OVERVIEW

African Transformation Report 2021

Integrating to Transform

ACET African Center for Economic Transformation

Published By

The **African Center for EconomicTransformation** is a pan-African economic policy institute supporting Africa's long-term growth through transformation. We produce research, offer policy advice, and convene key stakeholders so that African countries are better positioned for smart, inclusive, and sustainable development. Based in Accra, Ghana, we have worked in nearly two dozen African countries since our founding in 2008.

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Over the past thirteen years, the African Center for Economic Transformation (ACET) has been at the forefront of Africa's transformation agenda. ACET's goal is to help governments and private sector deliver economic transformation that improves lives.

Foreword

The third *African Transformation Report* explores the critical need to give new impetus to Africa's transformation agenda in the aftermath of the debilitating COVID-19 pandemic that has set back development across much of the continent and undermined progress on reducing poverty.

Over the past 13 years, the African Center for Economic Transformation (ACET) has been at the forefront of Africa's transformation agenda. ACET's goal is to help governments and the private sector deliver economic transformation that improves lives. It does so through rigorous research and analysis, advice to policymakers through peer learning and best practices, and galvanizing action through advocacy, outreach, and convening for impact.

Through these approaches, ACET has helped shift the debate, regionally and globally, toward economic transformation as the way to achieve sustained growth and shared prosperity in Africa. As Chair of the Transformation Leadership Panel, established by ACET in 2019, I am delighted to support this bold approach to fostering deep-rooted change across Africa's 54 countries.

While many of Africa's economies were already on a recovery path, the pandemic has had devastating economic and social costs for most African countries, setting back the development agenda for some of the world's poorest and most vulnerable, and jeopardizing the achievement of the Sustainable Development Goals.

Making a success of the new African Continental Free Trade Area is one way to reinforce badly needed integration in Africa. Launched in January this year, it will create an integrated market with a combined gross domestic product of $3.4 trillion. This larger market will attract greater investments, boost productivity, provide better jobs, and improve human well-being—all supporting the continent's economic transformation.

My colleagues on the Transformation Leadership Panel join me in underscoring that now is the time to reinforce the push for African integration, not just through trade, but also through greater collaboration to provide regional public goods. Only then will Africa see its economies transform and develop the leadership and institutions to build the Africa we want.

Ellen Johnson Sirleaf
Former President
Republic of Liberia

Preface

The main message of the 2021 *African Transformation Report* is that Africa's economic transformation requires much more progress on regional integration. To integrate faster and deeper, countries should go beyond trade and markets and collaborate to deliver regional public goods such as building transport corridors, managing river basins, establishing cross-border digital connectivity, and controlling outbreaks of pests and disease. They should also tackle three frontline challenges that can make or break their efforts to transform their economies: finding productive work for a young and rapidly growing workforce, innovating with digital technologies, and managing climate risks—all national challenges with regional solutions.

The 2014 *African Transformation Report* argued that the continent's faster economic growth after the turn of the 21st century—growth attributable to broader macroeconomic reforms, better business environments, and higher commodity prices—would not by itself sustain economic development. To ensure that growth is sustainable and to transform their economies, countries would need to diversify their product and service lines, make their exports more competitive, Increase the productivity of firms, farms, and offices, and upgrade technology in agriculture, mining, manufacturing, and services—all to improve human economic well-being.

Over the past two decades, however, Africa's growth has on average been less than transformative—far less. True, growth rose briskly for some countries in the 2000s, with 6 of the world's 10 fastest growing economies in Sub-Saharan Africa. But it slowed after 2010, stalled during 2015–19, and then, with COVID-19, slipped further or even contracted in 2020. The continent's economies are set to bounce back in 2021, but only slowly, with many countries not expecting to have their GDPs recover to pre-COVID levels until 2023 or even later.

For Africa's economic transformation, the picture is grim, with its overall score on our African Transformation Index remaining in the narrow range of 33–37 on a 0–100 scale since 2000. A short-lived spike in 2001–03 was followed by declines through about 2008, and then another spike hit an all-time high in 2011—only to fall into a steady retreat to a score below that at the start of the century.

The 2014 report also made a compelling case for the potential of regional integration to accelerate economic transformation. Many Sub-Saharan economies are small and have to import most inputs for manufacturing. Most also lack a large domestic market that would provide their manufacturers with some natural protection from imports. Integrating national markets into larger regional markets would thus help countries overcome these disadvantages and seize opportunities to transform their economies.

The African Continental Free Trade Area gives fresh impetus to the integration project. In signing the agreement, countries affirmed the importance of accelerating intra-African trade and boosting Africa's competitiveness in global markets. In broad terms, the agreement envisages free trade areas that progressively eliminate tariff and nontariff barriers to trade among the member states. That would help countries boost growth, diversify their exports beyond unprocessed commodities, and attract more foreign and domestic investment. The agreement also envisages freer movement of labor and capital, making both more productive.

These encouraging developments are necessary for Africa's integration, but they are not sufficient. As this report argues, deepening regional integration requires shifting the integration narrative from pursuing not just regional market integration but also broader regional collaboration. One underexplored area of regional collaboration is the provision of public goods and services whose benefits cross borders—benefits such as increasing the efficiency of transport corridors, reducing the spread of disease, increasing the dissemination of knowledge about climate-smart agricultural techniques, reducing the pollution in river basins and oceans, harmonizing taxes on extractives across borders to avoid smuggling, reducing the regulatory obstacles to regional communications networks and financial markets.

The COVID-19 pandemic has highlighted the urgent need for regional approaches and integration in Africa.

Advancing the continent's economic integration and transformation will also depend in large part on tackling three frontline challenges.

First is creating jobs—ensuring productive employment for the world's youngest and fastest growing labor force by imparting skills for work in digital and technological fields. Second is supporting digital innovation—enabling the private sector to deliver the many benefits from digital technologies in creating jobs, boosting productivity, and reducing poverty. Third is managing climate risks—promoting climate-smart agriculture, protecting the continent's green and blue ecosystems, and exploiting renewable energy.

Why these three, among the plethora of challenges facing Africa? Because they will shape Africa's future, and they are on every policymaker's agenda. Tackling each of them supports the transformation agenda and requires, and fosters, regional collaboration.

The COVID-19 pandemic has also highlighted the urgent need for regional approaches and integration in Africa, and for new and expanded regional public goods. The disruption of regional and global supply chains points to the need for stronger regional and subregional supply chains and rapid cross-border movement of goods and services to ensure the sustainability of critical industries. African economies must now rebound quickly with transformative and forward-looking policies that embrace regional integration. In some cases, the crisis provided an opportunity for quick policy implementation that would not have been possible otherwise—and that will serve citizens well beyond the pandemic.

To advance on all these fronts, Africa needs dedicated leadership at all levels, starting with top political leaders and extending to government, private firms, academia, and civil society, all in pursuit of collective action for the common good.

So let's get on with collaborating to integrate. Let's get on with integrating to transform.

K.Y. Amoako
Founder and President
African Center for Economic Transformation

Overview

The main message of the 2021 African Transformation Report is that Africa's economies need to integrate if they are to transform. They have been transforming only slowly, if at all, as demonstrated by the continent's lackluster performance on Growth with DEPTH, ACET's measure of economic transformation.

The first African Transformation Report argued that the continent's faster economic growth after 2000 would not by itself sustain economic development. To ensure that growth is sustainable and to transform their economies, countries need to **D**iversify their product and service lines, make their **E**xports more competitive, Increase the **P**roductivity of firms, farms, and offices, and upgrade **T**echnology in agriculture, mining, manufacturing, and services—all to improve **H**uman economic well-being. In short, Growth with DEPTH.

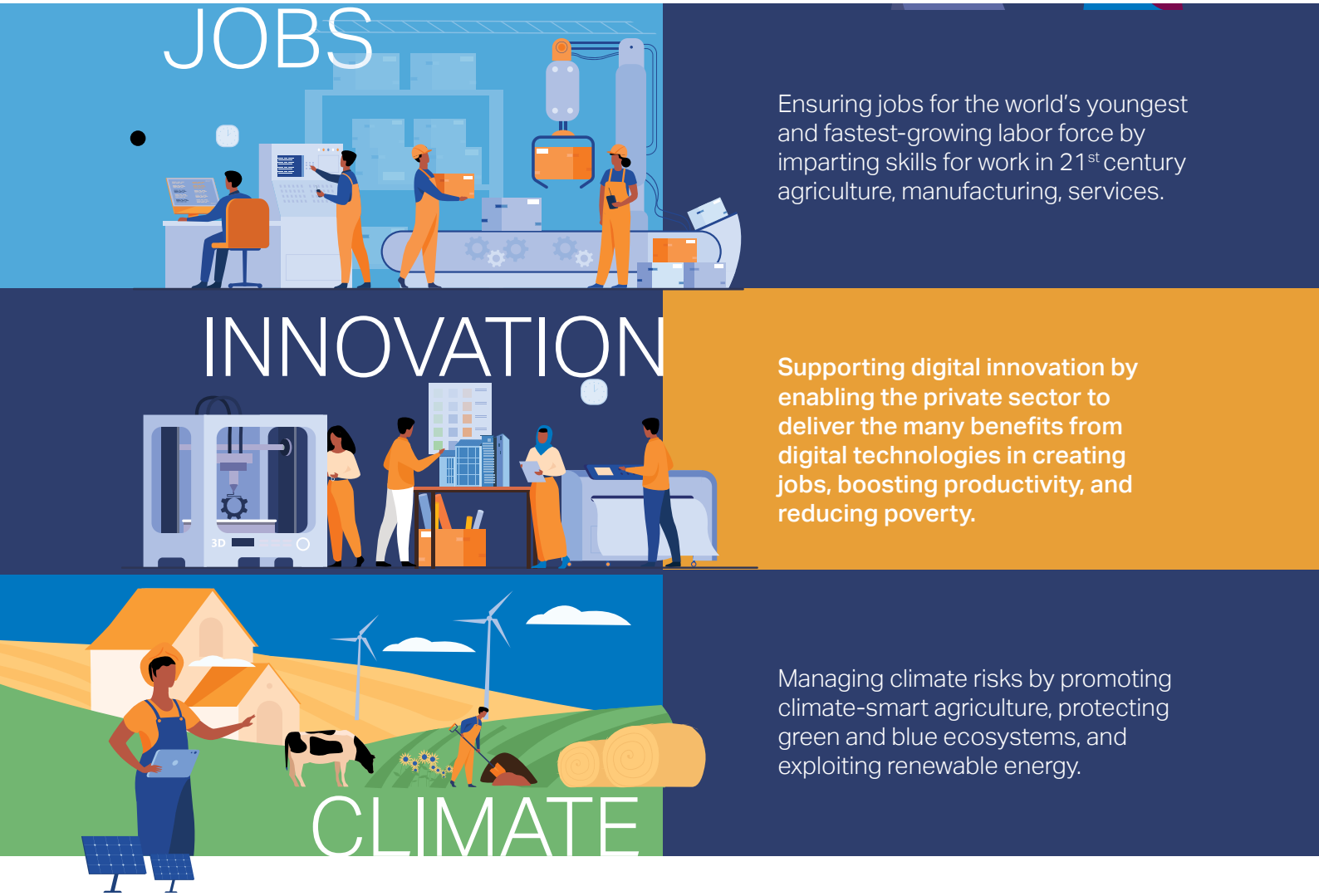
After a promising start in the 2000s, Africa's growth began to falter in the 2010s, with the rippling effects of the global financial crisis and then the end of the commodity supercycle and rising tensions in global trade. Africa's DEPTH, captured in our African Transformation Index, reversed earlier gains or continued earlier declines. Now, in the early 2020s, COVID-19 is attacking both growth and DEPTH. Most of the continent's economies slowed or contracted in 2020, and the pandemic negatively impacted all DEPTH attributes. As countries recover, they can act to do more than restore growth. They can also work with the private sector and civil society to tackle the three frontline challenges analyzed in this report. (Infographic 1)

- *Jobs:* Ensuring jobs for the world's youngest and fastest growing labor force by imparting skills for work in 21st century agriculture, manufacturing, and services.
- *Innovation:* Supporting digital innovation by enabling the private sector to deliver the many benefits from digital technologies in creating jobs, boosting productivity, and reducing poverty.
- *Climate:* Managing climate risks by promoting climate-smart agriculture, protecting green and blue ecosystems, and exploiting renewable energy.

Why these three, among the plethora of challenges facing Africa? Because they are the ones that will shape Africa's future, and they are on every policymaker's agenda. Tackling each of them supports the transformation agenda for Growth with DEPTH, and each requires and fosters regional collaboration.

As countries recover, they can act to do more than restore growth. They can also work with the private sector and civil society to tackle the three frontline challenges of ensuring jobs, supporting digital innovation, and managing climate risks.

INFOGRAPHIC 1: FRONTLINE CHALLENGES



Why these three, among the plethora of challenges facing Africa?

Because they are the ones that will shape Africa's future, and they are on every policymaker's agenda. Tackling each of them supports the transformation agenda for Growth with DEPTH, and each requires and fosters regional collaboration.

The African Continental Free Trade Area (AfCFTA), after starting in January 2021, gives fresh impetus to the integration project. In broad terms, the agreement envisages a free trade area that progressively eliminates tariff and nontariff barriers to trade among the member states. That will help countries boost growth, diversify their exports beyond unprocessed commodities, and attract more foreign and domestic investment. These go hand in hand with the jobs, innovation, and climate agendas.

But while past regional integration efforts have often struggled, Africa's transformation requires much more progress on regional integration. To achieve Growth with DEPTH, and for the AfCFTA to succeed, countries have to look beyond trade and markets and collaborate in delivering regional public goods such as transport corridors, free movement of people, well-managed river basins, cross-border digital connectivity, and systems to control future outbreaks of pests and disease. These will all help tackle the three frontline challenges of jobs, innovation, and climate—all national challenges with regional components. And in a self-reinforcing manner, collaboration to produce regional public goods will also help build experience and trust to pursue deeper regional economic integration, under the AfCFTA.

To advance on these fronts—collaborating to integrate and integrating to transform—will take dedicated leadership at all levels, starting with top political leaders and extending to government, private firms, academia, and civil society. Africa's leaders will need to promote visions that go beyond their national interest and to pursue collective action for the common good. Turning top-down visions into reality needs to be complemented by a bottom-up, more problem-driven approach to national and regional problems to help overcome the political economy barriers that have slowed progress in the past.

Pursuing Growth with DEPTH

The first African Transformation Report defined economic transformation as Growth with DEPTH. Here's the logic behind that definition:

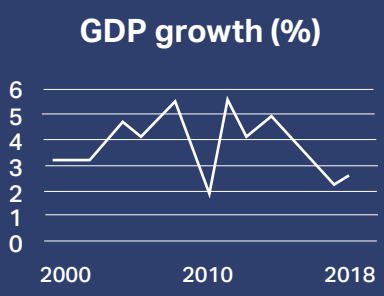
- **D.** African countries, most of them relying on a narrow range of commodity exports, need to diversify the array of goods and services to hedge against external and internal shocks.
- **E.** Their exports, if competitive, allow them to exploit their comparative advantage to generate higher incomes, which help pay for the investments in skills, capital, and technology needed to solidify their comparative advantage over time.
- **P.** Productivity gains, starting in agriculture, allow agriculture to release labor to industry and services, produce more food to moderate hikes in urban industrial wages, supply raw materials for processing in industries, increase exports to pay for transformation inputs, and enhance the domestic market for industrial products.
- **T.** Technological upgrading sustains rising productivity and enables transforming economies to produce goods and services that command higher prices on global markets.
- **H.** Increasing incomes per capita and employment, together with health and education, as well as peace, justice, security, and the environment, help to improve human well-being—and thanks to human capital development will have feedback effects of productivity and growth.

To track how countries are transforming their economies, ACET developed the African Transformation Index in 2014, based on a composite of the five elements of DEPTH. For 21 countries, the Index confirmed the slow progress of most African countries through 2010, with widely varying performance on the five depth subindexes. The second edition of the Index will contain data for 32 countries for the period of 1998-2019 and include a greater range of indicators.

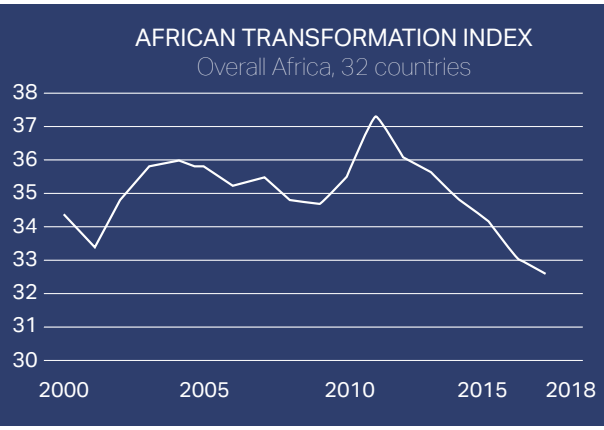
Over the past two decades, Africa's growth has on average been less than transformative—far less. True, growth rose briskly in the 2000s, with 6 of the world's 10 fastest growing economies in Sub-Saharan Africa.[1] But it then slowed after 2010, stalled during 2015-19, and then, with COVID-19, slipped further or even contracted in 2020. The continent's economies are set to bounce back in 2021, but only slowly, with many countries not expecting to have their GDPs recover to pre-COVID levels until 2023.

INFOGRAPHIC 2: GROWING SLOWER - NOT TRANSFORMING

African economies' average score on the African Transformation Index for 2018 is below where it stood at the beginning of this century



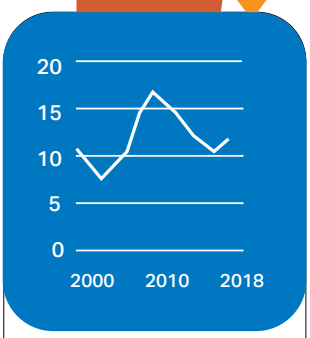
GDP growth slowed after 2011, as the African Transformation Index went into a steep decline.



The Index is a composite of five subindexes for DEPTH, all slipping in the 2010s and almost certain to slip further in the wake of COVID-19

DIVERSIFICATION

Only by learning by doing can African countries diversify their economies based mainly on traditional agriculture and primary commodities to increasingly include modern agriculture, manufactures, and high-value services.



EXPORT COMPETITIVENESS

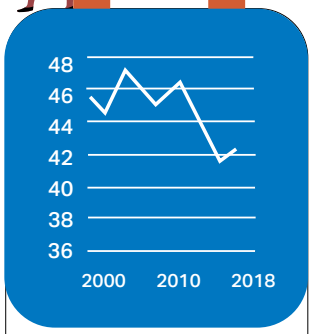
Exporting provides the opportunity to expand production, boost employment, reduce unit costs, and increase incomes. And the knowledge gained from exporting helps raise productivity and innovate with new products.

PRODUCTIVITY

Innovating with new processes and products underpins productivity gains that enable economies to produce more goods and services from existing resources and technologies, especially in agriculture.

TECHNOLOGICAL UPGRADING

A rising capability to introduce new and improved technologies enables an economy to sustain productivity growth over time and to produce goods that command higher prices on international markets.



HUMAN WELL-BEING

When opportunities for well-remunerated employment are expanding with rising GDP per capita, growth will be inclusive, prosperity will be widely shared, and poverty and inequality will be reduced.

The route to Growth with DEPTH:

Tackle the frontline issues of ensuring productive jobs, supporting digital innovation, and managing climate risks by collaborating in the provision of national and regional public goods.

For Africa's DEPTH, the picture is grim, with its overall score on a 0–100 scale remaining in the narrow range of 33-37 since 2000 (infographic 2). A short-lived spike in 2001–03 was followed by declines through about 2008, when another spike hit an all-time high in 2011—only to fall into a steady retreat to a score below that at the start of the century.

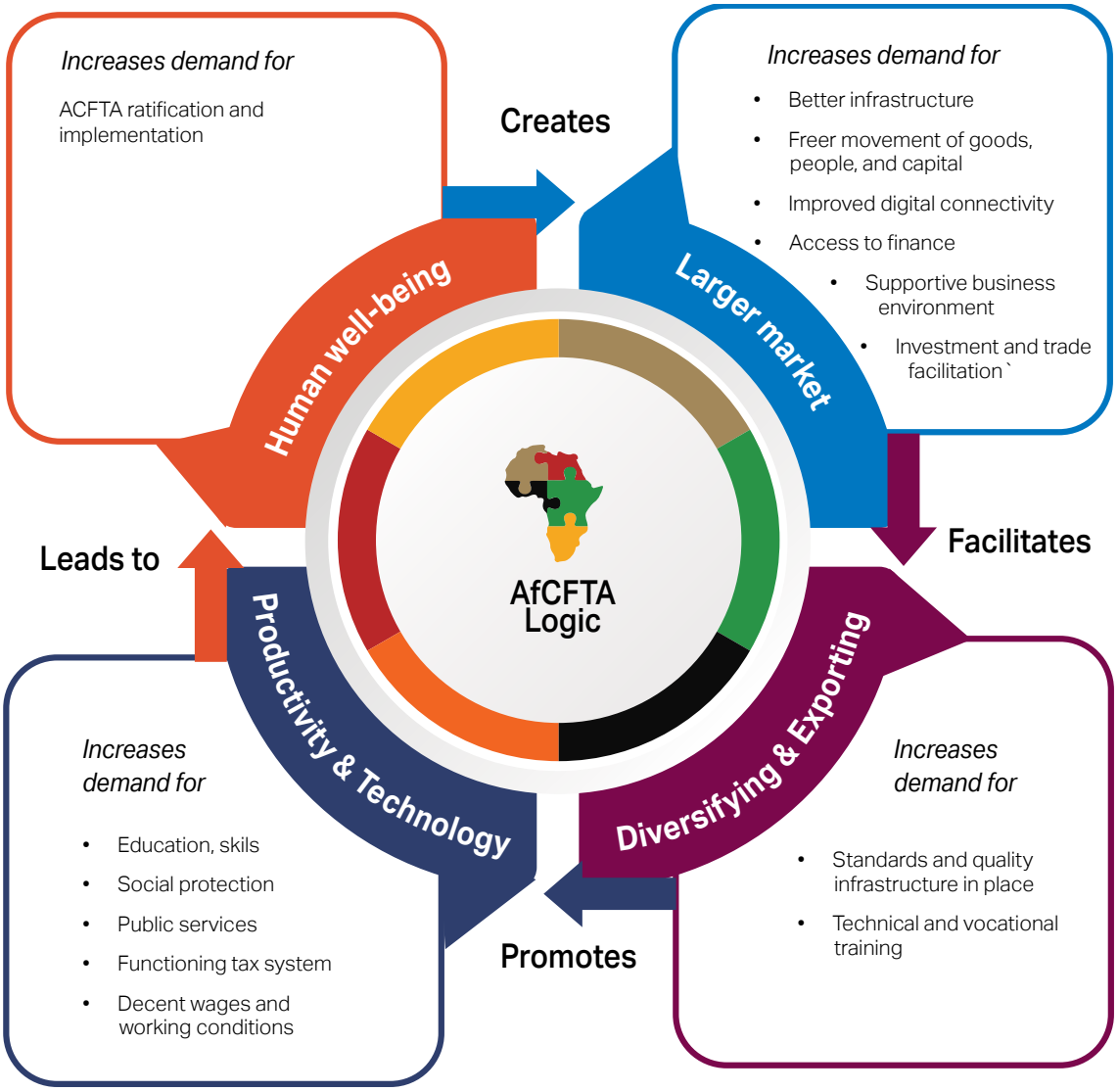
Keep in mind that these are averages, with half the continent, weighted by national GDPs, above average and half below. Ranging around these averages, the top African country had a score in 2018 of 64, and the bottom country, 19.

In sum: Declines in all five DEPTH elements account for the sharp decline in the overall ATI score from its peak in 2011, to a level below where it started in 2000. And those scores are almost certain to decline further in the wake of COVID-19. Their volatility is disconcerting: it suggests a vulnerability to shocks and thus a lack of resilience of the underlying structure of African economies.

The main implication of these preliminary results is that countries have to do more than get their economies back onto a path of faster economic growth. They have to take on the frontline challenges of ensuring productive jobs, supporting digital innovation, and managing climate risks—all of which can be supported by collaborating to deliver regional public goods, thus triggering a virtuous circle with faster and deeper regional integration and Growth with DEPTH, not least through the implementation of the AfCFTA and related agendas (infographic 3).

Declines in all five DEPTH elements account for the sharp decline in the overall ATI score from its peak in 2011, to a level below where it started in 2000. And those scores are almost certain to decline further in the wake of COVID–19. Their volatility is disconcerting: it suggests a vulnerability to shocks and thus a lack of resilience of the underlying structure of African economies.

INFOGRAPHIC 3: TRADING FOR GROWTH WITH DEPTH



The AfCTFA has the potential to unleash a virtuous circle where opportunities of larger markets trigger increasing trade and investment.

This leads to:

- export diversification
- productivity gains
- greater value added
- employment and improved incomes

All this increases the size of the market. Manufacturing trade stands to gain the most, but other service activities will too. Opportunities in agriculture and the digital market also stem from successful AfCFTA agreement and implementation. But this potential depends on having a majority of countries ratify and then implement the agreement.

Negotiations continue on key elements such as rules of origin and actual tariff reductions. In addition, many benefits rely on complimentary enabling policies that ensure that:

- people and goods can cross borders
- trade facilitation measures are in place
- business environments encourage investment
- structures are in place to allow upgrading and greater value addition, and
- all this translates into increasing incomes and livelihoods.

The AfCFTA can be very good for Growth with DEPTH - and thus for Africa's economic transformation. All this highlights the need to better understand all incentives and interests at play in implementing national and regional interconnected agendas.

Ensuring productive employment for young Africans

Africa's working-age population (15–64), now 750 million, is set to surpass 1 billion before 2030—as millions of young Africans enter the labor force—and to reach 1.2 billion by 2035.[2] Until now, Africa has not created enough good jobs for those entering the labor force, who mostly end up in the low productivity informal sector, which accounts on average for 80% of employment. So, providing productive work for the 18–20 million young people entering the workforce each year is going to be daunting—and essential.[3]

If new entrants to the labor force have access to more productive work and the necessary skills, they will start to generate an economic surplus that can improve human capital and increase productivity—delivering a demographic dividend. But most employment today remains informal on small farms and in small firms. On current trends, three-quarters of entrants to the labor market are projected to work in low-productivity self-employment or in microenterprises. Some 20% will work for wages in the service sector, and only about 4%–5% will find a formal wage-paying job in industry.[4]

Only about 100 million of the 450 million Africans expected to reach working age through 2035 can hope to find a well-paid job. What about the other 350 million? National policies and programs should target sectors with high potential for job creation and productivity growth.

Modernizing agriculture can create jobs by catalyzing a much larger agroprocessing sector, and supporting the private sector to expand off-farm activities will provide many productive jobs, as input dealers and large commercial farmers expand their operations. As agriculture commercializes on a larger scale, the need will grow for specialized transport services to meet time-sensitive delivery schedules, requiring drivers, packers, quality inspectors, and others. A more productive agriculture sector is also more attractive to young people with new ideas and new talent, important for rejuvenating a sector dominated by aging farmers. Given that demand in key urban agglomerations can be served by production centers in other countries, regional and continental trade in agricultural produce will be key to attracting further investment in this sector.

If new entrants to the labor force have access to more productive work and the necessary skills, they will start to generate an economic surplus that can improve human capital and increase productivity — delivering a demographic dividend.

Export-oriented manufacturing can focus on less automated sectors where technology adoption has been slow, such as food processing, wood processing, furniture, garments, and leather goods. These sectors could provide opportunities for labor-intensive local and regional market–focused manufacturing, under existing trade regimes and the AfCFTA. Taking advantage of those opportunities requires a continual focus on improving basic infrastructure—reliable power, telecommunications, roads, and railways, all of which have a regional component—and building industrial capabilities through technological upgrading and upskilling the labor force. And with the right policies and strategies, mastering traditional manufacturing can make it easier to jump into more complex digitized manufacturing.

Perhaps the greatest opportunities are in services. Although highly informal, the service sector is the fastest growing in job creation and value added in most African economies, in spite of the large numbers employed in low productivity informal services provision. The potential for job creation is even greater with digital technologies and the internet, and planned e-commerce negotiations under the AfCFTA, opening up markets beyond the national level. The application of mobile systems for payments and orders and the use of the internet and mobile phones to develop and roll out new products and services hold great promise. Examples include Jumia (an e-commerce platform), Zando (shoes and clothing), HelloFood (food delivery), EasyTaxi (cab-hailing), and Everjobs (classified ads). Kenya-based M-Pesa, the biggest money transfer system in the world, allows people to pay for all kinds of services by mobile phone and is rapidly formalizing the informal sector by bringing many transactions online. Also fast-growing are some high-productivity services, including horticulture, logistics, and business process outsourcing.

Equipping young Africans with the skills required to meet the growing and fast-evolving demands of the labor market will be crucial. African policymakers should expand the access and improve the quality and relevance of secondary and technical and vocational training, which will be a key entry point for young Africans to enter the world of work. However, the vast majority of African youth transition into the world of work before entering tertiary education—only 9% of primary school students reach higher education. So secondary education will be critical in preparing young Africans to earn a decent living. Indeed, educating young girls to complete secondary can increase their labor force participation and accelerate the demographic transition to lower death and birth rates—and reap the demographic dividend. Promoting universal secondary education will thus be crucial in ensuring a future-ready workforce.

The job creation potential and transformative impact of national industrial policies and programs can be amplified through regional collaboration on cross-border labor mobility and labor market information systems.

The job creation potential and transformative impact of national industrial policies and programs can be amplified through regional collaboration on cross-border labor mobility and labor market information systems. Such policies can improve efficiencies in regional labor markets, and thus create an environment conducive to more investments in production factors to spur entrepreneurship, address skill shortages and mismatches, and enhance trade diversification and export competitiveness. Though sometimes politically sensitive, the momentum behind the AfCFTA is an opportunity to be seized by leaders to ensure its benefits are realized.

Priorities for action

The growing demographic bulge of young workers presents an opportunity to reap a demographic dividend that will spur Africa's economic growth.

The growing demographic bulge of young workers presents an opportunity to reap a demographic dividend that will spur Africa's economic growth. But this will not occur automatically. It requires a comprehensive and integrated strategy focusing on three policy priorities:

- Implementing education and skill development policies, particularly for girls, to ensure that each year's 18–20 million new entrants to the labor force are well equipped and productive.
- Creating opportunities for productive employment in labor-intensive sectors by encouraging investment to serve regional and continental markets under the AfCFTA.
- Accelerating the demographic transition to lower death and birth rates to reap the demographic dividends of having more workers than dependents.

Regional collaboration can give a big boost to achieving these outcomes through the investment opportunities and employment created and through mutual recognition of qualifications.

Scaling up education and skills training

Sub-Saharan Africa, having underinvested in its human capital, currently lags all other world regions based on the 2020 Human Capital Index. Although school enrollments have been increasing over time, enrollments in secondary and tertiary remain very low. Equally important is the need to focus on quality and the relevance of schooling while actively pursuing the basic education goals of universal literacy and numeracy. Not easy, since 87% of 10-year-olds in Sub-Saharan Africa cannot read and understand a simple story, leaving them unprepared for secondary education.[5]

Key priority actions:

- *Expand secondary and tertiary enrollment, and emphasize science, technology, engineering, and mathematics (STEM) with a focus on new technologies, especially digital technologies of the fourth industrial revolution.* Ghana introduced a free Senior High School policy in 2017, increasing enrollments by 69% in three years. But such a rapid surge in enrollment strains the existing physical infrastructure, calling for innovative approaches to expanding digital infrastructure to facilitate distant learning. The government has instituted a policy of 60% enrollment in science and 40% in arts and humanities to facilitate STEM uptake at the tertiary level.[6]

- *Address the gender bias in science and in technical and vocational education and training.* In Burkina Faso, Kenya, and Malawi, cash and in-kind transfers targeting girls increased their enrollment, attendance, and graduation.[7] Senegal tackled the gender imbalance in STEM education through awareness campaigns, performance-based contracts targeting women and girls in STEM, and teacher training to encourage women to pursue STEM education. Ghana introduced a teacher and learning portal in 125 schools to encourage STEM uptake, giving teachers and students access to online teaching and learning resources, with a focus on science and mathematics.[8]

- *Ensure that the education systems and technical and vocational education and training (TVET) programs respond closely to the needs of the market by partnering with the private sector for program design and financing.* Ghana and Uganda organized training programs to meet the needs of private employers. Nigeria certified and accredited private TVET providers if they met certain criteria. In South Africa, the government partners with banks to deliver effective education and training. Senegal also has a national TVET strategy to improve the access, quality, and relevance, providing 300,000 students with the opportunity to get on-the-job practical experience.[9]

- *Recognize work experience in the informal sector, which absorbs close to 80% of the Sub-Saharan workforce (outside South Africa).* Most countries have national qualification frameworks, but they struggle to accredit informal learning and apprenticeships. Ethiopia's government combined forces with NGOs, private agencies, and private schools to train workers in the informal sector. Federal and regional TVET agencies certify those with informal training through units of competency, and any worker with almost any skill can be examined by one of the agencies and certified for that skill.

Creating opportunities for productive employment

Invest heavily in sectors that have high job-creation potential, such as agriculture, export-oriented manufacturing, high value-added services, and the creative industries can create jobs for youth, particularly in the rural areas. Key priority actions:

Investing heavily in sectors that have high job-creation potential, such as agriculture, export-oriented manufacturing, high value-added services, and the creative industries can create jobs for youth, particularly in the rural areas.

- *Modernize agriculture by introducing high-yielding seeds, chemical fertilizers, and digital agricultural technologies and orient farmers toward commercial agriculture.* Several African countries have training centers that offer an innovative approach that improves the perception of agriculture at schools, proposes new learning methods that combine technical and social training, and stimulates agricultural research and development for young people. The Songhaï center in Benin conducts training, production, and research, combining modern and traditional methods. It favors an integrated production system where agriculture, livestock, and fisheries interact, and nothing is wasted. The Rural Trades Centers in Côte d'Ivoire support national nonformal training in agriculture and other rural trades.

- *Strengthen linkages along the agricultural value chain by incentivizing input dealers and commercial farmers to expand operations and upgrade input services, storage, and logistics to stimulate the larger agribusiness sector.* Malawi uses blockchain to certify food safety for tea and tracks supply chains for tea sold to the consumer goods giant Unilever and the British supermarket Sainsbury's. Tanzania introduced a bulk procurement system in 2017 for the government to import all the major fertilizers. The Fertilizer Regulatory Authority now consolidates orders, conducts competitive bidding, awards tenders, and sets maximum retail prices.[10]

Export-oriented manufacturing focusing on labor-intensive products offers good prospects for job creation in the medium term. Key priority actions:

- *Support traditional manufacturing in their transition to more complex digitized manufacturing.* In Kenya, companies in machinery–electronics–transport are the most digitized, followed by companies in chemicals–plastics–rubber. This growing trend toward digitization is linked to improvements in telecommunications, electricity, customs, and regulations.

- *Accelerate improvements in basic infrastructure—electricity, telecommunications, roads, and railways.* Côte d'Ivoire's transport sector was allocated more than $10 billion, or almost a quarter of the country's $44.2 billion budget for the economic blueprint, as part of the National Development Plan for 2016–20.

- *Give tourism particular attention due the strong job creation and productivity increases the sector generates through technological innovations, such as sharing economy platforms and the use of big data and social media to market tourist destinations.*

- *Foster the media and creative industries, which have high potential for job creation thanks to the ease of adoption of digital technologies.* Microfinance platforms, such as M-Changa in Kenya, help match investors to a range of individuals and projects in creative industries and thus support job creation.

All of these labor-demand elements can be supported by implementing the AfCFTA and by supporting regional public goods that help promote export-focused investment.

Increasing regional collaboration for labor mobility

Regional collaboration for cross-border labor mobility can also unleash the job creation potential and transformative impact of national industrial policies and programs. With the AfCfTA concerted regional collaboration and implementation of the Free Movement Protocol can facilitate the free movement of skilled labor to areas of demand. It can also align national education and skill development to regional labor market requirements. Key priority actions:

- *Promote mutual recognition agreements among member states.* East African Community (EAC) members have concluded such an agreement for architects, engineers, and accountants and are preparing to extend it to lawyers, pharmacists, and veterinarians. Similar arrangements have been initiated in West Africa under the pilot talent mobility program.

- *Strengthen labor market information systems where they exist and are weak or create one where they do not.* The right skills must be available at the right time and place in and across countries. As part of their labor market and migration policies, most African countries have such a system. But progress has been slow in making them effective. To adapt worker skills to changing market dynamics, countries can set up a sentinel system to gather intelligence on the skills available today and the skills needed in the future, as countries in Southeast Asia have done successfully.

Accelerating the demographic transition

Africa's demographic transition from high to low birth and death rates has been delayed by persistently high fertility. The demographic transition can be sped up by reducing high infant and maternal mortality rates, improving educational outcomes for girls, and empowering women by giving them more autonomy to make their own decisions about life choices. Key priority actions:

- *Expand immunization programs and other communicable disease prevention programs.*

- *Strengthen and adapt health systems to take a more structured approach to health care (including primary health care), to improve health data systems, and to boost the quality of clinical care.* Ghana deployed portable ultrasound machines in 500 health centers and community-based health planning and service compounds operated by midwives, improving maternal delivery outcomes.

- *Improve educational outcomes for girls and empower women by making further investments in secondary and tertiary education where enrollment rates remain the lowest.* There is also the need to improve educational quality and close the gender gap in secondary and tertiary education enrollments.
- *Reform laws and institutions that govern girls' and women's lives by increasing the age at first marriage, expanding contraceptive coverage, and recognizing women as equal citizens to own land.* Rwanda's health sector reform and expansion of contraceptive coverage reduced fertility in the rural areas from 6 children per woman in 2003 to 4.1 in 2013.[11] In Ethiopia, institutional reforms now enable women to assert their rights in the court system.

Supporting digital innovation

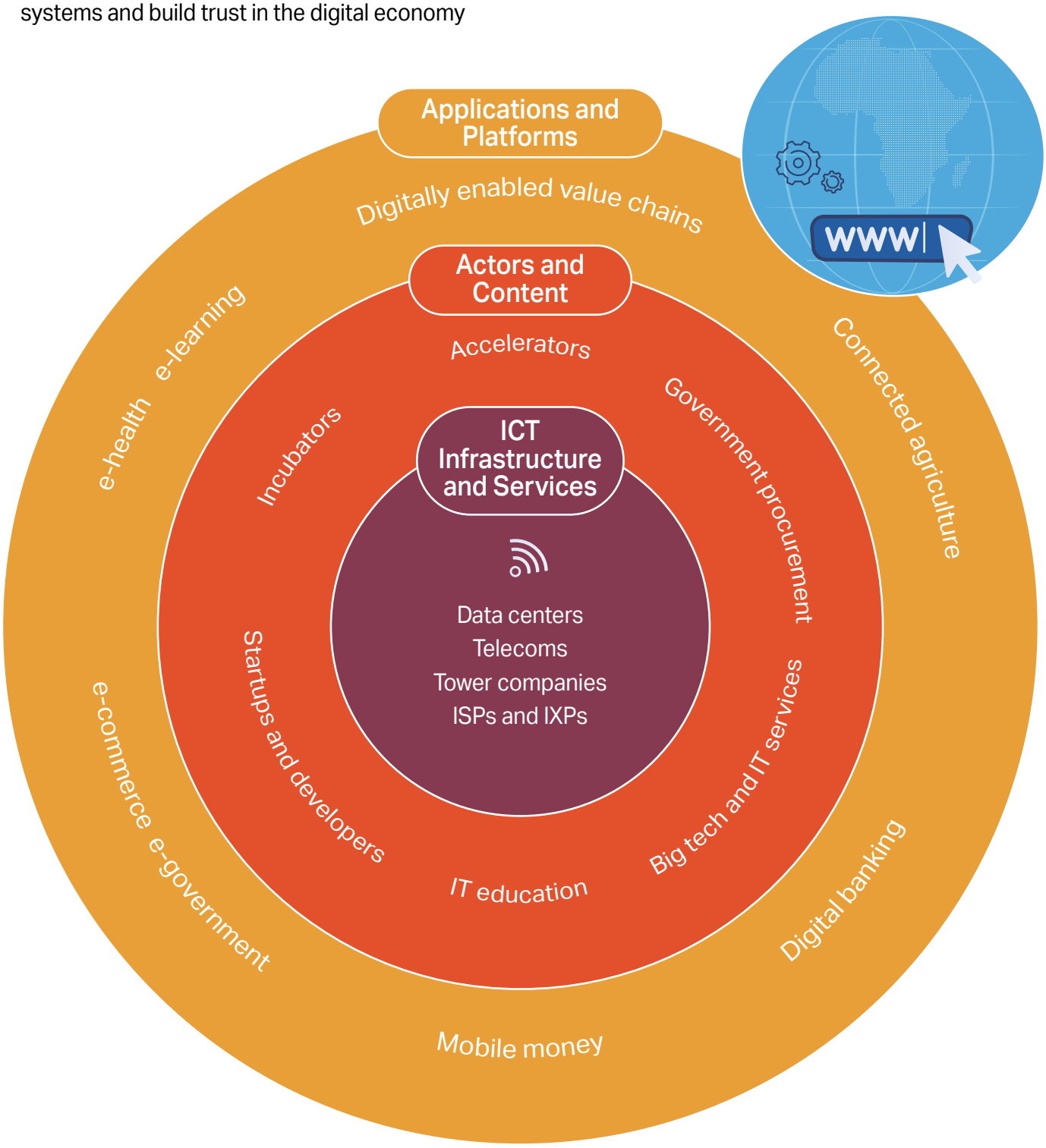
Early in 2020, Sub-Saharan Africa had 477 million subscribers to mobile services and 272 million mobile internet users. And its mobile industry contributed $155 billion to its gross domestic product, led by productivity gains in financial services, education, health, retail, agriculture, and government.[12] Yet internet adoption in Africa remains low. The continent lags the rest of the world in the availability, speed, and access of broadband, with landlocked countries and rural areas faring the worst. Most mobile phone subscribers do not have access to the internet, and nearly 300 million Africans live far from a fixed broadband connection.

Part of the reason: While there have been high profile successes in some countries—mostly related to mobile money—Africa's fragmented digital markets suffer from high taxes, expensive licenses, and regulatory gaps that permit excessive market concentration, limited competition, and the world's highest data prices. A move to regionally integrated innovation and digital ecosystems is essential for Africa's economic transformation (infographic 4).

Africa's fragmented digital markets suffer from high taxes, expensive licenses, and regulatory gaps that permit excessive market concentration, limited competition, and the world's highest data prices. A move to regionally integrated innovation and digital ecosystems is essential for Africa's economic transformation.

INFOGRAPHIC 4: NURTURING DIGITAL INNOVATION ECOSYSTEMS

Digital transformation takes place in a highly interactive ecosystem that requires government policies and institutions to coordinate systems and build trust in the digital economy



Digital transformation requires ICT infrastructure and services to enable the affordable and competitive provision of digital technologies, to expand access to the Internet, and to work with global ICT suppliers. It also requires a spectrum of skilled producers and users. And it requires digital application and new technological capabilities.

To govern the implementation, evaluation, and adaptation of innovation policy, countries can develop well-defined and well-coordinated policy frameworks. They can rapidly develop the capacity of a workforce and bureaucracy equipped with strong technical skills and digital capabilities to take advantage of Africa's demographic expansion. They can give space to the private sector until new markets and innovations are established. And they can identify key principles related to equity, inclusion, and accountability to shape innovation policy and technological advances. It will be crucial that such policy frameworks are informed by bottom-up consultation and respond to users and clients of digital services. Such clients and users include the private sector, both domestic and international, as well as citizens, academia and civil society. Likewise, such policy frameworks need to be rapidly scaled up with a minimum of bureaucratic hurdles and with a view to not thwart innovation and entrepreneurship.

Good innovation policy and digital technologies will also underpin regional collaboration and integration to create a single digital market.

With such a far-reaching agenda, countries can start by updating and revising their existing policies. To develop blueprints for an African digital trade and economy strategy, they could set up national and regional e-commerce stakeholder coalitions to identify key measures for harmonized national and regional regulatory systems and to engage in the AfCFTA e-commerce negotiations due to start soon. To achieve the goal of a pan-African policy for e-commerce, they need to settle legal uncertainties over privacy, consumer protection, e-transactions, spectrum licenses, and digital identity. To lower connectivity costs, they need transparent rules that foster regional integration of data markets. This could be accompanied by accelerating data legislation and providing technical support to help businesses comply with privacy regulations in overseas markets.

Digital technologies have already transformed many aspects of life for most people, and they are rapidly transforming commerce and finance. With appropriate policies, they will help transform entire economies and help achieve the necessary productive employment opportunities discussed above. Good innovation policy and digital technologies will also underpin regional collaboration and integration to create a single digital market and to improve the efficiency of regional power pools, the management of river basins, and the reach of tech-enabled regional road and rail networks. At the same time, governments can provide space for private sector experimentation and learning.

These advances will also equip policymakers with tools previously unavailable to deliver national and regional public goods with greater impact and sustainability. So will today's budding networks of innovators: The Innovation for Policy Alliance is an African network of more than 75 innovation hubs and 100 innovation partners pushing to engage with policymakers on investing in R&D and revamping educational curricula to emphasize e-learning, experimentation, and digital and financial literacy.

Priorities for action

African policymakers thus face a wide array of challenges in accelerating Africa's move to innovative and digital economies. The processes and policy actions must be prioritized and proceed in parallel.It is imperative that African leaders, policymakers, and digital and innovation stakeholders collectively develop a new policy mix to respond to pressing digital, innovation, and development challenges. The new policy mix will address the wide range of policy issues that are required to get the most from innovation and digital technologies.

The AU Digital Transformation Strategy identifies this mix as policies addressing digital infrastructure, digital skills, innovation, entrepreneurship, and the enabling policy environment, which covers access, pricing, licensing, cybersecurity, and data protection and privacy. The new policy mix will support:

- New digital platforms to develop, test, implement, learn from, and refine innovations and technology-driven applications—locally, nationally, and regionally.
- Fresh approaches to policies and regulations that recognize the shortcomings of purely national rules and uncoordinated sectoral policies and strategies.
- New approaches and mechanisms for transparency, oversight, and accountability.

Of the many elements in the broad policy agenda, the following actions are of particular relevance for Africa to take advantage of the emerging global innovation landscape.

Formulating strategies and establishing policy frameworks

With inputs and experience from across the digital and innovation ecosystems, African governments can formulate and implement robust digital and innovation strategies, backed by adequate policy frameworks. To date, much of the budding innovation policy across Africa is either reactive or piecemeal, lacking linkages to national or continental strategies. But such strategies and frameworks can ensure that different sectors and value chains reinforce each other and lead to multiplier effects, rather than limited change within silos. They can also ensure alignment of digital and innovation policies with broader macroeconomic, financial, and industrial policy—and avoid inadvertently creating competing or disincentivizing policies. Creating such strategies and frameworks requires taking into account the available national and global evidence, seeking inputs from all stakeholders, allocating adequate financial resources, and investing in human capacity for effective implementation.

The AU Digital Transformation Strategy provides a comprehensive starting point for all African governments, but their strategies and policies also need to reflect local contexts.[13] A few African countries have digital or innovation strategies under implementation, including Kenya, Mauritius, Morocco, South Africa, and Tunisia. But most countries do not have such strategies—and if they do, only on paper. They could benefit from studying Korea, Finland, and Singapore, which have excelled at implementing digital and innovation strategies. Singapore, for example, developed a strategy that, while designed by government, was implemented through well-managed partnerships with industry and university research institutes. This highlights the need for bottom-up approaches to match top-down strategies, nationally and regionally.

Integrating innovation ecosystems

Digital and innovation policy in Africa is largely new and untested. That makes informing policymaking within a highly interactive innovation ecosystem—anchored on a shared vision, adaptive strategies, sustained commitment, and institutional cooperation—critically important to ensure well designed, equitable, and sustainable policies. This involves:

- Promoting an environment for leaders, policymakers, and main stakeholders to agree on and adhere to a participatory process related to policies for innovation, technology, and research and development.
- Putting in place policy processes and approaches that are problem-driven, iterative and learn from failure, building feedback loops to guide implementation roadmaps.

Few, if any, African countries are adequately supporting such ecosystems. Nigeria and South Africa have the most advanced innovation ecosystems, boasting 85 and 80 tech hubs respectively. But they have not adequately crowded in the private sector, academia, and all-of-government approaches to that ecosystem. There are also efforts by corporates, particularly in fintech, to build out private ecosystems, but they are not well linked to policymaking processes. Around the globe, Europe has the most advanced innovation ecosystems for a multi-country block. A report for the EU Digital Transition Partnership identified 247 innovation ecosystems in 35 countries, covering almost all of Europe.[14] Such a robust ecosystem results from:

- Targeting policies and collaborations to convene stakeholders.
- Transparently seeking policy inputs.
- Incentivizing partnerships across government departments, private firms, academic, researchers, and other stakeholders.

There are other useful models where a single country is developing and nurturing innovation ecosystems. For example, China has now overtaken the European Union with research and development investments, equivalent to 2.1% of GDP.[15] Today, of the world's largest digital firms, not one is European, with China, India, and the United States investing aggressively in innovation and digital ecosystems. This points to the significant challenge of harmonizing priorities, regulations, and policies across multiple countries. These models provide good lessons, including whether government or industry should lead in championing innovation ecosystems.

Even with the most integrated ecosystems and best policy frameworks, digital innovation and technologies will not provide full benefits to Africa without investments in both digital infrastructure and human capability.

Boosting investments in digital infrastructure and skill development

Even with the most integrated ecosystems and best policy frameworks, digital innovation and technologies will not provide full benefits to Africa without investments in both digital infrastructure and human capability. Broadband connectivity alone is projected to require up to $110 billion in investment, much to be borne by national budgets. So ensuring that such investments are targeted and that donor and private funding is crowded in will be critical.

Nearly 300 million Africans live more than 50 km from a fiber or cable broadband connection, so the lack of widespread high-speed (broadband) internet remains a significant hurdle for Africa to fully harness the full potential of digital transformation. Investment in connectivity infrastructure should thus be a priority action and one where, again, regional collaboration will be important.

A very large part of the IT content consumed in Africa comes from outside the continent. Investment in data centers in Africa will foster the development of a local digital industry. The main benefit of this localization will be cost savings on international connectivity; a second benefit is sovereign control over data.

Critically important for all African governments is avoiding a multiplicity of investment initiatives and instead promoting the implementation of common infrastructures, building on the political momentum around the AfCFTA agreement while simultaneously providing a basis for the benefits to be realized.

Countries will also need to invest in privacy and security measures and application-programming interfaces (which allow two applications to talk with each other, as with making a hotel reservation online). This will involve prioritizing investments, particularly in budget-constrained environments made even tighter by the impacts of COVID-19. It will also involve promoting cross-sector and cross-border connections to reduce costs and ensure seamless trade and data exchange. And it may involve developing Africa-centric, lower-tech solutions—particularly for rural areas.

Building human capital for innovation and digital transformation is equally important. The AU estimates that it will cost nearly $20 billion to provide digital skills training to all Africans. Ensuring the widespread availability of digital skills will require revamping education curricula according to current needs and trends in the digital economy and in the labor market, with a focus on science, technology, engineering, and mathematics and on entrepreneurship and innovation.

At the same time, it will be important to mainstream digital technologies and capabilities across all aspects of life and ensure that online services are relevant to all citizens, including eGovernment, eLearning, and eHealth. This requires building digital skills so that more people can be active participants in digital society.

All of this will require mainstreaming digital education at all levels and accelerating public–private support for education and worker training. It will also entail complementing a problem-driven approach to addressing national challenges in the digital arena with regional and continental frameworks. Countries that prioritize these investments will reap greater benefits in the future as economies rely more on innovation and digitally enabled sectors.

Managing climate risks

African countries need to respond to climate change with policy actions on many fronts—local, national, regional, continental, and international. The focus here is on agriculture, natural ecosystems, and energy. Countries can leverage climate-smart agriculture to increase agricultural productivity and build farmers' resilience. They can adopt innovative natural resource management practices to improve ecosystem resilience and promote inclusive growth. And they can harness Africa's considerable renewable energy resources to speed up their economic transformations while accelerating the transition away from dependence on fossil fuels. But for many of these efforts, countries cannot work alone and must engage with their neighbors, whether for ensuring markets for agricultural produce, managing shared river basins and lake resources, or generating and transmitting energy.

Climate-smart agriculture solutions are being applied in various parts of Africa and the world and could be replicated elsewhere on the continent. Push–pull technology, implemented in parts of East Africa, involves intercropping cereals with perennial legumes while growing perennial grasses on the border of the intercrop. The practice not only increases productivity, but also reduces dependence on chemical fertilizers, thus mitigating climate change. Hello Tractor, founded in Nigeria and now active in East Africa, is a farm equipment sharing application that connects tractor owners and smallholder farmers. By facilitating payments on a mobile device, the service helps farmers easily gain access to mechanization services and increases their production efficiency. Larger markets, through regional integration, offer opportunities for economies of scale and specialization, while regional collaboration on research can help share technological solutions with farmers.

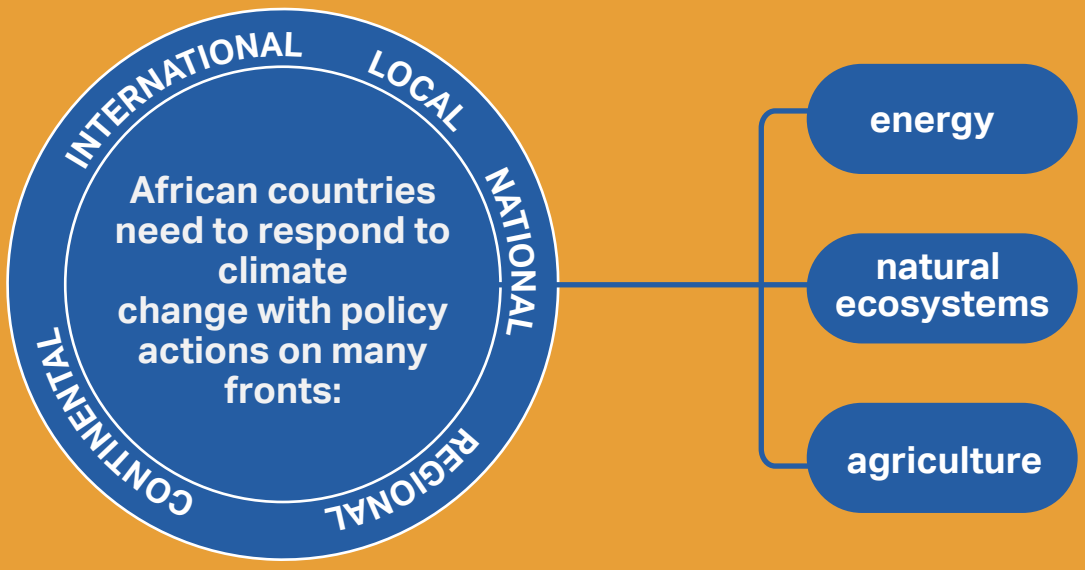
Climate-smart agriculture solutions are being applied in various parts of Africa and the world and could be replicated elsewhere on the continent.

To manage Africa's terrestrial and marine ecosystems, countries can implement natural resource management practices to improve the resilience of Africa's vulnerable ecosystems, integrating government regulations and customary laws in the management of natural resources, and cooperating with neighboring countries to come up with sustainable regional solutions. They can also increase the blue economy's contribution to economic transformation through a clear delineation of maritime boundaries and resolution of any maritime boundary disputes. And they can provide incentives for public–private partnerships and local communities to address climate change, deforestation, and ecosystem degradation. A variety of regional bodies cover forests in central Africa, lakes, and river basins and potentially offer a basis, beyond regional economic communities, for addressing climate threats to shared ecosystems.

To manage Africa's terrestrial and marine ecosystems, countries can implement natural resource management practices to improve the resilience of Africa's vulnerable ecosystems.

To harness renewable energy technologies, countries can attract investment by developing stable regulatory and policy environments, establishing competitive pricing to promote mini-grid solutions and stand-alone systems, and adopting other measures to attract domestic and foreign investors. They can also offer price incentives for investing in grid-connected and off-grid renewable energy systems. And they can overcome the steep upfront costs of renewable energy technologies for households and businesses through tax rebates, import duty reductions, and other innovative solutions. Again, regional collaboration can help in generating hydropower if countries can agree on terms to cooperate and manage water flows.

INFOGRAPHIC 5: RESPONDING TO CLIMATE CHANGE WITH POLICY ACTION



Climate-smart agriculture solutions are being applied in various parts of Africa and the world and could be replicated elsewhere on the continent.

Priorities for action

To manage climate risks, countries can do more to promote climate-smart agriculture, sustain green and blue ecosystems, and develop and scale up renewable energy. These policy priorities are consistent with three priorities of the Pan-African Negotiating Group in the Conference of Parties negotiations in global climate talks: to build healthy national and regional food systems; to promote climate resilience, environmental protection, and sustainable management of natural resources; and to facilitate access to affordable and sustainable energy.[16]

Promoting climate-smart agriculture

Adopting climate-smart agriculture will help African farmers increase their productivity, improve resilience, and mitigate climate change. Modern farm inputs (such as heat-tolerant crop varieties), improved management techniques (such as crop diversification), and innovations (such as precision agriculture) help optimize the use of farm inputs, increase farm productivity, and lower costs.

Key priority actions:

- *Increase farmers' technical skills and knowledge of technological innovations by boosting the capacity of national agricultural research and extension systems.* This can be done by increasing investments in research and development and in extension services. Kenya is strengthening the capacity of the local agricultural research and extension system to deliver training, knowledge, and advisory services to farmers.[17] The activities include upscaling climate-smart agriculture practices by financing interventions to promote and facilitate adoption of climate-smart agriculture practices, as well as supporting market, climate, advisory, and agrometeorological services.

- *Adopt, develop, and adapt technological innovations to local conditions.* Climate-smart agriculture solutions developed in advanced countries may not directly be applicable to conditions in Africa. So, it is essential to adapt them to the local conditions. In Kenya, the Ministry of Agriculture, Livestock, and Fisheries is also supporting the development, validation, and adoption of context-specific climate-smart agricultural practices. In Ghana, the Rain Forest Alliance is producing tailor-made online training materials to help cocoa farmers build resilience and end deforestation in the cocoa supply chain.

- *Improve rural coverage of digital applications and ensure that farmers have access to them.* Improve telecommunications coverage particularly in the rural areas to enable farmers to access digital applications. To increase farmers' access to these applications, the service providers also need to come up with products that are affordable. This can be achieved through public–private partnerships, with government providing incentives to private sector operators. In Tunisia, Plantix Tunisia is a mobile-based crop advisory application

for farmers and extension workers.[18] It can diagnose pest damage, plant diseases, and nutritional deficiencies affecting crops and offer treatment measures. To improve coverage and access, the project is training young agriculture graduates to be deployed across the country.

- *Promote regional collaboration in agricultural research.* To share knowledge and experiences in the production of climate-smart agricultural practices tailored to specific agroclimatic zones and subzones requires regional collaboration among national agricultural systems. Agricultural research in Africa is highly fragmented given the large number of countries and the wide variety of agroecological zones and farming systems. Much of Africa's agricultural research and development investment has come from donors, with limited private sector involvement. Regional collaboration is therefore required to develop an African funding base to support supranational research and reduce the current dependency on donors. In the absence of such a funding structure, existing models of supranational research—such as the West Africa Agricultural Productivity Program and the East Africa Agricultural Productivity Program—can be leveraged to promote regional spillovers.

INFOGRAPHIC 6: MANAGING CLIMATE RISKS

Sustaining green and blue ecosystems

Sustainable management of both the green and blue ecosystems can be enhanced by deepening regional collaboration.

A key policy priority for Africa is to sustain its green and blue ecosystems. Sustainable use of the green ecosystem can be achieved by devising and applying nature-based solutions to address land use problems, while blue ecosystems can be sustainably managed by using innovative coastal zone management approaches such as blue carbon projects. Sustainable management of both the green and blue ecosystems can be enhanced by deepening regional collaboration. Key priority actions:

- *Devise and apply nature-based solutions to address land use problems.* To sustainably manage Africa's green ecosystems, countries can apply nature-based solutions, which involve using natural alternatives to solve land use problems such as deforestation and water scarcity. Examples include afforestation, agroforestry, and integrated watershed and catchment management. Co-designed by government agencies, civil society, and local communities, they provide incentives for public-private partnerships to address climate change and ecosystem degradation. Payments from NBS-related initiatives such as REDD+ or the Clean Development Mechanism provide financial incentives to forest-dwelling communities to plant trees and reduce deforestation.

  For afforestation, the Humbo community project in the southwestern Ethiopia involves the restoration of indigenous tree species. A collaboration under the Clean Development Mechanism, it involves local and regional governments, local communities, the Ethiopian Environmental Protection Agency, and development partners. It was the first in Africa to sell temporary Certified Emissions Reductions, which were purchased by the World Bank BioCarbon Fund. Revenue from the carbon credits is managed by the community-owned forest management cooperatives and is being used to improve the livelihoods of the people through investments in micro businesses, agroprocessing, and environmental protection.[19]

  For agroforestry, integrating trees on farms and rangelands, with a view to reduce farmer dependence on a single staple crop and thus to diversify their livelihoods, is a nature-based solution in the Lushoto District in northeastern Tanzania, where more than 60% of the land is eroded. An integrated watershed and catchment management approach controls runoff and reduces soil erosion. In the Uluguru mountain range in eastern Tanzania, a hydrological assessment in the catchment had revealed an overall decrease in water quality due to a dramatic increase in sediment loading in the Ruvu River, the main water source in the area. To address the problem, upstream farmers received payments from downstream buyers (industry, sewage plants) for adopting agricultural practices to control runoff and soil erosion while improving crop production. The approach included construction of bench terraces, reforestation, intercropping crops with fruit trees, mulching, and fertilizing with animal manure.

- *Sustain blue ecosystems by promoting blue carbon projects in coastal areas.* Africa's blue economy plays a key role in providing employment, food security and nutrition. More than 12 million people are employed in fisheries, the largest blue economy sector, providing food security and nutrition for more than 200 million Africans and generating value added estimated at more than $24 billion, or 1.3% of African GDP.[20]

Blue carbon projects involve the rehabilitation, protection, and sustainable use of mangroves in coastal areas. Seagrasses, salt marshes, and mangroves sequester and store carbon dioxide, referred to as "blue carbon." Blue carbon projects can generate carbon credits that can be sold on carbon markets under the mangrove REDD+ or Clean Development Mechanism. An example is the Mikoko Pamoja project, currently implemented in Gazi Bay, Kenya.[21] The local community depends on the mangroves for their livelihoods, with 80% of the people making their living from fishing-related activities. Revenues from selling the credits go for mangrove planting and conservation and community development.

- *Deepen regional collaboration for Africa's green and blue economies.* To optimize the benefits of Africa's green and blue economies, a regional approach to addressing forest governance would make it easier for countries to access climate finance initiatives such as REDD+ to help achieve their nationally determined contributions under the Paris Agreement on climate. The Central African Commission on Forestry seeks to play this role for its member states. Regional collaboration is also required to resolve maritime boundary disputes and to address piracy, illegal fishing, and plastic pollution. The Economic Community of Central African States has integrated maritime security for its member states, including joint patrols, harmonized actions at sea, a regional maritime tax regime, and information sharing and management.

Developing and scaling up renewable energy

Africa has the lowest electricity access in the world but is endowed with abundant renewable energy resources that remain underexploited. Two key barriers to developing them are lack of investment and steep upfront costs of renewable technologies. Key priority actions:'

- *Increase investment by strengthening the policy and regulatory frameworks.* Developing robust legal and regulatory frameworks and independent regulatory bodies will provide a sense of security and certainty to potential investors, both domestic and foreign. Nigeria established a new entity, Nigerian Bulk Electricity Trading, to buy electricity from independent power producers and provide capital and market guarantees.

Africa has the lowest electricity access in the world but is endowed with abundant renewable energy resources that remain underexploited.

Innovative policy instruments can provide price incentives for investing in grid-connected and off-grid renewable energy systems. Feed-in tariffs in South Africa require the state-owned utility, Eskom, to purchase renewable energy from independent power producers at predetermined prices,[22] which reduce financial risk and increase market certainty for renewable energy developers and private investors.

- *Broaden access to renewable energy technologies by reducing the steep up-front costs.* Access to renewable energy can be improved by promoting digital technology and innovative business models that can help to reduce the costs, especially for poor households. In a scheme operated by M–KOPA Solar in Kenya, customers pay a small deposit for a solar home system and repay the balance in small installments on a pay-as-you-go basis using M–PESA.

  In Rwanda, the Infrastructure Gender Mainstreaming Strategy 2017–2022 has special provisions to address gaps in women's involvement in the energy value chain, such as access to finance. And in many parts of Africa, wireless carrier MTN Group addresses the lack of access to banking facilities and credit by allowing its mobile money subscribers to make single or bulk payments without having a bank account.

- *Deepen regional collaboration to reduce electricity costs and increase access.* Deeper regional collaboration on energy resource-sharing will help maximize the benefits from Africa's renewable energy resources and increase regional energy security. This can be done by integrating regional energy markets to facilitate cross-border energy trade. Increasing cross-border energy trade can drive down costs, create economies of scale, and stimulate investment, and thus boost electricity access across the region. Regional energy integration could save an estimated $63 billion of the $450 billion in investments needed to quadruple electricity use by 2040.[23] And the returns on cross-border transmission investment could be 20–30% across much of the region, rising to 120% for Southern Africa.[24]

  The decision by African Union Commission to launch the African Single Electricity Market in 2021 is a step in the right direction. When fully operational in 2040, it will be the world's largest single electricity market, covering 55 member states and serving 1.5 billion consumers.

Collaborating to integrate—by providing regional public goods

Each of the three key challenges that are the focus of this report—jobs, innovation, and climate—could benefit from greater regional collaboration to provide regional public goods and support countries in achieving their transformation goals.

Regional collaboration and integration have long been high on the agenda in Africa, as with the Abuja Road Map to create the African Economic Community and most recently the AfCFTA. Along with the African Peace and Security Architecture, the Programme for Infrastructure Development in Africa, and others, the AfCFTA reflects African leaders' recognition of their nations' interdependence and a stated ambition to deepen it.

But implementing regional frameworks has for the most part been slower than planned. One reason is low implementation capacity and inadequate financing. Aspirations are bold, with achievements too often elusive. But the reasons for slow progress go beyond capacity and financing. They are mired in the weak incentives for countries to engage politically when the gains are uncertain or small, especially for the large economies, and the reluctance to give up control over some of their national policies to regional and continental organizations is considerable.

There is thus a gap between the regional politics that shape the agreements that heads of state sign and the domestic politics that shape what governments implement and how. In countries with weak administration and uncertain rule of law and accountability (particularly in imposing credible sanctions for noncompliance), implementation takes place only when the incentives align to support it.

Jobs, innovation, and climate could benefit from greater regional collaboration to provide regional public goods and support countries in achieving their transformation goals.

Many of the challenges that countries face can be addressed by deepening regional integration and collaborating to promote regional public goods. But this requires understanding the nature of the regional public good being sought, to help overcome implementation barriers. It also requires shifting the integration narrative from pursuing not just regional market integration but also broader regional collaboration. That can create a virtuous circle where greater collaboration in other areas will help ensure the benefits of the trade agenda at the national level.

This raises the need to provide regional public goods and services whose benefits cross borders—such as integrated labor markets, digital infrastructures to support region-wide innovation, cross-border natural resource protection and development, as well as completing transport corridors, reducing the spread of disease, disseminating knowledge about climate-smart agricultural techniques, or integrating regional communications networks and financial markets. Thinking in terms of regional public goods can help both in the analysis of what type of regional collaboration is required and where the blockages lie—and in shifting the narrative toward the need to look beyond trade for the benefits of the AfCFTA to emerge.

The AfCFTA aims to create a single market for goods and services by removing tariffs for trade among African countries. Successive rounds of negotiations set protocols for trade in goods, trade in services, and dispute settlement. Agreements on tariff concessions on trade in goods, rules of origin, and commitments for trade in services and e-commerce are expected to further accelerate intra-African trade.

Upholding the provisions of the agreement will be crucial for the AfCFTA's success. The AfCFTA secretariat will have the legal authority to conduct negotiations, monitoring, and oversight on behalf of member states, along with the capacity to provide technical assistance and practical guidance. An institutionally strong secretariat—with the authority and capacity to oversee trade rules in line with the text of the agreement—will build credibility and reduce trade policy uncertainty and strengthen Africa's position in external trade negotiations.

A perfect example of a regional, indeed global, public good is reigning in the COVID-19 pandemic, a sinister public bad. For health, countries need to quickly acquire medical equipment to relieve pressure on hospitals and get vaccines to shield the public. For wealth, countries need flatten the infection curve while minimize the costs of curtailing economic activities.[25] The African Medical

Supplies Platform—a joint effort of the African Union, the African Centers for Disease Control, the regional economic communities, and other regional organizations—is linking national health providers with global suppliers of vaccines, personal protective equipment, ventilators, and other equipment to battle this and any other future pandemic. It is precisely the kind of regional collaboration that can lead to deeper regional and global integration (box 1).

Priorities for action

A regional public goods approach requires complementing the traditional top-down approach with regional organizations taking the lead in converting regional commitments to national actions—with a bottom-up approach that identifies local or national problems with a regional reach and formulates policy responses. This requires linking national development plans and programs with regional plans and programs (infographic 5).

The bottom-up problem-solving approach to providing regional public goods determines the interests of countries, the incentives of domestic players, and the type of policies that are appropriate, thus helping to overcome implementation gaps. It starts by asking what domestic problem needs the provision of a regional public good and gradually builds coalitions of relevant actors, and the capabilities of countries and organizations through repeated cycles of program implementation and adaptation, increasing the feasibility of further collaboration. The Maputo Development Corridor in Southern Africa and the Northern Corridor in East and Central Africa succeeded more from this bottom-up approach than from the Southern African Development Community (SADC) or EAC secretariats, though they served to support regional goals.

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Box 1. Line of attack for using the regional public goods approach

1. Analyze the problem

- Why is greater regional collaboration needed, and for whom?
- Which regional public good (RPG) is underprovided?

2. Understand the type of RPG

- What type of RPG is underprovided?
- How does this shape the long-term interests of countries in providing or not providing the RPG?
- What other factors—geographic, historic, economic, political—define interests and incentives around providing the RPG?

3. Identify necessary services and policies

- What services or solutions are needed for the RPG to be provided?
- What are the RPG characteristics of those services or solutions? For example, is one a weakest link solution, where the eventual provision is determined by the smallest effort or by no effort? Or is it a weighted sum solution, where all members must be mobilized to do their part?
- What minimum combination of services and solutions is needed for the RPG to be provided?

4. Choose a suitable coalition and framework for collaboration

- Is the issue more likely to be successfully addressed through bilateral collaboration, through a regional group of countries, or through a combination?
- Does everyone need to be equally on board, or just a few, for the RPG to be provided?
- Does a suitable regional framework already exist? Is it flexible enough?
- What coalitions or alliances need to be created or promoted for the RPG to be provided?

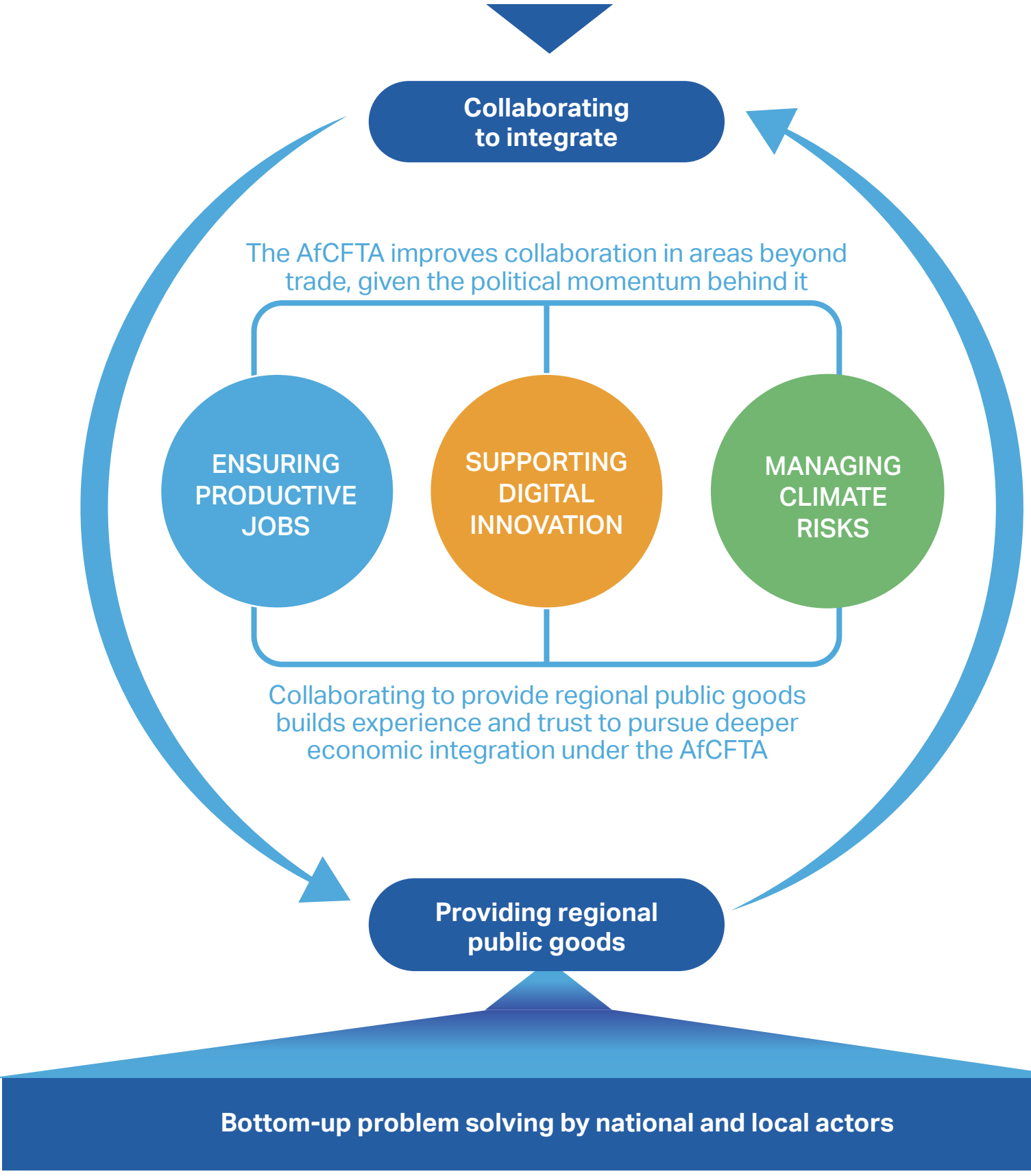
5. Act

- What type of policy implementation is it—fairly easy or very difficult?
- How can national contributions be incentivized?
- At what level should most efforts be focused to ensure real organizational change—for example, the regional level for best shot and policymaking/elite services, or the local level for weakest link and implementation-intensive service delivery?
- What short-term or partial solutions can change the environment and increase traction for regional collaboration?
- How can negative forces and disincentives be lessened to muster support for implementation?

6. Adapt and repeat

- What has not worked in the past, and why?
- Does the initial problem analysis (step 1) hold?
- What can be improved, and how?
- Do previous actions open new doors for advancing RPG provision?

INFOGRAPHIC 7: INTEGRATING TO TRANSFORM



Reframing regional collaboration as addressing national problems

One way to address past hurdles in regional cooperation is to reframe these top-down processes as entry points for addressing problems at the local or national level. That requires understanding some of the needs or ambitions of stakeholders that could be advanced by collective, regional approaches. It also requires understanding how the high-level trade or other regional collaboration agreements might help provide a useful framework to address those needs. The One Network Area mobile phone network in East Africa was a bottom-up approach to regional integration, where the private sector was able to negotiate to provide a regional mobile network, thus further facilitating regional communication and trade.

The AfCFTA can arguably help firms find new markets or source inputs from beyond their regional trade bloc—which are those firms, and how to ensure their current difficulties are addressed? That is an agenda that is ongoing now.

In the realm of water management and renewable energy, regional collaboration around dam construction and water levels can help address issues of renewable energy production, access, and irrigation, and can facilitate financing national priority projects. Framing problems in this way can help generate greater buy-in and momentum for implementing agreements. While the Renaissance Dam on the Nile remains somewhat controversial given a lack of trust among countries, the Nile Basin Initiative has continued to provide a platform for sharing technical data and seeking joint solutions to energy provision and transmission, as well as water flow and irrigation at a more local level.

Assembling coalitions for change

Identifying the problem should be followed by understanding what type of regional public good is involved, and which actors, within and across affected countries, can champion and help undertake implementation and at what level. Is the issue more likely to be successfully addressed through national, bilateral, or a larger regional group of countries? Does everyone need to be equally involved, or just a few, for the regional public goods to be provided? Does a suitable collaboration framework already exist? Is it flexible enough?

A common assumption is that regional collaboration and integration must take place through regional organizations. Experience shows that this is not always the case. Regional secretariats and commissions are important actors for convening and providing forums for discussion, but they are not always well-placed or indeed mandated to lead or promote implementation of the agreements they have helped foster.

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Thinking in terms of regional public goods can help identify where blockages might arise, and where to focus support efforts by understanding the types of regional public goods in question for implementation.

Thinking in terms of regional public goods can help identify where blockages might arise, and where to focus support efforts by understanding the types of regional public goods in question for implementation. Does implementation require collective action across multiple countries for the benefits to be realized, as in creating a free trade area or a communications network, where all participants must be mobilized (a summation regional public good)? Is it a weakest link issue, where the focus has to be on key bottlenecks, as in managing epidemics or transport corridor blockages due to nontariff barriers (if border officials demand side-payments)? Or is it something where a best shot from any participant will ensure benefits for all, as with a vaccine or climate-smart seed variety? Identifying the type of regional public good characteristic of different types and at different stages of collaboration can help identify the services and solutions essential for implementation.

For example, the TradeMark East Africa model of flexible donor support to reduce regional trade costs reflects this way of matching top-down objectives and agreements with bottom-up problem-solving initiatives around different types of regional public goods, adapting the support to the type and needs. The technology for the electronic cargo tracking system they helped roll out in East Africa is a best shot regional public good—not all participants need to come up with their own system to benefit. But whereas best shot public goods are relatively easy, weakest-link public goods such as the Niger and Nile regional water systems can suffer if a single country takes unilateral decisions about flows, thus undermining the benefits to all, unless an agreement can be reached. The risk is focusing only on best shot regional public goods, which are easier—such as writing a strategy or the text for the AfCFTA agreement—than implementing it. A summation public good like a trade area requires implementation by all participants to reap the full benefits.

Sometimes reform coalitions can stem from high-level political initiatives, but they often require a combination of different regional, national, and perhaps even local actors to be on board—thus providing demand for the regional good. The Maputo Development Corridor fits this approach, mixing high-level engagement with private sector engagement and wider initiatives for those less directly involved.

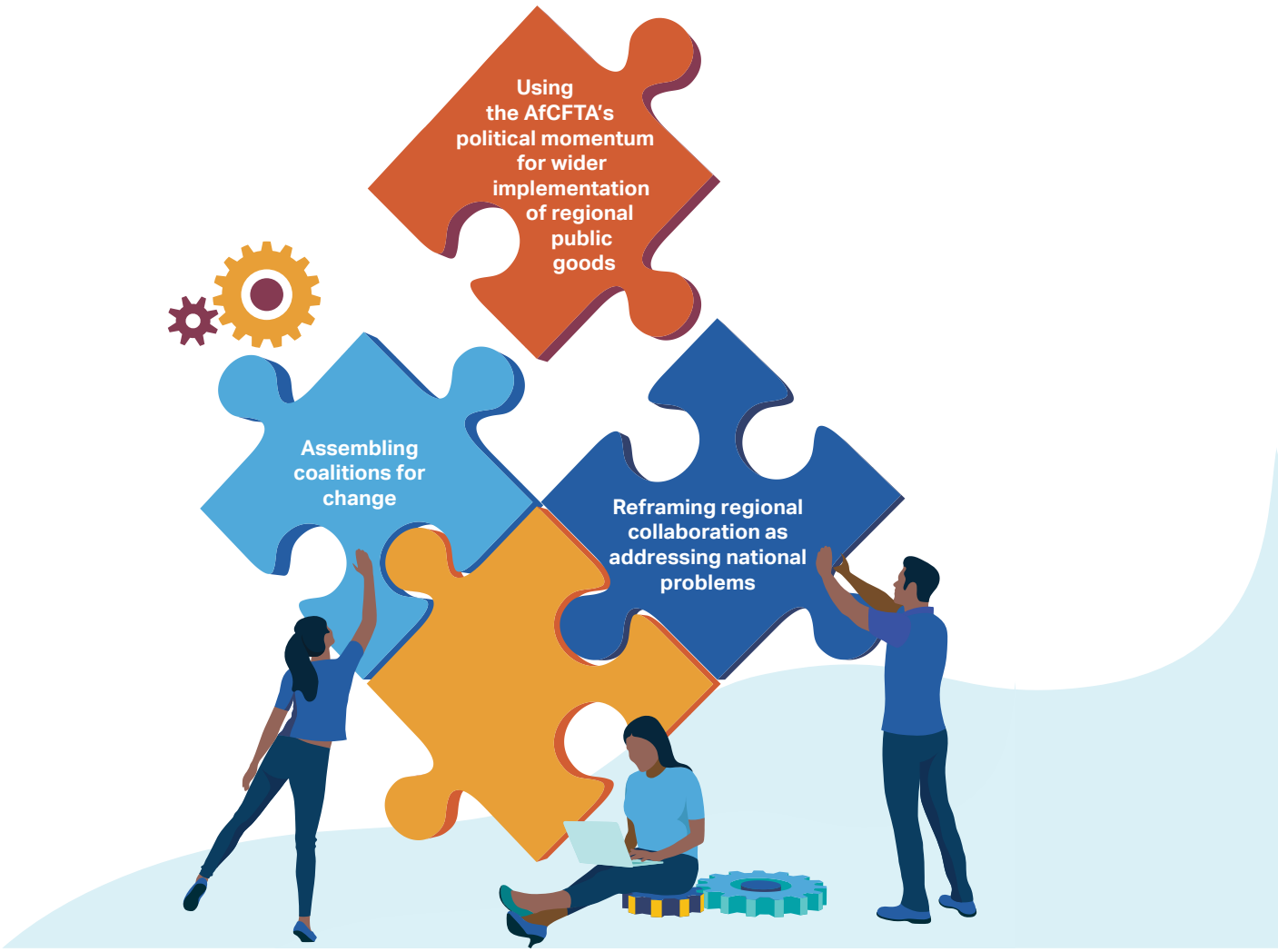
Resolving problems is about working with and for specific constituencies, as with private firms seeking to trade more easily, civil society seeking to protect citizens engaged in cross-border movements of livestock, or public agencies seeking to apply formal rules in complex and fragile circumstances. Of course, some stakeholders may stand to lose from certain aspects of regional collaboration, requiring that solutions be sought by engaging with these groups, and potentially offset their losses.

Work to help roll out the Common Market for Eastern and Southern Africa (COMESA) Simplified Trade Regime sought to build such coalitions around key border posts where the regime will be implemented. Civil society organizations that seek to train, inform, and support informal traders in West Africa can also help the Economic Community of West African States implement its customs union.

Using the AfCFTA's political momentum for wider implementation of regional public goods

The AfCFTA currently enjoys a lot of political momentum and attention. But for the main benefits to flow, other regional public goods have to be in place—not just existing regional trade liberalization agendas on which the AfCFTA builds, or hard and soft trade and transport infrastructures, or better aligned quality and standards frameworks. It will also require cross-border energy connections and markets to ensure viable energy distribution and wider access to it; regional arrangements for reliable and appropriately priced mobile telephony roaming and internet connections; more flexible movements of people and labor, recognizing qualifications; and coordinated responses to insecurity and climate change. All are forms of regional public good provision—addressing different problems, with different regional public good characteristics, requiring different coalitions of reform. At the same time, existing regional collaboration frameworks and agreements have often struggled with implementation.

INFOGRAPHIC 8: NATIONAL PRIORITIES HAVE REGIONAL SOLUTIONS



Each of these additional regional agendas is an important facilitator for delivering AfCFTA benefits, but in a circular way they can also benefit from the political momentum behind the AfCFTA. The AfCFTA can thus be an impetus for why more regional collaboration and integration are necessary. It can also promote dialogue on how best to pursue regional collaboration, and how to prepare different actors to contribute to delivering the greatest benefits.

Collaborating to tackle the three frontline challenges covered in this report

Ensuring productive employment

The free movement of workers and business people is a big issue for Africa's labor market. Though the AfCFTA garners much of the attention, the closely connected Protocol on the Free Movement of People garners far less, with only four countries having ratified it.

Consider this political matter in terms of the bottom-up problem-solving approach proposed here: Creating a common market with the free movement of people requires all countries to implement one. But it may be possible to address movement at a narrower, sectoral level, addressing specific markets. In a regional framework, different actors could agree to allow increased movement in agreed sectors. A coalition of interested private and public parties from two or more countries could then coordinate their efforts to increase political traction, all framed as making the AfCFTA a reality given the need for cross-border services to support trade in goods.

In the East African Community, the private sector identified the lack of mutual recognition of professional qualifications across borders as hindering the regional market. Without the lead of a regional body, groups from sectors such as accounting found ways to ensure mutual recognition of qualifications among professional associations to allow better cross-border integration of professional services. For accountancy services, an agreement was signed by all the professional institutes without substantial preparatory work. For engineering services, an agreement initiated by the registrars in Kenya, Tanzania, and Uganda was signed only by the engineering boards, which saw their underlying qualifications and forms of regulation as sufficiently similar to allow for mutual recognition. For architectural services, and agreement was initiated by the East Africa Institute for Architects, a regionwide umbrella organization for the bodies representing architects in each country.

Other examples include regional training centers. The COMESA African Leather and Leather Products Institute training centers—though not regional as such—take place in one country with wider regional benefits (a best shot). They also address the problem of how to add value to the large livestock population in several COMESA countries, again working with a coalition of interested parties, including the Zambia government, to increase buy-in for the approach.

Supporting digital innovation

For innovation to fully benefit Africa requires well-integrated digital infrastructure across the continent. While regional agreements to harmonize standards are necessary, they often are not enough. Some technologies call for agreement on leadership, which suggests a transfer of decisionmaking to a frontrunner that can provide a public good to the benefit of multiple consumers. The East Africa One Network Area roaming initiative lowers the cost of roaming and communications among Kenya, Rwanda, South Sudan, and Uganda through regulatory intervention and coordination—and Tanzania joined in January 2021. Again, the case for connecting digital infrastructure to benefit from the AfCFTA is quite clear.

Aligning national innovation systems may offer another opportunity, but it needs to be clear for whom and for what. Similarly, aligning national digital innovation strategies with the AU digital transformation strategy may seem attainable (best shot), but the challenge is in the implementation. Technological and regional solutions can be helpful, and organizations and capacities exist to provide them, but only if responding to demand and need: What is the issue they seek to address?

Having identified the problem that innovation systems seek to address, the question is to see what kind of regional public good is envisaged—is it about a framework, or about eliminating weakest links and therefore which actors need to be involved? While the AfCFTA will lead to negotiations on the digital economy, broader innovation systems will complement the AfCFTA with new business models and technology applications that will produce more jobs.

For innovation to fully benefit Africa requires well-integrated digital infrastructure across the continent. While regional agreements to harmonize standards are necessary, they often are not enough.

Managing climate risks

Preserving blue and green ecosystems requires regional collaboration on multiple issues and in multiple forms, so a more problem-focused approach can help get beyond broad climate-related policies to implementation. Even if regional organizations exist for this, enforcing and implementing agreements remains a country responsibility. Focusing on specific bottom-up problems within these broader issues can help identify where to zoom in on specific aspects of water conservation, or energy generation and how to address the tradeoffs between and within countries.

Renewable energy, particularly through hydropower, is a good example, where upstream energy generating capacity in one country can affect downstream water availability for irrigation in another. Gathering technical data from across the river basin—helped by new tools to simplify data-sharing—can then identify key bottlenecks and tensions, specify the key actors that will be affected, and seek to address specific problems, all while addressing the broader problem of energy distribution for broader economic transformation.

Regional power pools have the potential to bring down unsustainably high energy costs for both producing and consuming countries, and accelerate the transition to renewable energy by increasing the potential market, and ensuring that infrastructure can run at full capacity (even if domestic consumption is low). While a sophisticated regional market mechanism can be set up, as in Southern and East Africa, it requires sufficient installed capacity and good interconnections, and it must be driven by some key actors. The initial success of the Southern African Power Pool came from solving the problem of changing domestic and regional energy capacities and meeting South Africa's growing energy needs.

Preserving blue and green ecosystems requires regional collaboration on multiple issues and in multiple forms, so a more problem-focused approach can help get beyond broad climate-related policies to implementation.

Integrating to transform demands visionary leadership

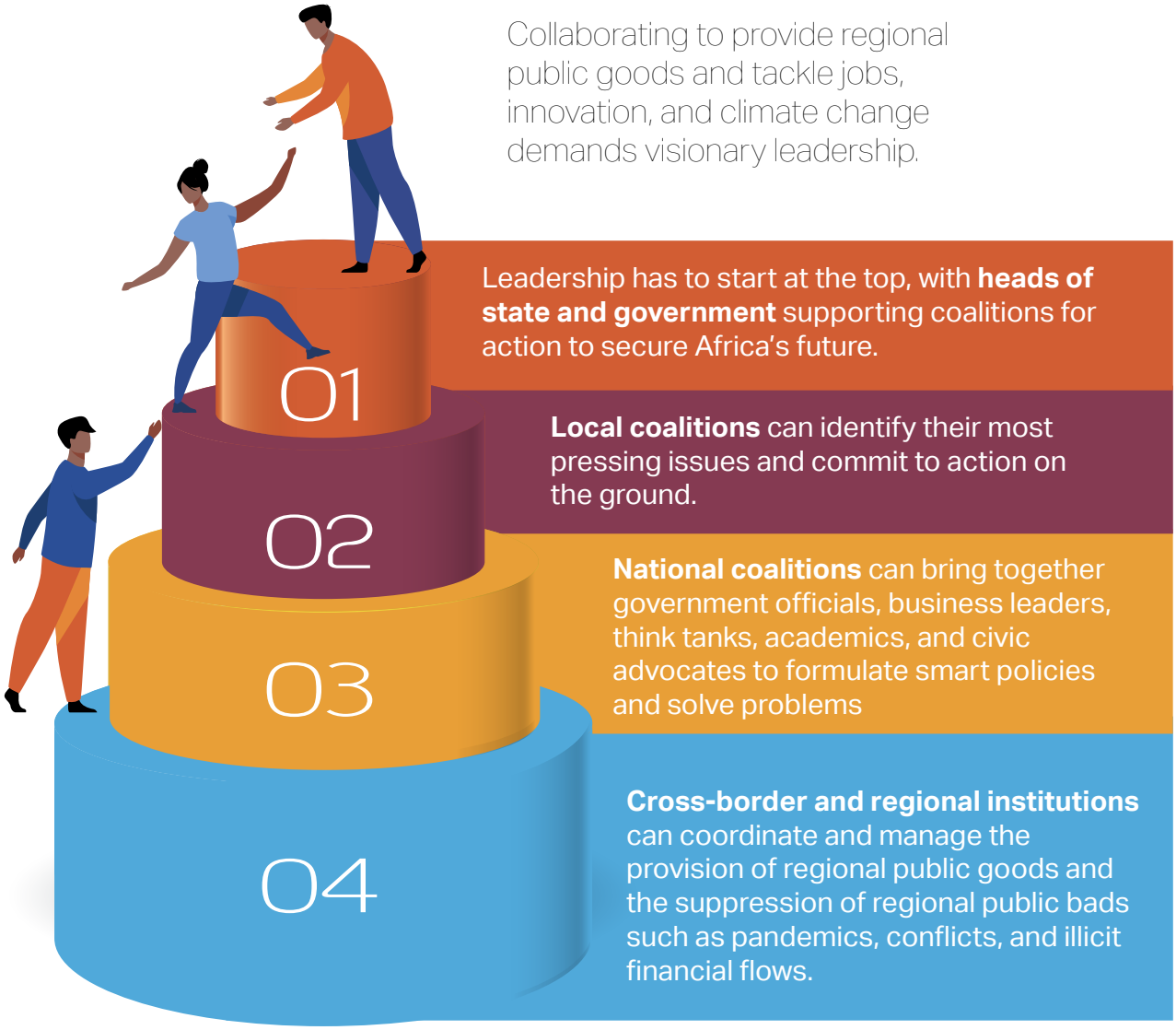
Recovering from the COVID-19 crisis is an opportunity to build trust in government institutions and between government leaders and citizens to seize the moment in taking difficult policy decisions.

Collaborating to provide regional public goods and tackle jobs, innovation, and climate change demands visionary leadership. And that leadership has to start at the top, with heads of state and government supporting coalitions for action to secure Africa's future. Local coalitions can identify their most pressing issues and commit to action on the ground. National coalitions can bring together government officials, business leaders, think tanks, academics, and civic advocates to formulate smart policies and solve problems. Cross-border and regional institutions can coordinate and manage the provision of regional public goods and the suppression of regional public bads such as pandemics, conflicts, and illicit financial flows.

Now, both regional integration and collaboration have been set back by the spread of COVID-19. Most African economies are expected to see their growth slow or recede, some considerably. The impacts will take a toll on all five elements of DEPTH. They will also deflect attention from tackling the frontline challenges of innovation, demographics, and climate. As countries recover, they should act not just to restore growth. They should work with the private sector and civil society to tackle the frontline challenges analyzed in this report in ways that support growth with depth. If they can get on a sustainable trajectory to transform their economies, they will be much more resilient to the future shocks that are certain to befall them.

African leaders should seize this moment to work with business, civil society, and the international community to drive the economic transformation agenda and ensure that it is not derailed. Recovering from the COVID-19 crisis is an opportunity to build trust in government institutions and between government leaders and citizens to seize the moment in taking difficult policy decisions. This increased trust can facilitate the acceleration of reforms during the recovery and strengthen transparency and accountability. It can also turn successful short-term policy measures into medium to long-term reforms by creating new incentives for stakeholders to support the new agenda. And it can foster support for increasing the capacity and preparedness to deal with economic shocks—to secure Africa's future by integrating to transform.

INFOGRAPHIC 9: THE NEED FOR VISIONARY LEADERSHIP



References

ACET (African Center for Economic Transformation). 2014. *African Transformation Report: Growth with Depth*. Accra, Ghana.

AU (African Union). 2020. *The Digital Transformation Strategy for Africa (2020–2030)*. Addis Ababa.

Akresh, R., D. de Walque, and H. Kazianga. 2013. "Cash Transfers and Child Schooling: Evidence from a Randomized Evaluation of the Role of Conditionality." Policy Research Working Paper 6340, World Bank, Washington, DC.

AUDA-NEPAD (African Union Development Agency, New Partnership for Africa's Development). 2021. "Strategic Priorities." Available at: https://www.nepad.org/strategic-priorities.

Azevedo, J.P., A. Hasan, D. Goldemburg, S.A. Iqbal, and K. Geven. 2021. "Simulating the Potential Impacts of COVID-19 School Closures on Schooling and Learning Outcomes: A Set of Global Estimates." Policy Research Working Paper 9284, World Bank, Washington, DC.

Brookings. 2019. *Harnessing Africa's Youth Dividend: A New Approach for Large-scale Job Creation*. Washington, DC: Brookings Institution.

Brown, E. K., and H. Slater. 2018. *The Future of Work in Africa: Implications for Secondary Education and TVET Systems*. Background Paper for Master Card Foundation Study on Secondary Education in Africa. Accra, Ghana: African Center for Economic Transformation (ACET).

Eberhard, A., O. Rosnes, M. Shkaratan, and H. Vennemo. 2011. *Africa's Power Infrastructure: Investment, Integration, Efficiency*. Washington, DC: World Bank. https://openknowledge.worldbank.org/handle/10986/2290.

Energypedia. 2021. "South African Renewable Energy Feed-in Tariff." Available at: https://energypedia.info/wiki/South_African_Renewable_Energy_Feed-in_Tariff.

GSM Association. 2020. *The Mobile Economy—Sub-Saharan Africa 2020.* London, UK.

Komorowski, M. 2019. "Innovation Ecosystems in Europe: First Outline of an Innovation Ecosystem Index." Brussels: imec–VUB–SMIT (Vrije Universiteit Brussel, Studies on Media, Innovation and Technology).

McKinsey. 2015. *Brighter Africa: The Growth Potential of the Sub-Saharan Electricity Sector*. New York: McKinsey & Company. Available at: http://www.mckinsey.com/insights/energy_resources_materials/powering_africa.

Muhoza, D.N., P.C. Rutayisire, and A. Umubyeyi. 2016. "Measuring the Success of Family Planning Initiatives in Rwanda: A Multivariate Decomposition Analysis." *Journal of Population Research* 33 (4): 361–377.

Webmanagercenter. 2017. "Tunisia-GIZ: Plantix, A Smartphone Application Serving the Agricultural Sector." June 21. Available at: https://www.webmanagercenter.com/2017/06/21/407967/tunisie-giz-plantix-une-application-smartphone-au-service-du-secteur-agricole/.

UNECA (United Nations Economic Commission for Africa). 2016. *Africa's Blue Economy: Opportunities and Challenges to Bolster Sustainable Development and Economic Transformation*. Issues Paper. Addis Ababa: UNECA.

UNECA (United Nations Economic Commission for Africa) and AfDB (African Development Bank). 2018. *African Statistical Yearbook 2018*. Addis Ababa and Abidjan, Côte d'Ivoire: UNECA and AfDB.

UN (United Nations). 2019a. *World Population Prospects. The 2019 Revision*. New York: UN Department of Economic and Social Affairs, Population Division.

World Bank. 2021. "Kenya Climate Smart Project." Washington, DC: World Bank. https://projects.worldbank.org/en/projects-operations/project-detail/P154784.

World Economic Forum. 2018. "Global R&D spending is now dominated by two countries." Geneva, Switzerland.

WorldVision. 2021. "Humble Humbo's Carbon Trade Upgrade." Available at: https://www.worldvision.com.au/global-issues/work-we-do/climate-change/humble-humbo-carbon-trade-upgrade.

Wylie, L., A.E. Sutton-Grier, and A. Moore. 2016. "Keys to Successful Blue Carbon Projects: Lessons Learned from Global Case Studies." *Marine Policy* 65: 76–84.

End notes

1 ACET 2014.
2 United Nations 2019a.
3 Brown and Slater 2018.
4 Brookings 2019.
5 Azevedo 2021.
6 Brown and Slater 2018.
7 Akresh, de Walque, and Kazianga 2013.
8 Brown and Slater 2018.
9 Brown and Slater 2018.
10 UNECA and AfDB 2018.
11 Muhoza, Rutayisire, and Umubyeyi 2016.
12 GSM Association 2020.
13 AU 2020.
14 Komorowski 2019.
15 World Economic Forum 2018.
16 AUDA-NEPAD 2021.
17 World Bank 2021.
18 Webmanagercenter 2017.
19 World Vision 2021.
20 UNECA 2016.
21 Wylie, Sutton-Grier, and Moore 2016.
22 Energypedia 2021.
23 McKinsey 2015.
24 Eberhard et al. 2011.
25 Byiers et al. 2021.

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