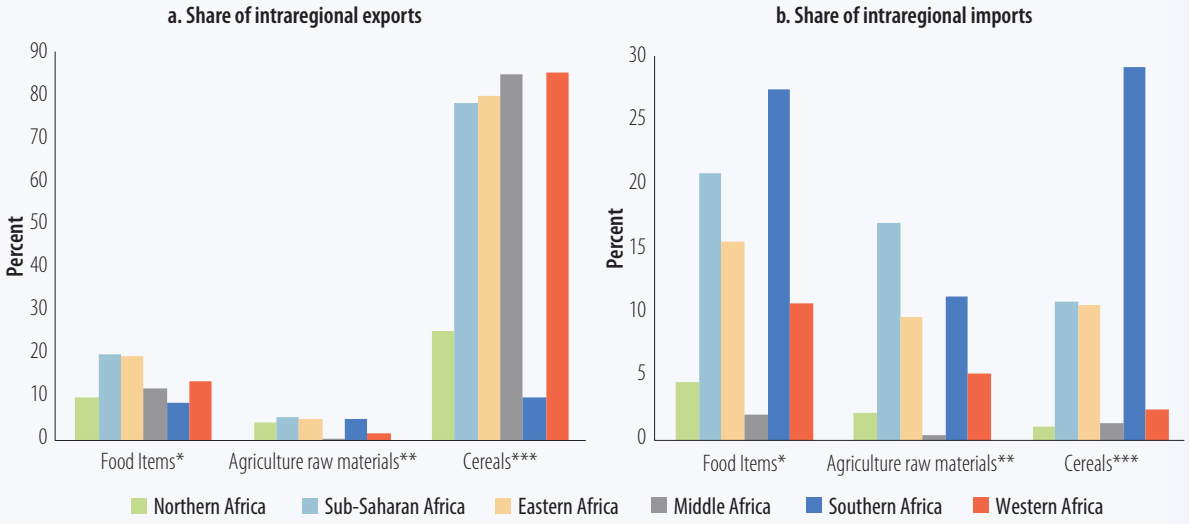
Sub-Saharan Africa has remained a net importer of agricultural products over the past decades despite its immense agricultural potential. Many countries in the region import basic foodstuffs (dairy products, meat and meat products, edible oils and fats, and cereals) to meet the growing consumption needs of their population. In 2020, food imports in Sub-Saharan Africa amounted to US$44 billion, with the import bill growing at an annual average rate of 3.9 percent over the past decade. Food imports are largely provided by trading partners outside the continent. Intraregional food trade may offer a unique opportunity to strengthen Sub-Saharan Africa's ability to ensure food security. The AfCFTA, which officially started in January 2021, aims at tripling trade in agricultural goods within the region by 2025 and enhancing the continent's food security through regional supply chains and greater intra-Africa trade.

Fostering regional and trade integration within Sub-Saharan Africa offers a unique opportunity to enhance the resilience of food systems to international market shocks. However, the intensity of trade linkages among countries in the continent remains low, partly due to transport, infrastructure, and connectivity issues. Intraregional trade in agricultural products as a percentage of Africa's total agricultural trade remains below 20 percent, one of the lowest in the world (figure 2.11). Regional trade in agricultural raw materials is even much lower. Deepening regional trade and integration would enable trade to play its rightful role in improving food security and facilitating more efficient allocation of resources for agricultural production. Increased movement of food commodities will increase food availability in deficit areas and help improve food security.

Deepening regional trade in agriculture and agricultural inputs would strengthen Africa's agri-food market resilience to price and supply shocks. Volatility in domestic food supply is a key driver of price and supply shocks, while agricultural production tends to be more stable at the regional than the country level. Hence, greater integration of regional food markets helps absorb the shocks better than smaller national markets. By providing economies of scale, regional food trade also reduces the unit cost of marketing and distributing food—and constitutes an additional incentive for private and public agents to invest in transport and other trade logistics that facilitate the flow of goods and inputs within and across borders.

Intraregional trade of agriculture products in Sub-Saharan Africa is one of the lowest in the world.

FIGURE 2.11: Share of Intraregional Trade in Food Items, Cereals, and Agricultural Raw Materials



Source: World Bank staff elaboration based on UNCOMTRADE database, 2022.
Note: SITC = Standard International Trade Classification.
* All food items (SITC 0 + 1 + 22 + 4).
** SITC 2 less 22, 27 and 28.
*** Includes wheat, rice, maize, cereals preparation, other cereal meals, and flour. The shares were calculated for 2021.

African policy makers have the opportunity to leverage existing regional trade agreements and the AfCFTA to build a strong infra-Africa food market. RECs and the more recent AfCFTA provide the much-needed platform to coordinate investments in regional infrastructure, reduce tariff and non-tariff barriers, and harmonize and simplify regulatory and institutional procedures—mainly, sanitary and phytosanitary measures and other non-tariff measures that restrict food trade. Agriculture and food exports are expected to grow by as high as 80 percent following the implementation of the AfCFTA, while agricultural intra-Africa trade is expected to rise by 49 percent.[106] Regional trade in agriculture and food faces the highest non-tariff barriers, including sanitary and phytosanitary restrictions as well as other technical barriers to trade. RECs and the AfCFTA can provide a regional platform to eliminate, when possible, and to harmonize and standardize non-tariff barriers when necessary, to promote intraregional trade and expand trade with the rest of the world.

Intraregional trade in Africa has been driven by an expansion of trade within rather than across RECs.[107] Although intra-Africa trade is low compared to other regions of the world, trade within each REC is high for many of the subregional trading blocs. This presents an opportunity for RECs to play a role in enhancing regional markets. These communities can formulate and implement actionable policies to boost agricultural output and productivity, integrate smallholder farmers into regional value chains, lead research in major food crops, and provide assistance in the development of regional food markets.[108] For instance, key commodities have already been

106 World Bank (2020a).
107 The lower tariffs implemented after the creation of the RECs significantly increased trade flows within subregions—although the effects were uneven across the RECs.
108 The overlapping membership across RECs could complicate instead of facilitate trade relationships among countries in the region.

identified for further development into regional value chains among RECs in East Africa (rice, beans, and dairy), West Africa (sorghum, livestock, fish, and aquaculture products), and Southern Africa (soybeans and groundnuts).[109]

A predominant share of African food trade is informal and small scale. High import and export duties, restrictive institutional and regulatory procedures, and the associated higher costs of formal food trade crowd out such trade from the formal trade channels. Reducing these costs could crowd in informal traders into predictable and traceable trade. Regions should facilitate free movement of REC nationals as is already implemented in the Economic Community of West African States and the East African Community (EAC) to promote food trade and streamline informal trade into formal channels.

Investments in regional trade facilitation are also essential to build resilient regional food systems. Deploying resources to behind-the-border and at-the-border trade facilitation is needed to reduce the cost of trading agricultural products and inputs. Removing tariffs not only reduces direct costs, but also eliminates the associated need for documentary requirements. Among non-tariff barriers, the most restrictive measures include sanitary and phytosanitary measures; pre-shipment inspections and formalities; contingent trade protective measures; licensing, quotas, and prohibitions; and price controls.[110] In addition, inefficient cross-border transactions, cumbersome customs processes and documentation requirements, poor coordination between customs agencies, and the associated delays impose significant costs, especially on small and medium-sized traders. In 2020–21, about 75 percent of the registered complaints by Common Market for Eastern and Southern Africa, EAC, and Southern African Development Community traders and businesses were related to customs and administrative entry procedures and transport, clearing, and forwarding, while only 3 percent of the complaints were related to import tariffs.[111]

Digital technologies could play a critical role in providing market information to small farmers and retailers and eliminating the cumbersome documentation requirements and inspection and clearance processes that often curtail the seamless movement of agricultural goods and inputs. Investments in shared one-stop border posts; strategic collaboration between members to address the specific challenges associated with differences in regulations and customs procedures across borders; as well as concerted effort and investment in regional infrastructure including roads, payment systems, and electronic transaction facilities are essential to foster agricultural productivity as well as enhance food security. The introduction of an electronic cargo tracking system in the EAC has reduced delays by avoiding multiple customs stops, requiring finalization of customs procedures only once across the EAC.

Enhancing market information systems is essential to connect small producers to markets. Small-scale farmers often account for a significant share of the total agricultural output in Africa.[112] Yet, due to the prohibitively high transaction costs, lack of market information, poor contract enforcement, and absence of quality grading and standards, a large share of smallholder

109 Haile-Gabriel (2021).
110 Kee and Nicita (2016).
111 COMESA-EAC-SADC (2021).
112 In Ethiopia, for example, small-scale farmers produce around 95 percent of total agricultural output.

farmers sell their production in local and informal markets.[113] Policies to strengthen local and regional market information systems by investing in connective infrastructure, financial services, warehouses, provision of reliable and timely information to farmers about prices, and standards and grades would bring a large share of production into the market and benefit small-scale producers. The Tanzania Mercantile Exchange and the Ethiopian Commodity Exchange provide successful case studies of platforms that reduce market information asymmetry in prices and product grades and simplify exchange. By availing the whole gamut of infrastructure required for trade, including warehousing, transportation, quality accreditation, telecom, insurance, and financial services, and supported by digital technologies, these commodity exchanges connect small-scale farmers to local, regional, and global markets, eliminating the need for middlepersons and traders.

The international community has a role to play in facilitating the free flow of agricultural products and inputs across borders. The World Trade Organization (WTO) and other multilateral organizations can play a role in limiting distortionary trade policies and fostering a fairer and more effective trading system. Trade policy plays a significant role in alleviating the impacts of excessive volatility of food and input prices, as well as the impacts of supply shocks in agricultural commodities and key agricultural inputs on domestic food security. In the wake of a food crisis of price spikes, exporters often react by restricting exports, and importers tend to encourage imports of food. These individually imposed restrictions on the trade of food and agricultural inputs would worsen the situation by further increasing staple food prices for many African countries, which depend significantly on the global food market. In this regard, there is a role for the WTO and other multilateral organizations to enforce rules so that trade policy is part of the solution and not the problem, both in the immediate short term and over the long term. In the immediate term, there is a need to ensure that large suppliers of food and agricultural inputs refrain from measures to restrict exports.

Finally, there is the need to fix the international trade architecture in agriculture over the medium to long term. Global trade in agriculture remains highly distorted to the detriment of food security and production in many African countries.[114] The WTO Agreement on Agriculture recognizes the importance of addressing agricultural trade imbalances, but progress in negotiations and enforcing existing decisions has stalled.[115] The substantial policy space in trade-distorting support policies availed by the WTO to developed economies continues to have adverse effects on the agricultural production and food security of African countries—with many increasingly becoming dependent on imports of agricultural products that are highly subsidized in developed economies. In addition to addressing this imbalance, there is a need to strengthen the special and differential treatment for developing country members, especially net food importing African countries.

113 Of those households selling crops, the percentage that do so through informal channels is 99 percent in Ethiopia, 73 percent in Ghana, 100 percent in Malawi and Nigeria, and 98 percent in Tanzania (FAO 2015).

114 IMF, WTO, and World Bank (2022).

115 At the Nairobi Ministerial Conference in 2015, the trade ministers adopted a historic decision abolishing agricultural export subsidies and setting new rules for other forms of farm export support. But progress on implementation has stalled.

C. Transforming Food Systems to Help Accelerate Economic Transformation[116]

Policy attention is usually paid to transformation of upstream food systems,[117] growth of food exports and imports through trade liberalization and globalization,[118] and growth of input markets (water, land, and improved seeds),[119] as well as downstream transformation in the domestic food system (the supermarket revolution, dietary diversification, and so on).[120] A neglected dimension is the fast transformation of the midstream segments of agri-food value chains—that is, the segments that intermediate between agricultural producers and the rising population of urban consumers. The midstream segments encompass the entire post-farmgate range of processing, storage, transport, wholesaling, retailing, food service, and other functions that transform agricultural goods produced by farmers on a daily basis. This is not a policy area that should be ignored as it accounts for 30 to 40 percent of the value added and costs in food value chains, and has a large job-multiplier effect.[121] It also has large potential nutritional outcomes by increasing the range of available nutrients for consumers. One example is the development of feed value chains, which can create value for crop byproducts while increasing the availability of animal proteins.

Transformation of the midstream segments of the agricultural value chains typically takes place along with industrial and agrarian revolutions. New equipment and products as well as enhanced management practices improve the quality and reduce the cost of processing, storage, transport, retail, and food services. In turn, these innovations lead to greater quality and declining prices of food, which permit entry into new markets and ignite greater investments, economic growth, and higher off-farm employment. In developing countries, the agri-food value chain is an entry point for foreign investments and technology transfers, and a potential employer at a larger scale (relative to the farm sector) as economies grow. This transformation of midstream intermediaries (transporters, cold storage providers, and millers, among others) is already taking place in poorer African and Asian countries.[122]

The growth and transformation of agri-food value chains has been tightly linked to rising income per capita and urbanization. As incomes increase, there is greater demand for: (1) more nutritious and perishable vegetables, fruits, and animal-sourced foods; (2) food away from home offered by restaurants and prepared and processed foods (especially frozen or refrigerated)[123]; and (3) nonnutritive quality attributes (appearance, safety, storability, taste, variety, environmental, or social attributes related to the production process).[124] This also holds for rural areas, where agricultural households are buying an increasing share of the food they consume. For instance, rural households in AFE purchased 44 percent (in value terms) of the food they consumed.[125]

116 This subsection draws heavily from Barrett et al. (2021), Barrett et al. (forthcoming), and Reardon (2015).
117 Pingali and Rosegrant (1995).
118 Anderson et al. (1997).
119 Rosegrant, Gazmuri Schleyer, and Yadav (1995); Deininger and Feder (2001); Pray and Naseem (2007).
120 Reardon et al. (2003); Pingali (2006); Popkin (2014); Barrett et al. (forthcoming).
121 Reardon et al. (2012).
122 Reardon (2015); Barrett et al. (forthcoming).
123 Ma et al. (2006).
124 Ortega et al. (2011).
125 Tschirley et al. (2015).

The midstream segments of the value chain have grown more important with the spatial intermediation resulting from rising urbanization. The pattern of urbanization in developing countries—characterized by more high-density megacities—represents an opportunity for the growth in retail and food service to meet the urban food demand.[126]

The agricultural value chain transformation has also been supported by public investments in hard and soft rural infrastructure—including roads, toll highways, and train and bus routes.[127] Investing in wholesale market infrastructure is also essential, along with strengthening commercial regulations and public standards, including sanitary ones.[128] The transport infrastructure deficit (in quantity and quality) in the region combined with poor public services (including marketplaces and logistics services, among others) may also slow down the transformation of food systems.[129] Investments to expand access to and improve the reliability of electricity services are needed for the processing of some agricultural products, with innovations in the renewable energy sector as an additional option. Private sector investments are also required from small and medium-sized operators, including truckers, warehouse owners, millers, cold storage operators, wholesale traders, and rural brokers.

Outward oriented policy reforms such as the unilateral liberalization of foreign trade and investments have an impact on agri-food value chains. In low- and middle-income countries, the agri-food sector's participation in global value chains (GVCs) has increased with the growing diversity of suppliers.[130] GVCs in this sector involve not only the penetration of foreign direct investment, but also transfer of management/business practices and skills (contracting, logistics, and so forth).[131] Still, most food products—and especially processed foods—are not internationally traded but are consumed in the country that manufactures them.[132] Therefore, the policy agenda should also focus on strengthening domestic value chains (DVCs) in agri-food systems across countries in the region.[133] DVCs can benefit from spillovers arising from GVCs through the transfer of technological innovations and exporting firms' best practices (for example, international standards).[134] In Madagascar, farmers utilized better soil and water management practices introduced by fresh vegetable exporters' extension agents to raise livestock and rice output for domestic markets.[135] Investing in infrastructure for the agriculture traded sector—for instance, rural feeder roads and aggregation market places—has the potential to speed up the development of DVCs.[136]

126 Reardon and Timmer (2014).

127 For instance, investments in roads and bridges in Ethiopia and Mozambique (Minten et al. 2016; Zant 2017).

128 Reardon et al. (2012).

129 OECD/SWAC (2021).

130 Greenville, Kawasaki, and Jouanjean (2019).

131 In countries with agri-food sectors that are less open to foreign investments (for example, South Africa), progress in the midstream of the value chain has been slower.

132 Worldwide, less than one-quarter of the food produced is traded across countries (d'Odorico et al. 2014).

133 DVCs can be operated by domestic or multinational firms and have linkages across different functions of the supply chain. However, local SMEs have a larger share of the domestic food market in Africa. For instance, the share of supermarket food sales by locally owned chains is 52 percent in the region (Barrett et al., forthcoming).

134 Feyaerts, van den Broeck, and Maertens (2019).

135 Minten et al. (2007); Bellemare (2012).

136 Theriault and Tschirley (2014).

The quiet revolution among the midstream intermediaries of the agri-food value chain involves increasing the use of logistics and business services, with significant consequences for food consumers, farmers, and the middlepersons (for instance, wholesalers, processors, third-party logistics service providers, and retailers) that facilitate product delivery among them.[137] Fast changes experienced by processing and trading systems as well as firm organizational modes will provide an opportunity for farmers to access (domestic and global) higher value markets while meeting higher standards in their products.[138] An illustration of these changes can be found in the growth of midstream intermediaries in the *teff* value chain in Addis Ababa, Ethiopia. The transformation of this value chain has resulted in higher quality teff flour and *enjera* (flatbread) rather than the sale of unmilled, cheaper red teff that households then clean and mill themselves. In turn, it led to the multiplication of mills/retailers (typically SMEs) and enjera-producing enterprises as well as a greater demand for tracking services for delivery at scale in more distant cities.[139] Analogous changes have materialized in the *maize* value chain in Nigeria, with rising growth in wholesaling to supply feed and flour mills, which has led to a massive increase in transportation and warehouse services.[140]

Finally, agri-food systems are also vulnerable to systemic shocks—such as extreme weather events, internal and external wars, as well as pandemics.[141] Amid the COVID-19 pandemic, value chain intermediaries adapted fast by switching among subsector-specific chains and service modes.[142] For instance, processors expanded retail-oriented packaging for food service clients while cutting wholesale packaging.[143] The pandemic crisis triggered technological and organizational innovations that may stay for good. For instance, farmers and processors are adopting new approaches to boost worker safety and firm resilience. In Nigeria, chicken processors have organized dedicated bus transport for workers and socially distanced shifts at factories.[144] Managing catastrophic systemic risks to agri-food systems may require greater diversification and flexibility of their production, sourcing, processing, and distribution patterns. However, these changes may come with efficiency costs.

137 Greenville, Jouanjean, and Kawasaki (2019).
138 Aksoy and Beghin (2005).
139 Minten et al. (2016).
140 Liverpool-Tasie, Adjognon, and Reardon (2017).
141 Gomez et al. (2021).
142 Varshney, Roy, and Meenakshi (2020); Lowe, Nadhanael, and Roth (2021).
143 Aday and Aday (2020).
144 Swinnen and McDermott (2020).

Appendix: Country Classifications

TABLE A.1: Country Classification by Resource Abundance in Sub-Saharan Africa

Resource-rich countries		Non-resource-rich countries		
Oil	Metals & minerals			
Angola	Botswana	Benin	Gambia, The	São Tomé and Príncipe
Chad	Democratic Republic of Congo	Burkina Faso	Ghana	Senegal
Republic of Congo	Guinea	Burundi	Guinea-Bissau	Seychelles
Equatorial Guinea	Liberia	Cabo Verde	Kenya	Somalia
Gabon	Mauritania	Cameroon	Lesotho	Sudan
Nigeria	Namibia	Central African Republic	Madagascar	Tanzania
South Sudan	Niger	Comoros	Malawi	Togo
	South Africa	Côte d'Ivoire	Mali	Uganda
	Sierra Leone	Eritrea	Mauritius	Zimbabwe
	Zambia	Eswatini	Mozambique	
		Ethiopia	Rwanda	

Note: Resource-rich countries are those with rents from natural resources (excluding forests) that exceed 10 percent of gross domestic product.

TABLE A.2: West and Central Africa Country Classification

Resource-rich countries		Non-resource-rich countries	
Oil	Metals & minerals		
Chad	Guinea	Benin	Gambia, The
Equatorial Guinea	Liberia	Burkina Faso	Ghana
Gabon	Mauritania	Cabo Verde	Guinea-Bissau
Nigeria	Niger	Cameroon	Mali
Republic of Congo	Sierra Leone	Central African Republic	Senegal
		Côte d'Ivoire	Togo

Note: Since July 2020, for operational purposes, the World Bank Africa Region has been split into two subregions—West and Central Africa and East and Southern Africa. The analysis in this report reflects this setup. Resource-rich countries are those with rents from natural resources (excluding forests) that exceed 10 percent of gross domestic product.

TABLE A.3: East and Southern Africa Country Classification

Resource-rich countries		Non-resource-rich countries	
Oil	Metals & minerals		
Angola	Botswana	Burundi	Mozambique
South Sudan	Democratic Republic of Congo	Comoros	Rwanda
	Namibia	Eritrea	São Tomé and Príncipe
	South Africa	Eswatini	Seychelles
	Zambia	Ethiopia	Somalia
		Kenya	Sudan
		Lesotho	Tanzania
		Madagascar	Uganda
		Malawi	Zimbabwe
		Mauritius	

Note: Since July 2020, for operational purposes, the World Bank Africa Region has been split into two subregions—West and Central Africa and East and Southern Africa. The analysis in this report reflects this setup. Resource-rich countries are those with rents from natural resources (excluding forests) that exceed 10 percent of gross domestic product.

References

Aday, S., and M. S. Aday. 2020. "Impact of COVID-19 on the Food Supply Chain." *Food Quality and Safety* 4: 167–80.

Aguiar, M., and G. Gopinath. 2007. "Emerging Market Business Cycles: The Cycle Is the Trend." *Journal of Political Economy* 115 (1): 69–102.

Ajayi, Kehinde; Dao, Aziz; Koussoubé, Estelle. Forthcoming. The Effects of Childcare on Women and Children: Evidence from a Randomized Evaluation in Burkina Faso. Forthcoming Policy Research Working Paper; World Bank

Aker, J. C., & Ksoll, C. (2016). Can mobile phones improve agricultural outcomes? Evidence from a randomized experiment in Niger. Food Policy, 60, 44-51.

Aksoy, M., and J. Beghin. 2005. "Introduction and Overview." IDEAS Working Paper Series from RePEc, Research Division of the Federal Reserve Bank of St. Louis, MO.

Alston, J. M., P. G. Pardey, and X. Rao. 2021. "Rekindling the Slow Magic of Agricultural R&D." *Issues in Science and Technology*, May. https://issues.org/rekindling-magic-agricultural-research-development-alston-pardey-rao/.

Amaglobeli, D., E. Hanedar, G. H. Hong, and C. Thévenot. 2022. "Fiscal Policy for Mitigating the Social Impact of High Energy and Food Prices." IMF Notes 2022/001, International Monetary Fund, Washington, DC.

Amankwah, A., and S. Gourlay. 2021. "Food Security in the Face of COVID-19: Evidence from Africa." LSMS Integrated Surveys on Agriculture, World Bank Group, Washington, DC.

Ambler, K., K. Jones, M. O'Sullivan. 2021. "Facilitating women's access to an economic empowerment initiative: Evidence from Uganda." World Development, 138, 105224;

Anderson, K., B. Dimaranan, T. Hertel, and W. Martin. 1997. "Asia-Pacific Food Markets and Trade in 2005: A Global, Economy-Wide Perspective." *Australian Journal of Agricultural and Resource Economics* 41 (1): 19–44.

Andrews, C., A. de Montesquiou, I. A. Sánchez, P. V. Dutta, S. Samaranayake, J. Heisey, T. Clay, and S. Chaudhary. 2021. *The State of Economic Inclusion Report 2021: The Potential to Scale*. Washington, DC: World Bank Publications.

Bailliu, J., R. Lafrance, and J. F. Perrault. 2003. "Does Exchange Rate Policy Matter for Growth?" *International Finance* 6 (3): 381–414.

Baptista, D., M. Farid, D. Fayad, L. Kemoe, L. Lanci, P. Mitra, T. Muehlschlegel, C. Okou, J. Spray, K. Tuitoek, and F. Unsal. 2022. "Climate Change and Chronic Food Insecurity in Sub-Saharan Africa." Departmental Paper DP/2022/016, African Department, International Monetary Fund, Washington, DC.

Baborska, R. forthcoming. Suivi des politiques agricoles et alimentaires au Sénégal 2021. Rapport d'analyse politique. Programme de Suivi et analyse des politiques agricoles et alimentaires (SAPAA). Rome, FAO.

Barrett, C. B., J. Fanzo, M. Herrero, D. Mason-D'Croz, A. Mathys, P. Thornton, S. Wood, T. G. Benton, S. Fan, L. Lawson-Lartego, R. Nelson, J. Shen, and L. Majele Sibanda. 2021. "COVID-19 Pandemic Lessons for Agri-Food Systems Innovation." *Environmental Research Letters* 16: 101001.

Barrett, C. B., T. Reardon, J. Swinnen, and D. Zilberman. Forthcoming. "Agri-food Value Chain Revolutions in Low- and Middle-Income Countries." *Journal of Economic Literature*.

Bashir, S., M. Lockheed, E. Ninan, and J.P. Tan. 2018. *Facing Forward: Schooling for Learning in Africa*. Africa Development Forum Series. Washington, DC, World Bank/Agence Française de Développement.

Bastian, G., M. Goldstein, and S. Papineni. 2017. "Are Cash Transfers Better Chunky or Smooth? Evidence from an Impact Evaluation of a Cash Transfer Program in Northern Nigeria." Gender Innovation Lab Policy Brief No. 21. World Bank, Washington, DC.

Beegle, K., and L. Christiaensen. 2019. *Accelerating Poverty Reduction in Africa*. Washington, DC: World Bank.

Begazo-Gomez, T., M. P. Blimpo, and M. A. Dutz. 2022. *Inclusive Digital Africa*. Washington, DC: World Bank.

Bellemare, M. F. 2012. "As You Sow, So Shall You Reap: The Welfare Impacts of Contract Farming." *World Development* 40 (7): 1418–34.

Bossuroy, T., M. Goldstein, B. Karimou, D. Karlan, H. Kazianga, W. Parienté, P. Premand, C. C. Thomas, C. Udry, J. Vaillant, and K. A. Wright. 2022. "Tackling Psychosocial and Capital Constraints to Alleviate Poverty." *Nature* 605 (7909): 291–97.

Buller, A. M., A. Peterman, M. Ranganathan, A. Bleile, M. Hidrobo, and L. Heise. 2018. "A mixed-method review of cash transfers and intimate partner violence in low-and middle-income countries." The World Bank Research Observer 33(2): 218-258.

Bundy, D. A. P., N. de Silva, S. Horton, D. T. Jamison, and G. C. Patton. 2018. *Re-Imagining School Feeding: A High-Return Investment in Human Capital and Local Economies*. World Bank, Washington, DC.

Carneiro, P., L. Kraftman, G. Mason, L. Moore, I. Rasul, and M. Scott. 2021. "The Impacts of a Multifaceted Prenatal Intervention on Human Capital Accumulation in Early Life." *American Economic Review* 111 (8): 2506–49.

CGIAR (Consultative Group for International Agricultural Research). 2022. The Future of Animal Source Food: Rising demands in Africa. https://foresight.cgiar.org/blog/the-future-of-animal-source-food-rising-demands-in-africa/

Cherchi, L., M. Goldstein, J. Habyarimana, J. Montalvao, M. O'Sullivan, C. Udry, and A. Gruver. 2019. "Empowering Women through Equal Land Rights: Experimental Evidence from Rural Uganda." Gender Innovation Lab Policy Brief 33, World Bank, Washington, DC.

Cockx, L., L. Colen, and J. De Weerdt. 2018. "From Corn to Popcorn? Urbanization and Dietary Change: Evidence from Rural-Urban Migrants in Tanzania." *World Development* 110: 140–59.

Collier, P., and S. Dercon. 2014. "African Agriculture in 50 Years: Smallholders in a Rapidly Changing World?" *World Development* 63: 92–101.

COMESA-EAC-SADC (Common Market for Eastern and Southern Africa, East African Community, and Southern African Development Community). 2021. *The Mechanism for Reporting, Monitoring & Eliminating Non-Tariff Barriers*. COMESA, EAC, and SADC.

Corral, P., A. Irwin, N. Krishnan, and D. G. Mahler. 2020. *Fragility and Conflict: On the Front Lines of the Fight against Poverty*. Washington, DC: World Bank Publications.

CPI (Climate Policy Initiative) 2022 https://www.climatepolicyinitiative.org/gca-africa-adaptation-finance/sectors/agriculture/

de Hoop, J., V. Groppo, and S. Handa., on behalf of the Malawi Social Cash Transfer Program and the Zambia Multiple Category Targeted Program study teams. 2020. "Cash Transfers, Microentrepreneurial Activity, and Child Work: Evidence from Malawi and Zambia." The World Bank Economic Review 34(3): 670-697.

Deane, G., T. Pattison, and N. Luchoo. 2016. "Land Administration and Valuation Information System (LAVIMS) – Five Years of Operations in Mauritius." Paper prepared for presentation at the "2016 World Bank Conference on Land and Poverty," World Bank, Washington, DC.

Deichmann, U., A. Goyal, and D. Mishra. 2016. "Will Digital Technologies Transform Agriculture in Developing Countries?" *Agricultural Economics* 47 (S1): 21–33.

Deininger, K., R. Awasthi, and W. McCluskey. 2021. "Improving Property Tax Collection in Africa: Technological Opportunities and Regulatory Changes." Background paper for the Africa Regional Land Flagship Report, World Bank, Washington, DC.

Deininger, K., and G. Feder. 2001. "Land Institutions and Land Markets." In *Handbook of Agricultural Economics*, edited by C. Barrett and D. Just. Amsterdam, Netherlands: Elsevier.

Deininger, K., and A. Goyal. Forthcoming. *Land Rights for Resilient and Equitable Growth in Africa*. Africa Region Flagship Series. Washington, DC: World Bank.

Di Pace, F., L. Juvenal, and I. Petrella. 2020. "Terms-of-Trade Shocks Are Not All Alike." IMF Working Paper 20/280, International Monetary Fund, Washington, DC.

D'Odorico, P., J. A. Carr, F. Laio, L. Ridolfi, and S. Vandoni. 2014. "Feeding Humanity through Global Food Trade." *Earth's Future* 2 (9): 458–69.

Donald, A., J. Vaillant, F. Campos, M.E. Cucagna. 2018. Caring about Carework: Lifting Constraints to the Productivity of Women Farmers in the Democratic Republic of the Congo. World Bank, Washington, DC

Drake, L., A. Woolnough, C. Burbano, and D. Bundy. 2016. *Global School Feeding Sourcebook : Lessons from 14 Countries*. Imperial College Press, London, United Kingdom.

Drechsel, T., M. McLeay, and S. Tenreyro. 2019. "Monetary Policy for Commodity Booms and Busts." Presented at the Jackson Hole Economic Policy Symposium, Federal Reserve Bank of Kansas City, MO.

Eberhardt, M., and A. Presbitero. 2021. "Commodity Prices and Banking Crisis." CEPR Discussion Paper 15959, Center for Economic Policy Research, London.

Eliste, P., Forget, V., Veillerette, Be., Rothe, A.-K., Camara, Y., Cherrou, Y., Ugo, E., Deng, S. 2022. Transforming Agriculture in South Sudan : From Humanitarian Aid to a Development Oriented Growth Path. Country Investment Highlights; No.14. Rome, Italy; Washington D.C., United States of America: FAO; World Bank.

Fan, S., A. Gulati, and S. Thorat. 2008. "Investment, Subsidies, and Pro-Poor Growth in Rural India." *Agricultural Economics* 39 (2): 163–70.

FAO (Food and Agriculture Organization). 2015. "A Data Portrait of Smallholder Farmers: An Introduction to a Dataset on Small-Scale Agriculture." FAO, Rome, Italy.

———. 2020a. *FAO Policy on Gender Equality 2020–2030*. Rome, Italy: FAO. www.fao.org/3/cb1583en/cb1583en.pdf.

———. 2020b. *The State of Food Security and Nutrition in the World*. Rome, Italy: FAO.

Feyaerts, H., G. van den Broeck, and M. Maertens. 2019. "Global and Local Food Value Chains in Africa: A Review." *Agricultural Economics* 51: 143–57.

Filmer, D., and L. Fox. 2014. *Youth Employment in Sub-Saharan Africa*. Africa Development Forum. Washington, DC: World Bank.

Franzsen, R., and W. McCluskey, eds. 2017. *Property Tax in Africa: Status, Challenges and Prospect*. Cambridge, MA: Lincoln Institute of Land Policy.

FSIN (Food Security Information Network) and Global Network Against Food Crises. 2022a. *2022 Global Report on Food Crises*. Rome, Italy: World Food Programme. https://www.wfp.org/publications/global-report-food-crises-2022.

FSIN (Food Security Information Network) and Global Network Against Food Crises. 2022b. 2022 Global Report on Food Crises: Mid-Year Update. Rome, Italy: World Food Programme. https://reliefweb.int/report/world/global-report-food-crises-2022-mid-year-update

Gautam, M., D. Laborde, A. Mamun, W. Martin, V. Piñeiro, and R. Vos. 2022. *Repurposing Agricultural Policies and Support: Options to Transform Agriculture and Food Systems to Better Serve the Health of People, Economies, and the Planet*. Washington, DC: World Bank and International Food Policy Research Institute.

Gentilini, U., M. B. A. Almenfi, T. M. M. Iyengar, Y. Okamura, J. A. Downes, P. Dale, M. Weber, D. L. Newhouse, C. P. Rodriguez Alas, M. Kamran, and I. V. Mujica Canas. 2022. "Social Protection and Jobs Responses to COVID-19." World Bank, Washington, DC.

Global Center on Adaptation. 2021. *The State and Trends in Adaptation Report 2021: Africa*. Abidjan, Côte d'Ivoire: GCA Africa.

Gomez, M., A. Mejia, B. L. Ruddell, and R. R. Rushforth. 2021. "Supply Chain Diversity Buffers Cities against Food Shocks." *Nature* 595: 250–54.

Goyal, A., and J. Nash. 2017. *Reaping Richer Returns: Public Spending Priorities for African Agriculture Productivity Growth*. Africa Development Forum. Washington, DC: World Bank and Agence française de développement.

Greenville, J., M.-A. Jouanjean, and K. Kawasaki. 2019. "Value Adding Pathways in Agriculture and Food Global Value Chains: The Role of Services." OECD Trade and Agriculture Directorate Paper TAD/TC/CA/WP(2018)1/FINAL, Organisation for Economic Co-operation and Development, Paris.

Greenville, J., K. Kawasaki, and M.-A. Jouanjean. 2019. "Dynamic Changes and Effects of Agro-Food GVCs." OECD Food, Agriculture and Fisheries Papers No. 119, Organisation for Economic Co-operation and Development, Paris.

Ha, J., M. A. Kose, and F. Ohnsorge. 2021. "One-Stop Source: A Global Database of Inflation." Policy Research Working Paper 9737, World Bank, Washington DC.

Haile-Gabriel, A. 2021. "Agriculture will make or break free African trade." Africa Renewal, United Nations, May. https://www.un.org/africarenewal/magazine/may-2021/agriculture-will-make-or-break-africas-free-trade

Handa, S., D. Seidenfeld, B. Davis, G. Tembo, and Zambia Cash Transfer Evaluation Team. 2016. "The Social and Productive Impacts of Zambia's Child Grant." *Journal of Policy Analysis and Management* 35 (2): 357–87.

Harris, D., and A. Orr. 2013. "Is Rainfed Agriculture Really a Pathway from Poverty?" *Agricultural Systems* 123: 84–96.

Hazell, P. 2009. "The Asian Green Revolution." IFPRI Discussion Paper 00911, International Food Policy Research Institute, Washington, DC.

IMF, WTO, and World Bank (International Monetary Fund, World Trade Organization, and World Bank). 2022. *Subsidies, Trade, and International Cooperation*. Paris: OECD Publishing. https://doi.org/10.1787/a4f01ddb-en.

Jayne, T. S., M. Muyanga, A. Wineman, H. Ghebru, C. Stevens, M. Stickler, A. Chapoto, W. Anseeuw, D. van der Westhuizen, and D. Nyange. 2019. "Are Medium-Scale Farms Driving Agricultural Transformation in Sub-Saharan Africa?" *Agricultural Economics* 50 (S1): 75–95.

Kabundi, A., P. Nagle, F. Ohnsorge, and T. Yamazaki. 2022. "Causes and Consequences of Industrial Commodity Price Shocks." In *Commodity Markets: Evolution, Challenges, and Policies*, edited by J. Baffes and P. Nagle. Washington, DC: World Bank.

Kee, H. L., and A. Nicita. 2016. "Trade Frauds, Trade Elasticities and Non-Tariff Measures." World Bank, Washington, DC.

Kondylis, F., Mueller, V., Sheriff, G., & Zhu, S. (2016) Do Female Instructors Reduce Gender Bias in Diffusion of Sustainable Land Management Techniques? Experimental Evidence From Mozambique. World Development, 78, pp. 436-449

Kose, M. A. 2002. "Explaining Business Cycles in Small Open Economies: How Much Do World Prices Matter?" *Journal of International Economics* 56 (2): 299–327.

Kray, H.A., C. Heumesser, F. Mikulcak, A. Giertz, and M. Bucik. 2018. Productive Diversification in African Agriculture and its Effects on Resilience and Nutrition. Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/942331530525570280/Productive-Diversification-in-African-Agriculture-and-its-Effects-on-Resilience-and-Nutrition

Kray, H., C. Jenane, S. Shetty, A. Braimoh, P. Eliste, and E. W. Mghenyi. 2022. "Adapting Africa's Food System to Climate Change Is an Imperative; It's Time for Action." *World Bank Blogs, Africa Can End Poverty*. https://blogs.worldbank.org/africacan/adapting-africas-food-system-climate-change-imperative-its-time-action.

Kwakwa, V. 2022. "Over 66 Million People Are Food Insecure in Eastern and Southern Africa: Here Is What the World Bank Group Is Doing about It." World Bank, Washington, DC. https://www.zawya.com/en/economy/africa/conflict-climate-change-economic-shocks-deny-over-66mln-africans-food-s1mgqhk1.

Liverpool-Tasie, S., S. Adjognon, and T. Reardon. 2016. "Transformation of the Food System in Nigeria and Female Participation in the Non-Farm Economy (NFE)." In 2016 Annual Meeting, Agricultural and Applied Economics Association, July 31 – August 2, Boston, MA.

López, R., and G. I. Galinato. 2007. "Should Governments Stop Subsidies to Private Goods? Evidence from Rural Latin America." *Journal of Public Economics* 91: 1071–94.

Lowder, S. K., M. V. Sánchez, and R. Bertini. 2021. "Which Farms Feed the World and Has Farmland Become More Concentrated?" *World Development* 142: 105455.

Lowe M., G. V. Nadhanael, and B. N. Roth. 2021. "India's Food Supply Chain during the Pandemic." *Food Policy* 105: 102162.

Ma, H., J. Huang, F. Fuller, and S. Rozelle. 2006. "Getting Rich and Eating Out: Consumption of Food Away from Home in Urban China." *Canadian Journal of Agricultural Economics* 54(1): 101-119.

Malawi Cash Transfer EvaluationTeam. 2018. "Malawi's Social CashTransfer Programme: A Comprehensive Summary of Impacts." Innocenti Research Brief 2018-01. UNICEF Office of Research—Innocenti, Florence, Italy.

Mendoza, E. 1995. "The Terms of Trade, the Real Exchange Rate, and Economic Fluctuations." *International Economic Review* 36: 101–37.

Minten, B., L. Randrianarison and J. Swinnen. 2007. "Spillovers from high-value agriculture for exports on land use in developing countries: Evidence from Madagascar." *Agricultural Economics* 37: 265-275.

Minten, B., S. Tamru, E. Engida, and T. Kuma. 2016. "Transforming Staple Food Value Chains in Africa: The Case of Teff in Ethiopia." *Journal of Development Studies* 52 (5): 627–45.

Ncube, P. 2018. "The Southern African Poultry Value Chain: Corporate Strategies, Investments and Agro-Industrial Policies." *Development Southern Africa* 35 (3): 369–87.

OECD and FAO. 2022. OECD-FAO Agricultural Outlook 2022-2031, OECD Publishing, Paris, https://doi.org/10.1787/f1b0b29c-en.

OECD/SWAC (Organisation for Economic Co-operation and Development and Sahel and West Africa Club). 2021. "Food System Transformations in the Sahel and West Africa: Implications for People and Policies." Maps & Facts No. 4, SWAC/OECD Publishing, Paris. https://www.oecd.org/swac/maps/Food-systems-Sahel-West-Africa-2021_EN.pdf.

Ortega, D.L., H.H. Wang, L. Wu, and N.J. Olynk. 2011. "Modeling heterogeneity in consumer preferences for select food safety attributes in China." *Food Policy* 36 (2): 318-324.

Pernechele, V., F. Fontes, R. Baborska, J. Nkuingoua, X. Pan, and C. Tuyishime. 2021. "Public Expenditure on Food and Agriculture in Sub-Saharan Africa: Trends, Challenges and Priorities." Food and Agriculture Organization, Rome, Italy. https://doi.org/10.4060/cb4492en.

Pingali, P. 2006. "Westernization of Asian Diets and the Transformation of Food Systems: Implications for Research and Policy." *Food Policy* 32: 281–98.

Pingali, P., and M. W. Rosegrant. 1995. "Agricultural Commercialization and Diversification: Processes and Policies." *Food Policy* 20 (3): 171–85.

Popkin, B. M. 2014. "Nutrition, Agriculture and the Global Food System in Low and Middle Income Countries." *Food Policy* 47: 91–96.

Pray, C., and A. Naseem. 2007. "Supplying Crop Biotechnology to the Poor: Opportunities and Constraints." *Journal of Development Studies* 43 (1): 192–217.

Premand, P., and Q. Stoeffler. 2020. "Do Cash Transfers Foster Resilience? Evidence from Rural Niger." World Bank, Washington, DC. https://documents1.worldbank.org/curated/en/281821605039063267/pdf/Do-Cash-Transfers-Foster-Resilience-Evidence-from-Rural-Niger.pdf.

Ralston, L., C. Andrews, and A. Hsiao. 2017. The Impacts of Safety Nets in Africa : What Are We Learning?. Policy Research Working Paper No. 8255. World Bank, Washington, DC.

Rashid, S., P. Dorosh, M. Malek, and S. Lemma. 2013. "Modern Input Promotion in Sub-Saharan Africa: Insights from Asian Green Revolution." *Agricultural Economics* 44: 705–21.

Reardon, T. 2015. "The Hidden Middle: The Quiet Revolution in the Midstream of Agrifood Value Chains in Developing Countries." *Oxford Review of Economic Policy* 31 (1): 45–63.

Reardon, T., K. Z. Chen, B. Minten, and L. Adriano. 2012. *The Quiet Revolution in Staple Food Value Chains in Asia: Enter the Dragon, the Elephant, and the Tiger*. Manila, Philippines: Asian Development Bank and International Food Policy Research Institute.

Reardon, T., and C. P. Timmer. 2014. "Five Inter-Linked Transformations in the Asian Agrifood Economy: Food Security Implications." *Global Food Security* 3 (2): 108–17.

Reardon, T., C. P. Timmer, C. B. Barrett, and J. Berdegue. 2003. "The Rise of Supermarkets in Africa, Asia, and Latin America." *American Journal of Agricultural Economics* 85 (5): 1140–46.

Reinhart, C. M., V. Reinhart, and C. Trebesch. 2016. "Global Cycles: Capital Flows, Commodities, and Sovereign Defaults." *American Economic Review Papers and Proceedings* 106 (5): 574–80.

Ritzema, R. S., R. Frelat, S. Douxchamps, S. Silvestri, M. C. Rufino, M. Herrero, K. E. Giller, S. Lopez-Ridaura, N. Teufel, B. K. Paul, and M. T. Wijk. 2017. "Is Production Intensification Likely to Make Farm Households Food-Adequate? A Simple Food Availability Analysis across Smallholder Farming Systems from East and West Africa." *Food Security* 9: 115–31.

Rosegrant, M. W., R. Gazmuri Schleyer, and S. N. Yadav. 1995. "Water Policy for Efficient Agricultural Diversification: Market-Based Approaches." *Food Policy* 20 (3): 203–23.

Rudin-Rush, L., J. D. Michler, A. Josephson, and J. R. Bloem. 2022. "Food Insecurity during the First Year of the COVID-19 Pandemic in Four African Countries." *Food Policy* 111: 102306.

Sadler, M. P. 2016. *Making Climate Finance Work in Agriculture*. Washington, DC: World Bank Group. http://documents.worldbank.org/curated/en/986961467721999165/Making-climate-finance-work-in-agriculture.

Sayeh, A. M. 2021. "Supporting Food Security in Sub-Saharan Africa amid the COVID-19 Pandemic and Climate Change." International Monetary Fund, Washington, DC. https://www.imf.org/en/News/Articles/2021/10/19/sp101921-supporting-food-security-in-sub-saharan-africa-amid-the-covid-19-pandemic-climate-change.

Svaleryd, H., and J. Vlachos. 2002. "Markets for Risk and Openness to Trade: How Are They Related?" *Journal of International Economics* 57: 369–95.

Swinnen, J., and J. McDermott. 2020. "COVID-19 and Global Food Security." International Food Policy Research Institute, Washington, DC.

Theriault, V., and D. L. Tschirley. 2014. "How Institutions Mediate the Impact of Cash Cropping on Food Crop Intensification: An Application to Cotton in Sub-Saharan Africa." *World Development* 64: 298–310.

Tian, X., and X. Yu. 2019. "Crop Yield Gap and Yield Convergence in African Countries." *Food Security* 11: 1305–19.

Trueblood, M. A., and S. Shapouri. 2001. "Implications of Trade Liberalization on Food Security of Low-Income Countries." Agricultural Information Bulletins 33705, United States Department of Agriculture Economic Research Service, Washington, DC.

Tschirley, D., T. Reardon, M. Dolislager, and J. Snyder. 2015. "The Rise of a Middle Class in East and Southern Africa: Implications for Food System Transformation." *Journal of International Development* 27 (5): 628–46.

UNFCCC (United Nations Framework Convention on Climate Change). 2019. United Nations Climate Change Annual Report 2019. New York, New York.

USDA (United States Department of Agriculture). 2022. *International Agricultural Productivity*. Washington, DC: USDA. https://www.ers.usda.gov/data-products/international-agricultural-productivity/.

Valdes, A. 2008. "Agricultural Public Spending: Description and Assessment Relevant to Latin America." Background paper for the Mexico Agricultural and Rural Development Public Expenditure Review. World Bank, Washington, DC.

van Ittersum, M. K., L. G. J. van Bussel, J. Wolf, P. Grassini, J. van Wart, et al. 2016. "Can Sub-Saharan Africa Feed Itself?" *PNAS* 113 (52): 14964–969.

Varshney, D., D. Roy, and J. V. Meenakshi. 2020. "Impact of COVID-19 on Agricultural Markets: Assessing the Roles of Commodity Characteristics, Disease Caseload and Market Reforms." *Indian Economic Review* 55: 83–103.

Venton, C. C. 2018. "Economics of Resilience to Drought." United States Agency for International Development, Washington, DC. https://www.usaid.gov/sites/default/files/documents/1867/Summary_Economics_of_Resilience_Final_Jan_4_2018_BRANDED.pdf.

World Bank. 2012a. "Africa Can Help Feed Africa: Removing Barriers to Regional Trade in Food Staples." Report No. 73887, World Bank, Washington, DC.

———. 2012b. "Designing and Implementing a Rural Safety Net in a Low Income Setting: Lessons Learned from Ethiopia's Productive Safety Net Program, 2005-2009." World Bank, Washington, DC. http://web.worldbank.org/archive/website01506/WEB/IMAGES/ETHIOP-2.PDF.

———. 2018a. *The State of Social Safety Nets 2018*. Washington, DC: World Bank.

———. 2018b. The Agribusiness Innovation Center of Senegal: Scaling a competitive horticulture sector through value adding post-harvest processing. World Bank, Washington, DC.

———. 2019a. "Digitizing Agriculture: Evidence from E-Voucher Programs in Mali, Chad, Niger, and Guinea." AFCW3 Economic Update, World Bank Group, Washington, DC.

———. 2019b. "Project Appraisal Document for Malawi Social Support for Resilients Livelihood Project." World Bank, Washington, DC. https://documents1.worldbank.org/curated/en/400931576292473547/pdf/Malawi-Social-Support-for-Resilient-Livelihoods-Project.pdf.

———. 2020a. *The African Continental Free Trade Area: Economic and Distributional Effects*. Washington, DC: World Bank.

———. 2020b. "The Next Generation Africa Climate Business Plan: Ramping Up Development-Centered Climate Action." World Bank, Washington, DC.

———. 2020c. "Where Climate Change Is Reality: Supporting Africa's Sahel Pastoralists to Secure a Resilient Future." World Bank, Washington, DC. https://www.worldbank.org/en/news/immersive-story/2020/09/21/where-climatechange-is-reality-supporting-africas-sahelpastoralists-secure-a-resilient-future.

———. 2020d. *The Human Capital Index 2020 Update : Human Capital in the Time of COVID-19*. World Bank, Washington, DC.

———. 2021a. *Africa's Pulse*, volume 24. World Bank, Washington, DC.

———. 2021b. "Design and Delivery of E-Voucher Schemes in Agriculture in Sub-Saharan Africa." World Bank, Washington, DC.

———. 2021c. "Food Security in the Face of COVID-19: Evidence from Africa." World Bank, Washington, DC. https://blogs.worldbank.org/opendata/food-security-face-covid-19-evidence-africa.

———. 2021d. *Future of Food: Building Stronger Food Systems in Fragility, Conflict, and Violence Settings*. Washington, DC: World Bank.

———. 2021e. "Opportunities for Climate Finance in the Livestock Sector: Removing Obstacles and Realizing Potential." World Bank, Washington, DC.

———. 2021f. "Stress Testing Social Protection: A Rapid Appraisal of the Adaptability of Social Protection Systems and Their Readiness to Scale Up – A Guide for Practitioners." World Bank, Washington, DC. https://documents1.worldbank.org/curated/en/559321634917529231/pdf/Stress-Testing-Social-Protection-A-Rapid-Appraisal-of-the-Adaptability-of-Social-Protection-Systems-and-Their-Readiness-to-Scale-Up-A-Guide-for-Practitioners.pdf.

———. 2021g. The Role of Strategic Grain Reserves in Enhancing Food Security in Zambia and Zimbabwe. World Bank, Washington, DC. https://openknowledge.worldbank.org/handle/10986/35811

———. 2022a. *Africa's Pulse*, volume 25. World Bank, Washington, DC.

———. 2022b. *Food Security Update*, various issues. World Bank, Washington, DC.

https://thedocs.worldbank.org/en/doc/b5de315c82b1a3bb32bf30057aad9b74-0320012022/original/Food-Security-Update-LXVIII-Aug-11-2022.pdf.

———. 2022c. "Responding to COVID-19 by Advancing Social Safety Nets in Liberia." World Bank, Washington, DC. https://www.worldbank.org/en/results/2022/05/10/afw-responding-to-covid-19-by-advancing-social-safety-nets-in-liberia.

———. 2022d. "World Bank Announces Planned Actions for Global Food Crisis Response." World Bank, Washington, DC. https://www.worldbank.org/en/news/press-release/2022/05/18/world-bank-announces-planned-actions-for-global-food-crisis-response.

World Bank; ONE Campaign. 2014. Levelling the Field : Improving Opportunities for Women Farmers in Africa. World Bank, Washington, DC.

Wylde, E., L. Carraro, and C. McClean. 2020. "Understanding the Economic Impacts of COVID-19 in Low- and Middle-Income Countries: Who, Where, How, and When." SPACE: Social Protection Approaches to COVID-19: Expert Advice Helpline. https://socialprotection.org/sites/default/files/publications_files/SPACE_Economic%20Impacts_V1_12062020.pdf.

You, L., C. Ringler, U. Wood-Sichra, R. Robertson, S. Wood, T. Zhu, G. Nelson, Z. Guo, and Y. Sun. 2011. "What Is the Irrigation Potential for Africa? A Combined Biophysical and Socioeconomic Approach." *Food Policy* 36 (6): 770–82.

Zant, W. 2017. "Bridges." Discussion Paper 2017-117/V, Tinbergen Institute, Amsterdam, Netherlands.

Zare, A., B. Barbier, M. Bologo-Traore, A. Diarra, G. Mahe, and J. Paturel. 2017. "Climate Forecast Perception and Needs in Wetlands: A Case Study in the Inner Niger Delta in Mali." *Wetlands* 37: 913–23.

Zossou, E., Van Mele, P., Vodouhe, S. D., & Wanvoeke, J. (2009). Comparing farmer-to-farmer video with workshops to train rural women in improved rice parboiling in central Benin. Journal of Agricultural Education and Extension, 15(4), 329-339.

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