



AFRICA TOMORROW

Pathways to
prosperity

Jakkie Cilliers

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Dedication

To my 1.4 billion fellow Africans

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List of abbreviations and acronyms

1D1F	One District One Factory
ACE	African Center for Economic Transformation
ACLED	Armed Conflict Location & Event Data Project
ACP	African, Caribbean and Pacific
ACPED	African Cabinet and Political Elite Dataset
AfCFTA	African Continental Free Trade Area
AfDB	African Development Bank
AFSA	Alliance for Food Sovereignty in Africa
AGOA	African Growth and Opportunity Act
AGRA	Alliance for a Green Revolution in Africa
AI	artificial intelligence
AIAI	al-Itihaad al-Islamiya
AIDA	Accelerated Industrial Development of Africa
AMISOM	African Union Mission in Somalia
ANC	African National Congress
APSA	African Union Peace and Security Architecture
AQIM	al-Qaeda in the Islamic Maghreb
AR	augmented reality
ASEAN	Association of Southeast Asian Nations
ASWJ	Al-Sunna wa Jama'ah
ATO	African Trade Observatory
AU	African Union
AU PSC	African Union Peace and Security Council
BBOE	billion barrels of oil equivalent

BIAT	Action Plan for Boosting Intra-Africa Trade
BOT	build–operate–transfer
BUILD	Better Utilization of Investments Leading to Development Act
CAADP	Comprehensive Africa Agriculture Development Programme
CAETE	China-Africa Economic and Trade Expo
CAR	Central African Republic
CARI	China Africa Research Initiative
CARICOM	Caribbean Community
CBAM	Carbon Border Adjustment Mechanism
CENI	Commission Électorale Nationale Indépendante
CIDCA	China International Development Cooperation Agency
COMESA	Common Market for Eastern and Southern Africa
CPI	Corruption Perception Index
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CRBC	China Road and Bridge Corporation
DALYs	disability-adjusted life years
DRC	Democratic Republic of the Congo
DRS	Debtor Reporting System
DSSI	Debt Service Suspension Initiative
EAC	East African Community
ECD	early childhood development
ECOWAS	Economic Community for West African States
EIP	External Investment Plan
EPA	Economic Partnership Agreement
EPRDF	Ethiopian People’s Revolutionary Democratic Front
ETS	Emissions Trading Scheme
EU	European Union
FAO	Food and Agriculture Organization

FATCA	Foreign Account Tax Compliance Act
FIS	Front Islamique du Salut/Islamic Salvation Front
FNL	Front de Libération Nationale
FOCAC	Forum on China–Africa Cooperation
G7	Group of Seven
G8	Group of Eight
G20	Group of Twenty
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
GELIS	Ghana Enterprise Land Information System
GEM	Gender Empowerment Measure
GERD	Grand Ethiopian Renaissance Dam
GIA	Armed Islamic Group of Algeria
GII	Gender Inequality Index
GMACCC	Global Military Advisory Council on Climate Change
GNI	gross national income
GSP	Generalised System of Preferences
GSPC	Groupe Salafiste pour la Prédication et le Combat/ Salafist Group for Preaching and Combat
GTD	Global Terrorism Database
HIPC	Heavily Indebted Poor Countries
IATA	International Air Transport Association
ICBT	informal cross-border trade
ICD	International Classification of Diseases
ICT	information and communications technology
ICU	Islamic Courts Union
IEA	International Energy Agency
IFAD	International Fund for Agricultural Development
IFFs	illicit financial flows
IFs	International Futures
IGO	intergovernmental organisation

IHDI	Inequality-adjusted Human Development Index
IHME	Institute for Health Metrics and Evaluation
IIAG	Ibrahim Index of African Governance
IMF	International Monetary Fund
IoT	Internet of Things
IPCC	Intergovernmental Panel on Climate Change
ISIL	Islamic State of Iraq and the Levant
ISIS	Islamic State of Iraq and Syria
ISS	Institute for Security Studies
ISS	Islamic State in Somalia
ISWAP	Islamic State West Africa Province
MDGs	Millennium Development Goals
MENA	Middle East and North Africa
MER	market exchange rate
MFJ	Multiannual Financial Framework
MFP	multifactor productivity
MNE	multinational enterprise
MNLA	Mouvement National de Libération de l'Azawad
MPI	Multidimensional Poverty Index
MPIA	multiparty interim appeal arbitration arrangement
MPLA	Movimento Popular de Libertação de Angola/ People's Movement for the Liberation of Angola
ND-GAIN	Notre Dame Global Adaptation Index
NDICI	Neighbourhood, Development and International Cooperation Instrument
NEET	Not in Education, Employment or Training
NEPAD	New Partnership for Africa's Development
OAU	Organisation of African Unity
OECD	Organisation for Economic Co-operation and Development
OPEC	Organization of the Petroleum Exporting Countries
OPIC	Overseas Private Investment Corporation

PAYG	pay as you go
PIDA	Programme for Infrastructure Development in Africa
PIDA-PAP	Programme for Infrastructure Development in Africa – Priority Action Plans
PPP	public–private partnership
PPP	purchasing power parity
RCEP	Regional Comprehensive Economic Partnership
REC	Regional Economic Community
RPF	Rwandan Patriotic Front
SAATM	Single African Air Transport Market
SACU	Southern African Customs Union
SADC	Southern African Development Community
SCAD	Social Conflict Analysis Database
SDGs	Sustainable Development Goals
SDRs	special drawing rights
SEZ	special economic zone
SGR	Standard Gauge Railway
SIA	Sustainability Impact Assessment
SIDA	Swedish International Development Cooperation Agency
SIV	simian immunodeficiency virus
SMRs	small modular reactors
SNEL	Société Nationale d'Électricité
SPLA	Sudan People's Liberation Army
SPM	Southern Paper Mills
SPTT	Special Preferential Tariff Treatment
STEM	science, technology, engineering and mathematics
TBT	Technical Barriers to Trade Agreement
TFA	Trade Facilitation Agreement
TPLF	Tigray People's Liberation Front
TRALAC	Trade and Law Centre

TVET	technical and vocational education and training
UCDP	Uppsala Conflict Data Program
UHI	urban heat island
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environment Programme
UNITA	União Nacional para a Independência Total de Angola/National Union for the Total Independence of Angola
UNODC	United Nations Office on Drugs and Crime
UNOWAS	United Nations Office for West Africa and the Sahel
UNPD	United Nations Population Division
USAID	US Agency for International Development
USIDFC	US International Development Finance Corporation
USMCA	United States–Mexico–Canada Agreement
V-Dem	Varieties of Democracy
WaSH	water, sanitation and hygiene
WGIs	Worldwide Governance Indicators
WHO	World Health Organization
WMO	World Meteorological Organization
WTO	World Trade Organization

Preface

After decades of modest improvements in key indicators of livelihood since independence in the 1960s, Africa's fortunes started to turn in the mid-1990s – but the gap in key indices such as average incomes between Africa and the rest of the world continues to widen. The chapters in this book explore the reasons for this concerning state of affairs. Beyond the historical impact of slavery, imperialism, colonialism and the deleterious impact of the proxy wars fought in Africa during the Cold War, this book explores key explanations and characteristics of slow development. Much of the text in this book, as well as more detailed country-level forecasts for each African country, are available on the accompanying website at futures.issafrica.org.

Because of its large youthful population, Africa will only enter a potential demographic dividend in the middle of this century – several decades later than other regions. Instead of being a boon to development, Africa's large, youthful population is a significant drag on improvements in incomes and poverty reduction. With most of its population still in rural areas, generally engaged in subsistence farming, the continent is unable to benefit from the dynamic contribution that urbanisation makes to growth. Instead of labour moving to employment in factories in urban settings, the traditional route to rapid growth elsewhere, most Africans urbanise to escape destitution in rural areas rather than to benefit from employment in higher productivity endeavours in towns and cities, surviving in a growing informal, low-end services sector. As a result, urbanisation is making only a modest contribution to improved productivity in most African economies. Also, instead of industrialising, Africa is deindustrialising – from relatively low levels of the contribution that manufacturing makes to its economies. At low levels of development, a services-led growth path translates into modest improvements in productivity and mediocre economic growth.

Despite all the talk about its agricultural potential, Africa has not experienced an agricultural revolution and average yields per hectare are less than half the average of those in the rest of the world. Farming land is communally owned and not bankable. Fertiliser is expensive and, because of poor infrastructure, surplus produce cannot get to the market. The gap in yields per hectare in Africa compared to global averages is increasing and, instead of catching up, the continent is becoming less food secure with each passing year – as evidenced by the impact of Russia’s invasion of Ukraine on food availability, hunger and malnutrition.

Then there is Africa’s large health burden. Rates of communicable diseases in Africa are more than four times higher than the average in the rest of the world. Although Africa’s non-communicable disease burden is only half of the rest of the world’s, rates are increasing. By 2024, the incidence of non-communicable diseases in Africa will overtake death from communicable diseases. This early epidemiological transition, given its levels of development, translates into a veritable double burden of disease for a continent with exceptionally poor health infrastructure and low expenditure on health, with ratios of medical personnel to populations that are subsequently low.

Against this background, it is ironic, then, that levels of democracy in Africa are quite high, given its levels of development – and, given its burden of instability, that military expenditure is generally below the average in the rest of the world.

So, what is to be done about all of this?

Beyond a detailed analysis of the reasons and trends in each sector, such as Africa’s infrastructure gap, this book presents the impact of positive scenarios in 11 separate sectors, ranging from health to infrastructure, from leapfrogging to better governance.

Africa can start closing the gap with the rest of the world, but there are no quick fixes or silver bullets. Rather, at different levels of development and given national circumstances and endowments, African countries need to recognise the need for good political and economic management and sequencing, and the importance of appropriate interventions given their specific circumstances, natural

endowments and levels of development. This book and the accompanying website provide insights into likely future trends and enable a first cut in understanding Africa's development challenges and the huge potential inherent in the establishment of a continental free trade area, more aid and foreign direct investment, and better education and health.

Forecasting is not prediction and perhaps the only certainty is that the future will unfold quite differently to that presented here. Scenarios present possible futures and given time and space, I present only an analysis of Africa's likely future (its Current Path) and a single positive scenario for each sector.

At the launch of the accompanying website on 22 June 2022, South Africa's President Ramaphosa commended the Institute for Security Studies for 'lending its weight to the pan-African drive for unity, self-determination, freedom, progress and collective prosperity'. With several thousand charts and almost a million words of text, the new site presents detailed forecasts for each African country and seeks to understand why Africa is trailing behind the rest of the world's improvements in livelihoods – and then presents forecasts and scenarios for two decades into the future.

Ultimately, Africans need progress across all sectors which, if achieved, could start closing the growing gap between income levels in Africa and those in the rest of the world. And for the next decade, the number of extremely poor people in Africa is likely to increase, rather than decrease. The growing gap will start to close, but this, along with a decrease in the number of extremely poor Africans, will take several decades to realise.

Information about the composition of peer groups such as South Asia and South America, Africa's income groups and the modelling platform (and its associated technical details) that is used for the forecasts and scenarios in this book is available in the About section of the African Futures website at futures.issafrica.org. Note that all US\$ numbers are in 2017 constant dollars unless indicated as being in current figures.

My thanks to Angela Voges who professionally edited the text and to my hard-working colleagues at the Institute, specifically Kouassi

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Jakkie Cilliers

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1 Africa's Current Path



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Introduction

For more than three decades I have been fortunate to travel extensively in Africa and internationally. For several years, from about 1993, I worked in support of the Department of Political Affairs, Peace and Security in the general secretariat of the Organisation of African Unity (OAU) in Addis Ababa, then headed by secretary-general Salim Ahmed Salim. I have enormous respect for Salim, a former deputy prime minister of Tanzania who served as secretary-general of the OAU from 1989 to September 2001. Salim recently turned eighty and we are still in correspondence, although he is becoming increasingly frail. Together with others – Said Djinnit, the late Sam Ibok and Margaret Vogt, and the always energetic El Ghassim Wane – the OAU was slowly transforming. At the end of the Cold War it was a sleepy organisation with little impact, generally ignored beyond general expressions of pan-African solidarity. Any number of military dictators attended the annual meetings of its Assembly of Heads of State and Government, most of whose decisions were ignored by the majority of member states.

The collapse of the Soviet Union in 1989 and the subsequent end of proxy wars in Africa changed everything – a period not unlike the tectonic shifts that are currently accompanying the rise of China and, more recently, Russia's invasion of Ukraine and the danger of the fragmentation of the world into separate geopolitical blocks.

The end of the Cold War stripped Africa of its geostrategic importance and provided a general respite from the constant interference in the domestic affairs of African countries by its former colonial powers, the United Kingdom and France in particular. In the years that followed, the OAU's general secretariat had extraordinary

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leeway to serve as a norm entrepreneur in the development of policies and legal instruments in support of good governance, democracy and human rights issues. Member states largely left the general secretariat to its own devices and it often succeeded in using the power of the penholder to advance protocols, policies and treaties that reflected considerable accountability standards – although implementation generally lagged.

Within a space of a decade the OAU/AU had developed a comprehensive conflict prevention and response system consisting of an early warning unit, diplomatic intervention capacities, election monitoring systems, a standby peacekeeping force and peace fund, backed by an impressive array of legal instruments. For all its efforts, little could come from its post-conflict reconstruction plans, a much longer and more resource-intensive process whilst leaders like Robert Mugabe of Zimbabwe effectively killed off efforts to establish a system to codify and set standards of democracy and good governance.

Included as a member of the OAU staff, I regularly attended heads of state meetings and observed, first hand, the shift in the OAU from a club of dictators to an organisation that reflected the unfolding of democracy in Africa. The so-called third wave of democracy after 1989 had a profound impact on Africa, then still the world's least democratic and poorest continent. It made me deeply aware of the extent to which Africa was undergoing deep and structural change – and the long time periods this involved. Steadily, the number of uniformed presidents for life gave way to suits and colourful African attire, eventually including Liberia's Ellen Johnson Sirleaf as Africa's first female president in 2006.

The change was most marked in Southern Africa. Namibia gained independence in 1990 and, after the release of Nelson Mandela from prison, South Africa held its first democratic elections in 1994, ushering in a period of hope for peace and development in Africa. In those years, South Africa was a military superpower by comparative African standards, with the most diverse and industrialised economy and developed infrastructure – although few of its benefits trickled down to its majority black population. Much was expected from South Africa when it joined the OAU in 1994 and, initially, it did not disappoint. The arrogance of many in the South African Department

of Foreign Affairs was often deeply embarrassing, however, as they sought to lecture their compatriots about their home-grown miracle and its apparently universal application.

One of the ways in which South Africa did not disappoint was the global status of Nelson Mandela and subsequent dynamic leadership provided by Thabo Mbeki, working in consort with Nigeria's President Olusegun Obasanjo, Prime Minister Meles Zenawi of Ethiopia, a somewhat reluctant Abdelaziz Bouteflika of Algeria and a much more intransigent Abdoulaye Wade of Senegal. The New Partnership for Africa's Development (NEPAD) was born – not the first grand continental scheme – which effectively merged a number of plans for the economic regeneration of Africa, this time modernising Africa's developmental approach. NEPAD's future was, inevitably, closely tied to the personal commitment and drive of its founders, the so-called Heads of State and Government Orientation Committee. When they floundered, so did NEPAD.

In 2002 the OAU became the African Union (AU) and the general secretariat became a commission, modelled on the European Union (EU), Africa's most important trading and political partner. Increasingly, Southern Africa – the most recently liberated region on the continent and generally led by former liberation parties that harked back to the former Soviet Union's centrist economic models – became a drag on political progress in Africa. Its leaders generally resisted democratic reform at every opportunity and effectively isolated the region from progress with human rights, democracy and efforts at codifying good governance. Its default position, to this day, remains defence of the liberation party in power, irrespective of its human rights violations, corruption or poor governance.

My own interests shifted. Even without the baneful engagement of the former Soviet Union and the US in Africa after 1990, instability and conflict wracked the continent. It was like the movie *Groundhog Day*: no sooner was a conflict prevention mission to one country dispatched than instability would erupt in another. One peacekeeping mission after the other followed as Africans turned on one another, most markedly in the Democratic Republic of the Congo (DR Congo) where, at the height of the war there, nine African countries and about

twenty-five armed groups fought one another. Steadily the enthusiasm from the United Nations (UN) and others to intervene and provide soldiers, police officers and other types of assistance waned, even as Africa's own engagement stepped in to partially fill the void.

The problem was that very few of the continent's efforts were working quickly enough. Without much more rapid economic development, it was clear as daylight that Africa would not progress. And I was exhausted. The Institute for Security Studies (ISS) that I established in 1991 was the largest independent think-tank on peace and security in Africa – but there are, quite obviously, no shortcuts to the challenges of instability, violence and suffering that Africa faces.

I stepped down as executive director of the Institute in 2015 and took a sabbatical at the University of Denver, to learn about the International Futures (IFs) forecasting platform that is used extensively in this book (see below) and the accompanying website at futures.issafrica.org. I had first been exposed to IFs during a trip to China some years earlier and was fascinated by the rigour and depth of its forecasts, the fact that it was open-source and free, and the extensive associated documentation.

The first and most enduring impression when using IFs is that Africa is clearly progressing, but more slowly than the rest of the world. Instead of catching up, it is generally falling further behind on key indicators of human development. Through data modelling, I wondered, what would more rapid development look like that could inform change, and see its countries fulfilling their national, regional and continental potential?

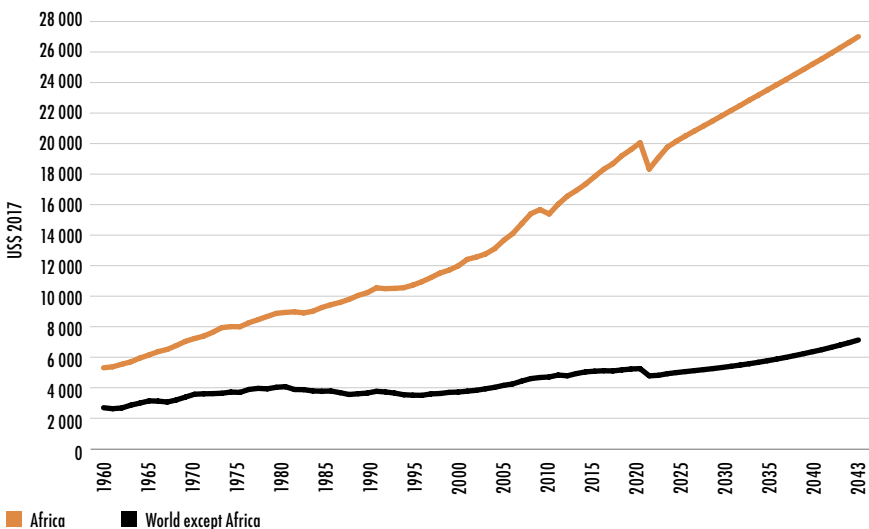
As the basis of such an analysis and exploration, gross domestic product (GDP) per capita is the easiest way of quantifying and comparing the developmental differences between countries in Africa and those in other parts of the world. It is calculated by simply dividing a country's total economic output by that country's total population. It is a blunt measure, and often comes in for criticism on this and other scores – it takes neither quality of life nor the distribution of the economic output among the population into account, for example – but it remains popular, given its simplicity and reliance upon readily available data that measures national economic productivity.

In 1960, generally considered the start of the postcolonial era, GDP per capita in Africa was about half of the average in the rest of the world – and the ratio has been declining ever since. It fell to below 50% in 1971, below 40% in 1986 and below 30% in 2011. In fact, average GDP per capita declined by almost US\$600 from 1980 to 1995 (using 2017 US\$). Then, from 1995 to the global financial crisis in 2007/08, Africa experienced its most sustained period of growth since 1960. The problem, however, is that it all came from the export of commodities such as oil, cocoa and coffee.

In 2019, the year before the COVID-19 pandemic upended things, GDP per capita in Africa was only 26% of the average in the rest of the world and will likely remain at this mediocre level for the next two decades. In addition to the history of GDP per capita in Africa compared to the rest of the world since 1960, Chart 1 includes a forecast to 2043.

The general trend for Africa obscures large country variations: in some countries, such as the DR Congo and Zimbabwe, their history of GDP per capita indicates that the former will take several decades even

Chart 1: GDP per capita for Africa and the rest of the world, 1960–2043



Source: IFs 7.63 initialising from WDI data

to recover to its 1960 level, while the latter is at more or less the same level that it was at in 1960. These are countries that have seen a generational loss of wealth and prosperity. Botswana, on the other hand, has a GDP per capita that today is 20 times larger than it was in 1960, while a country such as Equatorial Guinea has ostensibly also seen a large increase in GDP per capita due to its oil wealth – but much of it accrues to a single family and their associates.

The impact of COVID-19 is such that the continent is only likely to recover to the 2019 pre-COVID average towards the end of 2024 and then, just as growth was recovering, Russia invaded Ukraine, driving food and energy prices higher and delivering yet another huge shock to the most vulnerable people at risk of hunger, most of whom are in sub-Saharan Africa.

These variations aside, the increasing divergence between the trend in GDP per capita in Africa versus the average for the rest of the world correlates with many other indices of human development or well-being, such as average levels of education and various measures of health. Global events, such as the 2007/08 financial crisis, the COVID-19 pandemic and recent events in Ukraine, have significant effects – particularly in poor countries, where people live precariously.

The challenge of the growing divergence between Africa and the rest of the world is reflected in Africa's marginal role in the global economy. In 1960, Africa accounted for 3% of the global economy. Sixty years later, that share remains unchanged – despite the fact that Africa's share of the global population almost doubled from 283 million (9% of the global population) to 1.34 billion (17% of the global population). By 2047 Africa's population will likely account for a quarter of the world's population (2.4 billion of 9.6 billion), but the continent will still represent less than 6% of the global economy. Compare this to East Asia,¹ a region that increased its share of global economic output from about 9% in 1960 to more than 25% at the time of writing and which is set to increase that portion to 30% by 2043. East Asia's share of the global population, on the other hand, shrunk from 27% in 1960 to 22% in 2020 and will decline to below 18% by 2043, pointing to its much more productive economies.

On its current development trajectory, Africa is likely to remain a peripheral player, despite the significant increase in its share of the world's population. It is progressing more slowly even than other comparable developing regions, such as South America² and South Asia.³ Drastic action is needed to change this rather dismal situation. Doing more of the same is not going to lead to tangible progress. The impact of COVID-19, the momentum from a burgeoning population, the continued growth of China, India and others, the swift pace of technological change, and other disruptive events such as those arising from pandemics and climate change present a complex picture. Clearly, modern technology offers huge opportunities in rapidly accelerating access to electricity, water, education and better health. But it is also clear that, on its current trajectory, Africa could be left further behind as development accelerates more rapidly elsewhere.

Africa is undoubtedly experiencing a broad-based improvement in human well-being, reflected in a number of health indicators such as declining rates of infant mortality, improvements in life expectancy and others. In this regard, Africa is even catching up with global averages on a few measures. But looking at the bigger picture, one can argue that this is largely because rapid improvements at lower levels of development are easier to achieve, while continued improvements in rich countries are more difficult at their much higher levels. Progress is rapid until countries achieve a saturation effect; the last 10% is always the most difficult. On most other indicators of well-being, the gap between Africa and the rest of the world is either static or actually increasing.

In this book, I model and present Africa's likely development trajectory – the Current Path forecast – and the potential for ambitious improvements across 11 sectors to 2043: stability, demographics, health and basic infrastructure, agriculture, education, low-end manufacturing, leapfrogging, free trade, bulk infrastructure, the impact of inward financial flows and better governance. The Current Path forecast is an integrated forecast (or scenario) of the continent's likely future development trajectory. It does not assume any major paradigm shifts, seismic policy changes, or transformative events. Rather, it represents a reliable expectation of how major development

systems are likely to unfold, and is a useful starting point from which to design alternative future scenarios. I also review the impact of each scenario on jobs and climate change, in separate chapters. Chapter 15 then brings all of these scenarios together in a Combined Agenda 2063 scenario that indicates the likely ceiling, or upper limit, of Africa's development potential. The results, I hasten to add, were presented to a host of international experts on each issue area in a series of expert workshops from October 2020 to April 2021 and have been constantly revised and refined thereafter.

The forecasts in this book rely on the International Futures (IFs) modelling platform, developed and housed at the Frederick S Pardee Center for International Futures at the Josef Korbel School of International Studies at the University of Denver, where I spent several months as a Fulbright scholar. Each theme compares the IFs Current Path forecast with a set of interventions, grouped as a coherent thematic scenario. The time horizon for each scenario is from 2024 to 2033, representing an ambitious ten-year push in each sector, in line with the second ten-year implementation plan of Agenda 2063. I then maintain that level of progress to 2043 and measure that progress.

But first, a closer look at the growing gap between Africa and the rest of the world, and what this means for the continent's Current Path forecast.

The Growing Gap: Africa's Current Path

An understanding of Africa's development trajectory going forwards begins with a look back – at how, over the past two centuries, the world has witnessed a transition to levels of peace and prosperity that are almost unimaginable by historical standards. We often don't realise exactly how recent this progress is.

In his 1651 book *Leviathan*, the English philosopher Thomas Hobbes wrote that, in the absence of a strong central authority, the inevitable inclination of nations is towards civil war 'where every man is enemy to every man ... and the life of man, solitary, poor, nasty, brutish, and short'.⁴ Hobbes was describing the situation for most of humanity for, until the Industrial Revolution that began in Britain in

the 18th century, poverty was widespread and pervasive. Only a very small elite enjoyed decent living conditions; even by the beginning of the 19th century, no country's citizens had a life expectancy that exceeded 40 years.⁵

The improvement in well-being that followed the Industrial Revolution came off a very low base. Its result was inevitably to increase inequality between and within countries, a trend that decelerated somewhat between the two world wars and only stabilised after 1950 when growth in Europe and the USA slowed, coinciding with more rapid economic growth in Japan, East Asia and eventually China. Even at that point – 1950 – three quarters of the world's population still lived in what we would today term extreme poverty.⁶

During the first half of the previous century *rates* of poverty came down, even as global populations continued to increase. Then, from about 1970, the decrease in poverty rates became so rapid that we saw the *absolute number* of people living in extreme poverty also starting to fall, in spite of the huge increase in global population. That progress was largely delivered by capitalism and the expansion of trade – developments that we often consider synonymous with globalisation and a neoliberal phase of economic development.

Until the early 1990s, numbers of extremely poor people hovered at above two billion but, from about 1994, these declined precipitously, much of it due to rapid progress in China and, to a lesser extent, India. In the 11 years from 2006 to 2017 the number of people living in extreme poverty actually *halved* to fewer than 800 million people, despite the fact that the world's population *increased* by almost one billion during this period.⁷ By 2015, the number of Chinese living below US\$1.90 per day was less than 1% of its population. It was above 80% in the 1980s. Ironically, it was essentially the introduction of state capitalism in China, ostensibly communist, that unlocked its remarkable growth story. India, a diverse, fractious and loud democracy, also contributed to poverty reduction, if at a slower rate. Whereas almost 60% of India's population was considered extremely poor in the 1980s, by 2015 that number had come down to about 14%.

The improvements have been so fast that, in 2005, the international community was emboldened to adopt a target to halve extreme poverty

by 2015 as part of the Millennium Development Goals (MDGs). When that target was met, an even more ambitious goal, to *end* extreme poverty by 2030, was adopted as Goal 1 of the Sustainable Development Goals (SDGs), a goal that refers to ‘ending poverty in all its forms everywhere’. Technically, this means that less than 3% of the population of every country in the world should then be living in extreme poverty, using US\$1.90 per person per day as an average income. Whereas China met the SDG goal of eliminating extreme poverty in 2013, India will likely get there by about 2034. As an aside, in May 2022, the World Bank adjusted the \$1.90 global poverty line, which was defined in 2011 prices, to \$2.15, now expressed in 2017 prices – but more on this later.

Because of Africa’s rapid population growth, modest rates of economic growth and relatively high levels of inequality, the absolute number of extremely poor people in Africa has steadily increased since 1960 and is likely to continue to do so for several years, before slowly starting to decline. However, since the early 1990s, the *percentage* of people living in extreme poverty in Africa has started to decline. The reason is that, even though economic growth in the continent slowed after the 2007/08 financial crisis and contracted sharply in 2020 due to COVID-19, it has generally been robust enough to reduce the portion of Africans living in extreme poverty – but not robust enough to reduce the absolute number.

Sadly, Africa will miss the SDG of eliminating extreme poverty by 2030 by a very large margin. In this, the widening gap between Africa and the rest of the world again becomes painfully clear. Things are improving in Africa, but much more slowly than in other regions; in the wake of the COVID-19 pandemic, progress is modest. By 2030, in fact, the Central African Republic (CAR), Liberia, Burundi, Madagascar, Mozambique, South Sudan, Somalia, the DR Congo, Guinea Bissau and Sierra Leone will all likely still have more than 50% of their populations living in extreme poverty.

Despite the improved livelihoods that global trends illustrate, globalisation and the sense of relative deprivation are factors to consider

when exploring the growing gap between Africa and the rest of the world. For much of our recent history, certainly from the end of the 19th century onwards, globalisation has driven economic growth and played a positive role in the remarkable improvements in human prosperity that virtually exploded in the 20th century – in spite of two world wars. Today, though, the impact of globalisation is less visible, particularly in high-income countries like the US, Japan and Germany. Because Africa suffered under the yoke of colonialism and its economic legacies, it has generally not been part of the expansion in trade and increase in the value of its exports.

The past four decades have also witnessed dramatic reductions in the difference in average incomes between countries, although inequality within countries has increased. The main reason for the former is that developing countries, China and India in particular, have narrowed the gap in wealth and income between themselves and richer countries since the 1980s. In addition, the impact of COVID-19 is set to increase divergence as countries with advanced economies (and a few emerging markets) recover more quickly, in part because of these countries' better access to vaccines.

The period of globalisation after the end of the Cold War and until the 2007/08 financial crisis appears to have seen a convergence among a group of rich states, the stagnation of middle-income countries and a convergence (or stagnation) among poor countries. Wealth is also shifting from West to East as middle-class Westerners have seen less income growth than their (comparatively poorer but more populous) Asian counterparts. Many jobs in Europe and North America have either been outsourced to China, or eliminated. It is as if hyper-globalisation reached a tipping point with the 2007/08 global financial crisis, which temporarily turbocharged income inequality within and between countries. These trends have accelerated with COVID-19.⁸

Inequality, Thomas Piketty reminds us, 'is essentially ideological and political, not economic or technological.'⁹ His work on global inequality straddling trends over the last two centuries indicates that the share of wealth of the richest 10% of the global population has fallen significantly from 80–90% to about 50–60% today. It followed the destruction of private assets as a result of the wars and the changes in

legal, social and tax systems in much of Europe in the 20th century – particularly the rise of the welfare state that invested in education, health, retirement and disability pensions, and social insurance. Most of that happened after the two world wars, but has stagnated since the 1980s and 1990s.

It is important to recognise that the distribution of wealth among the global population is substantially more unequal than the distribution of income, which is again more unequal than the distribution of consumption. In the Group of Seven (G7) countries, for example, the share of wealth for the top 1% is about 27%. Typically, men earn more than women – even in these countries – although the gap is narrowing.¹⁰ The impact of COVID-19 has increased poverty and reversed several years of progress. In 2020, the economic contraction associated with COVID-19 probably saw about 91 million more people classified as extremely poor than in pre-COVID-19 forecasts, with a third of these being African.¹¹

The numbers and percentages may tell one story, but our interconnected world and access to information seem to have intensified a sense of relative deprivation among large swathes of the global populace, from India and China to the American Midwest and Afghanistan. It is particularly evident in Africa.

Initially, the 2007/08 financial crisis led to anti-establishment protests such as the Occupy Wall Street movement, although with important regional variations. Protesters believed that financial benefits were flowing to a small number of urban elites, financial institutions and a handful of large corporations, while little was changing for the middle class. In almost all countries with sufficient data to measure income distribution, income is increasingly becoming concentrated among top earners; the poor (and often the middle class) are not doing very well, while the rich are clearly getting richer.¹² The political impact of middle-income disenchantment has most prominently been the rise of populist political parties and leaders in the West, perhaps best reflected by the election of Donald Trump as president of the US in 2016.

The sense of absolute and relative deprivation, then – that actual improvements in living standards are vastly out of kilter with expectations – is clearly on the rise. In fact, although people in high-

income countries have never enjoyed a better standard of living (leaving the impact of COVID-19 aside, for the moment), they seem to feel particularly insecure, scared that they will not be able to maintain their standard of living and that migrants from poor countries will somehow overwhelm them. The result is a rise in developed world identity politics (or nationalist populism) in the midst of the most peaceful and prosperous era known to humankind.¹³ All reflect a view, for different reasons, that the political system that currently dominates in the West has generally not managed to hold the fort against special interests, big business in particular.

Given the sense of relative deprivation that globalisation has fuelled, the interplay between wealth, income inequality and growth is also integral when looking at Africa's Current Path.

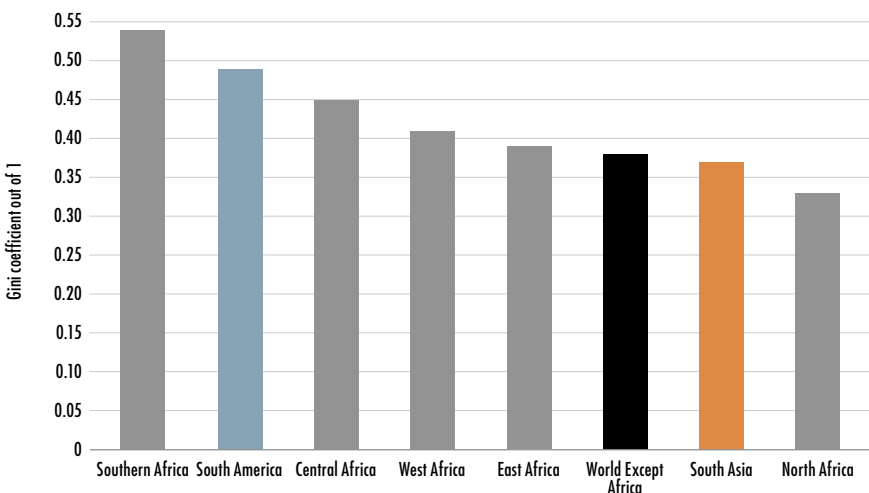
Economic growth and income distribution are the two key variables when forecasting rates of poverty at national level. In general, higher rates of economic growth are strongly associated with higher rates of poverty reduction, but high levels of income inequality and inequality in the distribution of wealth and opportunity limit the extent to which that can occur. If too large, inequalities of wealth and income affect economic growth in the long run – a situation increasingly characteristic of most high-income countries in recent years. A growing economy must, in particular, increase the number of formal sector jobs that, among others, provide more revenues for the government to invest in infrastructure, health and education (and hence improve the quality of its human capital). It also needs to use direct measures of poverty alleviation such as social grants or works programmes on top of policies that constrain inordinate wealth accumulation.

As mentioned earlier, the global achievements towards halving poverty in 2015 were largely made on the back of the remarkable progress in China since 1978 that transformed a rural, centrally planned economy into the most dynamic and, soon, the largest in the world, now generally referred to as a socialist market economy. China's success is such that it has come to challenge Western neoliberal

orthodoxy, which has run up against the huge disparities in the distribution of wealth increasingly characteristic of countries such as the US. In the next few years, China will likely graduate from its current status of upper-middle to high income, completing an unprecedented journey that others can only marvel at; inequality there has, however, steadily increased as the country has grown wealthier.

For an exploration of inequality, the Gini coefficient – the most widely used measure of income distribution – is a useful if imperfect tool. The index ranges from zero, corresponding to complete equality (everyone earns the same), to one (complete inequality, where all the income accrues to only one person in society). It is worth noting that, being a summary measure of income distribution, Gini does not identify whether a change in inequality is triggered by shifts at the bottom, middle or top of the income distribution range; it is also based on survey data that are often not well suited to capturing very high or very low incomes. The challenge is particularly acute for developing countries that do not have much information on income distribution, such as that earned by the bottom 10% or top 1%. And Gini does not measure inequality in wealth, for which measures such as the share or private property owned by the

Chart 2: Domestic Gini index by region, 2015



Source: IFs 7.63 initialising from WDI data

top 1% and bottom 50% of the population are much more useful and telling since they provide an indication of the concentration of ownership – and hence economic power – in an economy.

These limitations aside, when comparing regions using the Gini index, Southern Africa is the most unequal region globally. North Africa is significantly more equal than any other African subregion, largely a function of the central role that states there have played in providing all kinds of services and subsidies, often due to income from oil or gas. Central, West and East Africa are somewhere between Southern and North Africa.¹⁴

That inequality is complex is well illustrated by reference to the relatively low levels of inequality in North Africa compared to most global regions, since it begs the question: why would the Freedom and Dignity Revolution (the general name for the regional events known elsewhere as the Arab Spring or Jasmine Revolution) occur in this region and not elsewhere? North Africa has relatively high levels of education compared to the rest of Africa, and scores higher on almost all indicators of human development than sub-Saharan Africa.

Clearly the promise of events in 2010/11 has not alleviated the deep sense of frustration among the citizenry.¹⁵ Tunisia is the only country in North Africa that has transitioned to democracy, but progress on education, women's rights and general positive macroeconomic indicators since independence, several decades ago, conceal deep frustration in a populace weaned on large state subsidies for petrol, water, food and a vast array of state-owned enterprises that consume large amounts of revenue, fuel corruption and limit opportunity. Political, social and economic opportunity is constrained by special interest groups that confine the vast majority of the population to dependence. It is no surprise that frustration continues to simmer, and in a post-COVID-19 slow- or no-growth environment, the potential for violent disruption remains high.

These concerns and caveats aside, generally countries with low levels of inequality (such as Ethiopia), a developed bureaucracy and deep sense of nationalism can grow rapidly and translate that growth into extraordinarily rapid reductions in poverty until, of course, their ethnic divisions rise to the fore – as was the case in Tigray in 2020. Much more is required than economic growth alone.¹⁶

For example, in 1960, GDP per capita in Botswana was about a third of that in Ghana. But since the early 1960s Botswana has consistently grown its economy much more rapidly than Ghana, until very recently. The average growth rate for Botswana from 1961 to 1999 was 10.1%, while for Ghana it was only 2.5%. As a result, by 2019 Botswana's GDP per capita was almost three times that of Ghana. But because Botswana has higher levels of inequality, poverty reduction in the two countries does not differ as much as one would expect.¹⁷ From 1970 to 1996, poverty in Botswana came down by 25 percentage points – but by only 14 percentage points in Ghana (using the US\$1.90 poverty line).¹⁸ Clearly growth matters, but so does the distribution of wealth, incomes and opportunity as well as the effectiveness and quality of government. Whereas Botswana is generally an island of stability and good governance in its region, Ghana has suffered from a series of coups, significant political instability and high levels of corruption for much of its independent history.

In the face of the path on which the past two centuries have set Africa, then, what have the responses and resultant actions of the continent's nations and the international community – and their outcomes – been?

If Africa could talk itself onto a higher level of development, it would be doing very well. But only rarely do its many plans and visions translate into reality. These range from the 1980 Lagos Plan of Action for the Economic Development of Africa, 1980–2000 to Agenda 2063, the current long-term development vision of the AU. Today, these ambitions extend to regional level. For example, the Southern African Development Community (SADC) and the Economic Community of West African States (ECOWAS) have each embarked upon a Vision 2050 process. Ironically, neither have sought to harmonise their long-term horizon with the timelines of Agenda 2063, as the ISS has done in its associated website at futures.issafrica.org.

While the decolonisation of most of Africa had largely been completed by the 1960s, outside influence on African development trajectories had not ended. By the 1970s, Africa had hosted numerous

proxy wars, sponsored by the opposing sides of the Cold War and former colonial overlords – and had also suffered from the oil and debt crises caused by foreign wars, political blocs and an international oil cartel in which it did not have representation.

In an effort to regain agency in the face of externally imposed constraints upon economic and political development, African countries agreed in 1980 to implement the Lagos Plan of Action. The intention of the Plan was, in large part, to establish a self-reliant regional African economy and, ultimately, to establish an African Economic Community.¹⁹

The Lagos Plan of Action was arguably a pan-Africanist response to the continent's economic problems, with the underlying assumption that these problems arose primarily from the structure of the international economic system, and thus that independence from this system was the answer. The counterargument was that Africa's economic problems arose primarily from the internal structures of its economies, as well as from ineffective and corrupt governance structures. This would inform the Bretton Woods institutions' conceptualisation of the structural adjustment programmes.²⁰ Accordingly, the World Bank and the International Monetary Fund (IMF) – the two global financial institutions mandated to combat underdevelopment – responded by creating loan packages for highly indebted poor countries, which required them to reduce spending on health and education in favour of debt repayment and the liberalisation of the economy through privatisation and other means.

These measures were not new; the World Bank and the IMF have been attaching conditions to their loans since the early 1950s, and their policy prescriptions were inevitably closely aligned with the free-market economics dominant in the US, where their secretariats are located and which is the largest contributor to both.

In return for budget and balance of payments support, the World Bank and IMF now required African governments to adhere to an agreed set of policy reforms geared towards achieving macroeconomic stability. Perhaps the most significant impact of these structural adjustment programmes was the devaluation of many of Africa's overvalued currencies to more reasonable levels, but they also included

other requirements – such as capital account liberalisation that has subsequently facilitated illicit financial flows, along with the influx of multinational companies.

The negative impact on health, education, poverty and agriculture that followed would resonate for many years, and earn both institutions the enduring enmity of many Africans in what has been described as an effective ‘race to the bottom’.²¹ The subsequent painful reforms impacted very negatively on large populations in the recipient countries, and offered African leaders and activist academics a ready target in externalising reasons for slow development. The conditions, generally known as the Washington Consensus, put an effective end to national industrial policies that countries as diverse as Ethiopia, Ghana, Kenya, Mauritius, Mozambique, Nigeria, Senegal and Tanzania had tried to implement, albeit with very limited success. Consequently, industrialisation as a development option for Africa was replaced by trade liberalisation, deregulation, the free market and a small state. Henceforth, the role of the state would be limited to policymaking and regulatory functions. This was based on many African states’ inability, in the view of the World Bank and IMF, to effectively deliver public goods and limit the abuse of funds.

Whereas development elsewhere had been facilitated through an active role for the state, including clear industrial policy, the corruption and mismanagement by African governments now presented the continent with an impossible situation. It had to develop without the guiding hand of the government, depending upon the benefits of trade liberalisation at an early stage of development. The inevitable results – lack of industrialisation, poor growth and unequal development – soon become clear.

Unable to improve productivity rapidly, and with a fast-growing and youthful population, Africa saw its per capita average income levels peak in 1980 and decline to 1994 as trade shocks and economic crises took their toll. The percentage of people living in poverty in Africa followed suit, and steadily increased.

As these initiatives were unfolding, UN Secretary General Javier Pérez de Cuéllar appointed the World Commission on Environment and Development in 1983. The purpose of the commission, later named

the Brundtland Commission, was to chart and agree on a common sustainable development pathway at a time of deep pessimism about the environment and Africa's development prospects.²² The Brundtland Commission's report was released in October 1987 under the title *Our Common Future*. It introduced the notion of 'sustainable development' by establishing a clear relationship between economic growth, the environment and social equality. The commission presented its results just as the Cold War came to its messy conclusion with the collapse of the Berlin Wall in 1989. The Brundtland Report called for an international meeting to map out goals and programmes to pursue sustainable development, which led to the 1992 Earth Summit in Rio de Janeiro.

The Brundtland Report, and the broader context within which the debates about poverty occurred, also had a wider impact. Among other things, it led to deep introspection by the World Bank and the IMF about the effectiveness of their structural adjustment programmes. From 1989 onwards, development assistance from the West – to which a number of African states had become addicted – shifted ground. The focus moved to the importance of democracy, good governance and countering corruption. Multiparty elections, decentralisation and other methods to encourage greater citizen participation became popular. In the process, democracy became associated with liberal economic policies that envisioned a small state and a dominant role for the private sector, trade and open markets in development.

The problem is that poor countries need an activist, developmental state if they are to engineer an escape from poverty.

By 1999, the IMF had replaced its structural adjustment programmes with the Poverty Reduction Growth Facility, and placed poverty alleviation at the heart of its efforts. The following year, the World Bank admitted that the poor are better off without structural adjustment.²³ Writing for the African Development Bank, John Page notes, '[s]tructural adjustment had taken place without producing structural change.'²⁴

The Lagos Plan of Action had similarly failed to produce results. At a 1991 meeting of African trade ministers at the UN's Economic Commission for Africa (UNECA), the participants noted that African

governments had largely failed to incorporate the Plan in their national development frameworks – and that the Plan lacked an effective monitoring and follow-up mechanism for its implementation. The meeting also lamented the failure of African economies and trade systems to modernise, and that there remained a need to remove intra-African trade barriers.²⁵

The Lagos Plan of Action required a commitment to regional cooperation, the appetite for which disappeared shortly after the Plan was adopted. Rolling economic crises in the 1980s and a reliance on tariffs for a good part of government revenue spurred intra-Africa trade protectionism. Furthermore, the implementation of the structural adjustment programmes had provided African governments with easier access to finance than the more abstract and difficult-to-realise potential benefits of continental cooperation offered by the Plan, while undercutting their ‘collective self-reliance’ intentions.²⁶

In any case, and despite the intentions of the Lagos Plan of Action and the structural adjustment programmes, between 1980 and 1990 Africa lost considerable ground – in development terms, it was actually moving backwards. Average income per person decreased by about 12% and declined by a further 2% in the early 1990s.

The Lagos Plan of Action was followed by the Abuja Treaty, signed in 1991. The Abuja Treaty represented a change in course from the protectionist focus of the Plan. It looked to reconcile pan-Africanist development ambitions with the liberalisation orthodoxy of the time, and moved away from the focus on market integration in favour of collaboration, expansion and diversification of production across regions.

While Abuja seemed to represent an improvement on the Lagos Plan of Action, it faced similar challenges – including being ignored or, at best, reluctant cooperation from a handful of member states – and failed in its ambitions.²⁷

Eventually it was the commodities boom, not its own planning, that changed Africa’s prospects. From 1994 until 2008 (when the financial crisis hit), Africa experienced its most sustained period of growth since independence in the 1960s – an average of 4.6% per annum. During this period, the average per capita income increased by 35%. However,

the share of Africans living in extreme poverty decreased by only about five percentage points, in part due to the high levels of inequality on the continent and rapid population growth.

The impact of the Brundtland Report and the Earth Summit continues to resonate several decades later, however – first with the eight MDGs that were adopted at the UN Millennium Summit in 2000, and more recently with the SDGs for 2030, adopted by the UN General Assembly in 2015. An important tool to assist in achieving the vision of sustainable development was international cooperation and solidarity, including the provision of overseas development assistance (aid). However, instead of increasing (when measured in constant dollars), aid levels declined steadily from their peak in 1990 to the time of the Millennium Summit in New York a decade later.

One of the reasons for this was that a prolonged recession began in 1991 in Japan, a major aid provider. A second reason was the resource pull exerted by transition economies in South Asia, which steadily diverted attention from Africa. But the most important reason was that the dissolution of the Soviet Union freed Western countries from the need to prop up pro-Western African dictators. With the collapse of the Berlin Wall, Africa lost much of its geostrategic relevance.

Aid only started to regain momentum with the 2000 UN Millennium Summit in New York. It was substantially bolstered by the support of international celebrities such as Bono and Bob Geldof, who campaigned for greater awareness about poverty and the acquired immunodeficiency syndrome (AIDS) crisis, and helped to raise funds for relief programmes in Africa. In addition, the post-2000 momentum was marked by various initiatives such as the Report of the Commission for Africa and the European Consensus on Development. The 2005 World Summit in New York called for increased aid transfers in order to reach the MDGs of halving poverty and hunger by 2015. While progress was made on the MDGs, many goals remained unachieved in Africa, though there is a convincing argument that the MDGs were poorly tailored for the African context.²⁸

In the meantime, the Lagos Plan of Action and the African Economic Community concepts had largely fallen by the wayside, having been eclipsed by the establishment of NEPAD in 2001. NEPAD departed

from the Lagos Plan of Action, with a greater focus on political reform as a core component of development, and efforts to improve the accountability of member states were also strengthened by the institution of the African Peer Review Mechanism. While remaining Africa-centred and -led, NEPAD eschewed regional isolationism and embraced global partnerships, and has since been integrated into the AU as its core development agency as well as for giving effect to Agenda 2063.²⁹

Cooperation for Africa's development is now largely guided by the SDGs and Agenda 2063, although, as we will see, it is already looking unlikely that Africa will achieve the aspirations of these instruments in the wake of the COVID-19 pandemic. While these goals may require revision to contemplate what is reasonably achievable in the context of a recovery from the pandemic, they nevertheless provide a useful framework to guide and assess Africa's development trajectory.

Instead of the more productive (re)structuring of its economies, then, much of Africa's recent growth has been enabled by the commodities supercycle that started in 1996 and peaked in 2011. What made this cycle so powerful is that the prices of oil, base metals and agricultural produce all started to increase at roughly the same time. It was therefore generally a stronger and more uniform upward and downward cycle than previous supercycles, lifting economic growth across all regions in the world, including Africa.

The demand behind the supercycle came from the higher primary export volumes that were required to feed Asia's manufacturing and construction boom, much of which was in China. In the process, China's consumption of commodities grew from about 10% to 15% of total world demand to in excess of 50% for most commodities. The subsequent decline in commodity prices is largely a function of the economic restructuring and modestly lower growth in China.

The Arab Spring caused a brief spike in oil prices, but the ongoing shale oil and gas revolution in the US led to a subsequent downswing ahead of COVID-19. Eventually, growth in India could reignite deep and broad demand for commodities – and even before the war in

Ukraine there were some indications of a turnaround as liquid natural gas, iron ore, copper, rice and soybeans started to surge early in 2021 as the economies of high-income countries (and China) rebounded after the initial impact of COVID-19.

The global energy transition will eventually play an important role in the next upward cycle as demand for copper, cobalt, platinum, nickel and lithium – all important for batteries, power from solar and wind, as well as hydrogen fuel cells – accelerates as part of the fight against climate change and the shift to build renewable energy infrastructure.

Supercycles – decades-long, above-trend movements in a wide range of base material prices – are not smooth, and consequently their upward and downward cycles can vary greatly. At the time of writing it was still too early to see a supercycle and the impact of the war in Ukraine has upended things. Typically, each commodity class has its own pendulum, so shifts in the price of base metals do not generally correspond with that of livestock, agricultural products or oil, which has evidenced most volatility as the Organization of the Petroleum Exporting Countries (OPEC) tries to govern oil prices. For example, commodity prices remained depressed for a year after 2007/08 before recovering, only to be hammered by COVID-19 in 2020.

When the United Nations Conference on Trade and Development (UNCTAD) released its 2019 report, *The State of Commodity Dependence*, it noted that an increased number of countries – 102 out of 189 – had become dependent on commodity exports. Nine out of ten sub-Saharan African countries are commodity dependent.³⁰ Only 82 countries were considered commodity dependent in 2009–2010.³¹ While the number of commodity-dependent countries in Africa has increased markedly in the intervening years, it has generally remained static in other global regions, contributing to the relative decline in Africa's competitiveness.

Ironically, Africa's low levels of integration into the global economy gave it a degree of protection from the global financial crisis of 2007/08, but the impact of the crisis was nevertheless significant. Global and African growth was significantly slower in its aftermath. From 2010 to 2019, Africa experienced average growth of only 3.1%.

In addition to the general decline in commodity prices that followed the restructuring of China's economy (now known as the Dual Circulation Strategy), three factors likely explain Africa's modest rates of growth after the global financial crisis. The first is that, outside of Africa, the size of the working-age population relative to dependants had started to decline, meaning that labour was no longer contributing positively to improvements in productivity, explained in Chapter 3 on demographics. The second is that North African countries and the Sahel region have been caught up in the turmoil that followed the Arab Spring. A decade later, Libya is still trapped in a debilitating civil war and the region is awash with weapons, spreading across the Sahel to West Africa. The third is that oil exporters have been affected by the sharp decline in oil prices that has accompanied the shale revolution in the US, which saw demand for oil decline until sanctions against Russia in 2022 (the second largest gas and third largest global oil producer globally) reversed oil and gas prices.

Based on the duration of previous cycles, it can take anywhere from 5 to 17 years before a general improvement in commodity prices occurs again.³² On average, full trough-to-trough supercycles take 32 years. No two supercycles are the same; that said, on the 32-year average we should reach the trough in about 2027. The cycle would then peak in about 2043. At the time of writing it was still too early for any confident forecast about the impact of COVID-19 and sanctions against Russia on these broad cycles of commodity prices over the medium to long term.

In addition to favourable demographics, the next commodities supercycle will lift African growth rates – though likely to a lesser extent than before the 2007/08 global financial crisis – and it may also take several years before the demand for commodities recovers from the impact of the COVID-19 pandemic. The world will still require commodities, but the resource intensity of economic growth is declining. There is, however, ample evidence that commodity dependence leads to slow and poor-quality growth over long time horizons. Extreme commodity dependence is closely associated with poor governance, and supporters of the 'resource curse' hypothesis argue that too heavy a dependence on energy resources, such as oil or gas, impedes rather than accelerates economic growth and investment.

Some of the severe risks that single-commodity exporters face include the inevitable exposure to price volatility of that commodity (which occurred, for example, in 2014 and again early in 2020 with the collapse of the oil price), the decline in the contribution from other economic sectors (the so-called Dutch disease), an increased likelihood of undemocratic government (since governance is dominated by competition for control over the income stream from its single commodity and not by other considerations such as service delivery), the prevalence of a rentier state (where the state is not accountable to citizens but to special interest groups aligned to the commodity income), pressures to spend within a short-term horizon to maintain support (also to align with a surge in commodity incomes), and a greater likelihood of low-quality institutions (the cumulative impact of all of the above). To date, Botswana is the only African country that has successfully and sustainably developed its resources sector (diamonds) to the general benefit of its populace. Despite relying heavily on commodities, Botswana has had the lowest percentage share of primary commodities in exports in Africa, in part by stimulating domestic processing industries.³³ Yet it too struggles to spread its commodity-led growth beyond a small, privileged elite in a country that has the third-highest level of inequality globally.

Resource-poor economies generally outperform resource-rich countries, then, with South Korea, Japan and Taiwan often cited as the best examples of the former, and Nigeria, Angola and Equatorial Guinea as examples of the latter.

This is not to say that commodities cannot play a powerful role in development. Norway famously made excellent use of its oil and gas reserves for development, saving much of the proceeds in a sovereign wealth fund. While obviously politically difficult, managing spending and planning for the future is key to making the most of national commodity endowments. In the 1970s, Cameroon adopted just such a strategy as it began producing oil, opting to increase government savings and moderating spending and borrowing during the upward cycle. Despite a decline in commodity prices in the early 1980s, Cameroon's growth rate remained at about 7% per year, while maintaining low inflation and borrowing rates – although its success

was ultimately short-lived.³⁴ At the same time, Kenya and Nigeria spent most of their revenues from coffee and oil price booms in the late 1970s, and could not reel in expenditure in the 1980s – when prices, and thus revenue, ultimately fell. Growth rates declined, while inflation and borrowing increased.³⁵

Since then, several African countries have attempted to make better use of their resource booms by saving more of the associated revenue in sovereign welfare funds. While such savings have been associated with better macroeconomic management, they are also regularly undermined by subsequent over-withdrawals from the funds, as well as political interference in their governance. Of all Africa's many resource-rich countries, and the many sovereign wealth funds that have been established, Botswana's Pula Fund, a sovereign wealth fund, is alone in attaining sustained improvements in macroeconomic management, thanks to excellent governance and management.

In late 2019, the Sars-CoV-2 virus spread to humans in China's Wuhan province and the subsequent COVID-19 pandemic brought the global economy to a shuddering halt. The World Health Organization (WHO) acknowledged COVID-19 as a Public Health Emergency of International Concern on 30 January 2020. Africa experienced its first case on 14 February 2020, in Egypt, and COVID-19 was declared a global pandemic on 12 March. Two months later the disease had spread to every country in Africa, mostly entering capital cities through international flights from Europe and spreading from there through community transmission.

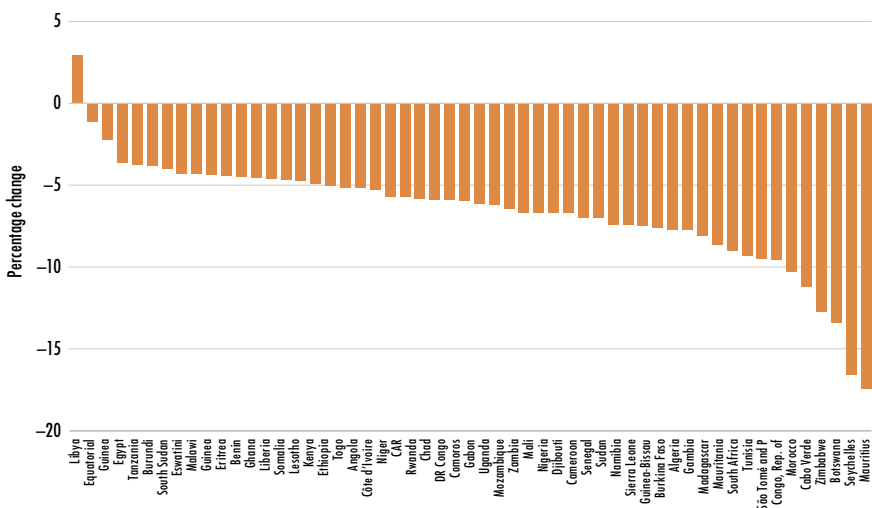
Initially it was feared that mortality from COVID-19 would hit Africans harder than other regions due to higher levels of poverty, lower-quality health services and the higher prevalence of HIV/Aids and other comorbidities, but eventually, the reverse transpired, generally attributed to the continent's youthful population – although a second wave at the end of 2020 outpaced the scale and speed of the first, followed by a third, fourth and fifth wave at the time of writing. Yet more than 80% of Africans who were infected with the virus were

asymptomatic, meaning they showed no symptoms and could carry on with their normal activities – almost double the average of the rest of the world – although daily infections were more severe during the second wave, which also saw the emergence of more contagious coronavirus variants as adherence to basic health protocols lapsed.³⁶

Africa has not, however, been spared the dire economic impacts associated with the virus, such as its effects on tourism and the efforts to contain the spread of the pandemic globally.

Before the COVID-19 pandemic, the IMF expected that Africa would register average growth of close to 3.2%. Eventually, COVID-19 caused a massive 6.4 percentage point collapse in growth compared to the pre-COVID forecast, equivalent to a difference of US\$200 billion in the size of the African economy. With a population size that is increasing at a rate of 2.7% annually, average GDP per capita in Africa fell by more than US\$300 in 2020 compared to a no-COVID forecast. While wealthier African countries have more resources to face the pandemic, they also tend to have a higher percentage decrease in GDP as a result of the pandemic, as Chart 3 shows.

Chart 3: *Relative change in the size of African economies (percentage) in 2020 given COVID-19 adjusted data*



Source: IFs 7.63 initialised from IMF and WDI data

The impact of COVID-19 is that 32 million more Africans would likely be classified as extremely poor in 2020 due to COVID-19 than would have been the case in a no-COVID scenario, and 43 million in 2021.³⁷ Government revenues in Africa are estimated to decline by US\$66 billion in 2020 and US\$61 billion in 2021, compared to a no-COVID forecast. By 2030, more Africans are likely to have succumbed to the secondary impact of the associated reductions in government revenues – reductions in health expenditure in particular – than to the direct effect of the virus. Economic recovery in Africa now depends upon the availability and rollout of vaccines, the latter remaining a huge challenge several years later.

The response by African governments to the threat of COVID-19 differed sharply between countries, with most adopting variations of lockdown measures and instituting harsh travel restrictions. Necessary spending on health interventions, social grants and general fiscal stimulus to drive recovery, taken together with reduced government revenues, have also increased debt dependence and reduced debt sustainability, even in Africa's wealthier countries.

At the UN General Assembly in September 2020, a number of African leaders – such as those from Senegal, Niger and Côte d'Ivoire – called for additional and dramatic measures to help economies survive the impact of the coronavirus pandemic. African countries estimate that they need annual support of US\$100 billion for the next three years, plus the extension of a moratorium on debt repayments first announced by the Group of Twenty (G20) earlier in 2020 for another year.³⁸

COVID-19 has elevated Africa's rising pre-COVID debt levels to a crisis. It recalls the extent to which alleviating Africa's large debt burden focused the minds of many in the development community during the 1980s and 1990s, and points to the continent's recurring debt challenge, explored next.

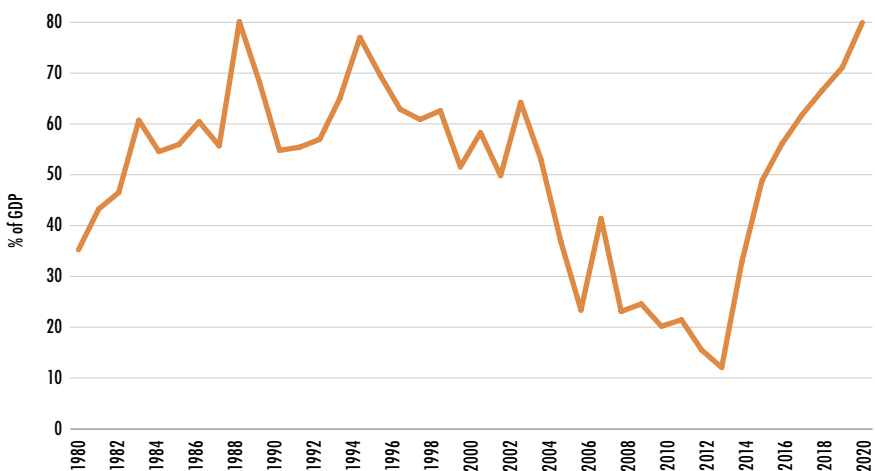
Whereas a general debt-to-GDP ratio of 60% is typically seen as a responsible ceiling, the suggested long-term debt-to-GDP ratio for

developing and emerging countries is often set at 40%. In a wide-ranging study on the relationship between debt and growth, Carmen Reinhart and Kenneth Rogoff concluded: ‘When external debt reaches 60 percent of GDP, annual growth declines by about two percent.’³⁹ There is, however, also evidence that the debt trajectory and rate of economic growth, rather than the absolute debt level, is more important. African countries generally pay punitive interest rates on debt compared to other regions such as South America – a function of the negative views on Africa that dominate among (Western) rating agencies.⁴⁰

On average, Africa’s low- and lower-middle income countries consistently had debt levels in excess of 60% of GDP from the mid-1980s for almost two decades.

In 1995, public debt for Africa’s lower-middle income countries peaked at 97% of GDP – and in the following year, public debt for low-income Africa peaked at an astounding 174% of GDP. In response, the IMF, the World Bank and other creditors began the Heavily Indebted Poor Countries (HIPC) Initiative in 1996, which was reviewed and comprehensively expanded in 1999. From 2005, the

Chart 4: Debt in Africa as a per cent of GDP, 1980–2020



Source: IFs 7.63 initialising from WDI data

* The year 1989 was excluded due to a lack of data in the IFs 7.63

HIPC was complemented by the Multilateral Debt Relief Initiative, a debt relief proposal initially advanced by the Group of Eight (G8) countries.⁴¹

As the HIPC programme matured, the international community focused on strengthening the links between debt relief and progress in implementing Poverty Reduction Strategies and macroeconomic and structural reform programmes.⁴² As a result of these efforts, public debt among low-income countries in Africa declined to 15% of GDP in 2013 and, for lower-middle income African countries, to 11% the following year. But thereafter it started to increase again. To a large extent, the increase in debt was the result of declining commodity prices after 2011 that hit Angola, Chad, the Republic of the Congo, Niger, Nigeria and Zambia particularly badly.

This rising debt was also driven by a number of other factors, such as internal conflict (Burundi), the impact of epidemics such as Ebola (Liberia and Sierra Leone) and fraud/corruption (Mozambique and The Gambia). Finally, a larger liquidity crunch, delays in the start of natural resource production, and weaknesses in revenue administration contributed to large increases in debt in Benin, Cameroon, Djibouti, Ethiopia, Ghana, Kenya, Senegal, São Tomé and Príncipe, Rwanda, Togo, Uganda and Zimbabwe.⁴³

In its 2018 *Regional Economic Outlook* for sub-Saharan Africa, the IMF noted that public debt rose above 50% of GDP in 22 countries at the end of 2016, up from 10 countries in 2013. ‘Debt servicing costs are becoming a burden, especially in oil-producing countries, and Angola, Gabon and Nigeria are expected to absorb more than 60% of government revenues in 2017,’ the IMF said.⁴⁴

It was against this background that the announcements of additional large loans from China (such as those made on the margins of the Forum on China–Africa Cooperation meeting held in September 2018 in Beijing) elicited concern that debt levels in sub-Saharan Africa were rapidly becoming unsustainable. Accurate information is hard to find since national banks in neither China nor the West release comprehensive data, but it seems that interest-bearing loans from China’s government, banks and contractors went from almost nothing in 2000 to US\$143 billion in 2017, about a third

of Africa's overall debt of approximately US\$365 billion. Chinese lending now dwarfs World Bank loans in Africa.⁴⁵ To some analysts, it appeared that Africans were having to borrow money from the IMF to repay China. In response, the US administration under President Donald Trump launched an aggressive campaign to characterise Chinese loans as 'debt-trap diplomacy' – arguing that China is seeking to use debt for leverage to gain control, eventually, over strategic resources such as railways and harbours.

Chinese lending appears to have resulted in an increase of nearly 4% of debt-to-GDP of low-income countries in recent years, while that of multilateral institutions such as the World Bank has seen an equal decline. Chinese lending to developing countries is generally offered on less concessional terms than that offered by Western and multilateral creditors, although it is more favourable than the market would offer.⁴⁶ The shift in debt away from the concessional rates offered by the World Bank and IMF towards China has also seen other effects, such as shorter maturities and grace periods.⁴⁷

Always careful about the associated tide of criticism, in 2019 Beijing announced that it would establish an analysis framework on debt sustainability for Belt and Road Initiative projects and improve transparency.⁴⁸ Already, in January 2019, the IMF had assessed that about 17 low-income African countries were either in or at risk of debt distress.

To cushion the economic and social impacts of the COVID-19 pandemic, a number of African governments announced fiscal stimulus packages that averaged about 3% of GDP, financed partly by debt. The average debt-to-GDP ratio – which had stabilised somewhat at about 60% of GDP at the end of 2019 – was increasing rapidly when, in April 2020, the G20 countries, the IMF and the World Bank announced an initial one-year debt standstill for 76 low-income countries, including 40 in sub-Saharan Africa. The G20 Debt Service Suspension Initiative (DSSI) was intended to give poor countries the opportunity to support health and social services amid the pandemic, and was subsequently extended. In related news, the IMF approved six months of debt service relief for 25 low-income countries, including 19 in Africa, and approved additional funding support for

several.⁴⁹ It proved too little too late for, in November 2020, Zambia became the first African country to default on its debt.⁵⁰

When newly elected Zambian President Hakainde Hichilema reviewed the books in September 2021, he found that Zambia owed US\$2 billion more to foreign creditors than previously thought, with more than US\$6.6 billion owed to 18 different Chinese creditors. External debt stood at US\$14.48 billion – more than 60% of GDP – of which Zambia owed China US\$5.75 billion, or US\$6.18 billion once unpaid interest was included.⁵¹ For example, whereas Zambia (before its September 2021 elections) admitted to sovereign debt of US\$3.4 billion, research by AidData indicates that Zambia actually owed US\$6.6 billion to 18 different Chinese creditors once the hidden debt component was included.⁵²

Almost simultaneously, in neighbouring Angola, the country opened the door to China to extend its oil field holding as its previous system of using oil to pay for debt came under pressure with falling oil prices. Oil-backed loans then already accounted for two-fifths of Angola's external debt – most of it to China, which has agreed to provide deferment over and above that promised under the DSSI.⁵³ And then, in Kenya,⁵⁴ China agreed to a six-month debt repayment holiday worth US\$245 million in January 2021, shortly before a critical deadline when a US\$1.4 billion loan from the Exim (Export–Import) Bank of China to build the Nairobi-to-Naivasha standard gauge railway would have come due.

China has probably taken more aggressive measures to assist Africa during COVID-19 than much of the West, providing restructuring and postponing of debt repayments to Angola, Zambia and Ethiopia in rapid succession in 2020 – but it has not offered substantive debt cancellation.⁵⁵

In this context, the administration of newly elected US President Joe Biden agreed, in April 2021, to the allocation of US\$650 billion in special drawing rights (or emergency credit) via the IMF, although only a limited amount (about US\$33 billion) will flow to Africa. Having been able to stimulate their domestic economies with several trillion dollars, a number of G7 members donated their special drawing rights (SDRs) to low-income countries.⁵⁶

China is now Africa's largest single official bilateral lender, owning at least 21% of the continent's outstanding debt, but likely significantly more. In addition, its position, for more than a decade, as Africa's single-largest trading partner means that Africa is increasingly tied to China through debt, much of which is backed by various agreements on collateral.⁵⁷ Looking to the future, it could be that China may opt to become a majority shareholder in some of the assets of countries with high debt levels as an alternative to the repayment of maturing debt.⁵⁸

China's spectacular growth rates are also set to decline steadily, meaning that its surplus cash will decline too as its focus turns increasingly to its own neighbourhood. The IFs Current Path forecast is for China's growth rates to decline to below 4% per annum by 2034. The growth slowdown will decrease its demand for commodities such as iron ore, oil and gas from Africa as China's massive domestic infrastructure build programmes taper. In 2021, data emerged⁵⁹ that pointed to an alarming trend since the launch of the Belt and Road Initiative in 2013: a decline in Chinese official sector lending to African governments (so-called sovereign debt by the two 'policy banks', the Exim Bank of China and China Development Bank) in favour of a dramatic rise in so-called hidden debt from state-owned Chinese commercial banks.⁶⁰

Hidden debt does not appear on public balance sheets. The average annual underreporting of repayment liabilities to China, according to AidData, is equivalent to 5.8% of GDP. It is different from sovereign debt, which is directly owned by central government institutions, since it is a debt between a Chinese commercial bank and, often, a special purpose vehicle specifically created to 'hold' the debt in the African country requiring the loan. Such debt is still guaranteed by the particular African government, but indirectly. What makes this trend alarming is not only the extent of the debt, including the lack of public reporting, but the nature of collateral (such as profits from the port of Mombasa) and the steep terms. Thus '[a] typical loan from China has a 4.2% interest rate and a repayment period of less than 10 years. By comparison, a typical loan from an OECD-DAC lender like Germany, France or Japan carries a 1.1% interest rate and a repayment period of 28 years'.⁶¹ In a blog from AidData, Alex Wooley writes that 'Beijing

has used debt rather than aid to establish a dominant position in the international development finance market’.

In this new debt era, Africa’s debt to China is increasing at an alarming rate, this time backed by extensive collateral agreements that are not publicly reported.

Not unlike the complex way in which the pieces of Africa’s Current Path forecast puzzle interact, the various goals and targets of the SDGs themselves are described as being ‘integrated and indivisible’. Many of them refer to the relationships between economic growth, inequality (using various different indices and measures) and decent employment, three of the key factors that determine poverty rates.

SDG Target 8.1, for example, aims for sustained per capita economic growth of ‘at least 7% gross domestic product growth per annum in the least developed countries’, most of which are in Africa. Target 8.5 is about ‘full and productive employment and decent work for all women and men’. Target 10.1 commits countries to ‘progressively achieve and sustain income growth of the bottom 40% of the population at a rate higher than the national average’. And Target 1.2 is ‘to reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions’ by 2030.

The SDGs and their targets have led to a global effort to develop the data and associated tools with which the international community can more accurately measure progress. Measuring poverty has received significant attention since it is closely related to the imbalances in people’s opportunities in education, health, level of empowerment and access to technology. Poverty differs between countries and within countries. Poverty in the eastern parts of the DR Congo is quite different from that experienced in Mali or South Africa, for example. Poverty in rural Uganda is also quite different from that in the capital city of Kampala. Poverty among men and women also differs sharply, as does the poverty experienced by children. For example, since women tend to be disproportionately responsible for household chores and caregiving, poverty restricts the time for which girls can commit to

staying in school. It also determines whether families can afford school fees, purchase supplies, or guarantee that their children can attend school when their help is needed at home, either to help generate income or to take care of household tasks.

Different regions also use different measures to reflect poverty more accurately in their member states. For example, the European Union typically uses a relative poverty line that is set at 50% or 60% of the national median income.

Since average income is quite a blunt instrument through which to view poverty, there have been numerous efforts to flesh out new approaches and definitions, such as the Multidimensional Poverty Index (MPI)⁶² developed by the Oxford Poverty and Human Development Initiative and subsequently adopted by the United Nations Development Programme (UNDP).⁶³ The MPI is focused on a set of tangible goods and services without which people might be defined as poor.⁶⁴ The 2019 edition of the Human Development Report⁶⁵ is entirely devoted to exploring the different dimensions of inequality and poverty, and carries the subtitle 'Inequalities in human development in the 21st century'.

For many years, the international community used a single, income-based definition of extreme poverty for the purposes of cross-country comparisons. It was first set at US\$1.00, then US\$1.25. When the negotiations about the SDGs were finalised, extreme poverty was defined as living below a daily income of US\$1.90 per person in 2011 prices. That value, in turn, was anchored in the poverty thresholds used by some of the world's poorest countries, since national poverty lines inevitably increase as national incomes rise. It is the most recent incarnation of an international poverty line, originally defined as a dollar a day; it has often been criticised for its focus on income and that it does not reflect the lived experience of extreme poverty. Using the US\$1.90 threshold, 35% of Africa's total population was considered extremely poor in 2019, a ratio that will decline to 31% by 2030 and 23% by 2040. Due to rapid population growth, by 2040, 486 million Africans would therefore still live in extreme poverty – compared to 455 million in 2019. Extreme poverty in the rest of the world would, in 2040, be at about 116 million people, down from 286 million in 2019.

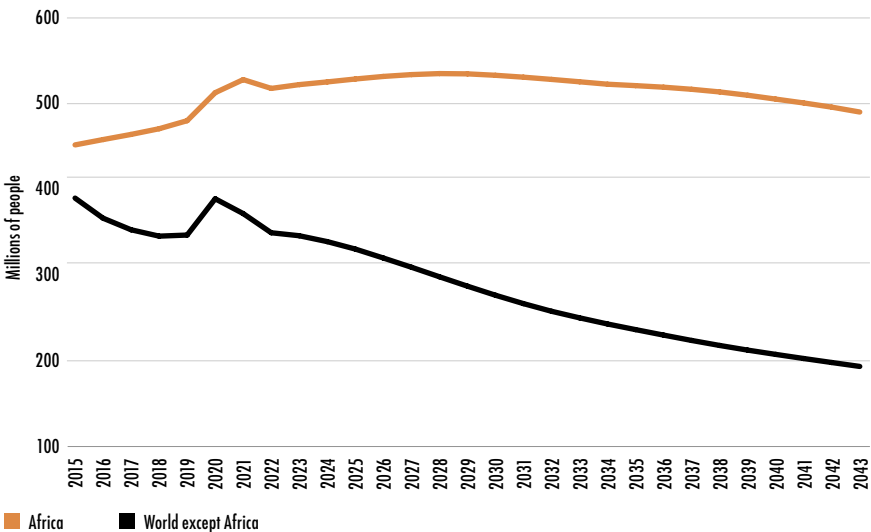
Chart 5 presents extreme poverty in Africa and the world except Africa from 2015, with a forecast to 2043 using the US\$1.90 extreme poverty income level.

With more than 450 million extremely poor people in 2019, sub-Saharan Africa is by far the region with the largest burden of extremely poor people globally.

Charts 6, 7 and 8 present the Current Path forecast of extreme poverty vs population for each African country in 2019, 2030 and 2043.

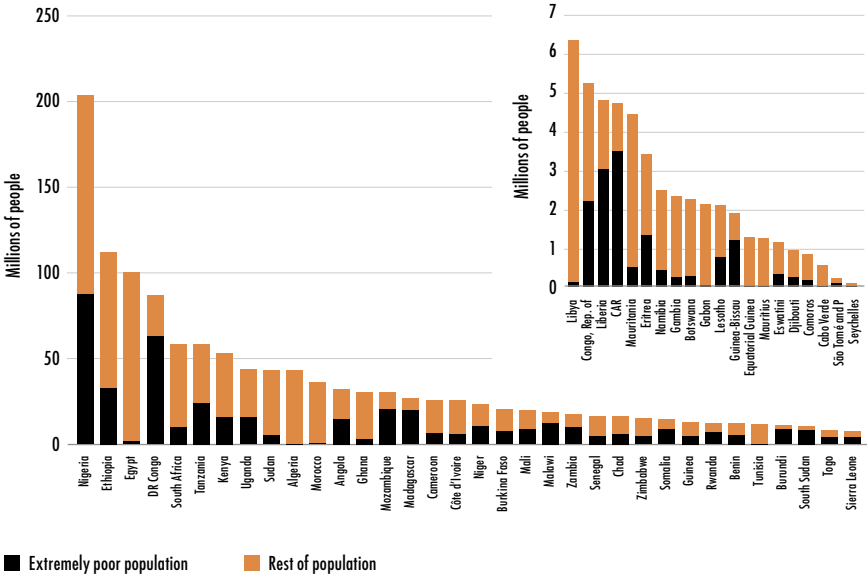
To compensate for the fact that extreme poverty in richer countries occurs at higher levels of income than in poor countries, in 2017 the World Bank announced an important addition to the way in which it measures poverty. While progress to the 2030 Agenda for Sustainable Development’s headline goal of eliminating extreme poverty would still be measured using US\$1.90 per person per day, it introduced three additional poverty lines for lower-middle, upper-middle and high-income countries at US\$3.20, US\$5.50 and US\$22.70.⁶⁶

Chart 5: *Extreme poverty in Africa and the rest of the world, using US\$1.90 threshold: 2015–2043*



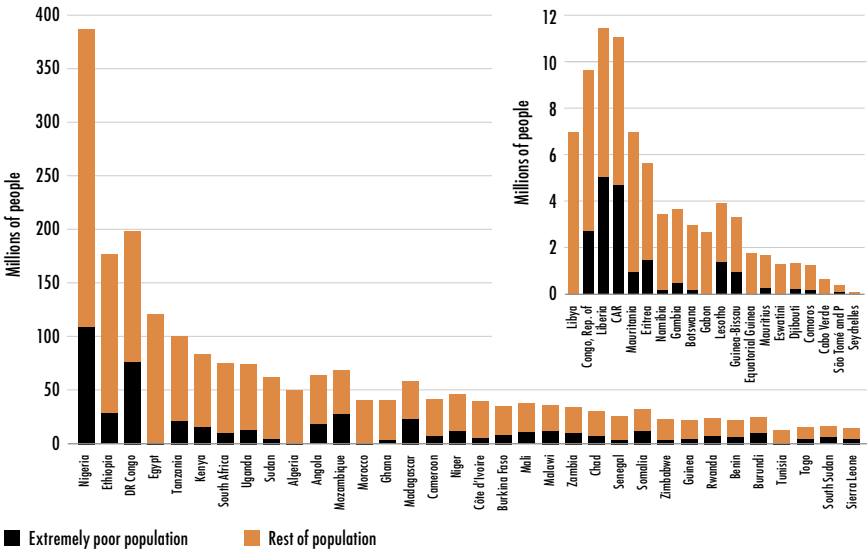
Source: IFs 7.63 initialising from UNDP World Population medium variant expectancy

Chart 6: Population in extreme poverty in each African country using US\$1.90, 2019



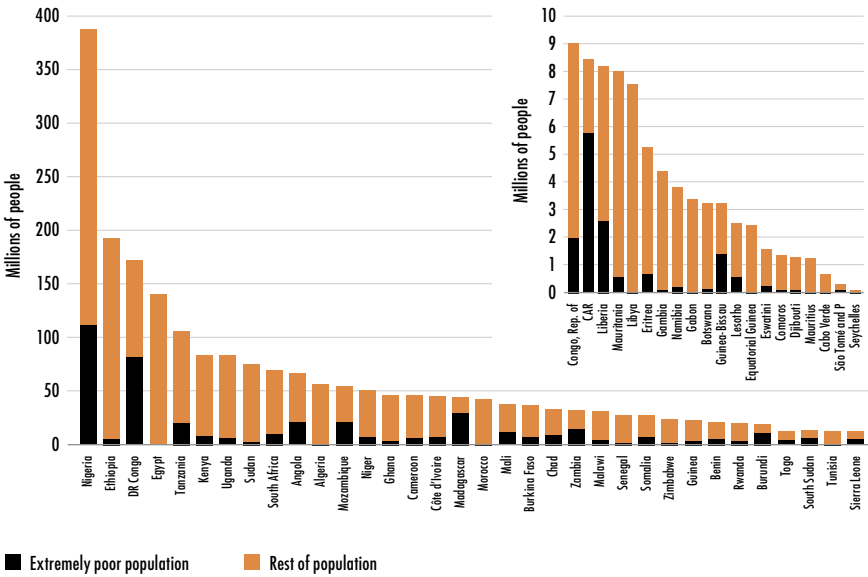
Source: IFs 7.63 initialised from UNDP World Population medium variant life expectancy

Chart 7: Population in extreme poverty in each African country using US\$1.90, 2030



Source: IFs 7.63 initialised from UNDP World Population medium variant life expectancy

Chart 8: Population in extreme poverty in each African country using US\$1.90, 2043



Source: IFs 7.63 initialised from UNDP World Population medium variant life expectancy

Previously, using US\$1.90, North Africa was the only region in Africa that would achieve the goal of eliminating extreme poverty as set out in the headline goal. In fact, as a group, it has already done so (except for Mauritania), with the proportion of its extremely poor population at below 3%. The Bank also moved away from the household to the individual as the primary unit of analysis, since there is considerable evidence that there are poor women and children living in non-poor households. So, while the main breadwinner in a household may technically not be classified as extremely poor, others in the same household may be living on much lower levels of income.⁶⁷

The three additional poverty lines compensate for a crucial imbalance in that the amount of income that a person needs to escape the burden of extreme poverty in low-income Mozambique is quite different from the income that a person in neighbouring upper-middle income South Africa would need.

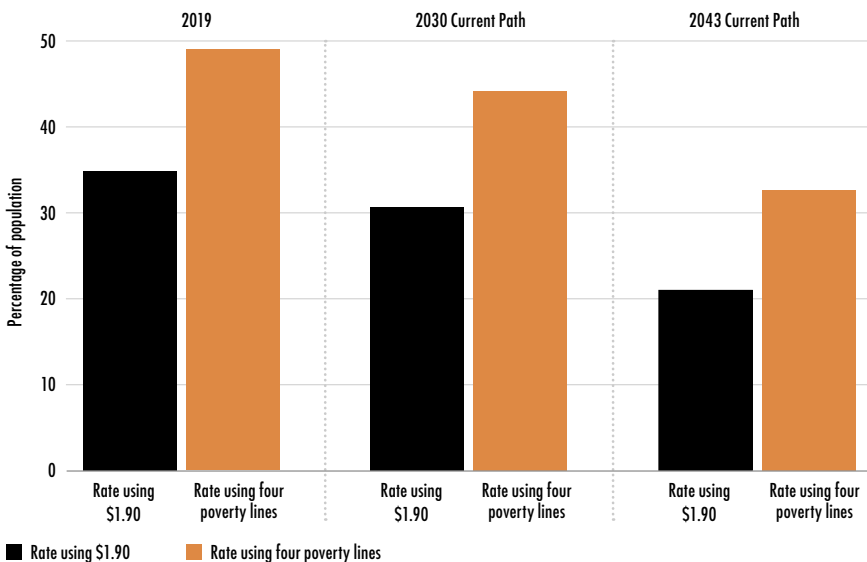
Once they are applied in Africa, the impact of the differentiated poverty rates is to sharply *increase* the number of Africans deemed to live

in extreme poverty. Using the four poverty lines, each applied to the relevant income group, the Current Path forecast is that the extreme poverty rate in Africa will, by 2043, have declined from 49% in 2019 (640 million of a total of 1.3 billion people) to 44% (755 million of 1.7 billion people) in 2030, and 33% (731 million of 2.1 billion people) in 2043.

The associated forecasts are set out in Chart 9.

In May 2022, the World Bank announced⁶⁸ that it had decided to update the international poverty line from \$1.90 in 2011 prices to \$2.15 in 2017 prices, and explained that ‘the real value of \$2.15 in 2017 prices is the same as \$1.90 in 2011 prices’. The net effect, the Bank explains, is no substantial change to global poverty, although ‘extreme poverty is reduced in sub-Saharan Africa and increased slightly in each of the other regions’. Instead of the previous US\$3.20 for lower-middle income countries, the adjusted poverty line is now \$3.65, and \$6.85 for upper-middle income countries (instead of \$6.20, in 2011 prices). The Bank has not yet announced the new poverty line for high-income countries, previously set at \$22.70 in 2011 prices.

Chart 9: Estimate of extreme poverty rate in Africa in 2019, 2030 and 2043 using different income levels



Source: IFs 7.63 initialising from WDI data

It will take some time for these new poverty lines to settle down in the associated analysis and the Bank intends to release the associated estimates in 2023. In the meanwhile, this book and the associated website at futures.issafrica.org will continue to use the \$1.90, \$3.20, \$6.20 and \$22.70 poverty lines.

With Africa's large and growing labour force, the matter of labour's contribution to economic growth is of particular importance to the continent, which does not have deep pockets of capital and does not benefit from high levels of technology – the other two sources of productivity improvements.

Global labour productivity growth slowed from a peak of 2.7% in 2007, just before the global financial crisis, to a post-crisis trough of 1.5% in 2016, and it remained below 2% a year in 2017/18. By 2018, the output per hour of work had actually been declining for more than a decade.

In theory, the potential for improvements in productivity as part of digitisation and automation is large. But, with a shrinking labour force as a portion of the total population in most middle- and high-income countries, artificial intelligence and automation first need to offset the reduction in production from that smaller labour force before these countries will experience an increase in the size of their economies. With its growing working-age population, Africa is potentially in a positive position – but it is coming off a very low base, and many countries are still several decades away from generally achieving a positive ratio of working-age persons to dependants – examined in Chapter 3.

A second reason for low productivity to date is that instead of the transition from agriculture to manufacturing to services – the growth trajectory that delivered the most rapid improvements in general well-being in Europe, North America and Asia – the African transition is from subsistence agriculture to low-end services in urban areas. Africa has not benefited from a revolution in its agricultural sector (see Chapter 4). Currently, the services sector (lending, recreation, tourism, transport and food) constitutes the largest economic sector by value

and is significantly larger than any other sector in Africa, including agriculture and manufacturing. On one hand, the impact of COVID-19 is likely to accelerate the growth in the low-end services sector as a result of lower investment, erosion of human capital because of unemployment and loss of schooling, and a retreat from global trade and supply chains. On the other hand, COVID-19 could encourage the digitisation and more rapid adoption of new technologies, but the associated productivity gains may be unevenly distributed – in particular, bypassing those countries with widespread, stable internet access, strong institutions and good education systems, and causing employment losses in some sectors.⁶⁹

Unlike the manufacturing sector, the services sector had not, prior to COVID-19, been fully disrupted by technology. Since the services sector is more labour-intensive, the shift to services reduced overall productivity. But this is changing rapidly now – although more slowly in Africa, given the dominance of low-end over high-end services, often provided in informal settings such as barber shops and vehicle repairs along the side of the road. COVID-19 is likely to drag the services sector, finally, into the modern world. According to the McKinsey Institute, productivity growth could potentially reach 2% annually over the next decade, with 60% of this increase due to digital opportunities.⁷⁰

An important explanation for the continent's generally slow economic growth is the fact that the contribution of Africa's already small manufacturing sector (see Chapter 7) has been declining, giving credence to the view that what Africa is experiencing is so-called premature deindustrialisation: most African countries have experienced peak manufacturing contribution to GDP at relatively low levels, after which the sector's contribution to GDP declined.

For much of the 20th century, a vibrant manufacturing sector played a unique role in boosting productivity throughout the economy in most of today's high-income economies, thanks to its forward and backward linkages to agriculture and services. The general shift seems to be that labour is moving from subsistence agriculture in rural areas to informal jobs in the urban services sector. Investment and jobs are often limited to capital-intensive commodity enclaves, such as in northern Mozambique's gas fields, with little or no forward or backward

linkages to the surrounding economy. The few jobs that are created through these megaprojects do little to provide employment or create local value chains. They provide jobs for a small number of expatriates and generate large streams of revenue for governments, but generally, enclave economics don't contribute to broad welfare improvements within the economy.

Going forward, then, Africa needs to seize the opportunity offered by renewable energy and the promise of the Fourth Industrial Revolution to rapidly improve productivity growth and provide more jobs. But how can that be achieved in a global economic environment where Africa is becoming more, not less, dependent on the export of commodities, and where the contribution of its small but growing labour force (as a portion of the total population) is likely to decline in value since the rest of world is invested in labour-saving technology – all while growth in the manufacturing sector is constrained by the fact that South-East Asia has become the world's factory? Chapter 9 on leapfrogging examines this.

Whereas manufacturing is often referred to as the automatic escalator that lifts countries to higher levels of productivity, Africa appears to be on a low-productivity services and commodity escalator. Africa's services escalator does go upwards, but slowly – and its manufacturing window is closing. This is largely because the share of workers employed in higher-productivity sectors such as manufacturing is declining, resulting in a drop in the average growth output per worker.⁷¹ In addition, it has become much harder to establish export manufacturers. The entire sector is shrinking globally, and competition is fierce. That may all change in the wake of COVID-19 and the global competition between the West and China, however; the chapters that follow explore some of the trends associated with this.

The debate about the role of the state in Africa's development trajectory has evolved markedly over recent decades. The mantra of 'good governance' – defined as 'the manner in which power is exercised in the management of a country's economic and social resources for development' – has steadily replaced the need to downsize the state. As mentioned earlier, for donors like the IMF and

the World Bank, the focus on good governance was a way of responding to the inefficiencies, corruption and predation that had become a defining characteristic of many African governments. Later, that debate would shift – to the need to attract and enable foreign direct investment from the private sector as the best means to facilitate growth. In its most recent incarnation, the focus is on the importance of domestic resource mobilisation.

This effectively completes a circle – one in which the role of capable African governments is again recognised as key to the continent's future, and which is explored in later chapters and touched on in the next chapter: a look at Africa's stability, generally considered a prerequisite for development, hence the reason for turning there first.

2 Africa's Stability



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The complex picture of Africa's prospects for stability requires brief reference to the history of human development on the continent.

Because a large part of Africa lies in the tropics and the surrounding regions also have little seasonal change, Africa has a particularly high disease burden (see Chapter 5) that translated historically into very low levels of population density until modern medicine upended this state of affairs (see Chapter 3). The lack of population pressure meant that much of the continent did not complete the Neolithic or agricultural revolution (see Chapter 4).

Africa's generally low population density also meant that wars in Africa between tribes were not fought over land, of which there was plenty, but over labour – to capture slaves.¹ The subsequent Arab and Western slave trade had a similar logic. Constantly denuded of productive human capital in sufficient concentrations, Africa was left in almost perpetual turmoil as populations sought to avoid capture, so development here generally took a different pathway from that in Europe and Asia. With low population densities and thus low technology, Africa could, generally, offer little organised resistance to foreign occupation.

Perhaps because its people were free from the diseases that plagued the forests of Central and West Africa and the surrounding savannahs, the only region in sub-Saharan Africa that did experience large population increases, and subsequently completed the agricultural transition from herders to farmers, was the fertile highlands in northern Tanzania, central Kenya and Ethiopia. Ethiopia even saw the introduction of the plough.² It is not surprising, then, that Ethiopia alone was able to resist being colonised by Europeans – until 1936. Elsewhere, foreigners with superior technology defeated Africa's emerging empires through conquest, slavery and imperialism.

The arbitrary partitioning of Africa that followed the Berlin Conference, itself an act of violence, has had long-term effects. During colonialism, stability became a function of external powers that brought substantial military assets to bear to suppress or contain internal uprisings, and the introduction of modern medicines eventually propelled much more rapid population growth. Conflict between colonies in Africa became proxy wars between European states, and the occupied territories regularly changed hands between Prussia (later Germany), France, Belgium, Portugal, the Dutch Republic, Italy and Great Britain.³

For example, after World War I, Germany had to hand over what is today known as Burundi, Cameroon, Namibia, Rwanda, Tanzania and Togo to the League of Nations, which then handed them to Belgium, France, Portugal, South Africa and the United Kingdom. Italy suffered the same fate after World War II when it lost Libya, Ethiopia, Eritrea and Somalia. However, the end of that war weakened the remaining colonial powers, and the promise of the Atlantic Charter emboldened Africans to embark on renewed efforts at emancipation.

Yet the borders that colonialism imposed on Africa have endured. Fearful of the turmoil that could follow efforts to adjust them, Africa's independent leadership endorsed them shortly after forming the Organisation of African Unity (OAU) in 1963. Their foresight was rewarded, given the turmoil that followed the establishment of Eritrea and South Sudan.

As time passes, this imposed nationhood is translating into a sense of being Congolese or Beninoise, for example, instead of being from a particular family, tribe or ethnic group – but it is a multigenerational challenge. The centre is constantly struggling to impose its will on an unpoliced and distant periphery that may ascribe to quite different cultures and authorities.

This legacy remains at the heart of many of Africa's development challenges today, more than half a century after the end of colonialism.

With limited capacity to impose order in – and often balancing numerous factions across – its borderlands, independent Africa has consistently experienced a significant conflict burden when measured as a ratio of fatalities from armed conflict to population size. Today, Africa’s conflict burden reflects the close correlation between poverty and instability – as well as the lack of a nation-building process, already mentioned. Developing countries with young populations are typically more unstable due to a large youth bulge and the weakness of the central government, with its lack of capacity.

That said, even the debilitating impact of COVID-19 – with its deleterious short-term effect on stability – is unlikely to disrupt the long-term trend in Africa and elsewhere: a general decline in intrastate and civil war as national incomes rise and governments’ capacity to ensure stability increases over time.⁴ Riots and protests are increasing, but these are not included in measures of armed conflict and their impact is more difficult to foresee. We can see these trends in data from either of the two largest publicly available data providers that cover Africa comprehensively: the Uppsala Conflict Data Program (UCDP), and the Armed Conflict Location & Event Data Project (ACLED).⁵ Both use the media as their primary source, and collect and categorise events and fatalities – as do others, such as the Social Conflict Analysis Database (SCAD) and Global Terrorism Database (GTD).

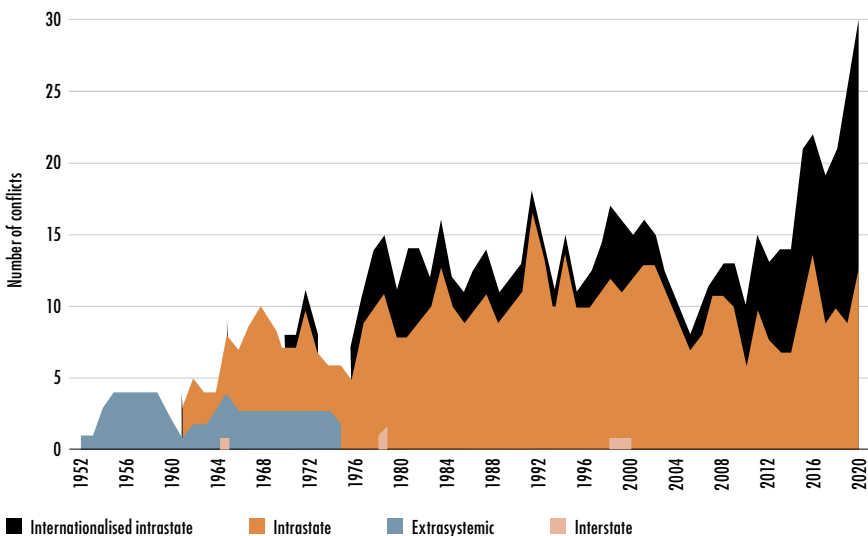
Chart 10, then, presents the incidence of four types of armed conflict in Africa from 1946 to 2019, as recorded and coded by the UCDP. To be included, a conflict must tally at least 1 000 battle-related deaths per year, and one of the parties to the event must be a government. The associated fatalities are necessarily those directly from violent events and not those caused indirectly by conflicts, such as starvation or lack of healthcare. The four types of armed conflicts are:

- Extrasystemic conflicts between a state (such as a colonial power) and a non-state group outside its territory, such as during liberation struggles.
- Interstate armed conflict that occurs between two or more states, most common in the Horn of Africa between Ethiopia and Somalia in 1977–78 and 2006–09, between Ethiopia and Eritrea in 1998–2000, and between Eritrea and Djibouti in 2008.

- Internal armed conflict between the government and one or more internal opposition groups, characteristic of many countries in Africa.
- Internationalised internal armed conflict between the government of a state and one or more internal opposition groups, which also sees intervention from other states. An example is the civil war in Libya where, by 2020–21, several thousand mercenaries from Turkey, Russia and elsewhere were fighting on opposing sides.

As Chart 10 shows, the number of extrasystemic conflicts (primarily liberation struggles) in Africa after World War II is high and there has been a subsequent increase in intrastate (internal) conflicts. Levels of intrastate conflict have generally been low; recent years have seen a rise in internationalised internal armed conflict, with the war in Libya serving as a textbook example. Levels of the largest category of conflict in Chart 10, intrastate wars (or internal conflicts) in Africa, have remained roughly the same for four decades.

Chart 10: *Count of wars in Africa, 1946–2020*



Source: UNDP/PRIIO Armed Conflict Dataset version 21.1

The structural drivers of violence in Africa are complex and country-specific. Sustained violence within countries reflects deep (or structural) drivers of conflict that include a history of armed conflict and its social, political and economic legacies; a youthful population; high levels of unemployment; and inequality and poor governance that render societies vulnerable to further conflict. The sections that follow examine these drivers, starting with a look at how the characteristics of armed violence in Africa are changing.

The changing characteristics of organised armed violence

After independence in the 1960s, Africa's most violent period occurred shortly before the end of the Cold War in 1989. Levels of organised, armed violence in Africa rose much more quickly than the global average during the 1970s and 1980s. As Chapter 1 discussed, the continent served as a proxy battleground between the former Soviet Union and the US and its allies, each backing particular clients. As tension between the East and the West mounted, the burden of armed conflict increased – then plateaued at globally unprecedented high levels, with peaks in 1982, 1987 and 1991.

For some years following the collapse of the Berlin Wall in 1989, the international system appeared to promise 'the emergence of a new form of global security governance' premised on broader human, as opposed to state security, concerns since '[t]he end of the Cold War ... removed a significant source of conflict from the international system'.⁶ The impact of the pent-up peace dividend did see an initially sharp decline in global armed conflict. Instances of organised violence and the burden of fatalities steadily declined for more than two decades, with the period from 2004 to 2006 being more peaceful than any other in Africa's recent history.

But while Africa seemed to be becoming more peaceful from one perspective, it was experiencing high levels of conflict between armed groups and factions that were fighting one another and not government forces. The UCDP refers to this as 'non-state conflict'. Non-state

conflict reflects the absence of effective government control, and the government's inability to exert its authority, extract taxes, enforce compliance or provide services. These regions evidence competing systems of power, often determined by tradition, community structures or criminal groups. Corruption is rife, and communities provide limited and grudging compliance to shifting dominant groups. The vacuum allows local militias, criminal gangs and traditional groups to advance or protect their cattle, goats, fields, gold, tantalum and other possessions.

As the number of conflict actors increases, resolving conflict in countries such as the Democratic Republic of the Congo (DR Congo), Sudan and the Central African Republic (CAR) becomes more complex.⁷ Rebel and extremist groups that split into smaller groups complicate efforts at mediation or reconciliation. Attempts to craft inclusive peace agreements invariably fall short of their stated goal to include all key protagonists. No sooner do mediators persuade the warring parties to sign an agreement than a group splits off and a new faction emerges. Additional demands follow. While commentators and interest groups readily agitate for maximum inclusion (including of women) as part of agreements, the problem with most peace agreements is lack of implementation rather than inclusivity.⁸

In a similar vein, political inclusion, such as having a broadly representative cabinet, contributes less to peace than most suspect – a finding underlined by the African Cabinet and Political Elite Dataset (ACPED), which has collected longitudinal data on the composition of cabinets for a number of countries. Most African leaders are involved in complex, dangerous and costly games of 'elite management' in the interests of remaining in power, South Africa being a recent example. These severely constrain their ability to undertake economic or other reform.⁹

Armed violence since 1989

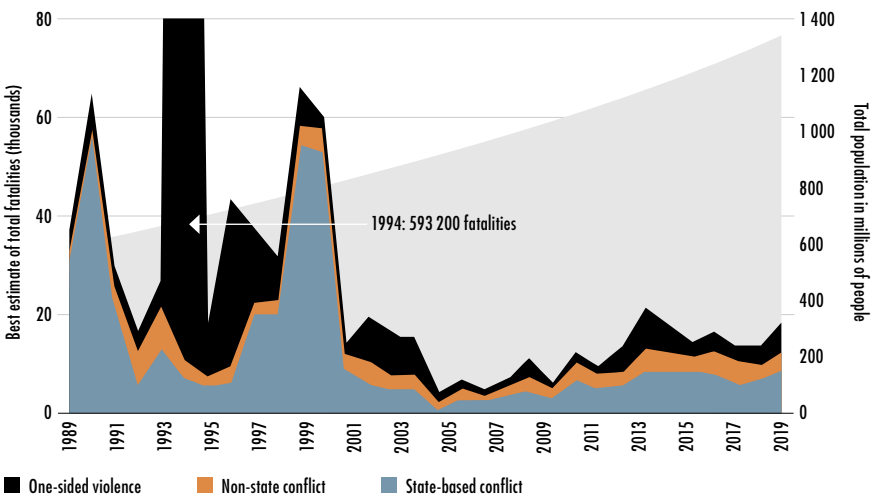
Given Africa's increasing levels of non-state conflict, what has armed violence on the continent looked like since 1989, the end of the Cold War?

First, a note: since Africa has a rapidly growing population, it is essential to view the number of violent events on a proportional basis, such as fatalities per million (or per hundred thousand) of the population, rather than to use absolute numbers. Using this rationale, Chart 11 presents fatalities against population growth. Fatality numbers are drawn from the UCDP, and population data is from the UN Population Division (UNPD): 613 million people in 1989, increasing to 1.315 billion in 2019.

The chart distinguishes between state-based conflict (involving a government), non-state conflict (no involvement of government armed forces), and one-sided violence (when the government or a formally organised group uses armed force against civilians). The UCDP only includes events when fatalities amount to 25 deaths per year and group. Its dataset therefore excludes individual murders and individual deaths from crime, but includes most organised armed actors such as rebel groups.¹⁰

The periods that saw the highest number of fatalities were 1990–1991, 1994 and 1999–2000. Why this spike in fatalities?

Chart 11: Best estimate of total fatalities (thousands) from all events, Africa, 1989–2019 vs population (millions)



Source: UNDP GED version 21.1, population from UNDP in IFs 7.63

The 1990 spike was mainly from Ethiopia's civil war, which overthrew the dictatorship of Mengistu Haile Mariam, who fled to Zimbabwe. In Burundi, the assassination of Melchior Ndadaye, Burundi's first democratically elected president, in October 1993 tipped the country into a civil war between the army, dominated by the Tutsi minority, and Hutu rebel groups. Even higher numbers of fatalities were recorded in Angola in 1993 after its warring parties rejected internationally supervised elections in 1992. The struggle between the Movimento Popular de Libertação de Angola/People's Movement for the Liberation of Angola (MPLA) and the União Nacional para a Independência Total de Angola/National Union for the Total Independence of Angola (UNITA) only ended with the death of UNITA leader Jonas Savimbi in February 2002.

Most prominent, of course, is the genocide in Rwanda in 1994 that, according to the UCDP, resulted in 534 468 deaths, mostly Tutsis. The genocide is followed by almost 100 000 fatalities recorded during the 1999/2000 Ethiopia–Eritrea war in and around the town of Badme. This saw the two governments support dissident and armed opposition groups, drawing in neighbouring countries such as Somalia and, to a lesser extent, Sudan.

In DR Congo, the support of Rwanda and Uganda enabled Laurent-Désiré Kabila to overthrow President Mobutu Sese Seko during the First Congo War (1996–1997). When Kabila subsequently broke ties with both countries, they invaded DR Congo. The Second Congo War only wound down from July 2003, at which point it had involved nine African countries and nearly 20 rebel groups. The UCDP dataset captures more than 34 500 battle deaths in DR Congo in 1996, almost 14 000 in 1997, and more than 1 000 annually to 2003. Fatalities again peaked above 5 000 in 2009 and 2017.

The Sudanese Civil War from 1983 to 2005 pitted the government forces in Khartoum against the Sudan People's Liberation Army (SPLA) based in the south. The struggle eventually resulted in the Naivasha Agreement in 2005, a referendum, the secession of South Sudan in 2011 and its independence, only for a civil war to commence in South Sudan in December 2013 among opposing factions in the ruling party.

Armed conflict in the Republic of Congo, also evident in Chart 11, intensified after parliamentary elections in 1993, ended with a

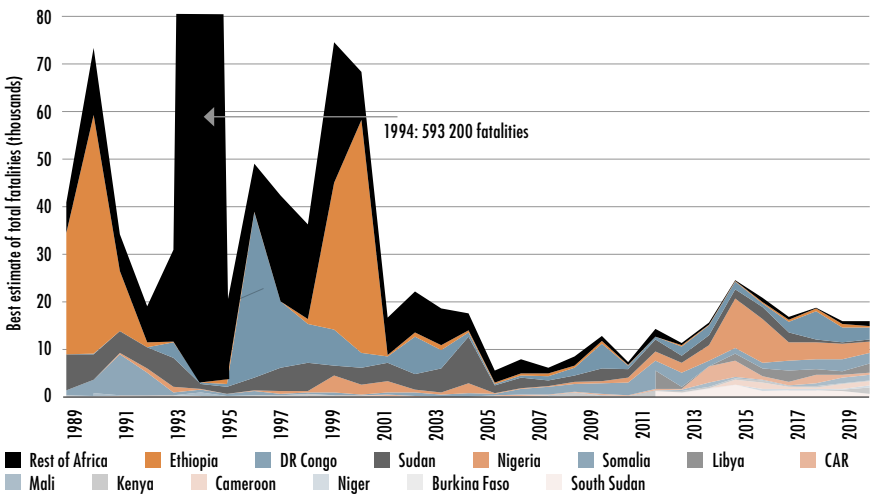
December 1994 peace agreement, then intensified in anticipation of elections in 1997. The war eventually wound down in December 1999.

Chart 11 also illustrates the extent to which violence accelerated after 2010 during the Arab Spring, the subsequent increase in incidences of violent Islamist terrorism, and the result of external involvement such as in Libya and Mali. Violent incidents peaked in 2014/15 with the activities of Boko Haram in Nigeria (see below), before starting to decline until the spike in DR Congo in 2017. Recent years have seen an increase in instability, particularly in the Sahel, due to the governance vacuum that was exacerbated by COVID-19.

The general trend is a sharp decline in the fatality of events until 2005. After that, the increase in deaths in Chart 11 is generally consistent with Africa’s population increase, with a peak in 2014. At this level of analysis, stability in Africa is not improving – although Africans are generally less exposed to organised armed violence than they were in the 1980s and 1990s.

Chart 12 shifts our focus by showing which countries have been most affected by armed violence in the period under examination.

Chart 12: Fatalities from armed conflict (thousands) for most affected African countries and rest of Africa, 1989–2020



Source: UNDP/PRIo version 21.1, population from UNDP in IFs 7.63

In summary, fatalities from armed conflict generally occur in a handful of countries, particularly Ethiopia, Burundi, Rwanda, Ethiopia/Eritrea, DR Congo and Nigeria. The seven countries that experienced an annual average of more than 1 000 fatalities over the five years from 2014 to 2019 are Nigeria (particularly in 2014 and 2015), DR Congo (particularly in 2017), Somalia, Sudan, Libya, CAR and South Sudan.

Inevitably, countries with large populations – such as Nigeria, Ethiopia, Egypt and DR Congo – record a correspondingly high number of fatalities from armed conflict.¹¹ However, when considering population size (that is, fatalities per thousand or million people), the fatality burden in four countries was significantly higher than elsewhere in the five years from 2015 to 2019: CAR, Libya, Somalia and Sudan. These are all countries with relatively small populations, each with an extraordinarily high casualty burden.

Should Africans or the international community manage to bring stability to the four countries with the highest fatality burden from armed violence in Chart 13, it would have a disproportionately positive impact on continental levels of armed conflict, on investor confidence, and on the ability of governments to invest in development and improved well-being. According to the UCDP, 21 African countries had fewer than 10 fatalities due to armed conflict from 2014 to 2019.

Chart 13: *Total fatalities vs fatality rate*

Highest number of fatalities: 2015–2019	Greatest risk of being killed as a result of armed conflict (highest fatality rate) 2015–2019
Nigeria	Libya
DR Congo	CAR
Somalia	Somalia
Libya	South Sudan

Source: Calculated from UCDP version 21.1

Terrorism

The contribution that Islamic terrorism has made to Africa's conflict burden has waxed and waned since the 1960s. It has recently increased, expanding its footprint in the aftermath of the 9/11 attack on the US – making it another significant structural driver of violence and instability on the continent.

Domestic grievances primarily drive terrorism, which is then contextualised and animated within a broader religious or political framing.¹² This remains valid despite several copycat insurgencies having recently emerged, such as insurgencies in the eastern DR Congo and northern Mozambique that borrow Islamic State nomenclature in their efforts to extend their influence. At one level, people join armed jihadist groups and become violent, reflecting marginalisation, poverty and poor governance. Primarily, however, the decision to engage in violence is related to personal experiences at the hands of authorities, rather than to ideology such as radical Islam. Eventually, a specific incident mobilises local leadership, which then frames the reasons for the situation and the need for action within a broader political, ideological or religious context.¹³

Many of the groups eventually associated with Islamist radicalism have been linked to the Society of the Muslim Brotherhood, established as an Islamic revivalist movement in Egypt more than a century ago. The aim of the Brotherhood was a state ruled by Sharia law. It grew rapidly in popularity through its extensive charity work, but has regularly been banned and unbanned as the government sought to manage the relationship between religion and politics. The Brotherhood was legalised in 1948, but the failed assassination of Egyptian President Abdel Nasser on 26 October 1954 saw the imprisonment of thousands of its members and the execution of some of its leaders. It was banned again after a splinter organisation assassinated President Anwar Sadat in 1981.¹⁴

In 1995 linkages with al-Qaeda appeared, evident in the assassination attempt on President Hosni Mubarak while on a state visit to Addis Ababa, one of six attempts that he survived.¹⁵ The most prominent associated radical grouping in Egypt, al-Gama'a al-islamiyya, launched a

particularly brutal attack on tourists at Luxor in 1997 but renounced violence in 2003 as support dropped off.¹⁶

An estimated 1 000 Egyptian combatants were active in Afghanistan before the terrorist attacks on the US in September 2001, now known as 9/11. Egypt's domestic counterterrorism efforts managed to contain the domestic threat, inadvertently exporting extremists until a resurgence in 2003, which eventually shifted attention to the volatile Sinai Peninsula where terror attacks continue to this day.

Tension was already high, then, when the spark in Tunisia ignited the Arab Spring of December 2010, which spread to Egypt. Amid widespread protests, Egyptian President Hosni Mubarak stepped down in February 2011, transferring his powers to the Supreme Council of the Armed Forces. The head of the Muslim Brotherhood and leader of the Freedom and Justice Party, Mohamed Morsi, won the subsequent presidential elections. After a year of divisive rule and rolling mass protests, army chief Abdel Fattah el-Sisi removed him in a coup d'état and was subsequently elected president. Egypt has since managed to keep a lid on terror, although often intervening and engaging elsewhere to contain the threat, such as in neighbouring Libya.

Algeria, too, has served as a centre of terror in Africa.

Algeria's bloody independence war ended in 1962 with the Front de Libération Nationale (FNL) government coming into power, initially closely aligned to the Soviet Union. Once in government, the FNL resisted any political role for Islam despite the prominent role that it had played in mobilising anti-French support. Instead, it chose to embark upon a concerted effort at cultural and educational Arabisation and Islamisation to displace the use of French in education and culture. The Front consolidated its grip on power with a coup in 1965. Still, it instituted a multiparty system to soak up discontent as Algeria's youth bulge expanded, culminating in widespread rioting – notably the so-called bread riots of October 1988.

In a state-dominated economic and political system characterised by slow growth and little opportunity, these efforts laid the

groundwork for a national Islamist awakening. Eventually, the Algerian military stepped in to annul the elections in 1992 when the recently legalised Front Islamique du Salut/Islamic Salvation Front (FIS) appeared to be heading for victory. Several veterans of the jihad in Afghanistan, who had fought with Osama bin Laden and others, were subsequently crucial in establishing the campaigns of the most prominent subsequent terror group, the Armed Islamic Group of Algeria (GIA).

The civil war that followed was ferocious, as the GIA massacred many fellow Muslims. These tactics eventually split the GIA, leading to the formation of the Groupe Salafiste pour la Prédication et le Combat/Salafist Group for Preaching and Combat (GSPC), the more prominent subsequent grouping. Effective security force action and an amnesty emasculated the GIA, which declared a ceasefire in 1997 – ahead of the elections in 1999, which saw Abdelaziz Bouteflika elected as president of Algeria for the first time.

In addition to links to various organised criminal networks, the GSPC sought to spread its message and embarked upon the training of new members from Chad, Sudan, Libya, Mali and Mauritania. It also deepened its relationship with al-Qaeda, although steadily losing ground against the Algerian security forces. In 2007, the remnants of the GSPC announced that it had changed its name to al-Qaeda in the Islamic Maghreb (AQIM), reflecting its open support for al-Qaeda.

Meanwhile, the US invaded Iraq in 2003 under the pretext that the latter had weapons of mass destruction and supported al-Qaeda. The blunder allowed al-Qaeda in Afghanistan to regroup. It also facilitated the growth of the Islamic State of Iraq and Syria (ISIS), initially an offshoot of al-Qaeda, to become a competitor, changing its name to the Islamic State of Iraq and the Levant (ISIL). Together with the impact of the Arab Spring, the US's foolish intervention revitalised Islamic terror globally.

American troops left Iraq in 2011, even as the impact of the Arab Spring washed across the Middle East and North Africa (MENA) region, forcing President Ben Ali of Tunisia to flee, the changes in the Egyptian regime mentioned previously, and the deposition of Muammar Gaddafi in Libya.

However, the momentum of the Arab Spring was insufficient to replace the pre-existing order in key authoritarian states. Instead, it effectively facilitated the Islamic State's expansion from Iraq to Syria and destabilised large parts of the Maghreb – the Sahel in particular.

After NATO's intervention, the collapse of central authority in Libya left a space for Syrian combatants from al-Qaeda and the Islamic State to fill. It also facilitated the looting of the giant arms supplies that Gaddafi's regime had built up over the years, eventually serving as the primary source of arms in the region. The weapons and Tuareg fighters from Libya now stoked a simmering conflict in Mali and Nigeria, igniting a war in the Sahel. Former members of Gaddafi's armed forces fled to northern Mali in 2011. Here, they provided the backbone for the separatist Mouvement National de Libération de l'Azawad (MNLA) and, after taking control of cities and territories in the north of Mali, advanced on the capital Bamako. French military intervention narrowly averted the capture of Bamako, but neither a subsequent UN peacekeeping mission nor regional efforts have been able to restore stability.

Beyond Egypt and Algeria, terrorism in Africa is also generally associated with Somalia. Its origins are several centuries of war and invasion between Ethiopia and Somalia, including the allocation of grazing land in the Ogaden by the British to Ethiopian Emperor Menelik in the 19th century.¹⁷

Contemporary extremist Islam in Somalia began as an underground movement in the mid-1970s in response to the repressive tactics of the secular Siad Barre regime, corruption, the failure of secular nationalist ideology to resolve the status of Somalis living outside the colonial borders, and economic pressures.

Siad Barre actively pursued the dream of a Greater Somalia and invaded the Ogaden (in Ethiopia) in July 1977. The tide turned very rapidly when the Soviet Union abruptly shifted its support from Siad Barre to Ethiopia. With the aid of some 11 600 Cuban troops and 6 000 advisors, an air bridge from Moscow and two South Yemeni armoured

brigades, Ethiopia eventually expelled the Somali forces from the Ogaden. This – and the extensive brutality of Barre’s regime – facilitated the subsequent civil war and, in 1991, the collapse of the Barre regime amid widespread conflict between clans, allowing al-Itihaad al-Islamiya (AIAI) to spread its influence.¹⁸

Members of AIAI fought with the mujahideen in Afghanistan in the late 1990s. They would plan and conduct the US embassy bombings in Nairobi and Dar es Salaam in 1998, and attack an Israeli hotel and airliner in Mombasa in 2002.¹⁹ AIAI hardliners eventually joined forces with an alliance of Sharia courts, known as the Islamic Courts Union (ICU), and gained control over the capital, Mogadishu. That event triggered intervention by Ethiopia in December 2006, eventually driving al-Shabaab and the ICU from Mogadishu.²⁰

Kenyan troops crossed into Somalia in 2011 to fight al-Shabaab and, like the Ethiopians, later joined the African Union (AU) peacekeeping force in its mission in Somalia (AMISOM). In subsequent years, a string of ruthless and high-profile attacks, mostly in neighbouring Kenya, continued to keep al-Shabaab in the news – even as a rival organisation, the Islamic State in Somalia (ISS), mounted increasingly well-publicised operations.

Successive bouts of widespread and intense instability have also plagued Nigeria since independence from Britain in 1960, including the effort at secession by the Eastern Region as the Republic of Biafra (1967–1970) and ethnic violence for control over the oil-producing Niger delta from 1992 to 2009. Its most recent violence has also been closely linked to Islamic terrorism. Thus, a 2015 study on regional extremist linkages would find that: ‘Boko Haram has been able to build on relations of loyalty and support across borders, such as long-existing networks of trade, the influence of local big men, and the discontent of disenfranchised youths.’²¹ The dominant narrative remains that a Christian government in the south caused deprivation and poverty in the north. In 2015, a faction of Boko Haram pledged allegiance to IS and named itself the Islamic State West Africa Province (ISWAP).

The most recent manifestation of such terrorism, in 2020, was in the Cabo Delgado province in northern Mozambique in response to decades of poor governance and abuse at the hands of security agencies.

Protests and riots

In sharp contrast to the slow decline of armed violence (if viewed over long time horizons), Africa is experiencing increased anti-government riots and violent protests. Protests have become a more acceptable public behaviour in many countries, initially associated with democratisation and, since 2020, the hardships that followed COVID-19 lockdown measures.

While larger-scale armed conflict is likely to continue its steady long-term decline, it is less clear what the short-term effect of the increase on social instability and protests will be. ‘Over the past decade, mass uprisings in Africa have accounted for one in three of the nonviolent campaigns to topple dictatorships around the world,’ write Zoe Marks, Erica Chenoweth and Jide Okeke in *Foreign Affairs*.²² These mass uprisings are more successful in Africa than anywhere else, having toppled autocratic leaders in countries as diverse as Burkina Faso, Côte d’Ivoire, Madagascar, Mali, South Africa, Tunisia, Zambia and, most recently, Algeria and Sudan.

Crowd and mass violence typically require politicisation and triggering events, such as the decision by the young Tunisian fruit-seller Mohamed Bouazizi to self-immolate on 17 December 2010, the event generally accepted as having triggered the Arab Spring.

For such a spark to have ignited the widespread violence and unrest that followed, societies need to be afflicted by very high levels of social tension and discontent. In this instance, tension was primarily the result of limited social, economic and political opportunity in North Africa and the Middle East against a backdrop of relatively high levels of education and a bulge in the size of the youthful population – those aged 15 to 29 – as a portion of the total population. In addition, North Africa experienced a downturn in economic growth before the Arab Spring that inevitably increased the sense of relative deprivation with increases in food prices serving as an immediate source of anger.²³

Similar dynamics underpin the widespread violence in South Africa that erupted in July 2021 following the arrest and incarceration of former president Jacob Zuma on charges of contempt of the Constitutional Court; as Chapter 1 showed, South Africa is generally

accepted as having the highest levels of inequality and unemployment globally. By comparative African standards, South Africa is very democratic, and protests are the order of the day given slow growth, corruption and high levels of inequality. The leadership transition from Jacob Zuma to Cyril Ramaphosa in 2018 had many hoping that the trend would reverse. Still, the country remains unsettled due to rising unemployment, falling incomes and the extent to which Zuma had allowed his friends and cronies to loot the state.

As is the case elsewhere globally, democratic African governments are less repressive and tend to use less violence against civilians than their autocratic counterparts. In general, few civilians are killed during protests, even if the number of protest events may increase compared to incidents of armed conflict.²⁴

ACLED²⁵ defines a politically violent event as ‘the use of force by a group with a political purpose or motivation’. It codes six different event types, occurring at a specific date and location and involving specific groups. Unlike the UCDP, there is no fatality threshold for inclusion in the event data that ACLED gathers. It also focuses its efforts more widely on tracking rebels, militia and government activity over time and space, and on collecting information about riots and protests.

According to ACLED, non-violent protests and violent riots in Africa had increased elevenfold by 2019 since the start of the Arab Spring in December 2010. The continent is becoming more restless and politically aware, although better reporting and access to social media probably accentuates the increase. Countries with larger populations also appear to see more protests, even on a per capita basis.

Riots and protests have also increased in Ethiopia, Tunisia, Algeria, Kenya and Sudan. In 2019, large-scale protests erupted in Algeria and Sudan where thousands of people took to the streets to demand the end of two of Africa’s longest-ruling presidents – Abdelaziz Bouteflika, who had presided over Algeria since 1999, and Omar al-Bashir, who had served as president of Sudan since a coup d’état in 1993. Public displays of anger and resistance eventually forced both from power. Abdalla Hamdok, an economist and former deputy at the United Nations Economic Commission for Africa, eventually replaced al-Bashir and embarked upon a comprehensive peace process, including an offer of

amnesty to end decades of violence in his beleaguered country until a coup also forced him from power.

The extraordinary increase in the number of riots and protests reflects the effect of increased levels of education on Africa's youth amid limited job opportunities. It also reflects Africa's urbanising social landscape and the effect of social media and internet access, which has instigated a broader power shift away from political elites and toward the public – who are now armed with information and the ability to communicate in real-time. In the decade to 2019, mass mobilisation contributed to transitions of power in Niger, Tunisia, Egypt, Libya, Senegal, Burkina Faso, The Gambia, Ethiopia and DR Congo.

The nature of violence and instability seems to change as countries transition to democracy. Whereas political change is often associated with large-scale violent rupture, lower-intensity riots and protests are more prevalent in democracies, with South Africa and Kenya offering two good examples.

On a per-capita basis, ACLED captured almost double the number of riots and protests in Nigeria than in Ethiopia, the country with the second-highest riot or protest numbers when weighted by population size. An important factor in Nigeria was the 2019 general election, eventually won by incumbent Muhammadu Buhari – amid ongoing terrorism by Boko Haram in the northeast, increased communal violence between nomadic herders and farmers, and a general increase in banditry and violent crime.

In 2016, Ethiopia experienced an extraordinary increase in the number of riots and protests as the Oromo and later the Amhara ethnic groups started protesting against the perceived dominance of the minority Tigray ethnic group. Tigrayans are accused of holding inordinate economic, political and security influence although they comprise only 6% of Ethiopia's population. An acute drought and the floods in the highlands, particularly in the Amhara and Oromia regions, deepened this sense of discontent.

Eventually, in March 2018, Prime Minister Hailemariam Desalegn stepped down to make way for a much younger replacement, Abiy Ahmed, from the Oromo ethnic group. Abiy's reform efforts would eventually culminate in a failed coup attempt in the Amhara region,

and ongoing efforts at Tigray's violent subjugation in 2020 and 2021 that involved troops from neighbouring Eritrea.

Generally, riots and protests appear to have become less deadly over time, meaning that there are fewer fatalities per event. For example, while Africa experienced an average of eight deaths per riot or protest event from 2001 to 2003, that average declined to three from 2015 to 2017. Broader access to social media reporting may also have played a role, however.²⁶

It is also important to note that Africa's steady rate of urbanisation is associated with the increasing number of riots and protests, which are overwhelmingly urban phenomena. Sub-Saharan Africa was only 31% urban in 2000, but this increased to 40% in 2019 and is likely to reach 50% by 2043. With this region being significantly less urbanised than other regions in the world, more rapid urbanisation in the future could prove to be politically destabilising. Riots and protests will increase, since the region is also undergoing changes in regime type and democratising.

Repeat violence and bad neighbourhood

The next structural driver of violence on the continent to examine is a historical one. Repeat violence, or recurring conflicts, is a massive problem in Africa. Globally, cycles of war (and protest) tend to repeat in countries such as Sudan, South Sudan, Ethiopia and Somalia. As a result, the best predictor of future instability is past instability.

Apart from inhibiting development, armed conflicts also spill over into the neighbourhood.²⁷ According to the World Development Report 2011, a 'country making development advances, such as Tanzania, loses an estimated 0.7% of gross domestic product (GDP) every year for each neighbour in conflict'.²⁸ Furthermore, neighbouring countries that are in turmoil regularly offer safe havens for rebel groups and insurgents that operate across borders.²⁹

Unaddressed grievances are often the drivers of recurrent violence, suggesting that lasting peace, or at least more stability, requires these

grievances to be addressed. Indeed, the seeds of the next war are sown during the preceding one.³⁰ The result is that efforts at negotiating an end to violence or stabilising a situation through the deployment of peacekeepers, such as in South Sudan or CAR, often need to be measured in decades rather than years.

Moreover, being situated in a conflict-ridden region is a significant risk factor for conflict; neighbouring countries are likely to experience the spill-over effect of the instability,³¹ currently most evident in the Sahel. Briefing the United Nations Security Council in January 2020, Mohamed Ibn Chambas, UN Special Representative and Head of the UN Office for West Africa and the Sahel (UNOWAS), described a region that has ‘experienced a devastating surge in terrorist attacks against civilian and military targets’. Chambas painted a picture of relentless attacks on civilian and military targets that have ‘shaken public confidence’. In Burkina Faso, Mali and Niger, casualties have leapt fivefold since 2016, with more than 4 000 deaths reported in 2019 compared to some 770 three years earlier.

Climate change as a risk accelerator

Important to note at the outset of a discussion about climate change as a driver of conflict is that there is no scholarly consensus on the direct and causal link between factors brought about by climate change, such as desertification, and the outbreak of conflict in Sudan (Darfur) and Mali, for example. It is clear, though, that ‘changes in climate can alter the conditions within which social interactions occur and thus have the potential to change the likelihood that conflict results’.³²

An example would be the drought in Ethiopia before the 2016 riots and protests. These protests were against the expansion of the capital city proposed in the Addis Ababa Master Plan, which would encroach upon the Oromos’ precious farming land. The subsequent events eventually led to almost 700 deaths and a state of emergency as the government responded forcefully. In retrospect, it seems clear that the drought intensified pressures on land and associated livelihoods.³³

Others point to Northern Nigeria as ‘a textbook case of environmental changes stoking deadly conflict’,³⁴ given frequent

droughts and desertification – the Sahara is advancing southwards at a rate of 351 000 hectares annually. Many natural water resources have dried up, and the changes have intensified long-standing competition between herders and farmers. Both communities have mobilised armed groups for protection. Fatalities from herder–farmer conflict have regularly exceeded those from Boko Haram conflict in recent years. Yet, paradoxically, although the amount of arable land contracts each year, total agricultural production has increased as farming on the remaining land has become more productive – pointing to the unexpected outcomes of climate change.

The role that climate change plays in accelerating a trend towards violent competition, then, is becoming increasingly evident. Burke, Hsiang and Miguel argue that:

‘[s]ocieties experience climatic variables in continuous time and respond to both short-lived and long-lived changes, making the frequency of short-lived events an economically relevant feature of the climate. For example, if hot temperatures increase the likelihood of riots in a city – even if extreme temperatures are experienced only for a few hours – then this is important for understanding climate impacts because the frequency of these momentary events may change if the distribution of daily temperatures changes.’³⁵

The net effect of climatic events on conflict operates through numerous potential challenges. For example, it indirectly affects various socio-economic outcomes such as agricultural income, human health and residential mobility. Already, in many countries in the Sahel – which has a particularly rapidly growing young population and an extreme climate – conflict between herders and farmers causes more fatalities than terrorism. A report by Cullen Hendrix and Idean Salehyan (one of those examined by Burke, Hsiang and Miguel, mentioned earlier) found that:

Water shocks may lead to social conflict via their effects on resource competition, poor macroeconomic outcomes, and

reduced state capacity ... deviations from normal rainfall patterns have a significant effect on both large-scale and smaller-scale instances of political conflict ... wetter years are more likely to suffer from violent events. Extreme deviations in rainfall – particularly dry and wet years – are associated with all types of social conflict (violent and nonviolent, government-targeted and non-government-targeted), although the relationship is strongest with respect to violent events, which are more responsive to abundant rather than scarce rainfall.³⁶

That said, these findings are primarily observable in low- and middle-income settings – settings in which economic variations are more significant due to their importance to local agricultural production.³⁷

African countries will, however, experience widely different effects from climate change in the coming decades. This will strain the ability of large regions to support local populations under current developmental conditions. Some areas of the continent are likely to become warmer and drier, and experience more frequent and severe droughts close to major population centres, particularly in the Sahel.³⁸ Other parts of the continent may also experience widespread drought – and potential famine – without proper government intervention. In contrast, the Eastern swathes of the continent will likely experience heavier rainfall, which could also adversely affect crops and food security.

Current evidence for the effects of climate change on conflict is country- and region-specific. It depends upon quality of governance and, of course, levels of development. For example, the evidence from East Africa is that socio-political factors are more robust drivers of conflict than climate change.³⁹ But our work on the future of Burkina Faso, Chad, Mali, Mauritania and Niger point to a more direct link between climate change and conflict. Here, competition within pastoral communities is intensifying as herders move southward earlier and further in search of grazing.

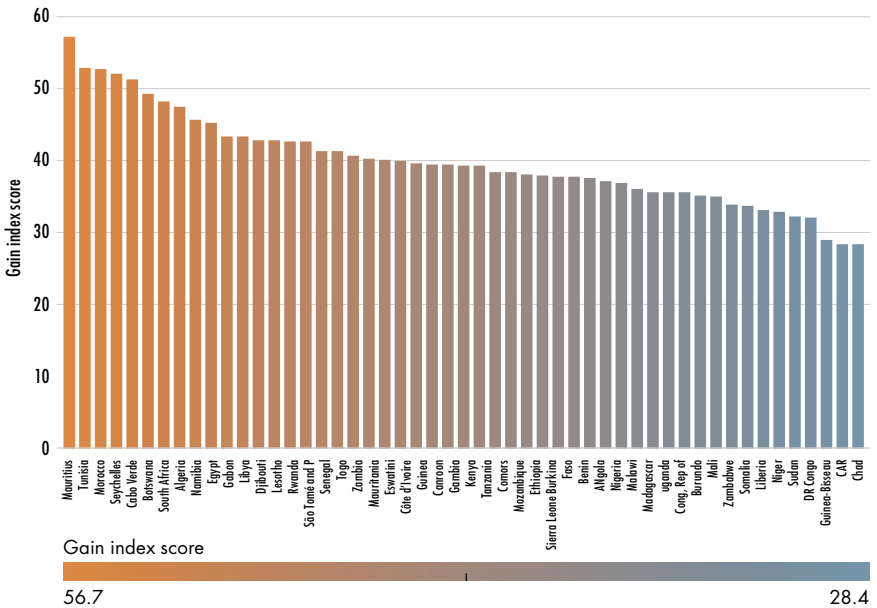
Burke, Hsiang and Miguel find that ‘contemporaneous temperature has the largest average impact, with each 1 σ [standard deviation] increase in temperature increasing interpersonal conflict by 2.4% and intergroup conflict by 11.3%.⁴⁰ Thus, every 0.5-degree Celsius increase

in local temperatures increases the risk of conflict by 10–20%. Bear in mind that the period from 2011 to 2020 was the hottest decade in recorded history; the Sahel was particularly affected, with temperatures rising 1.5 times the international average during this period.

To illustrate this, Chart 14 presents the Notre Dame Global Adaptation Index (ND-GAIN) country vulnerability index. This index measures a country’s exposure, sensitivity and capacity to adapt to the adverse effects of climate change.⁴¹ Afghanistan and Haiti aside, all of the 17 countries most vulnerable to climate change and other global challenges are African.

In response to mounting evidence, in March 2021, the African Union Peace and Security Council (AU PSC) issued an unprecedented communiqué dedicated to the effects of climate change on peace, security and stability in Africa.⁴² In doing so it sought to address, directly, the threats that climate change poses to stability and to call for

Chart 14: 2019 vulnerability index to exposure, sensitivity and capacity to adapt to the negative effect of climate change



Source: Notre Dame GAIN index data

specific actions, including establishing an AU Special Fund for Climate Change. The following month, US President Joe Biden convened the Leaders' Summit on Climate for 40 world leaders, including the presidents of Nigeria, South Africa, DR Congo, Gabon and Kenya. The meeting included a theme on responding to the global security challenges posed by climate change.

Against this background, it is perhaps not surprising that Africa's largest peacekeeping missions are in climate change hotspots, including South Sudan, Mali, DR Congo, CAR, Sudan and Somalia. Military experts such as the Global Military Advisory Council on Climate Change (GMACCC) have been raising their concerns about this for more than a decade.⁴³ Ultimately, the extent to which climate threats, conflict and displacement translate into violence depends on context, meaning that localised responses will be vital.⁴⁴

Regime capacity, type and dissonance

The departure point for any discussion about regime type and stability in Africa must be that, generally, liberal democracies are more stable and peaceful than other regime types. But becoming a liberal democracy is not easy: the transition from autocracy to democracy is often turbulent, and mixed regime types (so-called anocracies – electoral rather than substantive democracies) are volatile. For example, in 2021, 16 African countries experienced sustained armed violence. None are fully democratic, according to Freedom House.⁴⁵

Stability, then, depends on the nature of the government – fully democratic or fully autocratic being the most stable. It also depends on sustained economic growth, and the means to provide or enforce security. Yet developing countries have fewer resources to devote to either security or development. In this sense, Africa is trapped in a vicious circle – many countries are unstable because they are poor, and because they are poor, they are unstable. Since only inclusive economic growth can produce the resources required to alleviate conflict's root causes, poor countries remain violent, and because of this they cannot grow rapidly enough to alleviate the stresses and grievances that lead to instability.

Before COVID-19, Africa was making steady progress in general living conditions that would very likely translate into stability as the capacity of governments to provide or enforce security increased, best reflected in larger budgets for the various security agencies. But government spending on security in Africa tends to be relatively low compared to the level of insecurity on the continent and in other regions such as the Middle East. Generally, it is skewed towards providing security for the president or governing elite, rather than responding to real security needs. Given the continent's long history of coups d'état and interference by the military in government, security spending is often also divided between competing and overlapping security services as leaders try to ensure that no single agency could pose a threat to them. At the same time, many areas in Africa are unpoliced, with limited government representation. Institutions are weak and, because of high levels of poverty, rent-seeking is high within unpoliced borderlands.

In southern African democracies such as Namibia, Botswana and South Africa, the extraordinarily high level of inequality and unemployment is a potential threat to stability. An important reason for this is that the informal sector in these countries is relatively small compared to that of other countries at similar levels of development. And in the case of Africa's autocracies, the extent of repression in countries such as Equatorial Guinea and the Kingdom of Eswatini also present a problem if left unattended, with such countries experiencing recurring bouts of violence. Efforts by leaders such as Teodoro Obiang Nguema Mbasogo (Equatorial Guinea), Mswati III (Eswatini), Paul Biya (Cameroon), Yoweri Museveni (Uganda), Alpha Condé (Guinea) and Alassane Ouattara (Côte d'Ivoire) to extend their terms in office or effect dynastic succession present obvious challenges, as pressure mounts without prospects for either democratic change or generational succession.

Because military rule and one-party governments have generally been an unmitigated disaster, there is strong support for democracy in Africa, discussed in more detail in Chapter 13 on governance. The problem, however, is that when leaders eventually allow reform, it is for nominal, not substantive, democracy. In Zimbabwe, DR

Congo, Uganda, Ethiopia, Rwanda and Algeria, governments nominally hold regular elections. Still, there is no actual choice, freedom of opposition or genuine debate – and a significant amount of research has shown that genuinely free and fair elections that offer prospects for change in leadership underpin development. Electoral competition incentivises politicians to deliver on the provision of public goods and services. Improved government effectiveness (and hence better service delivery) can therefore be associated with substantive democracy, but generally not with nominal electoral democracies.⁴⁶

At this time, most African countries have elements of both autocracy and democracy, hence the term anocracies.⁴⁷ Examples of anocracies include Côte d'Ivoire, Zimbabwe, Tanzania, Algeria, Burundi and The Gambia. In these mixed or intermediate regimes, regular competitive elections occur, but the legislature has little practical control over the executive branch of government. Thus, anocracies are

[c]haracterised by institutions and political elites that are far less capable of performing fundamental tasks and ensuring their own continuity. Anocratic regimes very often reflect inherent qualities of instability or ineffectiveness and are especially vulnerable to the onset of new political instability events, such as outbreaks of armed conflict, unexpected changes in leadership, or adverse regime changes (e.g. a seizure of power by a personalistic or military leader in a coup). Anocracies are a middling category rather than a distinct form of governance.⁴⁸

To conclude, anocracies, then, are less stable than full autocracies – which are in turn less stable than consolidated democracies. The relationship takes the form of an inverted U, with intermediate regime types six times more likely than democracies and two and a half times more likely than autocracies to experience new outbreaks of civil conflict. It is telling that more than half of anocracies experience a significant regime change within five years, and 70% within ten years.⁴⁹ And anocracies in which one ethnic grouping is advantaged over others are particularly vulnerable to political instability.

Youth bulges and relative deprivation

Given a median age of 20 years (19 for sub-Saharan Africa) in 2020, Africa has an exceptionally youthful population, although rates differ significantly between and within countries. Africa's youth bulge is the final structural driver of violence in our examination. It is a significant one, since a large population aged between 15 and 29 – young males in particular – relative to the total adult population is generally associated with an increased risk of conflict and high rates of criminal violence, particularly if secondary and tertiary education is expanding. Thus, 'the combination of growing youth cohorts and educational expansion often leads to increased political violence even in the presence of low youth unemployment'.⁵⁰ Government and labour markets struggle to satisfy this cohort's high expectations, which leads to the relative deprivation discussed in Chapter 1 – and to social unrest.

Youth bulges appear to be more closely related to low-intensity conflict than to civil war.⁵¹ And higher education levels are generally associated with lower conflict vulnerability, but this depends on the size of the youth bulge, levels of employment and degree of urbanisation.⁵²

In 2020, more than half of the adult population in Uganda, Chad, Somalia, Zambia, CAR, Malawi, Niger, Mali and Burkina Faso was aged 15 to 29. This puts these countries at particular risk of violence and conflict, given that they also have high levels of unemployment. Others, including Angola, Mozambique, The Gambia, Ethiopia, South Sudan and DR Congo, follow closely behind.⁵³ The only African countries with less than a third of their adult population in the youth bulge are Libya, Morocco, Algeria, Tunisia, Mauritius and Seychelles. The youth bulge is coming down rapidly in several North African countries, reducing its importance as a structural driver of violence. Still, this reduction is only likely to have an effect if it is accompanied by substantive economic freedom and more rapid economic growth that provides economic opportunity to a much larger swathe of citizens.

In addition, an expansion in higher education often precedes rebellions.⁵⁴ A sudden increase in university enrolments by young people seeking upward social mobility can lead to social status competition and the marginalisation of elements in the dominant elite.⁵⁵ And a causal link

between youth unemployment and violence in developing countries is widely assumed, particularly crime, gang violence and domestic violence, but solid evidence remains insufficient.⁵⁶

Moving on to relative deprivation, the difference between stable and unstable developing countries is often a political elite that effectively distributes services (particularly among different ethnic groups), develops sustainable institutions, minimises corruption and encourages economic opportunity in all sectors while focusing on equitable growth. To this end, the Ibrahim Index of African Governance (IIAG) defines governance as ‘the provision of the political, social and economic public goods and services that every citizen has a right to expect from their state, and that a state has the responsibility to deliver to its citizens’.⁵⁷ The IIAG measures overall governance performance across four sub-components, namely safety and the rule of law, participation and human rights, sustainable economic opportunity, and human development. Somalia, South Sudan, Eritrea, CAR, Sudan, Libya, DR Congo, Chad, Equatorial Guinea, Angola and Burundi all scored the worst in the overall governance index, at below 40 out of a possible 100.

High levels of inequality often point to a government that essentially looks after the interests of specific sectors or elites, or is unwilling to undertake the necessary measures to address disparities, such as is reflected in the high inequality scores of South Africa, Botswana, Namibia, Equatorial Guinea, Lesotho, Comoros, Zambia and CAR.⁵⁸ Today, former liberation parties that have grown complacent in power dominate governments in southern Africa. Their inability to grow their economies means they have also been unable to change the patterns of inequality inherited from colonialism, white settler dominance and apartheid. Instead of growth, they turn their attention to (re)distribution, which has much more limited potential. With no prospects for political, generational and policy renewal that could affect these structural imbalances, the promise inherent in regular free and fair elections is frustrated. Zimbabwe best reflected this trend when the slightly younger Emmerson Mnangagwa replaced octogenarian Robert Mugabe, with little

substantive change to a country with levels of income that were much lower than when its white minority government declared unilateral independence from Britain several decades ago.

Only South Africa's relatively high levels of democracy have constrained violence, given its high levels of inequality and unemployment – until the lockdowns associated with COVID-19 and political mobilisation around imprisoned former President Jacob Zuma tipped the scales in July 2021, resulting in widespread looting and violence. Ultimately, without leadership and political renewal, countries inevitably grow below their potential and social problems fester.

Perceptions about the distribution of wealth between groups and levels of equity in society play an important role and fuel discontent. But inequality changes very slowly.

In Central Africa, the downturn in global commodity prices, touched on in Chapter 1 in the discussion about commodity dependence, has exacerbated an already fragile situation. Governments are unable to deliver the most basic services, yet the political elite have been exceptionally creative in designing strategies to retain their hold on power through 'personalised presidential systems supported by patronage networks sustained mainly through elite bargaining and collusion with traditional rulers'.⁵⁹ That trend is also evident in West Africa. In recent years, the governing party has either increased the registration fees that aspiring candidates must pay (Guinea, Niger, Burkina Faso and Mali) or started requiring contenders to obtain endorsement from a host of other political actors. The result is that opposition parties have to beg, bribe or negotiate with the ruling party to be allowed to participate in elections.⁶⁰

Over and above a history of conflict and chronic underdevelopment, the countries in sub-Saharan Africa that suffer severe inequality, rely heavily on primary commodities, and have a prominent youth bulge and an oppressive regime are virtually assured of future instability – and even a violent rupture.

Even then, growth in itself could be insufficient to forestall instability – as demonstrated in Ethiopia, where the government instituted a national state of emergency in October 2016 after a decade of absolutely remarkable economic growth by any standard. In fact, growth widened discontent in a country that many felt was controlled by a small ethnic elite from Tigray.

Modelling the prospects for greater peace: The Silencing the Guns scenario

How has Africa responded to the structural drivers of instability and violence examined in this chapter?

Efforts began in earnest to address the continent's instability in 1990, when OAU (predecessor of the AU) secretary-general Salim Ahmed Salim⁶¹ and his team, grappling with the impact of the end of the Cold War era on Africa after the collapse of the Soviet Union, set out their understanding of the implications of the changing world in the prescient *Report of the Secretary-General on the Fundamental Changes Taking Place in the World and their Implications for Africa*.⁶² The report made it clear that 'the present international situation makes it imperative for Africa to map out a strategy to face the challenges of the 1990s and lay the foundation for sustained development in the 21st century'.

The subsequent 1993 *Declaration on Establishing within the OAU a Mechanism for Conflict Prevention, Management and Resolution* (the Cairo Declaration) led to the creation of the AU's Peace and Security Architecture (APSA), including its 15-country Peace and Security Council, the African Standby Force, the Continental Early Warning System, the Panel of the Wise for mediation purposes and the Peace Fund.

Subsequent years have seen remarkable progress although the global financial crisis and the economic fallout from the COVID-19 pandemic unleashed unrest and a number of coups in West Africa. Today, Africa's conflict prevention and peacemaking are led by Africans. The trend is also towards peacekeeping in Africa by Africans, largely because of a decline in the willingness of others to participate in peacekeeping on the continent – combined with the push towards greater ownership. The evidence is clear: the risk of conflict recurrence drops by as much as 75% in countries where UN peacekeepers are deployed.⁶³

It is against this background that the AU launched Agenda 2063 as a 'call for action to all segments of African society to work together to build a prosperous and united Africa'.⁶⁴ To this end, the AU's 50th Anniversary Solemn Declaration noted its 'determination to achieve the goal of a conflict-free Africa, to make peace a reality for all our people

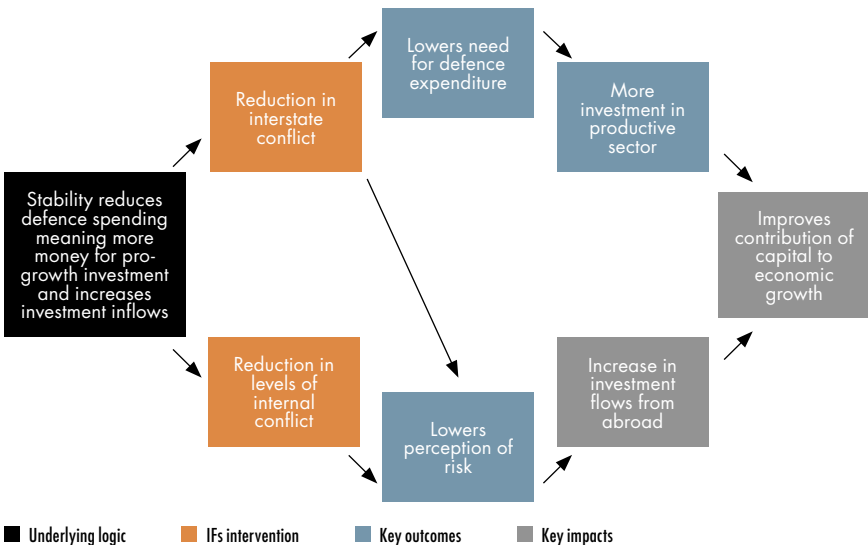
and to rid the continent of wars, civil conflicts, human-rights violations, humanitarian disasters and violent conflicts, and to prevent genocide. We pledge not to bequeath the burden of conflicts to the next generation of Africans and to undertake to end all wars in Africa by 2020'.⁶⁵

In December 2020, the African Union held its 14th Extraordinary Session on Silencing the Guns. Belatedly, it agreed to extend the original 2020 timeframe to 2030.⁶⁶ Instead of a trend towards less violence, African Union Chairperson President Cyril Ramaphosa from South Africa had to admit that ‘incidents of conflicts are intensifying and spreading to all regions of the continent’.⁶⁷ The recent increase in conflict and coups in West Africa are deeply associated with the economic impact of COVID-19 and the associated reductions in government services, including less security, that follow.

Against this rather concerning background, the chapter turns to a scenario that emulates improved stability.

The broad logic of the scenario set out in Chart 15 would see African countries benefit from larger inward investment flows and lower requirements for defence expenditure. These have a positive

Chart 15: Schematic of stability intervention in IFs



Source: Author. See also the IFs wiki on governance at <https://pardee.du.edu/wiki/Governance>

effect on capital contributions to growth, meaning that more government revenues can be allocated to the provision of health, education and other services – even as levels of economic growth accelerate.

The reductions in the probability of state failure or internal war are applied to the 23 most conflict-affected countries;⁶⁸ while lower government security risk (an internal risk index with IFs) is applied to all African countries. Reduced defence expenditure is applied to 29 countries that spend more than 1.5% of their GDP on their military services.⁶⁹ A target of 1.5% of GDP is used – a reasonable aim for defence expenditure by 2033 for 27 countries. In addition, defence expenditure in Libya is reduced from its last recorded number of 15.5% in 2014 to 4% by 2033 – and that of Algeria, at 6.7% in 2020, is reduced to 2% by 2033. These two countries spend significantly more than other African states on defence and more rapid reductions may not be realistic.⁷⁰ Other countries that benefit from large reductions in defence expenditure are Angola and Morocco. It is perhaps no surprise, then, that the countries that gain the most from greater stability, lower levels of defence expenditure and more foreign investment are Libya and Algeria. By 2043, the GDP per capita of Libya is US\$1 927 higher in the Silencing the Guns scenario than in the Current Path forecast, and that of Algeria is US\$709 higher.

Instead of spending US\$150 billion on defence in 2043, Africa would spend US\$123 billion. Within IFs, the associated additional revenues are reallocated to education, health and infrastructure.

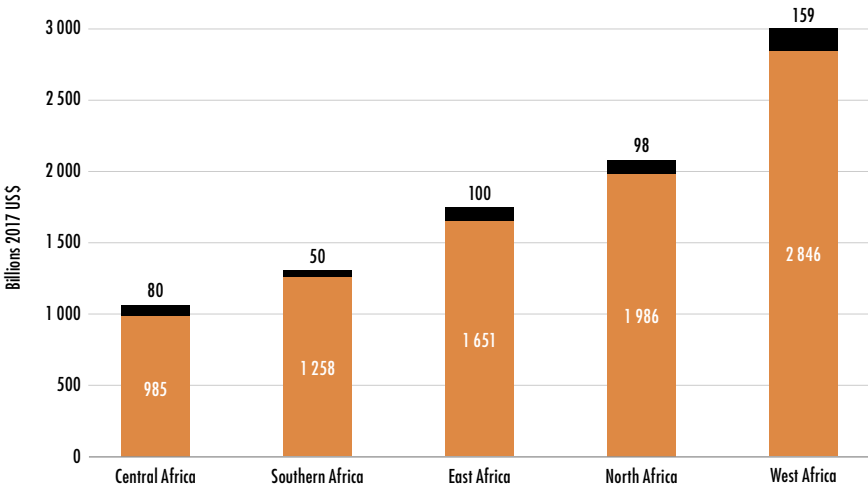
The impact of the scenario is that, instead of foreign investment flows equivalent to 3.7% of GDP in 2043, Africa attracts 4% as investor confidence grows. The difference is equivalent to an increase in the stock of foreign direct investment (FDI) by US\$254 billion in 2043. The effect is a marginal improvement in the gap in FDI inflows relative to other comparable regions – South America in particular. Using FDI inflows as a percentage of GDP, the two countries that gain the most are Equatorial Guinea and Liberia. Chapter 10 models the additional effect of efforts to attract FDI.

While it is possible to argue that improved stability will only follow increased defence expenditure, the logic is that other considerations –

largely, efforts at conflict prevention such as better and inclusive governance and an end to interference in the affairs of neighbouring countries, rather than military responses towards conflict management – will yield better results. The result of this approach would be a general decline in threat perceptions and beggar thy neighbour views. Clearly, such a positive turn of Africa’s fortunes will also require a globally facilitating environment – including Western/Chinese collaboration in Africa and, particularly, a positive role by countries from the Middle East in the Horn, which has become something of an arena for proxy competition.

More stability and foreign investment translate into a bigger economy and improved economic growth. In the Silencing the Guns scenario, the African economy is US\$468 billion larger than in the Current Path forecast in 2043 (in market exchange rates). By 2043, the average GDP per capita (in purchasing power parity) is US\$7 423 and will have increased by US\$266 above the Current Path forecast for that year. More than 31 million fewer Africans would be living under the international extreme poverty line of US\$1.90 per day, with South Sudan and

Chart 16: *GDP at market exchange rates (MER) of each African region in 2043 in Current Path forecast, with increase due to Silencing the Guns scenario*



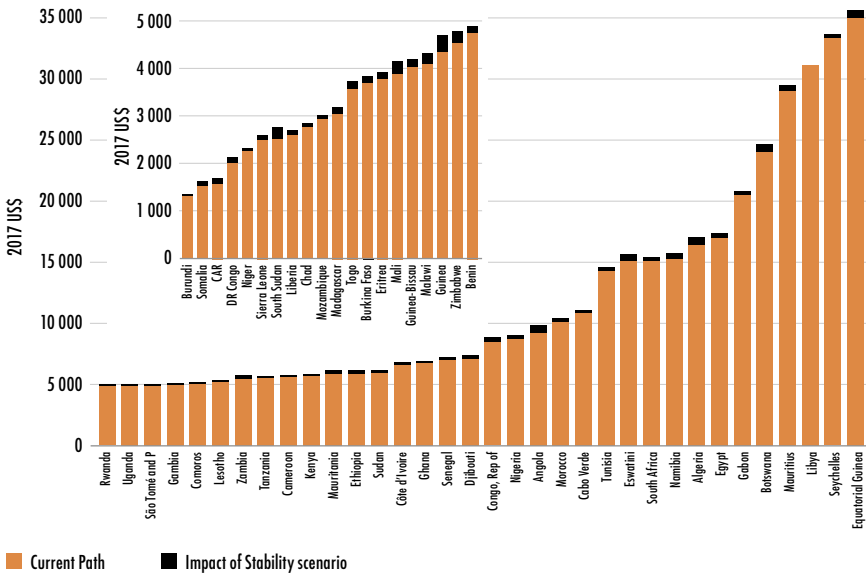
Source: IFs 7.63 initialising from IMF and WDI data

DR Congo having experienced the largest reductions in the percentage of extremely poor people. In addition, levels of democracy are likely to increase, and governance will improve.

Given the state of insecurity in Central Africa, it is no surprise that this is the region that benefits the most from the Silencing the Guns scenario. Its 2043 economy is 8% larger than in the Current Path forecast. It is West Africa, however, that sees the largest absolute increase, equivalent to almost 6% – an economy that is US\$158 billion bigger in 2043, compared to the Current Path forecast.

A different and perhaps more impactful way to consider the effect of the Silencing the Guns scenario is to review the additional contribution to GDP per capita. At the continental level, it comes to an additional US\$266 for the continent's 2.24 billion people by 2043. In the Current Path forecast, GDP per capita would be US\$7 157; but it increases to US\$7 423, or by 4%, by 2043 in the Silencing the Guns scenario. The contribution does, of course, vary hugely between countries, as Chart 17 reflects.

Chart 17: Country-level impact in GDP per capita in 2043



Source: IFs 7.63 initialising from IMF and WDI data

Focusing on conflict prevention

In conclusion, states in sub-Saharan Africa are generally younger and poorer (in terms of income) than most international peers. And colonialism and its legacies have severely disrupted their natural evolution, with political violence having been a central feature of the region's colonial and postcolonial history. African states are imposed creations that remain fragile, although they become less so with each passing decade. The summary view on future stability in Africa is both reassuring and concerning: Africa is a safer place than at any time since the end of colonialism, but the rise in conflicts in the Middle East, global flux, increases in global and national inequality, and the impact of COVID-19 followed shortly thereafter by the food shock brought about by Russia's invasion of Ukraine have all disturbed the old repressive order – without allowing a new one to evolve.

Africans lead in making peace in Africa, but there is no magic wand for ending armed conflict beyond inclusive and sustained growth combined with substantive democracy. The impact of the COVID-19 pandemic and the global resurgence of autocracy – the two being partly related – affect Africa's stability negatively. Because of the marginal position that the continent occupies politically and economically, and because of the potential multiplier effect of limited and poor governance in many African countries, levels of armed conflict in Africa also remain sensitive to global developments.

On one hand, instability and violence structurally constrain economic growth, deter foreign and domestic investment, and compound already pressing welfare and humanitarian challenges. They decrease economic growth by limiting long-run capital accumulation, whether in savings or investments. They also shorten the horizons of policymakers, who often make more frequent adjustments to policies – which creates volatility and negatively affects macroeconomic performance. Political instability lowers productivity growth rates and physical and human capital accumulation.

Structurally, inclusive economic development coupled with substantive electoral accountability offers the best prospect for greater

peace and stability. Generally, countries become more peaceful as they become more prosperous and, above certain levels of income and development, democracy is the most stable form of government – although at low levels of development, democracy may hinder growth, and it may even be that ‘for the poorest countries, development may actually stimulate violence’.⁷¹

It will take time for Africa to become more peaceful because of the slow rate at which the structural changes needed for stability occur. For example, conflict-affected countries typically have much younger populations than more stable regions, and population structure shifts very slowly. The impact of COVID-19 is such that instability will increase for several years. Africa is also democratising, and it is difficult for democracies to counter insurgencies.

Violent armed conflict and resource insecurity will continue to occur, mainly in poor countries that have weak governance, previous experience of conflict, spillovers from being located in a bad ‘neighbourhood’, and widespread youth exclusion co-existing alongside a median age of below 25 – fuelled, ironically, by the rapid expansion of secondary and tertiary education.⁷²

An important argument for Africa – with its weak states, poor governance and porous borders – is that territories with a single government, defined borders and a shared, central administration experience only a quarter of the average death rate of states that do not have a national government.⁷³ A world (or indeed an African continent) consisting of countries where governments ensure law and order across their territories will be more peaceful, and will experience lower mortality of all types.

Africa’s complex and country-specific structural drivers of conflict are influenced by external factors such as the impact of radical ideology and geopolitical competition – of the kind between the US and China, for example. Yet, we are likely to see further reductions in instability in the 21st century since levels of education and literacy are increasing, as is substantive democratic accountability, while trade and travel all connect us more closely than before. The COVID-19 pandemic has slowed and even disrupted these trends, but is unlikely to change the positive direction of progress in a fundamental way.

While armed conflict is often more prevalent in rural areas, riots and protests are becoming an overwhelmingly urban phenomenon as the share of Africa's urban population living in slums steadily rises. Political violence in Africa is already largely urban-based, and instability is more likely to affect cities and the unpoliced and unplanned urban sprawls than the rural areas.⁷⁴ Conflicts about land, property rights and services for urban residents need to be addressed by integrated urban development strategies.⁷⁵

Against that backdrop, the gains in peace and stability over the past two decades are impressive. These include significant multilateral, regional and bilateral efforts and investments in conflict prevention, peacemaking, peacekeeping and peacebuilding. However, much remains undone, such as ending the spillover effects from one country that fuel instability in neighbouring countries.

An approach premised on longer-term stability requires clear standards for governance, accountability and security provision. Africa needs to shift its focus from conflict management (expensive peacekeeping) to substantive conflict prevention and the structural drivers of violence, such as poor governance and low levels of inclusive economic growth. Few investments can compete with the provision of education, for example, as a means to drain the swamp of ignorance that allows radical ideologies to flourish.

Violence, instability and armed conflict in Africa require an ongoing and dedicated response from the AU, its member states and the international community to provide aid, humanitarian assistance and peacekeeping. This alone will allow the continent to move towards the promise of the Sustainable Development Goals.

3

Getting to Africa's Demographic Dividend



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From several centuries ago until about the middle of the 17th century, countries with the largest populations and the most fertile farming land boasted the largest economies. The size of the labour force and the suitability of the land for agriculture were the main engines of growth, even if they seldom made a difference to average incomes and the vast majority of citizens were very, very poor by modern standards.

Chapter 1 touched on how the Industrial Revolution in the West upended this state of affairs – how productivity soared in Europe and North America, and how the Industrial Revolution bypassed much of Africa, where colonial powers used new technologies like the steam engine to pilfer rather than to develop. This was the start of the ‘great divide’ that saw Europe, and eventually, North America, overtake China, previously the largest economy, and come to dominate the world – a global order that has held until very recently.¹

During the Industrial Revolution, people moved to cities to work in factories and birth rates declined, increasing the number of persons of working age relative to dependants. These developments largely also bypassed Africa for a host of reasons, including geography, the continent’s high disease burden, the impact of slavery, then colonialism, and other factors.

Population growth and age structure are critical components of economic growth, particularly at lower levels of development. Even in the 21st century, economies generally do not grow unless their populations do too. Today, in much of Western Europe – including countries like Italy and Germany – and in Japan, states are experiencing slower economic growth as their population’s age. Their population pyramids invert as the elderly population grows ever larger and the number of children declines.² Once population growth slows,

economies struggle to grow – but can continue to experience steady improvements in income per capita as the members of the smaller population inherit the wealth of their parents.

The golden rule is that the size of the economy must increase more rapidly than population growth, or that the population size should decline, thus increasing average income per capita. The US, for example, is now starting to age, and will inevitably lose one of its major sources of long-term dynamism: a relatively youthful population compared to other rich countries due to its historically higher birth rates and inward migration. As Paul Krugman writes: ‘Adjusting for demography, the economies of Japan and the United States have grown at about the same rate over the past 30 years.’³

For developing countries, population structure is very important for economic growth. However, except for a few countries in North Africa, Seychelles, Mauritius and South Africa, Africa is not on a pathway to realise its demographic potential for several decades. At current trends, sub-Saharan Africa is only likely to realise its demographic dividend – the accelerated economic growth that can result from a change in the structure of a country’s population – beyond 2050. Across much of the continent, Africa’s youthful population is actually a drag on improvements in income, service delivery and education – not to mention the increased carbon emissions, and their effect on global warming, that follow a larger population. Reducing fertility to closer to replacement levels (generally accepted as 2.1 live births per fertile woman) is a sure-fire way to improve development prospects.

Yet, bowing to political correctness and the demands of its elderly male leadership, the African Union (AU) and many other organisations like to emphasise the benefits of Africa’s youthful population. For example, the AU’s annual theme for 2017 was ‘Harnessing the demographic dividend through investments in youth’. In preparation, the AU Commission in Addis Ababa spent considerable resources on reviewing progress with the 2006 African Youth Charter⁴ and its 2009 to 2018 Plan of Action,⁵ which included a roadmap⁶ aimed at unlocking the potential of the continent’s youth. The basic premise was that Africa’s youthful population would ensure fast economic growth and that, as a general notion, rapid population growth was positive for development.

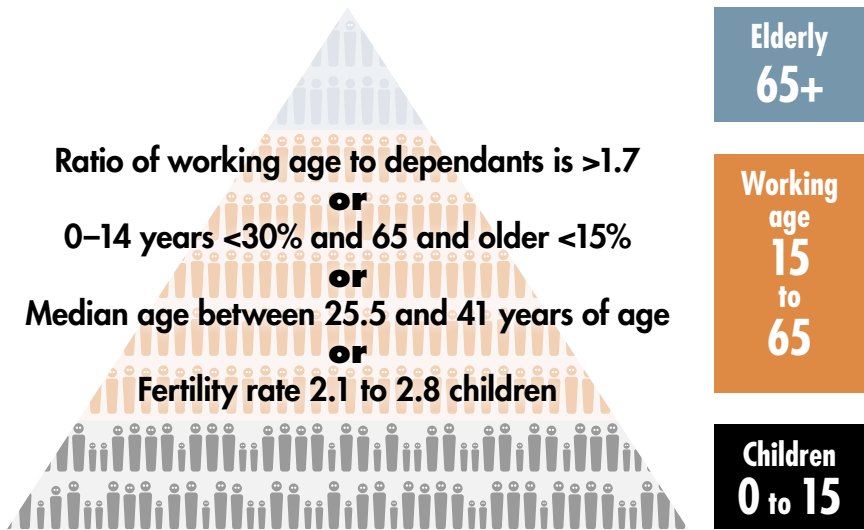
If this is indeed the case, why has Africa, the world's most youthful continent, not seen commensurate improvements in income?

In October 2018, I presented our research on demographics and economic growth to a large public audience and separately to staff from the AU in Addis Ababa. I argued that the Charter, Plan of Action and roadmap skirted around the need for a more rigorous analysis of the demographic dividend, and had basically missed the point. In fact, in much of Africa, the continent's very high fertility rates were a serious constraint on development – and until such time as we manage to reduce fertility rates significantly, even the most spectacular rates of economic growth will not be sufficient to reduce poverty substantially and improve livelihoods. Although trends are going in the right direction, much more urgent action is required to speed up the demographic transition – the shift in societies from having high birth and death rates, and low levels of education, technology and economic growth, to the other end of the spectrum: low birth and death rates, and higher levels of education, technology and eventually economic growth – in almost all of Africa's low-income and lower-middle income countries.

In the great ballroom of the Sheraton Hotel in Addis where I was speaking, it was, for some, as if I had let the air out of a very large balloon. Actually, nothing I presented was particularly new or innovative, and it had all been reflected in mainstream demographic analysis for several decades. As I expected, one elderly diplomat after the other struggled to his feet (there were few female diplomats in this crowd), including from a country like Uganda with its young population and elderly president for life, objected strongly to this attempt at 'stigmatising' motherhood and, apparently, children, and muttered darkly that I obviously did not understand the benefits of large families.

What many in the audience did not understand is that, at current rates of fertility, there are so many children that require schooling, healthcare and education that it is impossible to improve the human capital of those already in the system. The result perpetuates poverty.

There are many ways to conceptualise this challenge,⁷ as Chart 18 shows. All of them speak to the ratio of working-age persons to dependants. Typically, a fertility rate of 2.1 to 2.8 children per female in

Chart 18: *Approaches to the demographic dividend*

Source: Author

her reproductive years eventually ensures an optimal relationship between the potential labour force and dependants. Fewer than 2.1 children and a population starts to shrink, reducing the potential labour force and eventually presenting a large elderly population – such as Japan’s – that is expensive because of the high costs of treatment of non-communicable diseases and because it requires significant elderly care. More than 2.8 children and the economy has to expand very rapidly to account for the additional mouths to feed, minds to educate and bodies to keep healthy. In 2019, Niger had a total fertility rate of almost seven children for every fertile woman. It is one of 46 countries in Africa above the 2.8 threshold.

Another measure is to look at median age – the age that divides a population into two equal groups, half younger and half older. Countries where the median age is above 25.5 and below 41 years typically have a large enough working-age population to look after their dependants (children and the elderly). The only African countries with a median age above 25.5 in 2019 were Mauritius (at 37 years), Seychelles, Tunisia, Morocco, Libya, Algeria and South Africa.

I generally prefer to use a third measure: the ratio of working-age people (15–64) to dependants (children and the elderly). Intuitively, if there are more working-age people producing an income, then there is more to be shared with the children and elderly who depend on them.⁸ The working-age is, of course, an abstraction derived from Western welfare states and assumes that everyone makes an equal contribution to economic growth. The situation in Africa, with its large informal sector and lack of retirement schemes and benefits, means that there are clear challenges in applying this approach rigidly in this part of the world.

Of course, a large working-age population itself only marginally translates into a more rapidly growing economy. For that rate to increase, potential workers need to be well fed and educated, and have a job. Also, measures of dependency based on age alone can be misleading since cultural questions such as an acceptable age of retirement, delaying work for education, and the role of women in the labour force vary greatly by country and across time. Average teenagers in rural Sudan, who end their education after seven years to work on the family farm, contribute much earlier and differently over the life course than average urban South Koreans who spend time consuming education for another decade into their mid-twenties.⁹

For labour to contribute to growth, there needs to be a facilitating job environment – such as the opportunity to open a business and low barriers to entry – as well as improved education. If such an environment does not exist, as in most North African countries where education levels are generally high but economic opportunities are constrained, persons of working age have to eke out a living in the informal, and often illicit, sector.

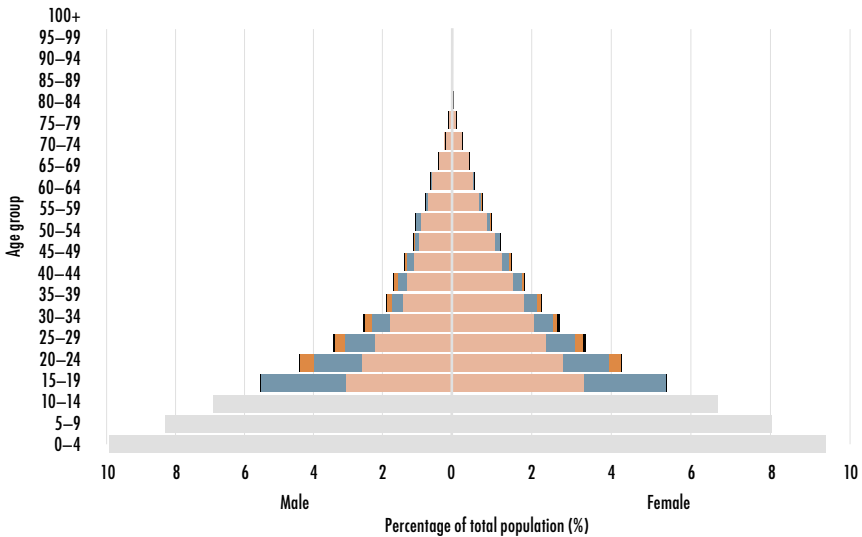
So, having more children, as actively advocated by the former president of Tanzania and current president of Uganda (which have total fertility rates of approximately 5 and median ages of 18 and 17 years respectively), does not bring prosperity – unless that high fertility is accompanied by extraordinarily rapid rates of economic growth. Indeed, it is often quite the opposite. No country in the world has been able to modernise socially and economically when its fertility rates have remained high. To improve incomes, developing countries have to work hard to reduce fertility rates – through improvements in education, among others.

It was to make this point that, in my presentation, I first made the standard distinction between children (aged 0 to 15) and the elderly (aged over 64) – the two components of the dependant portion of the population. Forty-five million Africans are born every year, a number that will increase to 55 million annually by 2043. By 2043, Africa’s total population will have increased from its 2019 total of 1.3 billion to 2.2 billion. It is currently on course to reach 3 billion by 2063.

I then pointed to the well-known youthful structure of the African population with a median age just shy of 20, meaning that half the African population is younger than 20. The result is a population pyramid that has a very broad base and quickly narrows with each age group, typical of Niger in 2019. Charts 19 and 20 compare the population pyramid for Niger with Africa’s oldest country, Mauritius.

It is no coincidence that the education attainment levels of Mauritius, reflected in the different colours, are so much higher in Mauritius than in

Chart 19: Population pyramid for Niger, 2019



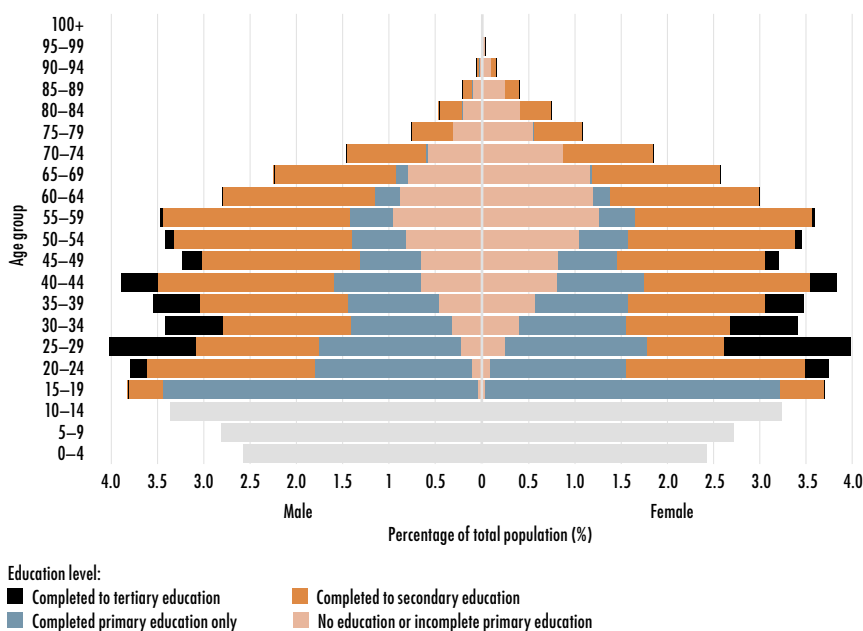
Education level:
 ■ Completed to tertiary education ■ Completed to secondary education
 ■ Completed primary education only ■ No education or incomplete primary education

Source: IFs 7.63 initialising from UN Population Division medium term forecast and UNESCO and Barro-Lee educational data

Niger. With fewer schools to build and teachers to train every year, Mauritius can spend its resources on better educating children who are already in the schooling system, making sure that the quality of education improves with each passing year. In contrast, Niger is unable to educate, feed and provide opportunities for the large cohort of its children who are under 15. It will remain poor – unless it manages to reduce the rate at which its population is growing, while investing the subsequent savings into appropriate education for the smaller cohort of youth.

A large body of research done over several decades by the World Bank and others has found that it is the increase in the size of the working-age population (15–64) *relative* to dependants that contributes most to economic growth at low- and even middle-income levels of development. In other words, it is the ratio of working-age persons to dependants that is important – and whether that ratio is increasing, or at least above a certain limit, as we see next.

Chart 20: Population pyramid for Mauritius, 2019



Source: IFs 7.63 initialising from UN Population Division medium term forecast and UNESCO and Barro-Lee educational data

According to the World Bank, in East Asia one-third of the increase in economic growth during its economic miracle can be attributed to a growing labour force. A substantial portion of the remainder is achieved by the determined pursuit of export-oriented policies that provide productive employment for its rapidly expanding population.¹⁰ Others estimate that the contribution that an increase in the size of the working-age population makes to economic growth is even higher.¹¹ In fact, *how well* countries capitalise on the demographic dividend window has a lot to do with policy, institutions, resources, reforms, and so on. The effects are observed first in maternal and child health (largely household-managed), then in education (which needs both parental and government investment), then in the economy (which needs government policy), and then in governance (which needs leadership). In other words, more government effort is needed the further a country progresses along this chain.¹²

The impact of the demographic dividend

The ratio of working-age persons to dependants in Africa started to improve in the late 1980s, from only 1.1 persons of working age for every one dependant to the current ratio of 1.3. In other words, whereas there were 10 dependants for every 11 people of working age in 1987, today there are 13 persons of working age for every 10 dependants.

When the continent reaches a ratio of 1.7 persons of working age to each dependant in about 2051, it will enter a window of particularly rapid income growth through the large contribution that labour – as opposed to capital and technology – makes to economic growth. In the Current Path forecast, this window will last for about two decades, provided it is accompanied by investments in human capital formation (education). The Current Path forecast is that, eventually, Africa will experience a peak ratio of about two persons of working age to every dependant shortly after 2070. Thereafter, the ratio starts to decline. If labour is still as important then as it is today, rates of economic growth will slow, unless capital and technology can compensate for the reduction in the relative size of the labour pool – and hence for the declining ratio of working-age persons to dependants.

China and the Asian Tigers peaked at an extraordinarily high ratio of 2.8 working-age persons to every 1 dependant in 2010 and 2013

respectively, and now experience slower growth. However, Africa is unlikely to experience the high rates of economic growth achieved by China and the Asian Tigers: its ratio of working-age population to dependants will peak at a relatively low level of 2 working-age persons to every dependant, compared to their ratio of 2.8. It also seems quite certain that the Fourth Industrial Revolution will change the labour–capital–technology relationship in favour of technology.

Unsurprisingly, the ratio of working-age persons to dependants has played an important role in improvements in prosperity in Japan, China and the Asian Tigers since the 1960s. In the case of the US and the Nordic countries, this ratio did not peak swiftly at the levels of China and the Asian Tigers and then decline. Instead, it slowly increased and then remained in positive territory (above the ratio of 1.7 to 1) for an extended period.

The constantly growing pool of working-age persons played an important role in the steady rates of economic growth and improvements in productivity in the US and the Nordic countries: these countries eventually graduated to high-income status and their populations grow wealthier year after year.

At the time of writing, 56% of Africa's population falls within the working-age bracket of 15 to 64, implying that there are 1.3 persons of working age for every dependant. The portion in sub-Saharan Africa (excluding South Africa) is even lower, at 54.5%. Compare that with the ratio in the rest of the world, where 67% of the total population is of working age – 2 persons of working age to every dependant. The 0.7 difference between the ratios is extraordinarily significant given the large numbers involved.

The underlying logic is quite simple. Economic growth is determined by the contribution of labour, capital and technology. At low levels of development, labour makes the biggest contribution to economic growth; at high levels of development, technology does. So, the larger the labour pool in developing regions relative to dependants (provided it is accompanied by improvements in human capital formation), the quicker those regions can grow. The quicker the rate of improvement and the higher the rate achieved, the more rapid the economic growth will be.¹³

Before the ratio of working-age persons to dependants in Africa started to improve in about 1987, albeit very slowly, it was declining.

As that ratio increases, rates of economic growth accelerate because of the additional contribution that more working-age persons (more labour) make to that growth. Obviously, fast growth in the working-age population relative to the number of dependants does not automatically translate into rapid economic growth, since other facilitators like food sufficiency, literacy and basic education, an export orientation and a governing elite committed to growth also need to be present. But it still has some interesting benefits. Smaller families mean that fewer additional schools are needed, and the ratio of teachers to learners can improve more readily. As a result, parents and the state can invest more resources in fewer children. Ultimately, governments need to provide fewer additional houses and water and electricity connections, and can invest in higher technology, research and other measures that are necessary to maintain improvements in productivity – even as the size of the working-age population later starts to decline as the size of the elderly population increases to displace child dependants.

The size of the labour force does not necessarily correspond to the number of people in the 15 to 64 age bracket, then, since many would still be getting an education, or would not have a job, but the essential relationship holds even after accounting for these differences. The sad reality for many Africans, however, is that having a ‘job’ is actually all about surviving in the large informal sector where there is no job security or benefits – or, indeed, decent work.

An increasing ratio of the working-age population to dependants boosts economic growth, then, when accompanied by appropriate human capital investments (health and education) since more working-age persons can contribute to economic activity – although this in itself is insufficient.¹⁴

Africa’s slow demographic transition

Globally, populations are ageing – and the world has entered a structural period of slower growth, from which it can only emerge through advances in technology. Yet Africa’s youthful population stands out against this global backdrop. It is also the least urban

continent. (South Asia is more rural, and both are urbanising, but later than other regions.) Why is this significant?

Historically, urbanisation has gone hand in hand with growth and development, borne out by a 2010 analysis by the McKinsey Global Institute which found that the shift from rural to urban employment could account for 20 to 50% of productivity growth in Africa.¹⁵ At the time of independence in 1960, less than one-fifth of Africans could likely be classified as urban. By 1980 that number had increased to about 27%, and by 2000 it had reached 35%. By 2039 or thereabouts, this number should cross the halfway mark – a mark that the rest of the world crossed shortly after the turn of the century.

Urbanisation in Africa has different drivers, however – contrary to the historical experience in much of the rest of the world, Africans currently don't move to urban areas in response to the pull effect of existing job opportunities in the urban manufacturing sector, which would increase productivity. Rather, they urbanise to escape the destitution and poverty of rural existence. Consequently, poverty is urbanising, and urban slums and informal settlements are expanding.¹⁶ Sharp income inequalities in many African cities also mean that the contribution of economic growth to poverty reduction is limited. As a result, Africa has more urban poor than any other region.

Africa's urban population growth, then, is the fastest globally, but from a low base. Each year, urban Africa grows by an estimated 20 million people. By 2030, that number will be close to 25 million, and by then Africa will host 6 of the world's 41 megacities. Cairo, Lagos, Kinshasa, Johannesburg, Luanda and Dar es Salaam will each have more than 10 million inhabitants, and 17 African cities will each have a population of more than 5 million.¹⁷ The African Economic Outlook 2016 predicted that Africa could see its slum population triple by 2050 as population growth and urbanisation without industrialisation proceed apace.¹⁸

It is much easier and less expensive to provide bulk services such as clean water, sanitation and electricity to people in denser settlements than to a population spread out across large rural areas. But unless leaders are able to reap the benefits of the greater economies of scale that an urban setting offers, Africa's accelerating urbanisation will

come with considerable risks. For one thing, urbanisation has powerful socio-political implications. It has become an important consideration in explaining the rise of populism in the West and in Africa, where urban areas are first to turn away from support of the governing party, evident in cities as diverse as Algiers, Addis Ababa, Harare, Cape Town and Johannesburg. As in other places in the world, African urbanites tend to be much more politically engaged than ruralites. Inevitably, it is in the capital city that support first goes to opposition parties. Whereas urban populations are more cosmopolitan and often younger, rural populations are generally older and politically more conservative.¹⁹

Today, most of Africa still finds itself in the early stages of the demographic transition: the shift from high to low death and birth rates has started, but it is progressing gradually and much more slowly than it has done in other regions. Urbanisation and fertility are closely related and, partly due to low levels of urbanisation, Africa is only likely to experience a real demographic dividend from the middle of this century onwards. Consequently, for the next three decades, Africa's large youth population will remain a drag on economic growth, although to a lesser extent with every passing year – Africa is forecast to reach a ratio of 1.7 by 2051.

Generally, countries (and regions) that have been unable to progress rapidly through the demographic transition and get to the demographic dividend ratio of 1.7 are characterised by severe poverty and large disease burdens (since governments don't have the resources to provide the basic infrastructure to combat the large communicable disease burdens of young populations), reduce poverty and improve livelihoods. The rapid increase in the number of children offsets the increases in income from economic growth and prevents the accumulation of savings, resulting in low capitalisation in the economy.

There are many reasons for Africa's comparably slow demographic and urban transition. Historically, low population density – a function of Africa's high disease burden examined in Chapter 4 – has translated into low levels of urbanisation and lower rates of income growth. And in more recent generations, the continent has also not been able to raise education quality and attainment, roll out the use of modern contraceptives quickly enough or transition to economies where child

labour is no longer required.²⁰ Nor has Africa been able to produce sufficient job opportunities to provide meaningful work for its growing population.

Most African countries are therefore experiencing slow income growth because their populations are very young. The picture is heterogeneous, however: in Tunisia, fertility rates are approaching the level at which population size first stagnates and then starts to decline unless there is a significant young, net inward migration and/or changes in fertility rates.²¹ Many other countries, such as Mozambique, appear to be stalling in their transition by maintaining very high levels of fertility. And a third group of countries (including Ethiopia) is achieving a rapid reduction in fertility rates that were previously very high. Ethiopia will therefore achieve the ratio of working-age persons to dependants of 1.7 a decade before other low-income countries in Africa.²²

Countries with high child mortality rates also tend to have high fertility rates, and a reduction in infant and child mortality supports a virtuous circle that is key to reducing fertility rates. As children's health and survival improve, family demand for more children slowly declines. Smaller family size improves maternal and child education in a positive, reinforcing way. As female education improves, and as child mortality declines, women have fewer children, which in turn allows for healthier and better-educated children.

Fertility rates, then, are closely associated with education and income levels, as well as with urbanisation. In Ethiopia, for instance, the fertility rate based on 2016 data was 6.4 children for poor women and 2.6 for the wealthy. The corresponding numbers in Tanzania for the same year were 7.5 and 3.1.²³ Geographically speaking, fertility rates in capital cities such as Accra and Addis Ababa are close to replacement levels, while those in rural parts of the Democratic Republic of the Congo (DR Congo) are close to seven children per woman.²⁴

Life expectancy in many African countries is also low. Whereas life expectancy in North Africa was estimated at almost 75 in 2019, roughly a year longer than the global average, in sub-Saharan Africa it is 64 – nine years below the global average, partly, of course, due to the impact of HIV/Aids and the continent's generally high disease

burden. In 2019, 24 African countries, ranging from Central African Republic (CAR) (life expectancy estimated at 51) to Equatorial Guinea, had a life expectancy of below 64, the assumed end of the working age.

Lower child mortality rates, higher incomes, the education of women and the availability of contraception all reduce fertility rates.²⁵ These socio-economic changes are a result of modernisation. Globally, better healthcare, structural changes to the economy, and a rise in women's status and opportunities have all contributed to a dramatic reduction in total fertility rates – and hence to slowing population growth.

The peak and length of the demographic dividend

Like the demographic transition, development takes time.

An important explanation for the dynamism and growth of the US economy over an extended period is that it entered its demographic dividend shortly before 1930 and will only exit it in about 2026, having been in this favourable position for almost a century. Like Sweden, the demographic dividend explains much of the high level of income that the US has been able to attain during this lengthy period.

China, on the other hand, will spend about 50 years in this fortunate window (from about 1984 to 2037), roughly half of the US's time. This partly explains why China is unlikely ever to approximate the US's income levels, reflected in the oft-repeated mantra that China will grow old before it gets rich.

India will ultimately spend about 60 years in the demographic high-growth range, having only recently attained a ratio of 1.7 working-age persons to dependants. However, while China experienced a peak ratio of 2.8, India's likely peak ratio will be about 2.2, achieved by about 2037. By this metric, India could experience a modest degree of income to catch up with China, but only in the second half of the 21st century.

Looking to Africa, Nigeria, the continent's most populous country, only progresses to the 1.7 ratio by roughly 2060 in the Current Path forecast. Less than 30 years later it peaks at 2, and will exit the 1.7 ratio early in the next century. Given this long-term horizon, it is

virtually impossible to speculate responsibly on Nigeria's long-term future growth prospects – also because the region is expected to suffer significant effects of climate change at a time of huge technological advances. But what is certain is that current demographic forecasts condemn Nigeria to moderate income growth – and, even then, only over extended time horizons.

In this context, remember that the impact of technology on productivity is increasing every year. While labour is an important component of productivity at lower levels of development, capital and technology are becoming ever more important, which would reduce Nigeria's growth advantage – indeed, that of much of sub-Saharan Africa. The effect of COVID-19 has been to accelerate that digital transformation. This will affect Africa negatively, which will be less able to extract a return on its large working-age population.

The point is that the level at which countries achieve their peak demographic dividend – and the length of time for which they stay there – can significantly affect prosperity over long time horizons. The longer a country is within this demographic window, the better; again, though, it is important to emphasise that labour's contribution to growth is declining over time due to the impact of labour-saving technology.

A peak ratio of 2.8 working-age persons to dependants (China in 2010) delivers much more rapid economic growth than a peak of 2.2 (India at its expected peak in 2036) or a peak of 2.0 (Nigeria at its expected peak in 2084). This is because the size of the potential labour force relative to dependants is larger.²⁶ That peak of 2.8 contributed significantly to China's economic growth rate of almost 11% in 2010. According to the Current Path forecast, India is projected to grow at 4.8% in the decade from 2030 to 2040 – and Nigeria at less than half of that in the 2090s, which is partly explained by its low peak of 2.0.

Looking to the end of this century, the ratio of working-age persons to dependants is set to contract in all regions except in sub-Saharan Africa, where it will peak at a ratio slightly below 2:1 in about 2075. At that point, Africa will have a population of 3.5 billion people (of which 3.2 billion will be living in sub-Saharan Africa).

A different way to express this metric is that 67% of the population of sub-Saharan Africa will be of working age in 2075, while the average for the world except Africa at that point is expected to be 60%. In this context, a seven-percentage-point difference would indicate that sub-Saharan Africa will grow faster than global averages, but not by much. Also, because Africa will achieve a relatively low worker-to-dependant ratio, it will very likely grow at quite modest rates. None of this is good news for a continent that aspires to catch up with global income averages. And whereas Europe and Japan are experiencing slow economic growth partly because of their large elderly population, sub-Saharan Africa is now the only region in the world where a high child dependency burden is an important reason for slow growth in income levels. This clearly signals the importance of reducing fertility rates.

The potential benefits of reducing fertility rates

Lower rates of fertility are generally associated with higher levels of income in Africa. And generally, a decline in fertility follows a decline in child mortality with a time lag of several years, as parents come to expect to lose fewer children.²⁷ Basic infrastructure for water and sanitation, as well as advances in primary healthcare, reduce infant mortality and eventually lead to lower fertility rates. The need to have many children in the first place arises not only from the expectation that some children could die before reaching adulthood, but also exists because, in economies dominated by employment in the agricultural sector (a characteristic of many poor and developing countries), families need children as labour. Child labour was widespread in most agrarian societies, even during industrialisation.

Although many factors affect fertility rates, the level of female education is perhaps the most important driver. In addition, women's increased participation in the labour force, which is closely linked to improved female education and steady improvements in gender parity, also reduces total fertility rates.²⁸ For example, women who are better educated have more employment opportunities and are likely to want fewer children. Educated women (and men) are also more likely to be better informed about modern contraceptives and the benefits that

lower fertility offers in terms of better education for a smaller number of children. Alternatively, where women have a lower social status, lower levels of decision-making opportunities and fewer opportunities outside the household, fertility rates tend to be higher.

While the Middle East and North Africa are generally not considered progressive regions in terms of gender parity (with the limited exception of Tunisia), in 2015 girls in the region were about 5% more likely to enrol in primary school than girls in sub-Saharan Africa. But from an economic productivity perspective, the investment in female education in North Africa is largely wasted, with the female share of the total labour force being roughly half that of sub-Saharan Africa (24% versus 43%). And while the labour force participation rate for females is only 23% in North Africa, it is 64% in sub-Saharan Africa.²⁹

The use of modern contraceptives is a more immediate driver of total fertility rates than education, although poor access to education among women constrains uptake. Research suggests that the average gap between actual and desired fertility could be as high as two children per woman in sub-Saharan Africa,³⁰ pointing to high demand for the provision of modern contraceptives. So, the potential for rapid uptake of contraceptives, with a large impact on fertility and the potential to improve Africa's demographic dividend, is large.³¹

Cultural factors across Africa may promote higher rates of fertility, with the dominant preference in Africa appearing to remain for big families. Indeed, sub-Saharan Africa is the poorest performing region when it comes to rates of contraception use. These things are changing. According to the UN's Department of Economic and Social Affairs: Sub-Saharan Africa, this is also the region that is most quickly improving in rates of contraceptive use, with all 10 fastest-improving countries between 2010 and 2019 in that region (Malawi, Lesotho, Kenya, Sierra Leone, Liberia, Burkina Faso, Senegal, Uganda, Madagascar and Mozambique). Pessimism about Africa's potential to reduce its fertility rates may thus be misplaced, with 7 of the 10 biggest decreases in total fertility rates globally between 2010 and 2019 also coming from sub-Saharan Africa (Uganda, Malawi, Sierra Leone, Ethiopia, Kenya, Chad and Somalia).³²

The Demographic Dividend scenario

This section explores the impact of a Demographic Dividend scenario that could set the continent on a demographic trajectory quite different from the Current Path forecast. Given the slow-moving nature of demographic dynamics, the forecasts look out to 2063, the final year of the AU's Agenda 2063, and include global comparisons to the end of the century. In constructing this scenario, I do not ask how these policies are motivated or assess the inevitable socio-political challenges that would be required to realise them. Rather, I look only at the potential impact of successfully implementing reasonable reductions in total fertility rates.

The first and most important set of policies for unlocking this change is the ambitious rollout of modern contraceptives in sub-Saharan Africa (since total fertility rates in North Africa are already very low), which should be possible given the unmet demand mentioned previously. In 2019, only 31% of fertile women in sub-Saharan Africa were estimated to use modern contraceptives, ranging from 69% in Kenya to below 5% in Chad. Leadership, particularly through extensive community engagement, can change this.

The second set of policies would be to reduce under-five and adult female mortality rates from communicable diseases. A high under-five mortality rate is an important driver of high levels of desired fertility, since high child mortality rates translate into families having more children. Maternal mortality is a measure of the number of women who die while pregnant or within 42 days of the termination of pregnancy. In the Current Path forecast, the maternal mortality rate in sub-Saharan Africa declines from 480 deaths per 100 000 live births in 2019 to 189 by 2043.

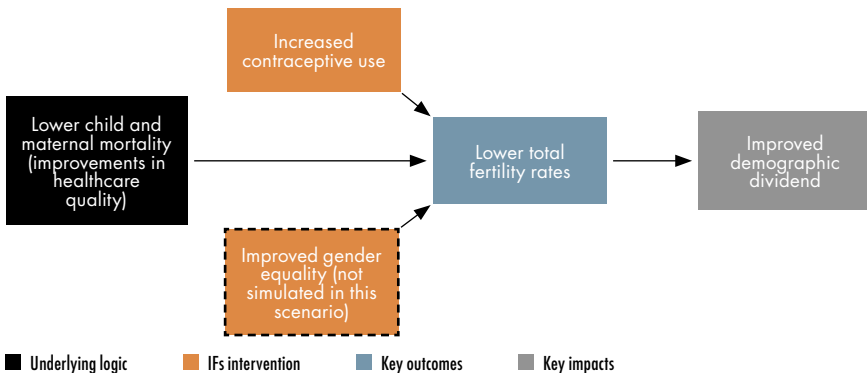
The final set of policies is about empowering women.³³ Generally considered the fundamental or deep driver of changes in the number of children that women decide to have, changes in social norms normally take longer to affect fertility than other measures. The UNDP uses the Gender Inequality Index to measure inequality between men and women.

The Demographic Dividend scenario does not model gender equality or apply contraceptive use interventions for Namibia, South Africa, Botswana, Libya, the Seychelles and Mauritius, which already have high levels of contraceptive usage and relatively low total fertility rates. Lower-middle income and North African low-income countries receive an ambitious push in contraceptive use, while low-income sub-Saharan African countries receive the most aggressive push.

Similarly, the scenario pushes improvements in basic healthcare to reduce rates of child and maternal fertility aggressively. Again, the interventions are most aggressive in low-income countries, and least aggressive in middle-income countries. And overall, the effect of the scenario would be a total fertility rate across Africa of about 3.3 children per fertile woman by 2033 (as opposed to 3.7 in the Current Path forecast) and about 2.7 per fertile woman by 2043 (as opposed to 3.2 in the Current Path forecast). In both low-income and lower-middle income Africa, the rate targeted would likewise be 2.7 children per woman by 2043, while in upper-middle income Africa, fertility rates approximate the replacement rate by 2033.

Given the momentum behind Africa's youthful population, the impact of the Demographic Dividend scenario on the size of the world's population would be substantial. In the Current Path forecast, peak global population would occur in about 2090, at 10.6 billion people.

Chart 21: Schematic of stability intervention in IFs



Source: Author

In the Demographic Dividend scenario, the global population should peak about a decade earlier, in 2080, at roughly 10.1 billion people – with enormous positive implications for global sustainability.

By the end of the century, Africa's population would grow to 3.2 billion people in the Demographic Dividend scenario (32% of the global population) and be close to its peak, while in the Current Path forecast it is expected to be approximately 3.8 billion people (36% of the global population) and still be several decades away from a Current Path forecast population peak for the continent.

That said, these forecasts over extended time horizons are very uncertain. Forecasting to 2043 is already stretching our understanding of how human and natural systems interact. Things will certainly be very different by 2063 – and even more so by 2100.

The impact of the Demographic Dividend scenario on Africa

In exploring the effect of the Demographic Dividend scenario on Africa compared to the Current Path forecast, the focus is on sub-Saharan Africa, since North Africa is much further along in its demographic transition and therefore benefits little from the Demographic Dividend scenario.

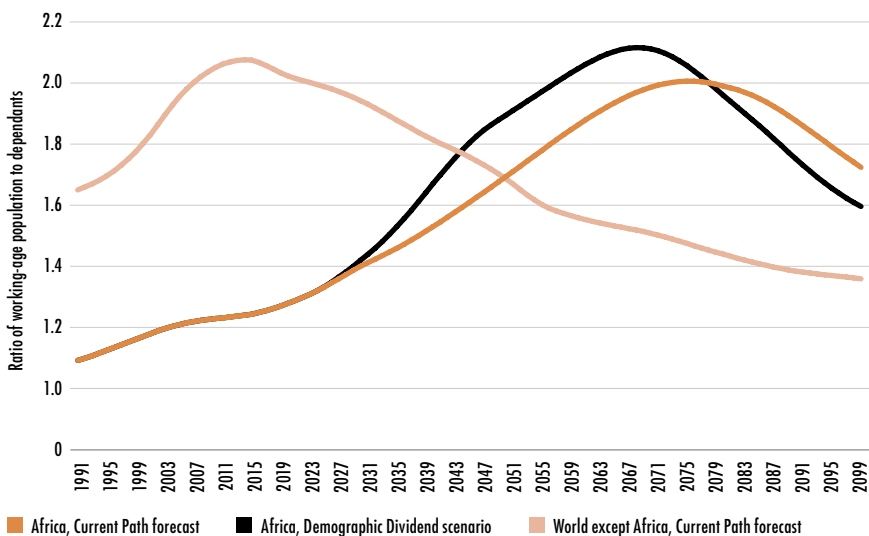
The Demographic Dividend scenario advances the onset of sub-Saharan Africa's peak demographic dividend by 8 years (from 2077 to 2068), and increases the ratio of persons of working age to dependants from 2.0 to 2.2. Sub-Saharan Africa reaches the 1.7:1 ratio in 2043 and exits it in 2095, more than half a century later – which is the same length of time that it spends in this favourable window in the Current Path forecast. But because the peak ratio is higher, incomes grow more rapidly in the Demographic Dividend scenario. So, the total size of the economy of sub-Saharan Africa is slightly smaller, as one would expect with a smaller population. But much more important is what happens to GDP per capita for this region, which would be more than US\$556 higher by 2063 than in the Current Path forecast – for a population of 2.4 billion people!

With more people of working age and fewer children to educate, less basic infrastructure to build and slowing population growth, the improvements cascade across various indices of human well-being:

the number of people living below the US\$1.90 extreme poverty line in sub-Saharan Africa would be 43.3 million fewer in 2043, for example, and 34.6 million fewer in 2063.

Inevitably, this impact accelerates over time. Whereas by 2043 the population of sub-Saharan Africa would be about 83 million lower, by 2063 the region would have about 267 million fewer people and a slightly smaller total economy – but a higher average GDP per capita. And the countries that gain the most in terms of GDP per capita tend to be those with more aggressive reductions in total fertility rates: countries such as Ethiopia, Zambia, Uganda, Rwanda, Madagascar and Zimbabwe, which each improve their GDP per capita by between 4.7% and 6.8% compared to the Current Path forecast by reducing their fertility by more than half a child per fertile woman by 2043. Malawi, however, is the greatest gainer proportionally, improving its GDP per capita by over 8% – for a reduction of only 0.3 children per fertile woman. For some countries, then, even a small reduction in fertility could create a substantial increase in welfare.

Chart 22: *Ratio of working-age population to dependants, Africa vs world except Africa*



Source: Historical data from UNPD World Population Prospects, 2017 revision, forecast in IFs 7.63

In dollar terms, the gains are also significant: Equatorial Guinea, Gabon and Nigeria each accrue over US\$1 000 more per person by 2063. Notably, a number of countries, such as Kenya, Eswatini, Rwanda, Ethiopia, Algeria, Zimbabwe and Egypt, benefit significantly by 2043, receiving over US\$200 extra in GDP per capita. The impact of the scenario dissipates by 2063, however, as these countries are already making strides towards the demographic dividend. The scenario simply accelerates the achievement of these gains.

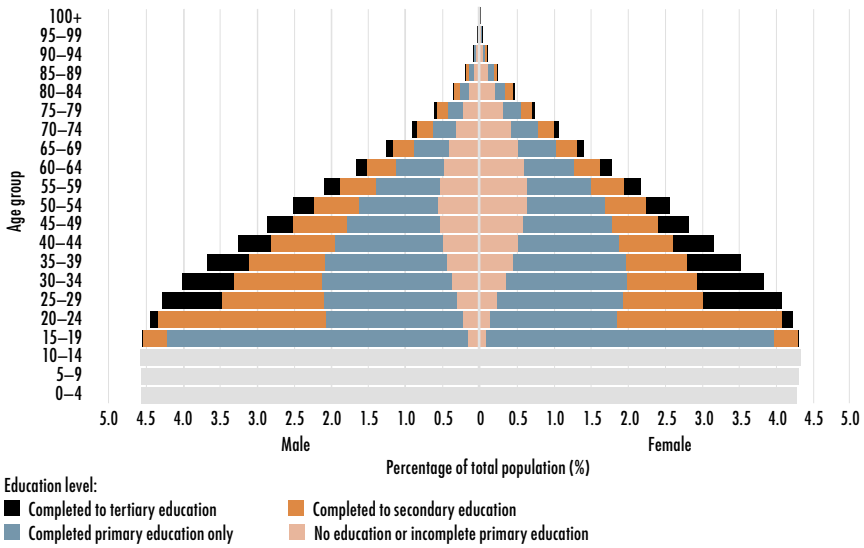
And to return to where we began, with population structure, in the Demographic Dividend scenario sub-Saharan Africa has a much more mature population structure, with a distinctive bulge along the midriff – compared to the more youthful population structure in the Current Path forecast. The peach grouping at the heart of each population pyramid in Charts 23 and 24 indicates no education or incomplete primary education. The black ribs on the outer edge of the pyramids indicate completed tertiary education. By 2048, about 6.5 million more sub-Saharan Africans would be enrolling for upper secondary education in the Demographic Dividend scenario (Chart 24) than in the Current Path forecast (Chart 23). The median years of adult education in this region would also have increased by six months (to 7.7 years), with a concomitant impact on labour productivity. All of these effects are simply due to the impact of reduced fertility.

COVID-19 and the Demographic Dividend

The COVID-19 pandemic is likely to present a challenge to Africa as the continent seeks to benefit from the demographic dividend. While it seems that Africa's youthful structure may have saved it from the death rates seen in older countries in the developed world, the pandemic will still put a strain on the resources required to drive fertility-reducing interventions.

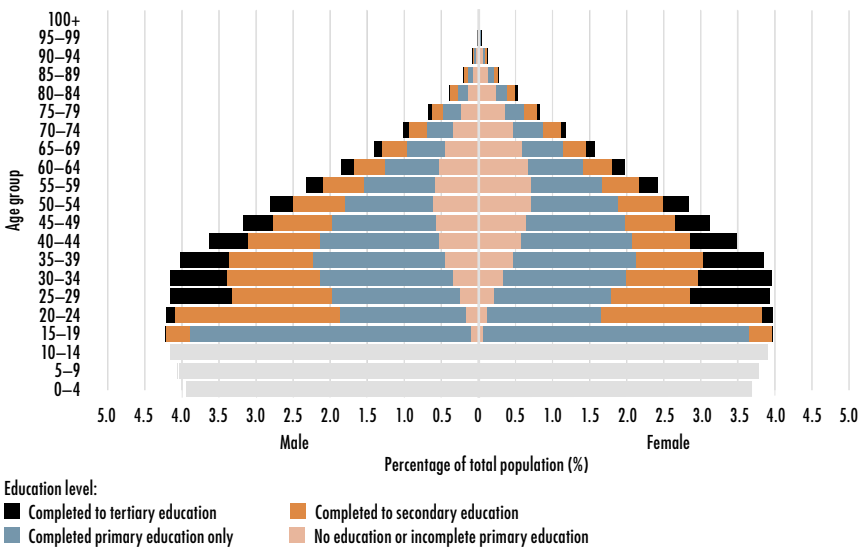
COVID-19 has put a strain on healthcare systems, with capacity being focused on fighting the pandemic. This means fewer resources dedicated to family planning and reproductive health services, as well as to healthcare for new mothers and infants. The education system has

Chart 23: Population pyramid for sub-Saharan Africa in 2063 in Current Path forecast



Source: IFs 7.63 initialising from UN Population Division medium term forecast and UNESCO and Barro-Lee educational data

Chart 24: Population pyramid for sub-Saharan Africa in 2063 in Demographic Dividend scenario



Source: IFs 7.63 initialising from UN Population Division medium term forecast and UNESCO and Barro-Lee educational data

also faltered, with disruptions to academic programmes and teachers affected directly by the disease. This has caused an increased dropout rate and reduced educational quality, another variable in fertility rates. Government-imposed restrictions on movement, as well as fear of catching the disease, have been cited by fertile adults in Africa as a reason for not obtaining contraception during the pandemic. While these disruptions will be most acute during the pandemic itself, the global economic crisis likely implies that government revenue, and thus capacity to implement fertility-reducing programmes, could be overstretched for years to come.

It is unsurprising, then, in the wake of these disruptions, that the rate of unwanted teen pregnancies has increased during the pandemic in some African countries, likely due to an interruption in family planning services. It is likewise concerning that incidents of gender-based violence have been on the rise during the pandemic, implying that women's social emancipation – a key determinant of fertility rates – may also be under threat.³⁴

The pandemic is likely to increase total fertility rates in Africa, though on current data the impact appears to be only marginal. If the interventions proposed under the Demographic Dividend scenario were to be implemented, the difference between the Current Path forecast and a pre-COVID scenario could be made up by as early as 2024.

Conclusion: Reducing fertility rates and working towards Africa's demographic dividend

This chapter has explained how very high fertility rates in much of Africa are a drag on development and explained the impact of Africa's slow demographic transition. Although Africa's demographic profile started to change for the better from the late 1980s, the ratio of working-age persons to dependants has only slowly improved, in part because of low rates of urbanisation. Under current expectations, sub-Saharan Africa will only achieve a demographic dividend in the second half of the 21st century – at which point the contribution of a larger labour force to economic growth is likely to have reduced significantly in favour of the contribution from technology.

The empowerment of women lies at the root of fertility rates, and an intervention to this effect is included in the scenario on democracy in Chapter 13. Advances in female education, another large driver of reductions in fertility, are included in Chapter 6 on education. A demographic dividend also can be enhanced and intensified by investing in basic infrastructure, such as the provision of clean water and improved sanitation, mentioned earlier in this chapter, as well as more rapid rates of urbanisation.

Africa clearly needs disproportionately higher rates of fertility decline in the larger countries with fast-growing populations. It matters a lot which countries are leaders and which are followers – and the size of the lags between them. If Tanzania and Uganda were to decide to compete to see who could best emulate Bangladesh's leap past Pakistan in terms of lowered fertility and higher GDP per capita, it would really reduce fertility rates on the continent. But if they decide to compete for the country with the largest population, thinking that rapid population growth equates to regional power, it will be a long time before African fertility rates decline.

To fully realise the potential of the demographic dividend, people need job opportunities. This is probably Africa's biggest short-term challenge and is examined in Chapter 12.

The interventions modelled in this chapter will require governments, especially those in low-income and lower-middle income countries, to make family planning a high priority on their developmental agenda. This applies most pertinently to Niger, Somalia, DR Congo, Chad, Mali, Angola, Nigeria, Burundi, Burkina Faso, The Gambia and Uganda. In all these countries, the total fertility rate exceeded five children per woman in 2019. In an additional 25 countries, the average fertility rate is between four and five children per woman. That rural fertility rates are significantly higher than those in urban areas and differ according to income complicates these dynamics.

From a societal point of view, Africans need to engage candidly and robustly in public discussions and scholarly analysis on the economic, developmental and emissions implications of the continent's large youthful population. Changes in fertility reflect shifts in social and cultural norms, many of which are associated with urbanisation, that may

take time, but while the fertility transition is slow to get started it can rapidly pick up momentum. Political leadership in discussing gender inequality, fertility and family size is vital, as are public media campaigns that demonstrate the health and economic benefits of smaller families.

There are additional benefits of advancing Africa's demographic dividend: the prospect of less political turbulence due to a declining youth bulge, lower chances of violent political transitions and higher chances of countries becoming liberal democracies as their median age increases.

The solutions to Africa's urbanisation challenges that were examined at the start of this chapter are well documented. The first solution is urban land rights. Without clear legal rights and a formal property market that allows for the secure transfer of property rights, land cannot serve as a tradeable asset and investments are limited to those of the state. Digitisation and modern technology allow Africa to do much of this more rapidly than is the case historically anywhere else.

The second solution is the early installation of infrastructure such roads, water, sewerage and electricity connections at low levels of density, as was done in China – or, where this is not possible, the use of modern technology to overcome the deficits. Urbanisation is an opportunity to build climate resilience.

And thirdly, cities develop if they are able to concentrate larger numbers of inhabitants into formal systems, increasing the tax base and improving efficiencies and productivity. Cities that are overcrowded or characterised by low-rise informal housing and urban sprawl have higher costs of production, and are generally unable to produce internationally traded goods.

Ideally, basic infrastructure must largely be in place *before* people arrive. Once an informal settlement has reached the size of Khayelitsha in Cape Town or Kibera in Nairobi, it is very difficult to uproot populations to install plumbing or build proper roads. Providing water and sewerage for half a million people is a challenging enough task; if all these people need to be relocated to provide that infrastructure, it is not only significantly more expensive, but also more difficult on a political level. Modern technology can help by combining smart metering, PAYG, big data, geolocation and the Internet of Things to

establish smart grids and solar home systems, map sanitation facilities, monitor decentralised water points, operate water ATMs in informal settlements, mitigate peak traffic flow and manage waste flows. The ICT sector, as an enabler, has strong backward and forward linkages with almost every sector of the African economy in need of rapid development, ranging from increasing yield in agriculture to electricity and water demand management and e-learning.

Urbanisation, digital transformation and electrification using PAYG services should therefore be adopted as deliberate strategies for providing basic services. More on this in Chapter 9 on Leapfrogging.

Although the impact of the Demographic Dividend scenario is significant, it is insufficient to reverse the Current Path forecast of growing divergence in average incomes between Africa and the rest of the world. To improve its human capital endowment, the continent requires a consort of structural transitions, including improved health and an agricultural revolution. We turn our focus to the latter next.

4

Agriculture in Africa



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Farming is the bedrock of human development – the organising principle of civilisation, in many ways. Africa, though, is unique as a region in that it is yet to have a revolution in agricultural production. Low levels of investment in agriculture, lack of land reform and the continued use of traditional farming methods leave the continent with the lowest agricultural yields in the world. It is the slow progress in this domain, historically and recently, that helps explain poor progress in Africa’s general development, and is this chapter’s focus.

The story of agriculture in Africa from the Neolithic revolution to independence

The world’s Neolithic or agricultural revolution started more than 12 000 years ago when nomadic hunter-gatherers turned to farming, mostly along large rivers like the Nile, the Euphrates and the Yangtze, to meet their growing populations’ needs. Whereas hunter-gatherer societies were constantly on the move, farmers needed to remain close to their fields; humanity settled in villages and towns, with specialised food-crop cultivation, irrigation and cleared areas for tilling and planting. They made pots to preserve foods and developed ways of storing knowledge through symbols and, eventually, writing. A division of labour followed. Communities started a barter system, developed rules for property ownership and learnt how to use metal.

With the noteworthy exception of areas along the Nile River, modern-day Ethiopia and some parts of West Africa and the Sahel, however, Africa’s agricultural development pathway had a unique trajectory. Its low population density is one reason, partly a function of its high disease burden (examined in Chapter 5): much of Africa is in

the tropics, with relatively high and stable temperatures and little seasonal change offering no respite from harmful bacteria or disease-bearing insects and mammals such as mosquitoes and bats. This kept population levels down in large parts of the continent, even as humanity expanded rapidly elsewhere. It also inhibited the spread of livestock.

Poor soil quality – except for areas along rivers such as the Nile, and in the Great Rift Valley in East and Central Africa – also seems to have played a role.¹ Free from most diseases, the fertile highlands in northern Tanzania, central Kenya and Ethiopia are the only regions where Africans developed intensive agriculture, writes Johan Fourie.²

And lastly, the domesticable plants in sub-Saharan Africa, such as yams, sorghum and pearl millet, are not as nutrient-rich as wheat, barley, rye, oats, rice and maize, the common staple foods that emerged in the rest of the world. Maize, which produces much higher yields than sorghum and millet, was introduced into Africa in about 1600, but had one major disadvantage: it was not drought resistant. And since the continent covered numerous climatic zones from north to south, the richer staple foods could not readily be transplanted across the humid equatorial regions.³

For these and other reasons, farming seems to have emerged in sub-Saharan Africa much later than elsewhere, and was not able (or required) to support the large settlements seen in Europe or Asia. Less population pressure led to lower levels of technology, so Africa's numerous empires had relatively short lifespans; they collapsed, or were forcibly dismantled by outsiders.⁴ In the centuries before the slave trade, most wars on the continent were therefore fought to capture labour and not to occupy land; indigenous African slavery was widespread.⁵

In more recent history, slavery, particularly the Arab slave trade in North and East Africa in the mid-7th century and the European slave trade from the late 15th century, disrupted agricultural development. From the 16th to the 19th century, the slave trade in North and East Africa overlapped with the transatlantic slave trade. Collectively, these had a devastating effect on the African continent, leaving its societies more dispersed and mobile than others.

Given this low population density, then, and the lawlessness and violence among people who were constantly on the move to avoid

capture, farming was challenging. Once slaves had been captured and violently removed, it was the young, the elderly and those with disabilities who remained, so large parts of Africa were denuded of their productive labour force. Farming and herding could not develop systematically, and social, political and economic systems could not mature to allow for technological and productivity improvements like those in other regions of the world.⁶

The continuous drain of labour may have ended after the abolition of slavery in Britain in 1807 and the United States in 1865, but other forced labour schemes under the guise of imperialism and colonialism soon followed at the beginning of the 19th century – forces that culminated in the Berlin Conference in 1884–85, where Africa was formally divided between various European states.

In the decades that followed the Berlin Conference, the continent became an increasingly important source of raw materials such as cotton to feed the factories in Great Britain, Prussia, Belgium, France, Italy, Portugal and Spain. Africa's agricultural exports became shaped by the demands of its colonisers, and imperial economics saw to it that commodity exports were supplied at the lowest possible price. Since labour costs were the most critical cost consideration, it comes as no surprise that Africans generally received poverty wages at the sprawling colonial farms on which they worked.

The introduction of crops such as peanuts and sesame replaced dietary staples such as millet and sorghum. The result was declining food reserves, chronic malnutrition and famine, despite the development of a sizable commercial cash crop system dominated by settler farmers. In many colonies, settlers often designated large areas *terra nullius* (unoccupied land) and reserved formal property rights for settlers and European firms.

With a clear focus on exports to feed and industrialise its colonial masters, the investment in Africa's road and rail infrastructure was to connect productive inland areas to the coast, from which products were shipped to Europe. Consequently, the rural and domestic agricultural

sector and regional trade were either destroyed or remained economically marginal. In this way, slavery, imperialism and colonialism fundamentally altered the development of agriculture on the continent, destroyed Africa's burgeoning trade in food, and displaced a host of indigenous crops with commodities beneficial for Europe's industrialising economies.

Agriculture in Africa after independence

Today, agriculture is generally considered the mainstay of Africa's economy, but its yields per hectare are the lowest globally and are improving more slowly than in other regions. Moreover, since food is cheaper on the international market than domestically, and because palates change with income, Africa is becoming more, not less, dependent on food imports – despite the continent having millions of hectares of arable land, with massive untapped agricultural potential.

There are many reasons for this. Essentially, though, while African independence brought many political benefits, few accrued to agriculture. With limited exceptions, the continent's post-independence leaders placed rural and agricultural development at the very end of the line in terms of resource and budgetary allocation. Instead, they sought to pursue rapid industrialisation – or worse, vanity projects. Most African governments also kept the bifurcated system of land ownership: customary property rights in many of the rural areas, and formal property rights reserved for a limited few and in some urban areas. The urban elites who shared the ethnic orientation of the governing party, then, effectively replaced white colonists in state institutions and land ownership. Only towards the end of the 20th century did the notion of formalising land ownership gain wider recognition, at a time when population growth had significantly complicated efforts at tenure reform that now needs to disentangle various overlapping regimes – from freehold, leasehold and customary to dual ownership systems.

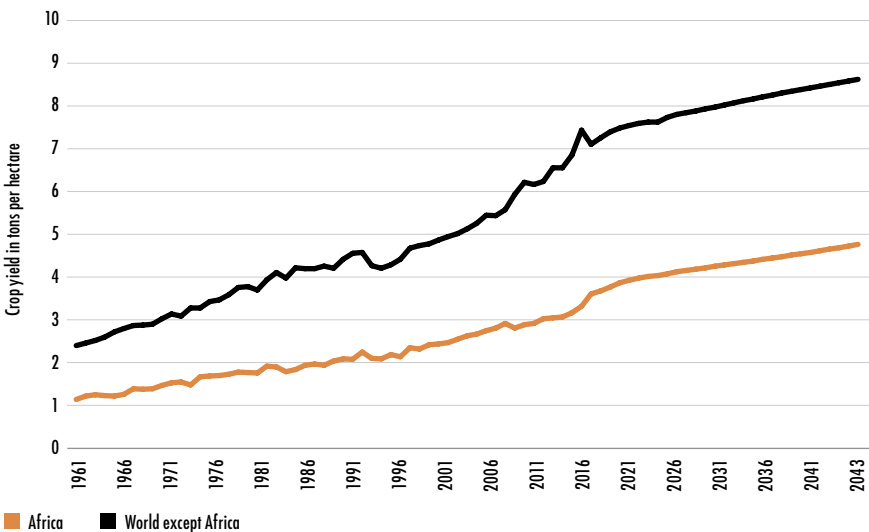
Elsewhere in the world, agriculture underwent substantive yield-enhancing shifts, including mechanisation, even before World War I and the introduction of new crop varieties and agricultural chemicals in the green revolution of the 1950s and 1960s. But not in Africa, where

the focus was on political rather than economic emancipation. Without tenure reform, and locked into an inequitable supply chain, Africa's agricultural productivity has lagged further and further behind that of other regions.

At Africa's independence in the early 1960s, the Food and Agriculture Organization (FAO) of the United Nations estimated that average yields per hectare in Africa were approximately 1.1 tons per hectare, 1.3 tons below the average for the rest of the world. By 2020, yields in Africa had increased more than threefold, to about 4 tons per hectare. Yet average yields in Africa were now 3.6 tons below the average in the rest of the world. Thus, for successive generations, agricultural yields in Africa have remained at about half of that of the rest of the world, with little prospect of catching up on the Current Path forecast to 2043, as Chart 25 shows.

Despite a few recent success stories – like Ethiopia, Madagascar, Mauritania and Sierra Leone, which doubled cereal yields between 2000 and 2016 – the agricultural sector in Africa is significantly less productive than in other regions. According to the most recent (2018)

Chart 25: *Yields per hectare: Africa vs world except Africa, 1960–2043*



Source: IFs 7.63 initialising from FAO Food Balance Sheets

FAO data, 17 of the 20 countries with the lowest average cereal yields per hectare globally were in Africa.⁷ At the same time, Africa is home to one of the top 12 most productive cereal yields. That country is Egypt, which benefits from having one of the world's most fertile agricultural deltas in the Nile River.

Against this background, the World Bank laments Africa's slow progress:

Of the world's surface area suitable for sustainable production expansion – that is, non-protected, non-forested land, with low population density – Africa has the largest share by far, accounting for roughly 45 per cent of the global total. While some large areas of the continent are arid or semi-arid, water resources are, on average, underutilized ... Furthermore, relative to other regions, Africa has low labour costs, which should encourage the production of labour-intensive farming-related products and services.⁸

The modest increases in agricultural production in Africa since independence were generally the result of the increased size of the area under cultivation rather than improved productivity. As a result, the World Bank in 2013 wrote that 'Africa is the only developing region in which the percentage of area exceeded growth in yield over the period 1990–2007'.⁹

African farmers have traditionally followed a practice of land rotation using slash and burn techniques – clearing new lands and leaving the old field fallow for a year or two to recover. That was fine while population densities were low. But as population numbers increased, shortages of arable land forced farmers to cultivate the same fields season after season. With rapid population growth and urbanisation in countries like Kenya and Ethiopia, urban sprawl drives land prices up and swallows some of the best farmland. And where prime agricultural land is far away from major population centres, the lack of paved roads and other infrastructure means that much of that more distant arable land is not used for large-scale production. Closer to population centres, unsustainable cultivation practices in high-

density areas contribute to substantial soil degradation as average farm sizes shrink.¹⁰ With access to credit and technology, farmers can resolve all these challenges. But instead, the vast majority of African farmers rely on less frequent bumper harvests (due to climate change) to tide them over during lean years.

There have been some efforts to improve agriculture in Africa, none of which have gained widespread traction. For example, in 2003 the New Partnership for Africa's Development (NEPAD, now the African Union Development Agency-NEPAD) published its Comprehensive Africa Agriculture Development Programme (CAADP), with ambitious goals:

... to allocate at least 10% of national budgets to agriculture, to reach rural growth rates of 6% annually by 2015, integrate and invigorate regional and national agricultural markets, significantly increase agricultural exports, transform Africa into a 'strategic player' in global agricultural science and technology, practice sound environmental and land management techniques, and reduce rural poverty.¹¹

In spite of the efforts by CAADP and many others, and the progress made since 2003, Africa is the most food-insecure region globally. According to FAO data, about 256 million Africans faced undernutrition in 2018 and the IFs forecast is that the number will only modestly decline to about 200 million by 2043.¹² The impact of a lack of focus on agriculture, climate change, natural resource degradation, rapid population growth, increasing fragility and insecurity, and slow economic growth combine to condemn many Africans to a life of hunger and malnourishment in spite of the continent's natural bounty.

Furthermore, those countries in Africa with large agricultural sectors mostly export raw products without adding value. For example, Africa produces about 45% of the world's cashew nuts, with 90% of that crop exported for processing overseas – with little benefit to the 2.5 million farmers involved in the industry. The Africa Cashew Alliance estimates that a 25% increase in raw cashew nut processing in Africa would generate more than US\$100 million in household incomes in the sector. As it is, a recent report noted that Tanzania's farmers 'get

rock bottom prices and the country imports its own nuts back after processing to meet buoyant domestic demand'.¹³

Africa also produces 70% of the global total of cocoa, much of that from Ghana and Côte d'Ivoire. Yet Ghana only earns about US\$2 billion a year from its colonial-style arrangement with the world's chocolate manufacturers. In fact, Africa accounts for less than 1% of chocolate exports. Europe, which grows no cocoa of its own, exported US\$19.2 billion worth of chocolate in 2016.¹⁴

After years of ineffective efforts to respond to the symptoms of this unequal relationship, such as well-meaning efforts to reduce widespread child labour, things have started to change. For example, through the Africa Cocoa Initiative Côte d'Ivoire overtook the Netherlands as the world's largest processor of cocoa during the 2014–15 season as it moves up the chocolate value chain. And Ghana is now processing more than a third of its own cocoa. Then, in an effort to increase the farm-gate prices to levels high enough to allow small cocoa producers to escape extreme poverty, Ghana and Côte d'Ivoire unilaterally announced that from October 2020 they would charge a fixed premium of US\$400 a ton over the benchmark futures price.¹⁵

After independence, then, hunger, malnutrition and low levels of educational attainment are well-established causes and symptoms of Africa's underdevelopment and represent significant bottlenecks in the effort to build human capacity and bring about structural economic transformation. Insufficient access to calories is a driver of undernutrition and stunting and, together with a lack of access to improved water, sanitation and hygiene (WaSH) facilities, can lead to a variety of health problems, which can culminate in psychosocial and learning challenges (discussed in Chapter 6).¹⁶

Given Africa's massive geographic expanse and diverse climate, agriculture potential and production necessarily differ vastly from country to country. In 2019 the agricultural sector in West Africa was the largest (at US\$184 billion) and was expected to experience solid growth, although growth in East Africa will be more rapid. According

to the Current Path forecast the size of West Africa's agricultural sector will have increased to US\$223 billion (or by 21% compared to 2019) by 2043. The agricultural sector in Southern Africa is the smallest (at US\$30 billion in 2019) and, although it too will grow by 21%, it will only amount to US\$36 billion by 2043.

This pedestrian improvement in agricultural productivity in Africa amid rapid population growth contributes to the slow rate of poverty reduction, although relatively high levels of inequality also contribute. Diet preferences are also changing and contribute to food insecurity. Africans are becoming wealthier and changing their eating habits, reflected in the rise of obesity and non-communicable diseases such as heart conditions that were once more common in richer, developed countries. The result is that African countries import ever-larger quantities of food with each passing year.

In 2019, Africa's annual agricultural trade deficit (the difference between the value of imports and that of exports) stood at roughly US\$64 billion per annum. In the Current Path forecast it will quadruple to about US\$276 billion by 2030 – and then more than double to approximately US\$652 billion by 2043. In the Current Path forecast, Africa could be importing more than a third of its requirements by 2043, which leaves the continent extremely vulnerable to fluctuations in food and other commodity prices.

Transforming agriculture in Africa

From its current position, how, then, can Africa transform its agricultural sector? There is abundant literature on agricultural reform. In it, we read that, generally, reform needs to start by unlocking access to credit that enables farmers to invest towards higher productivity. With few exceptions, African agriculture is low-technology, using limited irrigation, low levels of mechanisation (since labour is cheap and farmers lack capital) and limited (or no) fertiliser. The continent also sees limited use of genetically modified seeds that are more resilient to disease; slow progress with organic farming; and little use of indigenous crops that are better suited to the continent's climate.

But accessing credit for agricultural technology requires secure and transferable ownership of land, pointing to the need to formalise, regulate and modernise land ownership. Without clarity about ownership, farmers cannot access finance, transfer land or protect themselves against encroachment.¹⁷

Several decades ago, the prize-winning Peruvian economist Hernando de Soto¹⁸ went as far as to divide the world into two groups: those who have defined property rights, and those who do not. For De Soto, farmers inevitably remain poor if they are unable to leverage their resources to create wealth. Their assets become ‘dead capital’, which cannot be used to generate income or growth. Legally protected property rights are the key source of the developed world’s prosperity, he argued, and the lack thereof is the reason why many nations remain mired in poverty by the ‘tragedy of the commons’, whose unregistered assets can be stolen by powerful interests, hurting individuals and broader economic development.

In fact, a comprehensive ‘land grab’ is evident across Africa, particularly in the Nile River basin that covers an area of 3.18 million square kilometres from Uganda to Egypt. Companies from Austria, Belgium, Brazil, China, Ethiopia, India, Israel, Norway, the UAE, the UK and the US, among others, have acquired fertile Nile-irrigated land for growing food crops, flowers, tobacco and biofuels, rearing livestock and logging trees. Most of these deals are agricultural leases and forest concessions. While some have brought positive benefits to local economies, in most cases the local people suffer because governments prioritise foreign investment and export earnings above the pursuit of local livelihoods.

But the much larger land grab, however, is often by Africa’s own leadership. Zimbabwe’s disastrous experiment, for example, illustrates the importance of security of ownership to unlock land as a bankable asset and the implications of land expropriation without due process.

In addition, the World Bank finds that agricultural markets regularly fail African farmers – ‘the pattern of market failures is general and structural, and not related to the head-of-household’s gender, or to geographic characteristics such as distance to roads or to large population centres’.¹⁹ In other words, African farms are less productive

because farmers are chronically unable to access the finances (or credit) that would allow them to purchase critical inputs that could improve yields, such as fertiliser and seed.

The potential of property rights to unlock capital and development that Hernando de Soto wrote about in the 1980s remains largely unrealised in Africa. Perhaps 90% of rural land in Africa is not formally documented. Just 4% of African countries have mapped and titled the private land in their capital cities. Less than 20% of occupied land in sub-Saharan Africa is registered; the rest is undocumented, informally administered and thus vulnerable to land grabbing and expropriation without adequate compensation.²⁰ By one estimate up to 60% of national land in sub-Saharan Africa is held under customary or traditional forms of land ownership and perhaps 90% of rural land in Africa is not formally documented. Well-meaning reformers have often neglected the myriad other factors affecting whether titles are useful or not, such as custom, other laws and the capacity of the state to enforce people's legal property rights, and have generally underestimated the ability of vested interests, such as traditional leaders and urban elites, to obstruct reform.²¹

It is perhaps to China, then, that Africa should turn as an example of agrarian reform. The first 20 years of China's agricultural revolution, which improved productivity on smallholder farms through institutional incentivisation and improved access to better seeds and better farming practices, holds many lessons for Africa. In the 1970s and 1980s, Deng Xiaoping used the household responsibility approach to transform the domestic agricultural sector in China into a productive, market-oriented system. The reforms contracted individual households instead of collectives to farm. With this new responsibility and various other market-related reforms, productivity improvements in the order of 20% above collective era output were recorded.²²

China subsequently experienced three consecutive decades of steady improvements in agricultural yields. Average yields nearly tripled between 1970 and 2013, a catalyst of the economic growth enjoyed by the country during those decades. The available calories per person increased by nearly 70%, and there were fewer than 2 million malnourished children in 2015 compared to more than 22 million in 1987.

The African experience is that different families farm small patches of land, relying on unproductive, often traditional practices, similar to the situation in China several decades previously. By working with the individual farmer and focusing on improved smallholder productivity, China transformed its agricultural sector and fed its rapidly growing population.

China is not the only large and geographically diverse country to transform its agricultural sector in recent decades and from which Africa can learn. Brazil enjoyed rapid improvements in agricultural production in the decade between 2000 and 2010. Although it has traditionally been a net food exporter, it has improved that position by nearly seven percentage points. Between 1981 and 2016, Brazil more than doubled its average cereal yields, despite the size of the land under cultivation only increasing by about 6%.

While the rest of sub-Saharan Africa has not, on average, seen the same volatility as Zimbabwe, agricultural production per capita is also declining steadily. At the same time, South America sustains high production after an impressive decade-long sprint to improve productivity, and China's yields per capita continue to rise. Without a revolution in agriculture, sub-Saharan Africa is condemned to food insecurity and an expensive agricultural trade deficit.

Rather than replacing farmworkers, of whom there is an abundant supply on the African continent, agricultural technologies will likely help farmers reduce inputs such as herbicides, pesticides and fertilisers through greater precision in their use and application. And high-technology devices like drones could help to inspect fields and monitor herd animals.²³ In its report *State of the Climate in Africa 2019*, the World Meteorological Organization notes that solar-powered, efficient micro-irrigation has the potential to increase farm-level incomes by five to ten times, improving yields by up to 300% and reducing water usage by up to 90% while at the same time offsetting carbon emissions.²⁴

Mobile technology can alleviate many of the bottlenecks in Africa's smallholder agricultural credit system and enable farmers to access farming inputs at lower costs. In Kenya, for example, the company FarmDrive²⁵ uses machine learning and various data sources to unlock access to credit for smallholder farmers. Once the exact

location of the smallholder farm is confirmed,²⁶ the system accesses geospatial information to determine soil quality, weather conditions and market accessibility, then uses an algorithm to determine a credit score.²⁷ The associated decision-making tool enables financial institutions to develop small-scale agriculture loan products.

In Ghana, Kenya and Uganda, more than 20 000 farmers have access to affordable, smart insurance contracts (such as against crop failure or the loss of expensive breeding stock) via their smartphones, using blockchain technology. The system uses high-resolution satellite images to detect rainfall and plant growth data, then gives advice about what, when and where to plant.²⁸

The World Food Programme R4 Rural Resilience Initiative is also helping to implement innovations in finance and insurance to reduce the risk of farming. Its efforts reached more than 57 000 farmers in Ethiopia, Senegal, Malawi, Zambia and Kenya in 2018, increasing food and income security by managing climate-related risks.²⁹

In the past decade, the Alliance for a Green Revolution in Africa (AGRA) has invested hundreds of millions of dollars in improved seeds, and has doubled maize yields in the 18 countries they work in.³⁰ Detractors, such as the Alliance for Food Sovereignty in Africa (AFSA) and its allied organisations, have, however, called on donors to cease funding AGRA and other Green Revolution programmes, calling these support for industrial agriculture, and to rather support African-led efforts to expand agroecology and other low-input farming systems. They argue that ‘AGRA has unequivocally failed in its mission to increase productivity and incomes and reduce food insecurity, and has in fact harmed broader efforts to support African farmers’.³¹

These examples reflect some of many emerging African solutions for the continent’s estimated 50 million smallholder farmers as part of a trend to change a traditional farming mindset to a modern, agribusiness mindset that would have been impossible a few years ago. But the lack of electricity access in rural areas in Africa and low internet penetration are some of the biggest obstacles to applying modern technology in agriculture.

Equally important is the challenge of improving soil fertility. Humans have used mineral and organic fertilisers, like manure and bonemeal, to

improve soil fertility for thousands of years; in the past century, human-made fertilisers have greatly boosted yields. The use of fertiliser differs vastly from country to country but its use in Africa is generally lower than anywhere else, despite the continent's soil being poorer in nutrients than that of most other continents.³² So, soil fertility depletion generally continues unabated. The reason for this low use is that fertiliser prices in Africa are two to six times higher than the average price in the rest of the world because the continent generally imports fertiliser instead of manufacturing it. The delivered cost at Africa's ports is similar to that for other fertiliser-importing countries, but Africa has a higher cost of distribution, especially transport, reflecting its poor infrastructure, lack of competition and inappropriate regulations.³³

Various efforts are now underway to increase the production of fertiliser on the continent. For example, the Indorama Eleme public-private fertiliser plant that was completed in 2016 intends to turn Nigeria from a large fertiliser importer to a self-sufficient producer – and, eventually, a net exporter.³⁴ In addition, Morocco's OCP Group, which holds 75% of the world's phosphate reserves (an essential ingredient for phosphate-based fertilisers), has announced plans for a US\$1 billion industrial investment in fertiliser plants in Nigeria while constructing a massive plant in Dire Dawa in eastern Ethiopia, costing US\$3.7 billion.³⁵ Angola too will shortly see the start of construction of a large fertilizer plant. There is also a strong lobby, such as from AFSA mentioned above, against more intensive fertiliser use.

The African Agricultural Revolution scenario

So far, this chapter has illustrated that the extent of Africa's food import dependence is generally a function of a lack of political prioritisation and poor access to finance which, in turn, is due to low agricultural yields, limited application of technology, changes in food consumption preferences and big post-production losses, i.e. the loss and waste from production on the farm. It has also shown that, in addition to land ownership reform, technology can unlock Africa's agricultural potential – but only if the associated electricity and other basic infrastructure are also available.

The potential advantages of agriculture are well known. Boosting farmers' income helps stimulate general demand for goods and services in rural areas, which results in the establishment of new enterprises and contributes to the broader process of structural economic transformation and diversification.³⁶ Improving agricultural productivity and boosting local demand 'leads to the development of both upstream and downstream activities, the consolidation of value chains and the expansion of agro-industries, which are significant sources of employment and present real opportunities for economic diversification', notes the International Labour Organization – in addition to earning foreign exchange.³⁷ That will remain true, even if most of the continent's intense agriculture often occurs on the periphery of urban centres – closer to the market, thanks to the denser network of roads and access to markets there.

Against this background, this section models an African Agricultural Revolution scenario using four variables within the IFs forecasting platform. Each intervention initialises from individual country data, and the improvements are benchmarked to ambitious rates of progress in countries at similar levels of development. Generally, the magnitude of the interventions is more significant in most sub-Saharan African countries with lower agricultural productivity and more potential than in North Africa.

Fundamental to the first intervention, a direct improvement in yields, is improved tenure security and transferability of ownership to unlock finance. Many African countries have recently started to overhaul communal land rights, creating something of a middle ground between individual freehold and the colonial customary model. Modern technology such as aerial photography and digital platforms such as Cadasta can support the documentation of land and resource rights. The result is progress on land administration at a reasonable cost, and is being pursued in countries as diverse as Ethiopia, Rwanda, Côte d'Ivoire, Ghana, Benin, Burkina Faso and Tanzania.³⁸ Higher yields also emulate the modernisation of farming through more and better fertilisers, the adoption of high-yield variants, and the use of more appropriate indigenous crops. The more rapid adoption of high-yield varieties, improved water

management and appropriate use of fertiliser are all potent yield multipliers.³⁹

The second intervention extends the amount of land that is equipped for irrigation and that is under irrigation. Since the stock of land currently under irrigation in most African countries is meagre, the interventions come off a shallow base. Just over 3% of cultivated land in sub-Saharan Africa is under irrigation, compared to a global average of 21% of total cultivated land.⁴⁰ Therefore, the vast majority of cropland is dependent on good rainfall. This is becoming increasingly irregular due to the impact of climate change and desertification, to which Africa is particularly susceptible. Excluding South Africa, Africa also has the world's lowest water storage capacity – 43 m³ per person, compared to 6 150 m³ per person in North America. South Africa has 750 m³. As a result, much of the continent has little ability to control water flow and conserve water during periods of abundance for use during periods of scarcity.

The third intervention in the African Agricultural Revolution scenario involves improved food supply chains. Whereas the average loss and waste of agricultural produce in the rest of the world is roughly 14%, it is calculated at 24% in Africa and up to 30% in West Africa. Unlike in Europe and North America, where food reaches the consumer but is then discarded or wasted, most of the food loss in Africa, almost a third, happens in the production stage. Better storage and infrastructure would help reduce losses, but more detailed data on the supply chain would also help. Modern technology can also play a big role here since, according to the FAO, one-third of the world's food – approximately 1.3 billion tons, worth US\$1.2 trillion a year – is wasted.⁴¹

Technology can help track inventory and reduce food waste along the distribution chain from the farm gate to the domestic retailer or export market. One African example is InspiraFarms, which produces affordable, energy-efficient cold storage and processing equipment for on- or off-grid use.⁴² In particular, the intervention reduces the loss rate of agricultural production both at the farm and between the farm and consumer. Thus, the intervention reduces post-production loss and, together with an increase in yields, increases the availability of

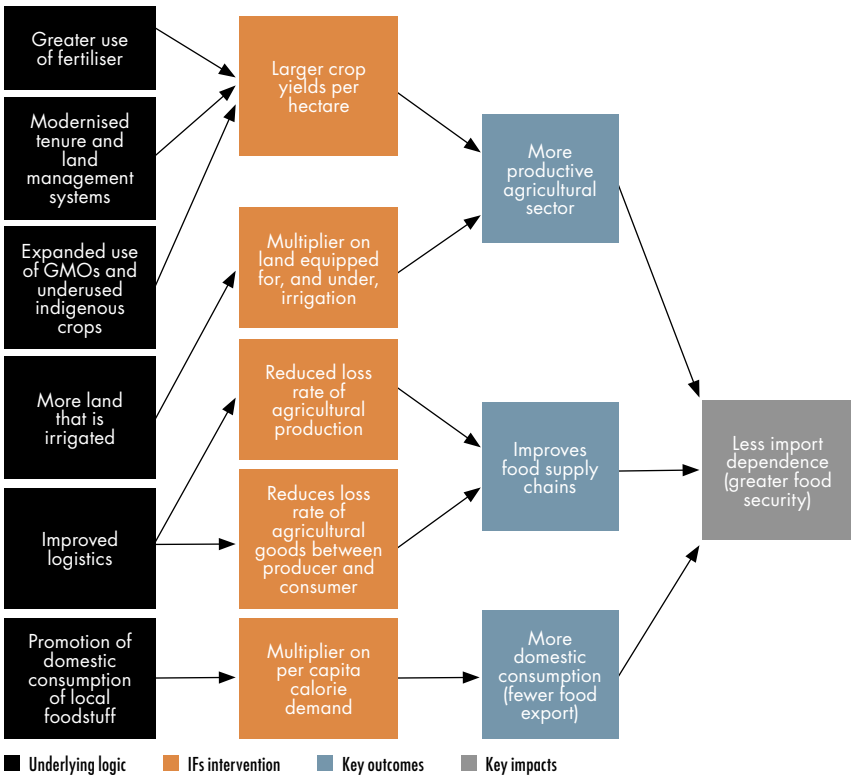
food for local consumption and export (or at least reduces import dependency).

The fourth and final intervention in this scenario increases per capita caloric consumption from 2 600 per person per day in 2019 to 2 900 in 2043. Thus the 2043 number is about 150 calories higher than in the Current Path forecast. This intervention ensures that the increase in agricultural production is partly consumed domestically and does not only benefit exports (where it can earn valuable foreign exchange).

Chart 26 summarises the interventions in the African Agricultural Revolution scenario.

In the African Agricultural Revolution scenario, Africa’s average crop yields improve by 50% above the Current Path by 2043 – see

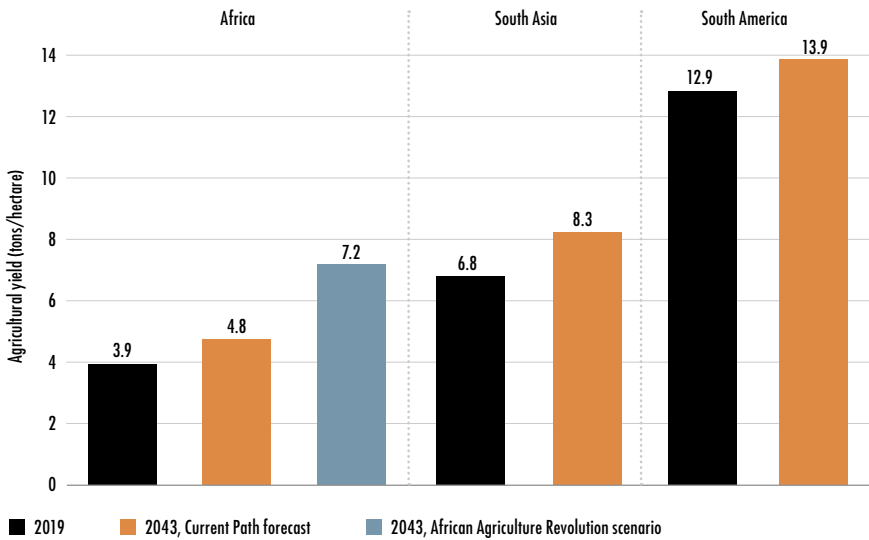
Chart 26: *Interventions in the African Agricultural Revolution scenario*



Source: Author

Chart 27. The scenario represents an 83% improvement from 2019 levels by 2043 (with an average yield, across crop types, of 7.2 tons per hectare). These improvements are particularly potent for East Africa, where yield increases by 74% above the Current Path forecast by 2043, while West and Southern Africa achieve yield improvements of 43–50%. Even the comparatively modest interventions in North Africa cause yields to increase by about 12%. Yields in Central Africa in 2043 are 60% higher than in the Current Path forecast for that year.⁴³

Chart 27: Crop yields per hectare: Africa compared to South Asia and South America in 2019 and 2043



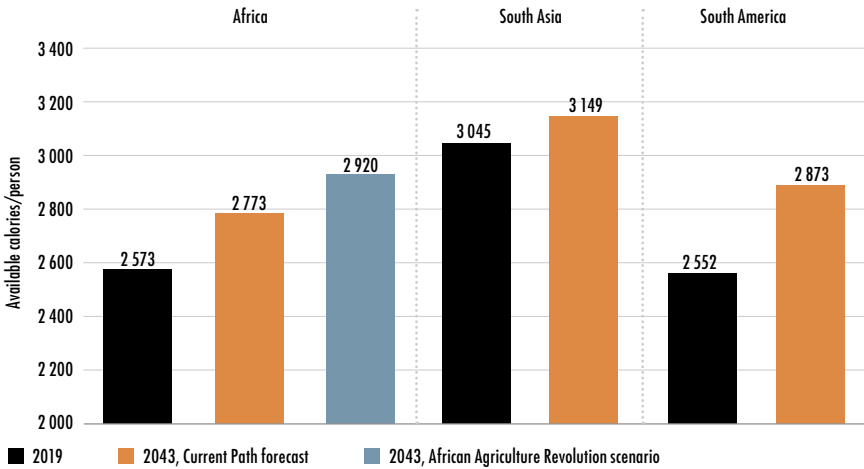
Source: IFs 7.63 initialising from FAO Food Balance Sheets

The improvement in calorie availability is presented in Chart 28. On this path, Africa would keep up with and even slightly surpass South Asia, though remaining significantly below the calorie availability in South America.

The African Agriculture Revolution scenario increases land under irrigation in Africa by approximately 7.6 million hectares by 2043 (a 55% improvement on the Current Path forecast for that year). The

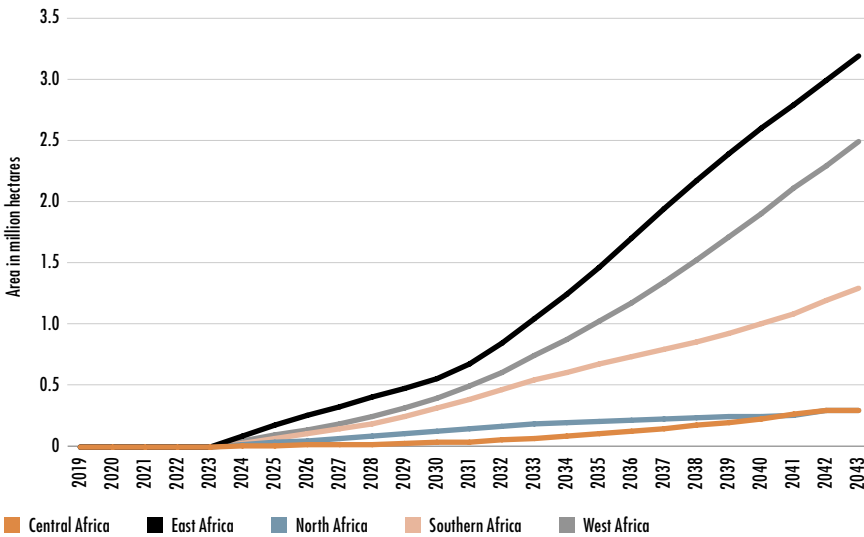
largest increase is in East Africa, where irrigated land volumes almost double, coming off a low base – see Chart 29.

Chart 28: *Calories per person in Africa, South Asia and South America*



Source: IFs 7.63 initialising from FAO Food Balance Sheets

Chart 29: *Increase in land irrigated in African Agriculture Revolution scenario for each African region, 2019–2043*



Source: IFs 7.63 initialising from FAOSTAT

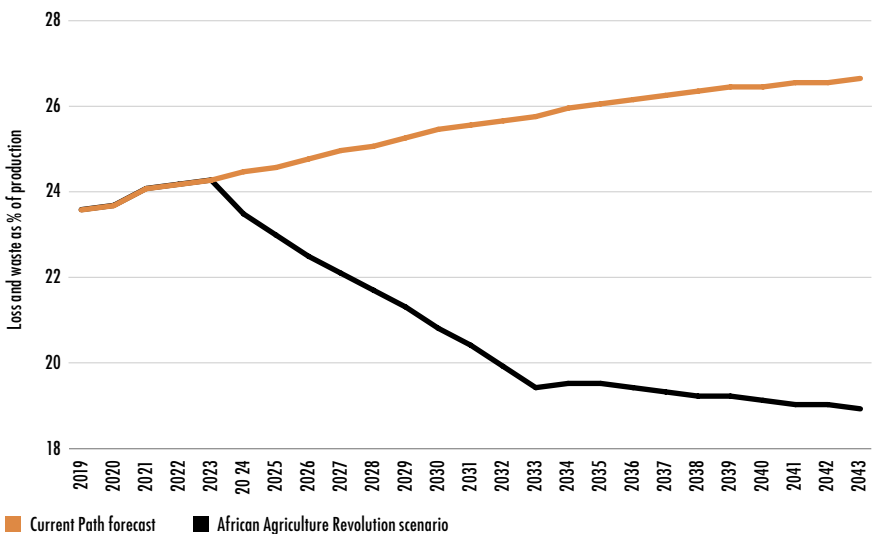
Because of the large increase in available food, the African Agriculture Revolution scenario increases the total amount of agricultural waste. However, as a share of production, food loss and waste would decline. In the Current Path forecast, loss and waste would climb from about 24% in 2019 to about 27% of production by 2043. In the African Agriculture Revolution scenario, rates decline to approximately 19% by 2033, and maintain a slight downward trend beyond 2043, as Chart 30 shows.

The impact of the African Agriculture Revolution scenario

The impact of the African Agriculture Revolution scenario is impressive. By 2043, Africa will produce a total of 703 million metric tons of additional food (crops, meat and fish). This increased domestic food production will reduce Africa’s 2043 agricultural import bill by US\$327 billion.

The increase in calories reduces the number of children suffering from malnourishment by more than 2.4 million in 2043. Thus, from 2024, the

Chart 30: *Agriculture loss and waste as a share of production: Current Path forecast vs African Agriculture Revolution scenario, 2019–2043*



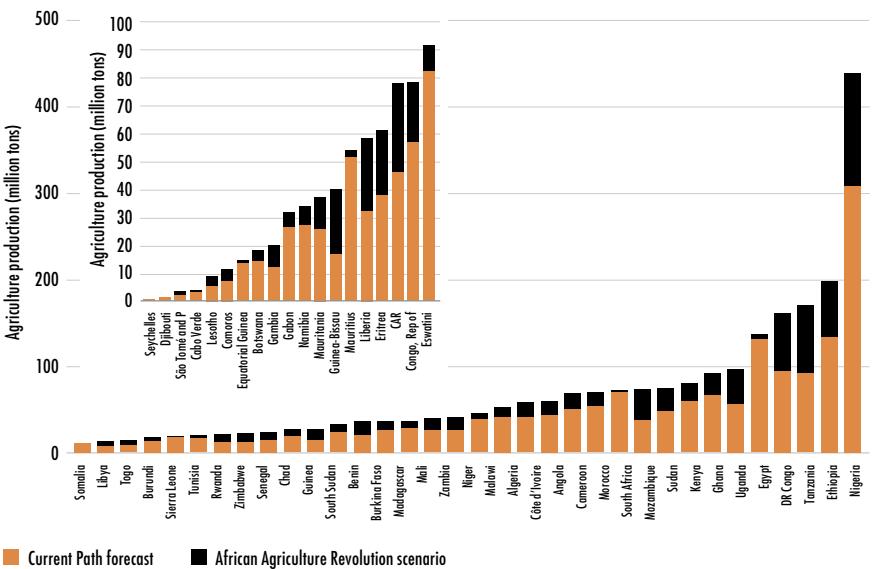
Source: IFs 7.63 initialising from FAOSTAT

first year of our intervention, to 2043, a cumulative number of 44 million fewer children suffer from malnourishment, accompanied by a reduction in stunting. The scenario also reduces infant mortality by almost two children per 1 000 live births under one year of age. Bear in mind that more than 43 million births occurred in Africa in 2019 and that the Current Path forecast is for almost 55 million in 2043! Although infant mortality declines, almost a million fewer children will be born in Africa in the African Agriculture Revolution scenario than in the Current Path forecast as health improves and parents generally opt for fewer children.

Regarding Africa’s food import dependence, in 2019 Africa imported 11% of its agricultural demand – staple foods such as rice and maize, which are cheaper to procure on the international market than domestically. In the Current Path forecast, net agriculture food import dependence reaches an alarming 35% by 2043. The African Agriculture Revolution scenario reduces the continent’s food insecurity to only 8% by 2043.

As Chart 31 reminds us, these averages conceal huge differences between countries and regions. The countries that achieve the most

Chart 31: Agriculture production by country 2043: Current Path forecast and addition from African Agriculture Revolution scenario



Source: IFs 7.63 initialising from FAO Food Balance Sheets

spectacular increases in production volumes – Nigeria, Tanzania, Ethiopia and DR Congo – are well known for their agricultural potential, while arid and small island states gain the least. Nigeria, for instance, would see an increase from just under 300 million metric tons of agricultural products in 2043 in the Current Path forecast to over 400 million metric tons in the African Agriculture Revolution scenario. And Egypt, one of the continent’s most agriculturally productive countries, is already close to its full agricultural potential, so it did not receive interventions under this scenario.

The African Agriculture Revolution scenario also has significant developmental and economic effects. It reduces the number of Africans living below US\$1.90 per day by more than 110 million people in 2043 (to 16% of the total population) compared to the Current Path forecast for that year (at 21%), half of whom come from West (38 million) and Central Africa (32 million). Low-income countries with high agricultural potential, particularly Madagascar and the DR Congo, do very well. The scenario reduces extreme poverty in DR Congo by almost 26 million people in 2043 – to 56 million, equivalent to only 33% of its population.

In addition, the African Agriculture Revolution scenario increases the average GDP per person (in purchasing power parity, or PPP) in Africa by US\$370 in 2043 – an improvement of more than 5% on the Current Path forecast for that year. Because of its smaller agricultural sector, North Africa benefits least, improving its GDP per capita by only 2% – which still represents an increase of US\$262. East Africa benefits most proportionally (by US\$401), while West Africa benefits most in pure dollar terms, by US\$455 in its average GDP per capita. And GDP per capita in Central Africa is US\$271 bigger in 2043 than in the Current Path forecast. By 2043, Africa’s total economy is US\$562 billion larger (using the market exchange rate, or MER) than in the Current Path forecast.

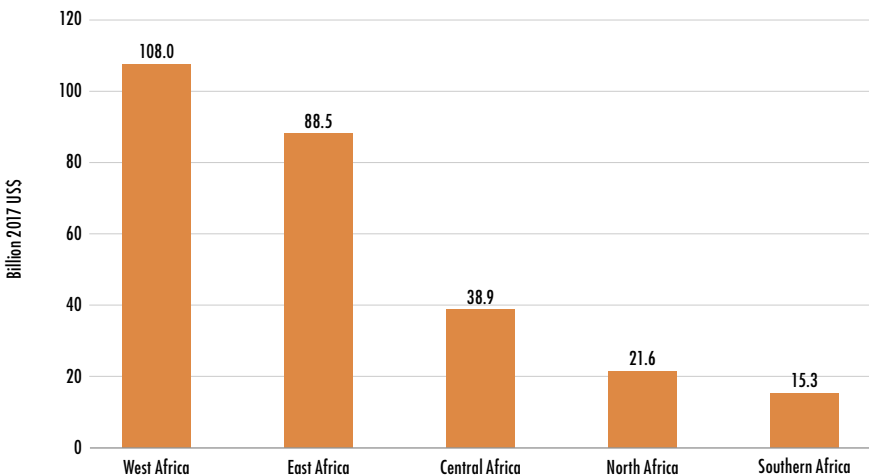
A noteworthy effect of the African Agriculture Revolution scenario is that, as countries graduate from low-income to middle-income – and, eventually, to high-income – status, the contribution of agriculture as a portion of their economies generally declines. For instance, in Africa’s 23 low-income countries 2019, the agricultural sector contributed an

average of about 28% to GDP, about 17% in its 23 lower-middle income countries, about 3% in its 6 upper-middle income countries, and about 4% in Seychelles, its single high-income island state. By 2043, these portions will likely have declined to 9%, 7% and 2% for low income, lower-middle income and upper-middle income Africa. The African Agriculture Revolution scenario would increase the value of the sector as a portion of GDP by four and two percentage points for low-income and lower-middle income Africa, equivalent to an increase in size of US\$108 billion and US\$162 billion respectively.

A different expression of the same metric is that, instead of agriculture representing 17% of the economy in Central Africa, as it did in 2019, by 2043, it will reduce to 11% in the African Agriculture Revolution scenario – compared to a more rapid decline to 8% in the Current Path forecast. On top of that, the region’s economy will be significantly larger than in the Current Path forecast.

Chart 32 presents the 2043 difference in the size of the agricultural sector between the Current Path forecast and the African Agriculture Revolution scenario for each of the five African regions. Over time, it shows, West and East Africa emerge as the continent’s food baskets.

Chart 32: *Difference in size of the agricultural sector in 2043: African Agriculture Revolution scenario vs Current Path forecast*



Source: IFs 7.63 initialising from FAO data

The improvements that are potentially to be made in the African Agriculture Revolution scenario are not a given, however. Factors that could affect them include the use of the water endowment available for irrigation, the effect of carbon fertilisation due to climate change on crop growth, and the impact of new cultivars and genetically modified plants that are more temperature tolerant.⁴⁴

And finally, more than half of Africa's labour force is engaged in the agricultural sector. But, as in China, Africa's agricultural sector is steadily losing its productive, working-age population as young men and women migrate to cities in pursuit of improved livelihoods. The African Agriculture Revolution scenario accelerates the rate at which employment in the sector declines, even as productivity improves and total output increases. This result concurs with a report – *The Future of Work in Africa* by the African Center for Economic Transformation in Ghana – which finds that boosting agricultural productivity reduces the number of jobs in agriculture.⁴⁵ However, the report concludes that jobs will be created downstream in the much larger agro-processing sector by lowering the costs of raw materials. Productivity improvements could come by upgrading value-chain activities such as logistics, input services, storage and other off-farm activities – all of which will require improved connectivity and basic infrastructure;⁴⁶ as Africa moves up the agricultural value chain, then, growth in the sector will expand employment opportunities in downstream agri-processing, much of which is in urban centres.

Conclusion: Aiming for food security and growth

Critically, investing in, and prioritising, Africa's massive agricultural production has never been attractive enough for Africa's leaders – or indeed its international partners – to unlock its potential.

Most African governments, NGOs and citizens generally prefer to blame Europe for lack of access to its agricultural market, instead of looking to the need to focus comprehensively on the production of staple foodstuffs for domestic consumption, advancing regional rather than international trade in agriculture, investing in agriculture research, advancing rural property rights, schooling for agriculture,

and generally focusing attention on rural poverty rather than on urban elites.⁴⁷ Imagine if African countries prioritised growing staple foods, while actively encouraging intensive smallholder farming and sustainable practices. It would increase rural incomes, reduce poverty and, eventually, open up the potential for agribusiness and large-scale exports that earn foreign currencies. This chapter's much-needed African Agriculture Revolution scenario will reduce Africa's agricultural import dependence, improve food security and contribute to growth.

Raising agricultural productivity is a foundation for broader, sustained economic development, with important caveats. The World Bank has found 'little evidence of a relationship between increased commercialization and improved nutritional status'.⁴⁸ In effect, low-income and low-middle income African countries should produce food for domestic consumption before pursuing cash crops for the export market, it argues. To capitalise on the benefits of having an educated and healthy labour force, governments need an unwavering emphasis on achieving food security. Only then does agriculture become 'central to securing foreign exchange earnings that can allow for the expansion of imports, thereby fuelling investment and growth'.⁴⁹

Clearly, there is much that Africa can do to improve agriculture, even as it inevitably declines as a share of national economies. To this end, AGRA calls for a holistic land management strategy that includes increasing the soil's organic matter content and moisture retention, and other forms of soil rehabilitation, in addition to the use of more inorganic fertiliser. Take South Africa, for example. Although primary agriculture only contributes about 3% to GDP, South Africa is one of the few African countries that provide food security on the back of a highly productive private agricultural sector and significant agro-processing industry. The country had a secure food supply system when it went into a six-month lockdown in March 2020 to halt the spread of COVID-19 – many other countries on the continent suffered.

Looking to the future, how climate change will affect agricultural yields in Africa is a big uncertainty. While conducting a recent long-term forecast on the future of five Sahel countries – Mali, Niger, Burkina Faso, Chad and Mauritania – I was struck by the effect that

climate change has already had, and will continue to have, on this region. The Intergovernmental Panel on Climate Change (IPCC) soberly notes that the Sahel, where agriculture accounts for more than 75% of total employment, has ‘experienced the most substantial and sustained decline in rainfall recorded anywhere in the world within the period of instrumental measurements’.⁵⁰

As Chapter 14 notes, the impact of climate change varies across Africa regarding changes in temperature and rainfall and the increased variability of weather, with many more extreme events such as floods, tornados and droughts. The IFs forecasting platform includes some of these effects in its agriculture yield forecast, but may be underestimating the effects. There are large associated uncertainties, particularly the potential for technology to increase agricultural production not through the traditional route of expanding land under cultivation, but through more precise farming and more sustainable farming methods. Eventually, solar-powered cold storage, accurate weather forecasts, monitoring of soil conditions and access to market information can all play an important role in increasing agricultural yields, as could greater efficiencies to reduce food waste. However, this will require current practices to change.

Without food security, developing countries cannot escape from hunger, poverty and the variances of nature, and meaningful advancement is difficult, if not impossible, to sustain. It is becoming increasingly evident that the effects of climate change are likely to have significant negative consequences for agriculture in much of Africa.

Because of how colonialism shaped and then locked Africa’s agricultural sector into the global economy, and the insufficient, poorly designed and inefficient government support for agriculture that resulted, Africa has not been able to benefit from this crucial sector. Yet the continent has huge agricultural potential. Subsistence and smallholder agriculture that primarily caters for household consumption needs targeted and coordinated support from the government, which is quite different from the private-sector-led growth model of medium- and large-scale commercial farming, although that too has its place. Clumsy interventions by African governments to set minimum prices for commodities such as cocoa, coffee and cashew

nuts without consideration of the broader impact often have unintended consequences. For example, it could encourage an increase in production by many more poor farmers, causing the commodity's price to fall. The result is to trap more poor people in subsistence farming from which they are unable to escape. Low-income and lower-middle income African countries should place emphasis on food self-sufficiency first, and only then on their massive export potential.

There has been some progress, but World Bank president Robert McNamara's prognosis in Nairobi in 1973 that 'there can be no long-term solution to the food problem'⁵¹ without rapid progress in smallholder agriculture remains valid today in much of Africa. For a successful agricultural transition towards food security, it is imperative to focus on indigenous crops, such as cassava, cowpea, soybean and yam, as well as indigenous practices.⁵² Once that is achieved, it is steady progress up the agro-processing value chain that will unlock improvements, not efforts to enter the global food export market without sufficient domestic reform. Even then, a truly productive agricultural sector able to compete internationally, such as that of the US or the Netherlands, generally follows the development of a substantive industrial sector.

Across Africa, from Angola to Kenya, governments and the private sector are modestly investing in the critical enablers of agricultural growth. But much more is needed. Prosperity requires that a country moves up the agricultural value chain and avoids being suckered by corporate social responsibility programmes that promise to tinker with the worst effects of colonial-style production but do not structurally intervene to promote food self-sufficiency and shift value addition to Africa. The storyline often sold to Africans is to leverage products such as cocoa and coffee to improve their share of value-add in these massive markets. But in the absence of effective agricultural management and producer associations with the muscle to manage the sector, it is probably more important to diversify the agricultural products in countries such as Ghana and Côte d'Ivoire and to trade regionally than to develop a cocoa cartel.

And then there is the challenge that, for much of Africa's young population, the idea of turning to agriculture as a livelihood is

associated with poverty, suffering and deprivation. Changing that mindset will be difficult: the sector suffers from poor infrastructure, insecure property rights, lack of access to credit, no or limited provision of electricity, and lack of access to modern technologies. All of these hurdles can be overcome – but this will require changing current practices of tenure insecurity, unlocking access to credit, using high-yielding seed varieties and modern inputs such as fertilisers, pesticides and, eventually, mechanisation to emulate some of the positive aspects of the agricultural revolutions in South Asia and South America in the 1950s and 1960s.

But above all, it will require determined and decisive political leadership, and the pursuit of agricultural transformation in tandem with industrialisation.

5

Health and WaSH in Africa



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The next step in an exploration of the possibilities of Africa's tomorrow is the continent's health – and how its water, sanitation and hygiene (WaSH) contribute to this. Earlier chapters have touched on Africa's high disease burden, and the health challenges that urbanisation has brought to the continent's cities. This chapter explores the continent's disease burden more closely, including the contributions of HIV/Aids and COVID-19, and moves to the health transition towards which sub-Saharan Africa is shifting, before examining the possibilities of the Health/WaSH scenario relative to the Current Path forecast for this aspect of life in Africa.

A fitting point of departure for this exploration is the UN's Sustainable Development Goal (SDG) 3, which speaks to 'ensur[ing] healthy lives and promot[ing] well-being for all at all ages'.¹ Targets falling under this goal include reducing maternal, infant and child mortality, ending the Aids, tuberculosis and malaria epidemics, and reducing mortality from non-communicable diseases such as diabetes and cancer.

While the African continent has registered substantial improvements on a handful of targets (notably reducing Aids-related deaths), it is likely to miss almost all of the health-related SDG targets, often by substantial margins. There are exceptions, of course: private healthcare in South Africa is among the best in the world, though expensive and thus only available to a small portion of the population. But only four African countries – Mauritius, Tunisia, Seychelles and Libya (depending on an end to its civil war) – are poised to meet the 2030 target to reduce infant mortality to fewer than 12 deaths per 1 000 newborns.

Why is this the case in Africa? At first blush, the explanation seems obvious: countries in sub-Saharan Africa generally spend significantly

less on health as a percentage of GDP than other regions – except for South Asia, which also has low spending levels. On the one hand, sub-Saharan Africa’s large young population requires less expensive investments to treat and prevent infectious diseases such as influenza and mumps than non-communicable diseases such as heart disease and diabetes. Non-communicable diseases are more prevalent in North Africa since its population is older and average expenditure on health per person there is more than double averages in sub-Saharan Africa. By contrast, Europe, with its much older population, spends several times more per capita on health than North Africa. Indeed, providing a US\$2 mosquito net to every vulnerable person in sub-Saharan Africa every two years is far more affordable than ensuring that every North African has reliable access to insulin (at an annual cost of more than US\$300 per person), cancer screenings and dialysis.

Then there is the reality that the large number of low-income and lower-middle income governments in sub-Saharan Africa also have less revenue to spend on health than upper-middle income and high-income countries.

Sub-Saharan Africa generally also has a very high disease burden compared to other regions given the much longer and closer relationship between humanity and its various predecessors here than elsewhere. Explaining this requires a brief historical digression.

Understanding Africa’s high disease burden

Evidence of previous waves of migration aside, the small group of our *Homo sapiens* ancestors who eventually came to dominate the world only successfully migrated from Africa some 70 000 years ago. Human DNA and palaeontologists confirm that all humans who have ancestors outside of Africa today come from a single small group of migrants, and not from earlier waves. About 50 000 years ago, they spread along the southern coast of Asia to Oceania and eventually to Europe – a spread that occurred over several thousand years. In the process, *Homo sapiens* eventually displaced Neanderthals. The process was not linear; there is ample evidence that *Homo sapiens*, Neanderthals and others interbred and even cohabited.²

Early humans gained an initial health reprieve that lasted for several thousand years when they moved out of Africa to cooler regions with fewer insect-borne diseases and less exposure to ‘the many parasites and disease organisms that had evolved in parallel with the human species’.³ As a result, humanity multiplied rapidly in these new areas until their large numbers required a more organised way of food production.

As we saw in Chapter 4, less disease and the development of agriculture were key to humanity’s rapid increase in numbers. But higher population density, in turn, bred new diseases. More significant population concentrations also caused competition and sometimes conflict between people; this required political organisation and further role differentiation. Competition spurred innovation and technological advancement.⁴ Large parts of ancient Africa’s interior, on the other hand, were consistently characterised by very low population densities due to the scourge of sleeping sickness and other vector-borne diseases such as malaria.

Sub-Saharan Africa has a constant high burden of vector-borne diseases, come summer, autumn, winter or spring. These are illnesses caused by parasites, viruses and bacteria that are transmitted to humans by insects such as mosquitoes, ticks and tsetse flies, all commonly found in tropical and sub-tropical regions such as in Central Africa and places where access to safe drinking water and sanitation is limited. In temperate zones, such as much of Europe, parts of Asia and North Africa, large seasonal fluctuations naturally constrain the breeding cycle of insects;⁵ in Central, West and East Africa, where *Homo sapiens* originated, this cycle is not similarly disrupted.

Diseases such as yellow fever and sleeping sickness were endemic in large parts of Africa, and insect-borne illnesses also prevented the use of the horse, ox or camel, thereby limiting opportunities for more rapid progress.⁶ Malaria, the deadliest vector-borne disease, is particularly prevalent in Africa, which is home to about 90% of malaria cases and deaths. The continent also accounts for 34 of the 47 countries prone to yellow fever outbreaks and about 40% of the global burden of lymphatic filariasis (elephantiasis), both also spread by mosquitoes in tropical areas.⁷ Today, Africa is still home to 16 of the 30 countries listed by the

World Health Organization (WHO) as having a high burden of tuberculosis.⁸

As Chapter 4 explained, as climatic conditions changed the belt of open savannah south of the Sahara and north of the tropical rain forests in central and western Africa eventually became an exception to the high burden of vector-borne diseases. Higher population densities allowed these regions to experience a modest agricultural revolution, although not on the same magnitude as elsewhere in the world.⁹

Largely because of sub-Saharan Africa's low population densities and ability to continue with hunter-gatherer lifestyles, the technological developments that accompanied the Bronze and Iron Ages essentially bypassed much of it. Because of its relative isolation from global trade and conquest, Africa was also less affected by population bottlenecks (or near-extinction events), such as significant famines, genocidal wars, or the great plagues that affected the rest of the world – an example being the Plague of Justinian that reduced Eurasian populations by a quarter from 541–542 AD.¹⁰

For a while, it seemed that the African civilisations that developed in modern-day Ethiopia (such as Aksum) and in the west along the Niger River (such as the wealthy Mali Empire) could rival those elsewhere. South of the Sahara, the Bantu people had domesticated cattle and were growing sorghum and millet. They had also discovered iron, but they and other groups were not technologically advanced enough to resist external intrusion indefinitely. First Muslim slave traders and later the transatlantic slave trade denuded the continent of much of its ability to pursue farming from about 1500. It was not possible, then, to identify and cultivate crops and domesticate animals – both prerequisites for farming – without sufficient labour and the opportunity to store reserves of foodstuffs in sufficient quantities.

Modern population densities (together with the density of domestic and farm animals) in modern times are much higher in East and South-East Asia than in other regions of the world. So, it is from there that most zoonotic pathogens have appeared in recent history. Indeed, 'three

quarters of emerging human infectious disease outbreaks are “zoonotic”, according to Bernard Bett and colleagues writing for the International Food Policy Research Institute, ‘meaning they originate from viruses and other pathogens infecting animals that then “jump” species to infect people’.¹¹ With the second half of the 20th century’s widespread use of antibiotics and vaccines, they write, many had begun to believe that the era of infectious disease was ending.

The COVID-19 pandemic has shattered that belief. West Africa, in particular, may grow in importance as an origin of zoonotic pathogens given the density of humans, poultry, pigs and ruminants. It is also clear that COVID-19 is not the last pandemic. The increase in human activity and its impact on the environment means that the frequency and severity of epidemics caused by wildlife zoonoses are increasing globally, not only in Africa. One recent estimate¹² of the probability of a future zoonotic spillover event resulting in a pandemic of COVID-19 magnitude or larger is a 22–28% chance of another outbreak with the magnitude of COVID-19 within the next 10 years, and a 47–57% chance that it will occur within the next 25 years.

But before COVID-19 there was HIV/Aids, which affected Africa dramatically and which we pause to explore next.

The impact of HIV/Aids

Like many other diseases, the origin of HIV in Africa is a function of humanity’s origins on the continent.

That HIV’s predecessor, simian immunodeficiency virus (SIV), spread to humans is no surprise. Several major human infectious diseases such as the plague, sleeping sickness, yellow fever, various forms of influenza, Creutzfeldt-Jakob disease and, most recently, Ebola, have all made the interspecies jump. These infectious pathogens have probably jumped from animals to humans often. Still, the subsequent outbreaks did not cause severe epidemics in Africa since population densities were too low to sustain their spread. As population sizes increased, however, SIV eventually found sufficient numbers of human hosts to allow it to survive and mutate into HIV, apparently in the western equatorial region of Africa (modern-day Cameroon and the

Democratic Republic of Congo, or DR Congo). During subsequent decades, subgroups of the virus were able to infect eastern, southern and western Africa. By the time it was discovered, then, the epidemic had already spread silently across large areas. Its slow-acting, asymptomatic incubation period and the eventual appearance of its diverse opportunistic infections defied prompt action until it had reached momentous proportions.¹³ By the mid-1970s, HIV/Aids had become a true pandemic.

HIV/Aids remained silent and unrecognised for so long because it affected the immune system, meaning that people were dying from various opportunistic infections and not from a single disease. It remained undetected because of Africa's inadequate health systems, poor infrastructure and limited medical research capacity.

The first known case of HIV was eventually traced to a man who died in 1959 in DR Congo. Global attention initially focused on young, gay men, but by 1982 the 'slim disease', a condition previously considered to be a wasting disorder linked to malnutrition, was recognised as HIV/Aids. Once the disease was identified, a lack of government capacity and the denialism of influential leaders such as President Thabo Mbeki of South Africa led to the unnecessary loss of hundreds of thousands of lives. In the country with the most significant Aids death rate globally at the time, Mbeki's stance would eventually contribute to his ouster as president in 2008 in favour of a flawed replacement, Jacob Zuma.

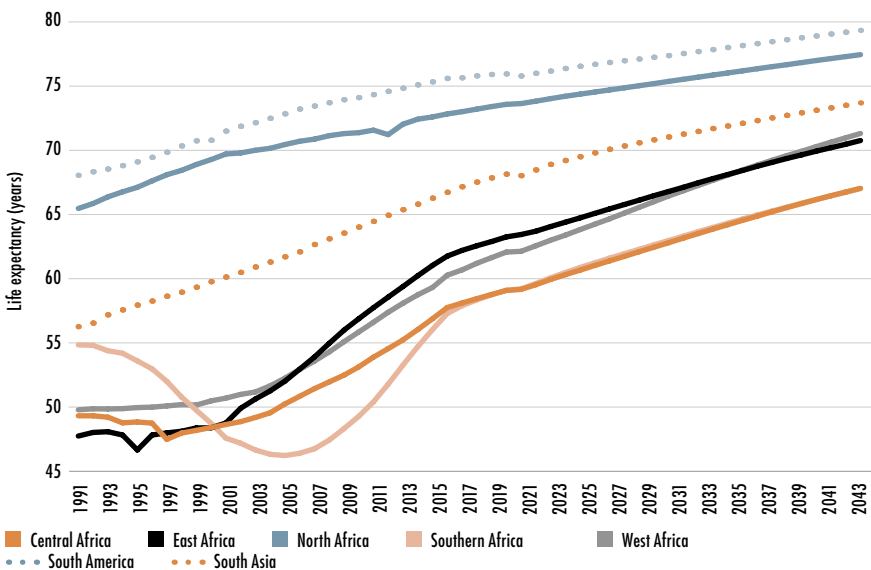
The actual number of people who passed away during the global Aids burden will likely never be known,¹⁴ but sub-Saharan Africa has consistently shouldered the heaviest burden. From 1998 to 2013 more than a million Africans died annually from Aids – and during its peak from 2003 to 2008, more than 1.5 million each year. By 2019, almost 32 million Africans had succumbed to the disease.

The Aids pandemic dramatically affected health outcomes, particularly in South Africa, Nigeria, Tanzania, Uganda, Kenya, Zimbabwe, Ethiopia, Mozambique, Malawi and Zambia – the 10 countries that, by 2019, had suffered the most deaths from the disease. It had a serious effect on economic productivity and a disastrous impact on families and communities. Life expectancy in these countries fell precipitously and has not recovered to the pre-Aids trajectory.

The impact of Aids on life expectancy can be seen in Chart 33, which shows life expectancy for North Africa, sub-Saharan Africa, South America, South Asia and the global average from 1990 with a forecast to 2043. From its peak in 2003 to 2005, improvements in treatment (particularly in the mass rollout of antiretrovirals) and prevention have reduced the impact of the disease. As a result, life expectancy has partially recovered. However, it has still not caught up with the rest of the world. By 2019 the gap in life expectancy between sub-Saharan Africa (64.2) and the global average was 9 years. Life expectancy was at almost 70 years in South Asia, 73.2 years globally and 76.6 years in South America.

Before Aids, life expectancy in Southern Africa was significantly above that of East, West and Central Africa. By 2004, it was below that of all three, and is now on a similar trajectory to Central Africa’s. Life expectancy in North Africa – which was not substantially affected by Aids, on the other hand – is comparable with the global average.

Chart 33: *Life expectancy for selected regions, 1990–2043*



Source: IFs 7.6.3 initialising from IHME Global Burden of Diseases

HIV/Aids dealt sub-Saharan Africa a devastating blow, coming at a time when the continent was showing signs of a turnaround from the declining economic growth prospects of the 1980s and 1990s – a change in fortune resulting from the factors examined in Chapter 1, including a determined effort by some in the international community to place poverty alleviation at the core of global concerns at the end of the Cold War. The impact of the disease lingers, with 77% of global Aids deaths in 2019 having occurred in sub-Saharan Africa.

HIV/Aids may have had a dramatic impact on life expectancy, but this has not been the case with COVID-19. The economic effects of this pandemic far outweigh its effect on mortality.

COVID-19

Compared to HIV/Aids, recorded mortality due to COVID-19 in Africa is low (although the disease had not entirely run its course at the time of writing). By May 2021, fewer people had died of COVID-19 in Africa than in the UK (and four other individual countries); deaths proportionate to population are also lower than in the Americas and Europe, and even marginally lower than in Asia.¹⁵ Research published in April 2022 found that true infections on the continent were, however, 97 times larger than reported confirmed cases.¹⁶ Earlier, in October 2021, the WHO revealed that deaths were likely three times the official toll of 214 000.¹⁷

The UN described the impact of the COVID-19 pandemic as ‘the greatest test that we have faced since the formation of the United Nations’. The International Monetary Fund (IMF) categorised it as ‘the worst economic fallout since the Great Depression’.¹⁸ Globally, trillions of US dollars have been committed to fighting both its direct and indirect effects: by September 2021, the US alone had spent and allocated more than US\$8 trillion.¹⁹

The pandemic spread particularly rapidly in South Africa, which had the most significant number of reported cases and deaths on the continent.²⁰ Other highly affected countries include Tunisia, Egypt and Morocco. Low mortality does not necessarily mean low infections, only that Africans have been less likely to succumb to the disease.

Africa's much more youthful population seems the most likely explanation for low COVID-19 mortality. The virus affects older people more seriously, resulting in much higher levels of morbidity and mortality. However, low levels of urbanisation also appear to protect rural people against the virus's rapid spread. Other factors such as the climatic and seasonal impacts are all still speculative. Lower rates of obesity, diabetes and other non-communicable comorbidities may also play a role. Some scientists are also exploring the possibility that a tuberculosis vaccine routinely given to children in many African countries might be helping reduce deaths from COVID-19. Another theory has been that the public response to COVID-19, as well as safety measures such as mask mandates and lockdowns, were less politicised than in Europe and North America.²¹ Yet another theory is that prior exposure to other coronaviruses, including those that cause the common cold, has provided a degree of resistance in some of the very communities once thought to be most vulnerable.²² Indeed, data on COVID-19 in Africa needs to be treated with care.²³

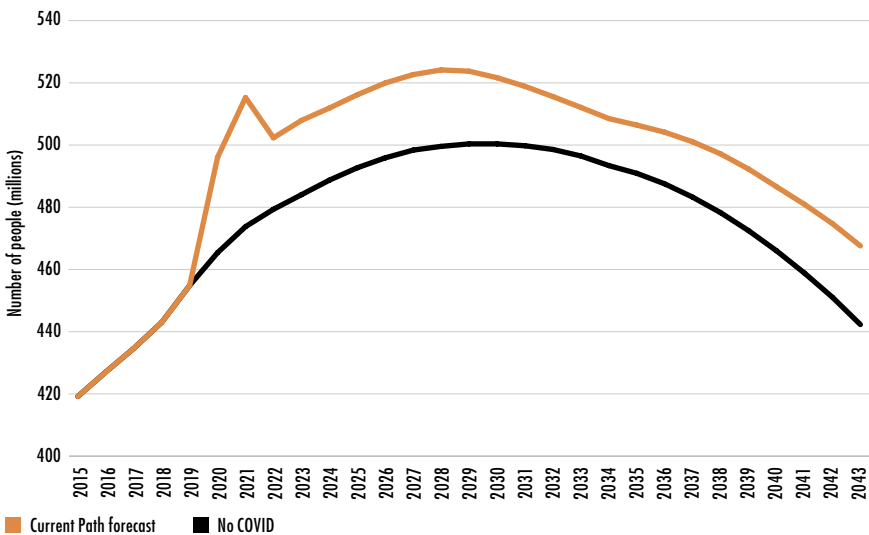
A further issue is that Africa (and much of the rest of the developing world) is vaccinating extremely slowly, initially because of a lack of vaccines and later due to poor logistics and low levels of government capacity. Africans may therefore remain vulnerable to the disease for months or even years after the rest of the world has gone mostly back to normal. African leaders, including the South African and Kenyan presidents, have spoken out against what they call 'vaccine apartheid',²⁴ and there are fears that Africans could be stigmatised and excluded from international travel and business while they wait to be vaccinated even as the rest of the world moves on.

Uneven vaccination creates perfect conditions for the evolution of a new, possibly vaccine-resistant, strain which could undo the vaccination work done in the rest of the world. This has led to calls for the intellectual property restrictions concerning the vaccinations to be waived so that the developing world may produce generic vaccinations and massively boost vaccine production (as well as somewhat equalise vaccine distribution). While the US originally joined other wealthy nations in blocking the waiver request, the Biden administration has belatedly indicated its support for the move (though it remains to be

seen whether this support will translate into practical results, especially with other key countries such as Germany remaining reluctant to proceed).²⁵

The damage that COVID-19 is inflicting on Africa is overwhelmingly from the economic impact that followed global efforts to contain the spread. As Chart 34 shows, COVID-19 will condemn millions more Africans to extreme poverty and incomes will decline. Using GDP per capita, in the Current Path forecast, it is likely that Africa will only get back to its 2019 average in 2025. Many will succumb to lack of food as efforts to constrain infection rates reduce economic activity and jobs, and affect livelihoods. Ultimately, more Africans may die of the secondary effects of COVID-19 – such as reductions in treatment available for other diseases as health spending is diverted to combat COVID-19 – than directly from the virus. The associated global recession hit Africa very hard, particularly given the commodity dependence of many of its economies. The results are constrained growth and economic improvements that were then accelerated by the global impact of Russia’s war on Ukraine.

Chart 34: *Impact of COVID-19 on extreme poverty (US\$1.90) in Africa, 2015–2043*



Source: IFs 7.63 initialising from PovcalNet data

Additionally, the economic impact of COVID-19 has reduced government revenues (by US\$61 billion in 2020 alone, and by slightly lower annual amounts thereafter). This means that less money is available for providing security, infrastructure and healthcare services, and building schools. An increase in instability, riots and protests, among other things, has resulted.

Ultimately, Africa and the world are learning to live with COVID-19, much like it has learnt to live with HIV/Aids and the additional security requirements that disrupted international travel after 9/11. Indeed, the pandemic has had many effects – including greater awareness of global interdependence – and has changed the way we work and spend our leisure time. It has boosted the services sector and underlined the importance of food security. It may also slightly delay Africa’s imminent epidemiological transition, the focus of the next section.

Sub-Saharan Africa’s approaching health transition

Typically, a country’s disease burden evolves in this way over time: first, the country experiences a declining burden of infectious diseases, then the incidence of non-communicable diseases – lifestyle diseases typical of older, sedentary population cohorts and those who consume processed foods – increases. Simply put, this evolution – the so-called epidemiological transition – is a switch from death in childhood from infectious (or communicable) diseases to death in old age from non-communicable diseases.

It is a transition that occurs when improved food security and innovations in public health and medicine result in communicable diseases, such as influenza, being replaced as the dominant cause of death by chronic conditions such as cancer. And it is generally associated with the transition from developing to developed nations. In Europe and North America, it occurred more than a century ago. In Latin America and the Caribbean, it happened in about 1970, in North Africa in about 1980, and in South Asia in about 2000. But is only set to occur in sub-Saharan Africa in about 2030.

As Chapter 3 showed, sub-Saharan Africa has a median age of below 19, so it naturally suffers from a much higher communicable

disease burden as children are especially susceptible to diseases of this nature. Poor living conditions, including unsafe water, poor housing and inadequate sanitation, also create an environment for pathogens to propagate. In more densely populated parts of the world, then, the growth of large cities has required authorities to give attention to waterborne sewerage and other measures to combat infectious diseases. The epidemiological transition in Western Europe and North America was largely a result of infrastructure investments, such as closed sewerage systems and clean water supply by public utilities in the 19th century, and later by vaccines and the discovery of penicillin. But by the time Africa had started to become more urbanised towards the end of the 19th century, imported modern medicine (vaccines and, later, penicillin) meant that larger communities were able to live in larger settlements – not because of city planning, or appropriate housing laws, or adequate municipal water and sewerage, but because modern medicines served as an effective alternative for keeping infectious diseases under control.²⁶

Chapter 3 also showed that in Africa, poor people generally move to cities not because of the prospect of a job or an improved lifestyle, but to escape destitution in rural areas. Africa is also urbanising much later than other regions, and this is now happening quite rapidly. The result is massive increases in large, sprawling slum cities that do not have clean water or adequate sewerage systems, such as those in Lagos, Dar es Salaam and Nairobi.

According to the Current Path forecast, sub-Saharan Africa only becomes predominantly urban in about 2040; it is the most rural continent in the world, although the absolute increase in growth of the urban population is large.

The continent's urban population is forecast to more than double by 2043, adding more than 800 million people to Africa's towns and cities. The UN Population Division (UNPD) anticipates that, between 2018 and 2035, all 10 of the world's fastest-growing cities will be in Africa – and 21 of the top 30.²⁷ Of these, 12 are in West Africa, 4 of which are in Nigeria. The Nigerian cities alone are projected to add about 200 million people to urban areas in Africa by 2050 – yet 37% of Nigeria's massive population is likely still to be in rural areas in 2043. The eight most

urbanised countries in Africa will be Botswana, South Africa, São Tomé and Príncipe, Algeria, Djibouti, Libya, Equatorial Guinea and Gabon, although most of these countries are already highly urbanised. Ethiopia, Kenya, Burkina Faso, Mali, Tanzania and Madagascar all have urbanisation levels of under 45% today, but this number will increase by 12 to 16 percentage points by 2043. These countries are all classified as low income, or have a large current population (over 50 million people), or both (in the case of Ethiopia), suggesting that their exploding cities will present major challenges to policymakers who have few resources to provide infrastructure for their already large urban populations.

African cities from Nairobi to Cape Town are already known for their slums. Slums and informal settlements present several problems, largely because they develop in the absence of planning. Housing units are almost exclusively self-constructed and neighbourhoods are organised independently of the central governing authority. In settlements of this nature, as well as in rural areas – where basic sanitation infrastructure is inadequate and often non-existent – making it potentially more susceptible to the impact of new viruses such as COVID-19. The simple but essential act of washing one's hands is difficult without consistent and reliable access to clean water.

The numbers paint a clear picture: in 2019, only 78% of Africa's population had access to improved water supplies, compared to 96% for the rest of the world. This situation will slowly improve: by 2030, approximately 82% of Africans are likely to have access to improved water supplies. The SDG goal is 98%. In addition, less than 64% of Africans are likely to have access to improved sanitation services, and only about 22% to wastewater collection or treatment systems. By 2030, only seven African countries – Algeria, Tunisia, Botswana, Seychelles, South Africa, Libya and Morocco – will be above the average for wastewater connections in the rest of the world, which will be 56%.

So, modern medicine means that people in sub-Saharan Africa are now living for long enough to succumb to non-communicable afflictions, and many older people in poor countries are contracting 'diseases of affluence', despite the presence of a large youthful population that keeps the median age in the countries of this region relatively low. In sub-Saharan Africa, then, the epidemiological

transition is happening at lower levels of income and urbanisation than elsewhere. And because the burden of communicable diseases also remains high, Africa will suffer from a double burden of disease: a high rate of deaths from both communicable and non-communicable diseases. This imminent double burden will present health systems in much of Africa with steadily worsening costs as they navigate increasingly complex public health landscapes. Africa's comparatively low average incomes translate into limited state budgets and capacity to provide healthcare for the treatment of non-communicable diseases.

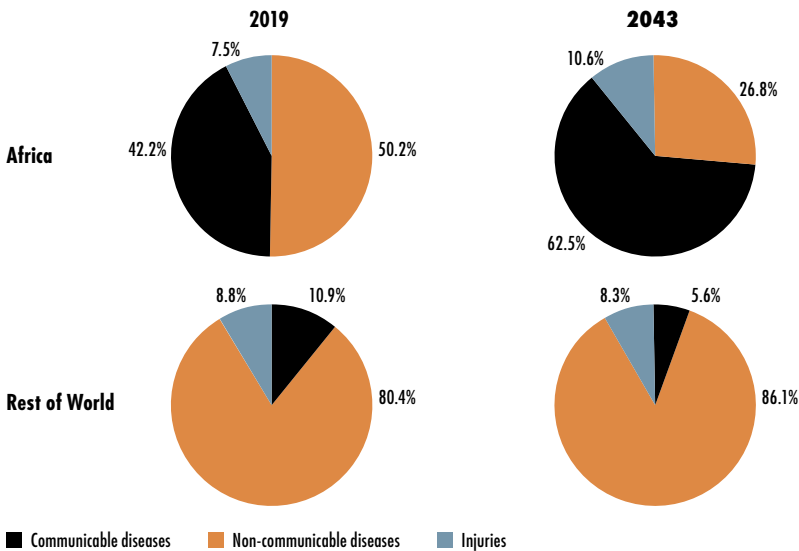
The result of the approaching double burden of disease will be more sick adults, requiring more resources to prevent and treat costlier non-communicable conditions. Pollution and tobacco are also proving to be a considerable challenge, as tobacco companies are now actively targeting the next generation of smokers, all of whom are in the developing world.

Still, communicable diseases continue to have a disproportionate and devastating impact on Africa, by any standard. In 2019, almost 91% of malaria deaths worldwide occurred in Africa; for HIV/Aids, the figure was about 78%. The continent accounts for nearly 50% of all infectious disease deaths worldwide, despite making up only 17% of the global population. In other words, people in Africa are about four and a half times more likely to die from a contagious disease than people elsewhere.

Chart 35 presents death rates as a percentage of total deaths for the three major categories used by the Global Burden of Disease project – communicable disease, non-communicable disease and injuries – in 2019 and includes the Current Path forecast for 2043.²⁸

Evident from Chart 35, is Africa's high communicable disease burden that, by 2043, is still likely to constitute 27% of deaths, compared to 6% in the rest of the world – despite having declined substantially in the intervening years. These trends vary hugely between countries, of course. By 2043, only six African countries will have a proportion of communicable deaths below the 6% average in the rest of the world. They are Libya, Tunisia, Mauritius, Morocco, Egypt and Algeria. Even high-income Seychelles is likely to have 9% of its deaths caused by communicable diseases. On the other end of the spectrum, Chad, Nigeria, South Sudan and Angola will still see 40% or

Chart 35: Deaths by major International Classification of Diseases (ICD) categories in Africa vs world except Africa in 2019 and 2043 Current Path forecast



Source: IFs 7.63 initialising from UNDP and IHME data

more of their deaths caused by communicable diseases. This may be understandable in Chad and South Sudan, two of Africa's poorest countries, but is disturbing in oil-rich Angola and Nigeria. Despite being an economic heavyweight, Nigeria will continue to have a large, poor and youthful population in the future, as well as sprawling megalopolises, making the universal provision of basic water and sanitation increasingly difficult as time goes by.

This trend is forecast to continue beyond 2043 in the Current Path forecast, explored in the next section, when Africa is projected to account for about 93% of global malaria deaths, 80% of global Aids deaths and almost half of total communicable disease deaths worldwide. It is partly because of this disease burden that the average life expectancy at birth in 2019 in Africa (66 years) is so much lower than that in the rest of the world (75 years).

Addressing Africa's disproportionate communicable disease burden is a high priority, then, but any progress in this regard will inevitably

mean a greater prevalence of non-communicable causes of morbidity. Africa's epidemiological transition will hence occur at a point when incomes are still quite low compared to other parts of the world that have already gone through the transition. Since non-communicable diseases are more difficult and expensive to diagnose, treat and manage than communicable diseases, many health systems will likely struggle to respond effectively. More than one-third of all deaths in sub-Saharan Africa are already categorised as non-communicable – a share that is forecast to rise to more than 63% by 2043, even in the absence of additional interventions.

Access to basic infrastructure and healthcare in the Current Path forecast

We have seen, then, that Africa is belatedly approaching its epidemiological transition, despite a severe lack of essential services such as clean water. As such, poor access to safe water and sanitation presents a significant challenge. WaSH access serves as a helpful proxy for a government's ability to fulfil the basic needs of its people. For this reason, unlike other forms of infrastructure such as electricity, reliable access to safe water is a basic human right – as proclaimed by the UN General Assembly in 2010.²⁹

In 2019, only about 57% of the continent had access to an improved sanitation facility, while the average for the rest of the world was approximately 87%. For clean water, the rates are only slightly better, with about 78% of people in Africa having access – while in the rest of the world that figure was more than 96%. In comparison, about 74% of people in South Asia had access to an improved sanitation facility in 2019, and about 95% of the region had access to potable water.

The picture is similar to nearly any other measure of access to infrastructure or services. For instance, in 2019 about 95% of global populations outside of Africa had access to electricity. In Africa, the figure was approximately half of that, at 53% (45% in sub-Saharan Africa), compared to 87% in South Asia. The use of solid fuels instead of electricity for cooking and heating is also a significant source of indoor air pollution, having all kinds of health complications.

This lack of access to physical infrastructure and basic services constrains Africa's ability to fully develop its human potential and thus capitalise on its future demographic dividend. WaSH infrastructure supports the development of broader human potential through its strong forward linkages to other important aspects of the SDGs, such as poverty, education and gender equality. In other words, improvements in WaSH infrastructure generally translate into sizable gains in the overall development of a country, since they improve the human capital contribution to economic growth.

For example, children who do not have adequate access to WaSH facilities have difficulty absorbing nutrients and are more vulnerable to the negative consequences of undernutrition. Malnourished children are highly susceptible to communicable diseases, with diarrhoeal diseases being among the most frequent and severe examples. UNICEF estimates that, of the roughly 1 600 children who die from the diarrhoeal disease each day globally, about half are attributable to a lack of WaSH access.³⁰ In recognition of this, in 2015 the WHO and UNICEF's Joint Monitoring Project recognised access to WaSH facilities as 'fundamental to good health, dignity and quality of life'.³¹

Children who don't succumb to diarrhoeal disease may suffer other lifelong effects, such as stunting – generally recognised as low height for age.³² Although stunting is commonly described in physiological terms, it also significantly impairs the development of the human brain. According to the WHO, stunted individuals suffer from 'poor cognition and educational performance, low adult wages, lost productivity and, when accompanied by excessive weight gain later in childhood, an increased risk of nutrition-related chronic diseases in adult life'.³³ Put bluntly, stunting is an irreversible condition that inhibits the potential of the affected individual or community for life; although 'only' about one-fifth of sub-Saharan Africa's population is stunted, with only a very modest decline forecast by 2043, the stunting rate among children under five is much higher, at about one-third.

Insufficient WaSH access leaves all children vulnerable, but as they mature the negative effects begin to stack up disproportionately against women and girls. Poorly maintained or non-existent WaSH facilities are

one of the main causes of high school dropout rates among teenage girls who lack menstrual hygiene services, for example.³⁴ This could lead to a large disparity in educational attainment between men and women, and could significantly diminish the economic opportunities for the latter, translating to lower growth for society as a whole.

However, there are immense challenges to advancing access to WaSH infrastructure in sub-Saharan Africa.³⁵ Even upper-middle income countries in Africa are struggling to expand access to WaSH infrastructure quickly enough, sanitation facilities in particular. Of Africa's seven upper-middle income countries, only Libya, Mauritius and South Africa have registered access to improved sanitation rates above the global average for countries in this category (about 88%).

In the four remaining upper-middle income African countries that have below-average access levels – Namibia, Botswana, Equatorial Guinea and Gabon – about nine million people were still living without access to an improved sanitation facility in 2019. It is likely no coincidence that three of these four countries – Namibia, Botswana and Equatorial Guinea – rank among the most unequal countries in the world according to the Gini index.

In the Current Path forecast, only 42% of sub-Saharan Africa's population is projected to have access to an improved sanitation facility and just over 80% is forecast to have reliable access to clean drinking water in 2030. Although this figure will rise to almost 88% in sub-Saharan Africa with access to improved water in 2043, this is still 10 percentage points short of the 98% target of the SDGs for 2030. Even worse, improved sanitation will be available to target only 58% of the population – a vast improvement, but far from the 2030 goal of near universal access.

In 2019, 224 million people in DR Congo, Ethiopia and Nigeria alone were living without access to improved sanitation facilities. This number is projected to increase to about 255 million by the time the SDGs are meant to be achieved in 2030, before starting to decline, reaching 159 million in 2043 – with much of that improvement in one country: Ethiopia. Nigeria's rapid population growth will continue to put pressure on basic infrastructure, as the country will have 109 million people without sanitation in 2043 compared to 101 million in

2030. Despite their massive economic potential, therefore, these large populations seem likely to suffer from a lack of proper sanitation for the foreseeable future, and even Ethiopians must wait decades for their expected improvement.

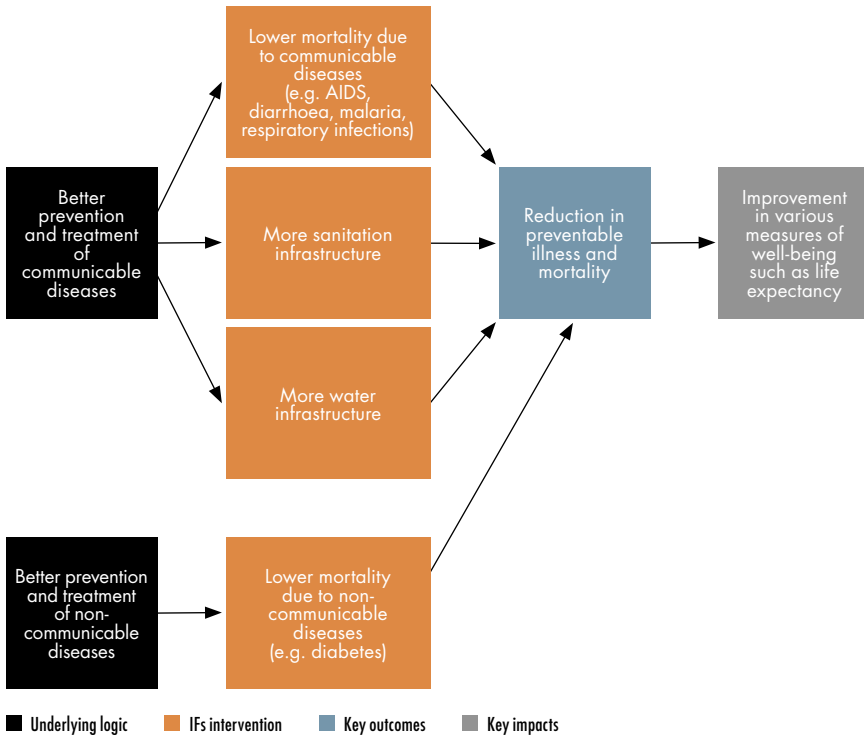
The next section explores what can be done to mitigate this.

The Health/WaSH scenario

Although Africa needs a coordinated, cross-sectoral approach to overcome the negative effects that poor health outcomes have on its development, a push on the most immediate health and infrastructure priorities would have significant and visible effects on health outcomes such as infant mortality and life expectancy. A healthier population will also be more productive and, once its productivity is combined with better education and other enablers, it will be in a position to improve the continent's economic growth prospects significantly.

Given how far behind Africa is on these various indicators compared to other regions, the interventions in the Health/WaSH scenario that follow are not calibrated to represent Africa's achieving the SDGs by 2030 (Goals 3 and 6 are dedicated to health and WaSH infrastructure respectively). Those ambitions appear to be out of reach. Rather, they reflect a determined and ambitious push towards what South America and South Asia have achieved, these being the two regions most comparable to Africa.

The Health/WaSH scenario simulates a combination of three sets of improvements (see Chart 36). The first is the more rapid provision of basic infrastructure (clean water and improved sanitation) that acts, in particular, on the drivers of Africa's very high communicable disease burden and indirectly improves productivity, given a generally healthier workforce.³⁶ The second is a large reduction in the incidence of HIV/Aids and malaria in the countries most affected by these diseases, on the back of expectations about rapid progress in prevention and treatment. Mortality is also reduced in countries with high levels of respiratory infections, respiratory diseases and 'other communicable diseases' (a residual category that excludes diarrhoeal diseases, HIV/Aids, malaria and respiratory infections). The third is modest reductions in the incidence of non-communicable diseases in the countries affected most –

Chart 36: *The Health/WaSH scenario*

Source: Author

diseases such as diabetes, malignant neoplasm, cardiovascular diseases and the category of other non-communicable diseases, also based on ongoing improvements in medical technology.

In all instances, the interventions accelerate the expectation in the Current Path forecast that things will steadily improve in all these dimensions.

The Health/WaSH scenario represents an ambitious push in the poorest countries – Chad, South Sudan and Madagascar, the countries least connected to improved sanitation in the Current Path forecast – representing improvements of 45–55% on Current Path forecast rates by 2043.

The malaria and HIV/Aids interventions are particularly aggressive, and imply large advances in treatment through yet-to-be-discovered

Current Path forecast by 2043, against improvements as a result of the Health/WaSH scenario. Togo, Sierra Leone, Central African Republic, Malawi, Guinea Bissau and Liberia are all forecast to come from a very low base and achieve aggressive improvements – above 50 percentage points – from 2019 to 2043. But even these improvements will come too late for the present generation, and most low-income countries in Africa will not even achieve 50% coverage by 2030. Disappointingly, South Africa, Africa’s most diversified economy, is forecast to experience an improvement of only two percentage points over the forecast horizon and will be unable to achieve full access by 2043, showing very little improvement compared to its peers. This represents an opportunity lost – and, perhaps, poor allocation and management of resources.

On the back of these improvements in income, the Health/WaSH Scenario also brings 6.7 million Africans out of poverty in 2043 compared to the Current Path forecast, including 1.3 million each in the DR Congo and Nigeria, and 700 000 in Kenya, using the US\$1.90 extreme poverty line.

Health costs decline in the Health/WaSH scenario, but infrastructure costs increase by a larger margin. Cumulatively, African governments will spend US\$20 billion less on health from 2023 to 2043 since medical breakthroughs in Aids and malaria, among others, will reduce costs. However, the investment in WaSH infrastructure is more than double those savings, at a total cumulative cost of US\$57 billion. On average, GDP per capita improves by a modest amount of US\$68 in 2043, compared to the Current Path forecast for that year. Some countries, such as Equatorial Guinea, Eswatini and Namibia, achieve a larger increase, while a few countries experience a decline because of the requirement for infrastructure – Mauritius being the most affected, with a decline of US\$87 in 2043. These results reflect the long time it takes for investments in health to translate economically, often affecting successive generations within a decade or less.

In this scenario, Africa will experience an increase in its average GDP growth rate of 0.1% from 2024 to 2043, so the African economy will be US\$143 billion larger in 2043 than in the Current Path forecast.

Despite the significant WaSH infrastructure push in this scenario, Africa does not achieve reliable access to clean water even by 2043. At

that point, 208 million Africans will still depend on unimproved water sources that do not adequately protect the water from outside contamination, in particular from faecal matter. Only 1 598 million Africans will be connected to improved sanitation services by 2043, with 269 million still using shared sanitation and 377 million relying on unimproved sanitation such as open pit and bucket latrines. Although this scenario doesn't get the continent to the finish line in time for the SDGs, a push to combat communicable diseases and improve WaSH infrastructure would still have significant benefits for human and economic development.

Technological advances will undoubtedly help in the drive for improved basic infrastructure at a lower cost. For example, since 2011, the Bill and Melinda Gates Foundation has invested more than US\$200 million in the Reinvent the Toilet Challenge. Among the early successes was the Tiger Toilet, which costs about US\$350 to install and requires no traditional sewer system – it uses tiger worms (*Eisenia fetida*) to devour human faeces. Once a person has used the toilet, they flush their waste down into a worm-filled compartment below it using a small bucket of water. The process removes 99% of pathogens and leaves no more than 15% of the waste by weight, which is much better performance than a septic tank. The leftover product is also an excellent fertiliser. After five years of use, the first Tiger Toilets did not require maintenance. Bill Gates estimates that the market for this new toilet technology could be as big as US\$6 billion a year by 2030, more than the current GDP of 16 African countries.⁴⁰

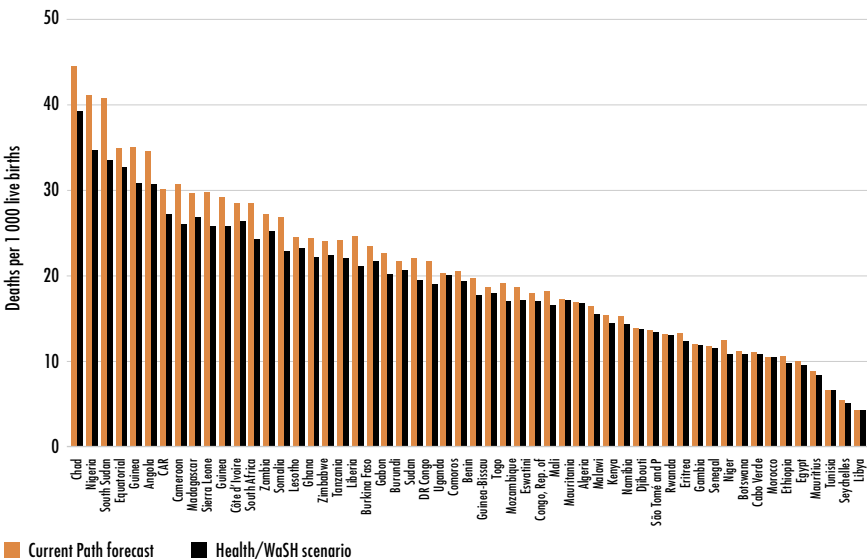
Another way of measuring the impact of the Health/WaSH scenario compared to the Current Path forecast is to use a standard metric for capturing a country or region's disease burden, called disability-adjusted life years (DALYs). DALYs are commonly used for comparing the relative disease and mortality burden across countries and regions. They offer a way of accounting for the difference between a current situation and an ideal situation where everyone reaches the life expectancy of Japan (the country with the longest life expectancy globally) free of disease and disability. Early death would provide years of life lost while sickness would translate into years lost due to disability. One DALY, therefore, represents the loss of the equivalent of one year

of full health.⁴¹ For example, in 2019 it was estimated that Africa lost about 351 million years of life to its higher communicable disease rates, 218 million years to higher rates of non-communicable diseases, and 47 million years to injuries.⁴²

In the Health/WaSH scenario Africa gains 40 million DALYs in 2043 from its lower communicable disease burden and almost 4 million from its lower non-communicable disease burden. In addition to the intrinsic value of healthy human life, this also means millions more productive years and contributions to the continent's development.

Ultimately, the two best-known and commonly used indicators of improved well-being in the Health/WaSH scenario compared to the Current Path forecast are infant mortality and life expectancy. Africa is already on the path to rapid reductions in infant mortality, from its 2019 average of 46.8 deaths per thousand live births to 37.8 by 2030 and 25.6 by 2043. The Health/WaSH scenario reduces those numbers to 34.7 and 22.6 respectively, an improvement of almost 10% on the Current Path forecast. Chart 38 shows country-level infant mortality

Chart 38: *Infant mortality rate in 2043 in Current Path forecast and Health/WaSH scenario*



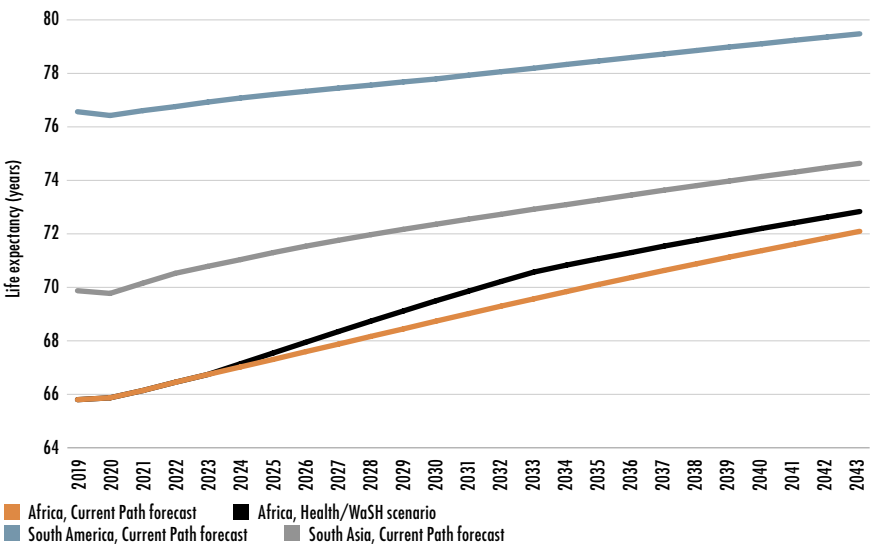
Source: IFs 7.63 initialising from IHME Global Burden of Diseases project data

rates. Given that Libya’s rates are already quite low, this country gains the least by 2043 and Chad the most, followed by Nigeria, South Sudan and Angola. For example, instead of an improvement from 74.3 infant deaths per thousand in 2019 to 44.5 in 2043, infant mortality in Chad declines to 39.2.

One of the results of reduced infant mortality, among others, is that births start declining from about 2026 as society reacts to the fact that more infants are surviving. By 2043, Africa would cumulatively have 15 million fewer births, and the total population of the continent will be about 7 million less when compared to the Current Path forecast for that year.

Chart 39 shows the effect of the Health/WaSH scenario on life expectancy, the second widely used indicator. The Current Path forecast is that life expectancy in Africa will improve from 65.8 years in 2019 to 72.1 years in 2043. In the Health/WaSH scenario, life expectancy increases to 72.8 years. Lesotho gains the most, with life expectancy improving by more than 2.2 years, followed by South

Chart 39: *Life expectancy in Africa compared to South America and South Asia, 2015–2043*



Source: IFs 7.63 initialised from IHME Global Burden of Diseases

Africa, Nigeria, South Sudan and Chad. The countries that gain the least are Comoros, Djibouti and The Gambia, with the last mentioned gaining only six months.

Conclusion: Planning comprehensively and in the long term

To recap, this chapter started by briefly explaining the effect of the extended period for which humans have interacted with nature in Africa on the continent's ongoing high disease burden. It included an analysis of the impact of the most serious epidemics, HIV/Aids and COVID-19, on Africa, and examined the positive effects of modern medicines (that partly obviate the need for functioning basic infrastructure), and the negative effects of under-resourced and poorly designed health systems.

The COVID-19 crisis has set the world further back from achieving the SDGs as substantial public resources, particularly the health system's capacity, have been diverted from development priorities to fighting the virus. Moreover, the pandemic has rudely exposed the dismal state of Africa's health and associated systems. Africa, the continent with the highest disease burden globally, imports 99% of its vaccines from abroad and its current ability to respond to future pandemics through vaccine research and manufacturing is abysmal. In recognition of this harsh reality, on 13 April 2021, at a meeting attended virtually by 40 000 people over two days, including researchers, business leaders and various civil society groups, African heads of state pledged to increase the share of vaccines manufactured in Africa from 1% to 60% by 2040.

This will not be easy. COVID-19 has raised awareness of the need for African institutions to play a much more significant role in research, policy development and manufacturing of vaccines and other critical components of healthcare. International donors and large pharmaceutical companies that fund countermeasures and profit from disease need to follow suit.⁴³

It is quite likely that we underestimate the relationship between health and economic growth, but the Combined Agenda 2063 scenario later in this book compares the fiscal and economic impact of the

Health/WaSH scenario with that of other scenarios. The analysis reflects findings in other studies, such as that a one-year increase in life expectancy could be associated with a 4% increase in GDP.⁴⁴

Moreover, the inclusion of infrastructure in the Health/WaSH scenario underscores the imperative to design health programmes that extend well beyond the health sector itself. In Africa, providing basic infrastructures like WaSH facilities and household electricity reduces the impact of diarrhoeal and vector-borne diseases, as well as the respiratory harm caused by indoor use of traditional fuels like dung and charcoal. There is also a role for the international community, although aid is no panacea. Installing taps and toilets has historically not been as attractive to donors (and sometimes governments) as, say, eliminating river blindness, but it would have a tremendous effect on livelihoods on the continent if foreign aid providers could spur African governments to place more emphasis on WaSH and related infrastructure.

What this chapter has not discussed is the relationship between education and health. Education is a very important cause of better health outcomes in low-income countries and is discussed in the next chapter. And in the Combined Agenda 2063 chapter, these various scenarios come together to create an additional synergistic effect to boost outcomes relating to improving income and life expectancy, reducing infant mortality and extreme poverty.

Demographic growth and technological change, then, can work in Africa's favour, but deferred action will be extremely costly. Urban planning in Africa must emphasise the provision of basic infrastructures like clean water, improved sanitation facilities and household electricity, as well as increasing access to, and the general quality of, health and education services.

Africa's health systems are desperately trying to battle the world's worst communicable disease burden with rising rates of non-communicable diseases. This emerging double burden is a complex challenge with many moving parts, but a better understanding of the trade-offs of health policy versus infrastructure investments should lead to better outcomes.

Against this background, getting more rapidly to Africa's demographic dividend and improvements in education may be among

the most important drivers of better health in much of Africa, among their other obvious benefits. Indeed, spending more money on WaSH and health requires more rapid progress in moving Africa through its demographic transition. Awareness and information programmes can contribute greatly to communicating the benefits of good hygiene and preventing the spread of communicable diseases like HIV/Aids. They can also instil healthy, lifelong habits regarding the importance of exercise and good eating, which could help to prevent – or at least delay – the onset of expensive lifestyle diseases like type 2 diabetes and heart disease.

6

Improving Education in Africa



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Education is the foundation of human development and self-actualisation. It enables us to lead a self-determined existence, increase professional performance and improve our health, as Chapter 5 touched on. It is why successful modern societies are called knowledge societies. Governments, world leaders and NGOs across the world – literally all of humanity, with the exception of terror and extremist organisations such as the Islamic State, al-Qaeda and Boko Haram – are in favour of more, better and broader-based education for men and women.

Education and prosperity go hand in hand. Leaving considerations of education quality aside for the moment, the average years of adult education in low-income countries globally is just below five years, in lower-middle income countries it is more than seven years, in upper-middle income countries it is almost nine years, and in high-income countries, it is twelve years. Investments in education increase the talent in the labour pool, raise productivity and boost economic growth and incomes. Beyond a certain basic education level, a growing economy requires and therefore incentivises education of various sorts to meet the demand for productivity enhancements. That works best if a focus on education is accompanied by industrialisation or a shift to work that is more knowledge-intensive, reflecting higher-end services, for then demand drives improved education outcomes. To this end, as countries graduate to middle-income status, the education system needs to provide additional skills and knowledge that respond, in part, to anticipated future demand.

A study from Eric A Hanushek and Ludger Woessmann found that each year of additional school is associated with a nearly 0.6% increase in long-term gross domestic product (GDP) growth rates.¹

Beyond basic literacy and primary education (the two generally go together), improvements in levels of education both precede and follow economic development. Generally, literacy and primary school education are requirements for countries to graduate from low- to middle-income status. However, whereas in Europe and the US rising levels of education foreshadowed development, in Asia improvements in education beyond primary school levels generally accompanied more rapid economic growth.²

The numbers clearly show this: in the two decades between 1960 and 1980, the East Asia and Pacific region increased the number of average years of education in its adult population by about 80%, and growth in GDP per capita tracked closely at about 85%. However, in the following two decades (from 1980 to 2000), GDP per capita more than doubled from about US\$3 800 per person in 1980 to about US\$8 400 per person. Over the same period, the number of average years of education in the adult population increased by just one-third.

In practice, the demand for appropriate levels and types of education to meet market demands shapes educational outcomes. Educators, governments and parents invest in core knowledge and competencies (traditionally termed reading, writing and arithmetic) and complement that core knowledge by trying to anticipate where the best opportunities for the betterment of pupils and students lie. What is in demand today could, of course, change completely by the time students graduate, given the inevitable time lag in the provision of education. And in the 21st century, demand is changing with each passing decade. This demand has been accelerated by the COVID-19 pandemic and the associated work-from-home revolution, where reliance on information technology is increasing more quickly than previously anticipated.

In addition, skilled labour and capital tend to flow from poorer to richer countries, rather than the other way around. This is part of the story of the African brain drain: well-educated Africans such as nurses, doctors and engineers seeking employment in higher-income countries. In fact, recent data from Afrobarometer confirms that sub-Saharan African nations account for eight of the ten fastest-growing international migrant populations since 2010.³ This steady exodus means that the education system in origin countries needs to work twice as hard.⁴

There is little doubt that advancing the average number of years of education in the adult population can give a substantial boost to GDP in the long run, but improving the general level of education takes time – and the economic returns take even longer to materialise. A study by the Education Policy and Data Center⁵ found that it could take as many as 150 years, or 7 generations, to move from 10% adult primary school completion to 90% secondary school completion. The average length of the transition for the countries in the group was nearly 90 years.

At the same time, South Korea has demonstrated that rapid progress is possible. Following a devastating war that split the country into two, the Miracle on the Han River (the nickname for the period of rapid economic growth in South Korea after the Korean War) saw mean years of education triple from four years in 1960 to more than 12 years in 2015 – a period of 55 years. At this point, South Korea had caught up with established Western democracies such as the UK and surpassed others such as Sweden. It also achieved 42 consecutive years of exceptional primary enrolment rates, affirming the importance of getting the foundation right as part of an investment in the future.

Against this background, how is Africa set to fare in education in the years ahead? By exploring recent trends in education on the continent, the status of private education, the generally low quality of education options in Africa, the reality of gender-based exclusion from learning and the requirements of education in Africa into the future, this chapter moves towards a scenario that models education of better quality and quantity to improve the continent's future prospects.

Recent education trends in Africa

Between 1980 and 1990, rather than simply sluggish growth, Africa experienced a decline in gross domestic income per capita of about 12% – and another 2% during the 1990s – before rebounding by about 30% in the first decade of the 2000s. During this period, the continent also suffered stagnation or, in some instances, a relative decline in average years of adult education compared to other regions. During the 1960s and 1970s, adults aged 15 and older, in sub-Saharan Africa were, on average, better educated than people in South Asia, by a margin of nearly

half a year of schooling. But by 1995, South Asia had closed the education gap – and by 2019, adults in South Asia could expect to receive more than seven years of education compared to just six years in sub-Saharan Africa. The African continent was steadily losing ground to its peers.

The contrast with average levels of adult education in North America, which was already at above 12 years in 2019, is stark. Whereas the average adult in North America has completed upper secondary school, the average adult in Central, East and West Africa does not have the equivalent of primary schooling.

While education is improving in Africa, it is doing so at a slower rate than elsewhere – and this is not to touch, yet, on the quality and relevance of the education provided. What drives this divergence in education between Africa and the rest of the world? The answer is a number of factors, including rates of economic growth, the use of non-African languages of instruction as part of education policy, and low and skewed government expenditure on education. But for this chapter's purposes, three considerations are particularly relevant. The first is the massive annual influx of more and more children into education infrastructure and systems that are already struggling to deal with overcrowding and the often inefficient use of resources, a challenge that underlines how important it is for Africa to accelerate its demographic transition, as discussed in Chapter 3. The second consideration is many African countries' inability to retain students within the education system – to enable them to progress from one grade to the next and not leave school, often for reasons of assisting with household chores, supplementing family income, or simply extreme poverty. And the third is about the quality of education, discussed in a separate section later in this chapter.

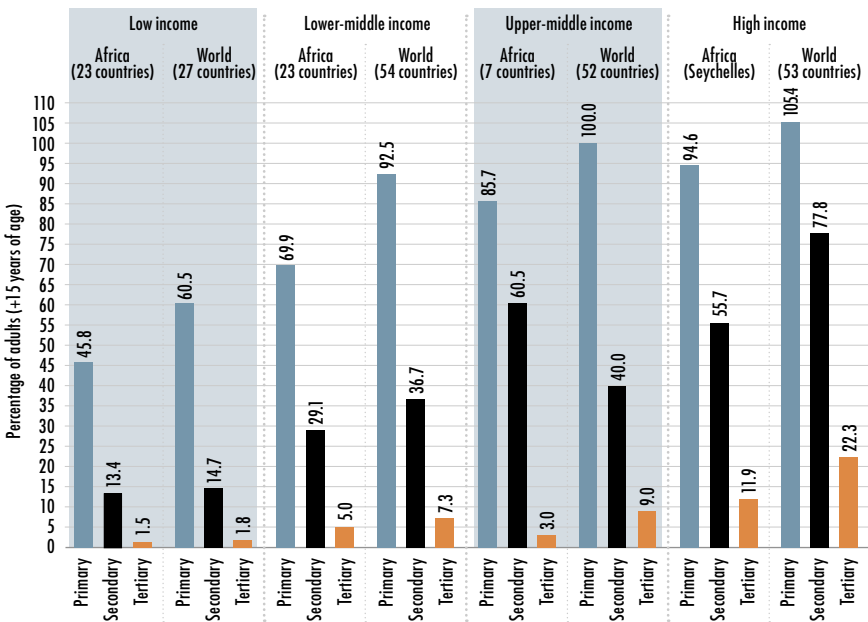
The education system can be viewed as a long funnel, with various cracks and fissures on children's way through it. High numbers of them enter the system at the wider end and, if they complete the entire journey from primary through secondary school and then enter university, lower numbers eventually graduate with a tertiary or equivalent education at the other end. The reality is that many don't progress that far. The goal is to increase pass rates, or the number of graduates who make it the full way along the length of the funnel. In short, it is to change the funnel to a straight pipeline with no 'leaks' – a

perfect system in which the full complement of age-appropriate pupils or students enter at one end and progress through to higher education at the other end (not necessarily through academic universities, but also through vocational and practical skills training institutions).

In Finland, generally considered the country with the world’s best education system, the gross intake ratio to the last grade of primary school is basically 100%. For lower secondary education it is 99%. The completion rate for lower secondary education is 100%, and for upper secondary education is at almost 90%. What this means is that all Finns complete at least lower secondary education – and that only 10% of those who enter upper secondary school don’t complete it.⁶ Only when one gets to tertiary education is there a substantial drop-off in these numbers.

Chart 40 presents the average percentage of the adult population that has completed primary, secondary and tertiary education using the World

Chart 40: 2019 average percentage of adults (+15 years of age) who have completed primary, secondary and tertiary education by World Bank country income group



Source: IFs 7.63 initialising from Barro-Lee educational attainment dataset

Bank country income group. African countries constitute the majority of low and lower-middle income countries – but even so, Africa trails at every level of adult education. Only in the portion of adults who have secondary education does Africa’s small number of upper-middle income countries exceed the global average, largely due to the much higher levels of secondary education completion among adults in South Africa.

While getting basic education right remains the top priority, Africa needs to attack all aspects of the education funnel to ensure that it retains students at every level and increases progression. This expands the pool of students at each successive level and, with foresight and good planning, is generally the most cost-effective way to proceed since it raises general levels of education throughout society and improves skills and potential as part of a comprehensive development strategy. But this is not always how things work. In a number of African countries, too much money and attention are often spent on improving, say, upper secondary education or even tertiary education without prioritising throughput at primary and lower secondary school levels.

Chart 41 shows that progression through the education funnel in sub-Saharan Africa is very different from that in North Africa and in

Chart 41: *Progression along the education pipeline (gross percentages), 2019*

	Primary		Lower secondary		Upper secondary	
	Gross enrolment	Completion	Gross enrolment	Completion	Gross enrolment	Completion
Sub-Saharan Africa	103.8%	71.7%	60.4%	44.9%	38.1%	27.8%
North Africa	104.6%	101.5%	101.5%	77.5%	68.0%	60.0%
South America	104.5%	105.0%	106.8%	84.4%	88.3%	68.7%
South Asia	106.0%	90.5%	87.5%	67.4%	64.1%	40.8%
World	103.2%	94.4%	91.5%	78.7%	74.8%	59.2%

Source: Calculated from UNESCO Institute for Statistics (UIS)

South Asia and South America, two comparable regions. Poor outcomes are coded orange or red, depending upon the severity compared to the situation in other regions.

Chart 41's enrolment percentages are gross numbers, and can be quite misleading if not placed into context. Gross rates include all students in a grade, irrespective of whether they are at the appropriate age. Students who are overage, including students who are repeating the grade, would therefore also be included in the gross rate. The result is that percentages are sometimes above 100%. The completion rates are the percentage of students aged three to five years above the intended age of the last grade of each level of education who have completed that grade.⁷

In contrast to gross numbers, net figures only include students at the appropriate age. For example, the gross enrolment rate for primary school in sub-Saharan Africa was 104%, but the net primary enrolment rate was only 77% in 2019, indicating that a large number of children who are supposed to be in school are not, and that many classes are crowded by older children. Crowded classrooms have a variety of negative consequences that range from a higher pupil-to-teacher ratio to insufficient desks, books and equipment.

Chart 41 shows the acute drop from 72% primary completion to a mere 28% upper secondary completion rate in sub-Saharan Africa. It is clear, then, that the educational pipeline contracts very rapidly in sub-Saharan Africa. Furthermore, educationalists generally distinguish between official enrolment and school attendance rates and numbers. Attendance rates are sourced by asking households about school attendance as opposed to using information pulled from official registration data. In most poor countries, enrolment rates are significantly higher than attendance rates as many children who are officially enrolled do not regularly attend school.

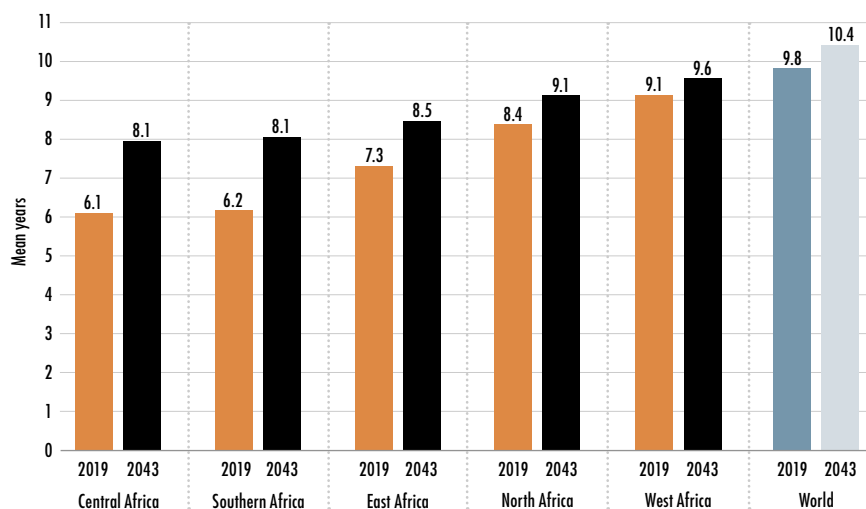
Sustainable Development Goal (SDG) 4 is about quality education, and is closely related to SDG 5, which is about gender equality. As things stand, Africa is poised to achieve only SDG indicator 4.1.1b – gross enrolment at primary school level of 100% – by 2030. In the Current Path forecast, primary school gross enrolment in Africa will reach 107% by 2030. However, it will fall short of its net enrolment

target by 12 percentage points, reminding us of the misleading nature of gross enrolment figures. Enrolment rates at secondary level, and completion rates for both primary and secondary education, will also remain well below the targets. Most concerning, upper secondary graduation rates will fall short of the SDG target by almost 60 percentage points (38% for a target of 97%). Gender parity rates will improve, but also will fall short of the 2030 targets.

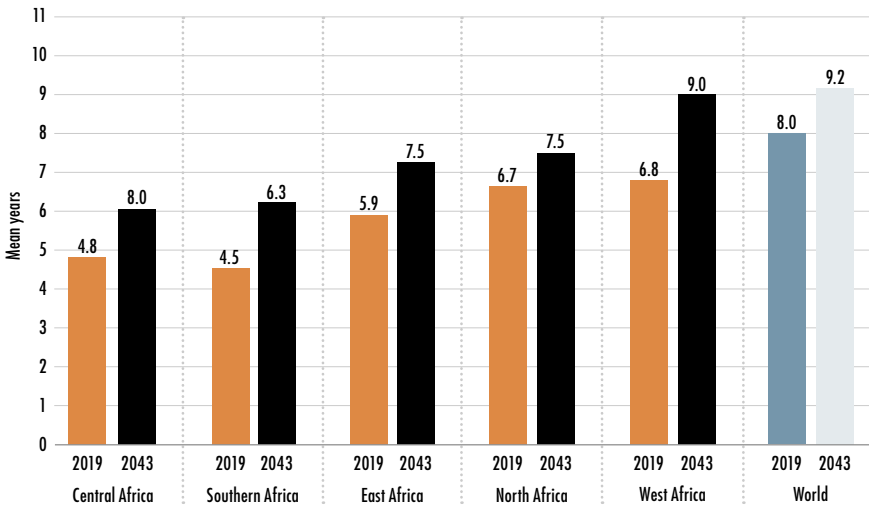
Another set of statistics that is used to measure the general level of education in a country is the mean level of adult education. Charts 42 and 43 present the mean years of education for the five regions in Africa, as well as the global averages. They compare the age grouping of 15 to 24 years (Chart 42) and 25 years and older (Chart 43).

Generally, average levels of education in North Africa are substantially higher than in other regions, followed by Southern, West,

Chart 42: *Current Path forecast of mean years of education (15 to 24 years), 2019 and 2043*



Source: IFs 7.63 initialising from UNPD medium-term forecast and Barro-Lee educational attainment dataset

Chart 43: *Current Path forecast of mean years of education (25+ years), 2019 and 2043*

Source: IFs 7.63 initialising from UNPD medium-term forecast and Barro-Lee educational attainment dataset

East and Central Africa, although this comparison is cohort-specific for East and Central Africa. East Africa is expected to improve more than Central Africa by 2043, with Kenya doing particularly well. And, also generally, men have more education than women – except in North Africa, where women are better educated.

There is progress to the extent that the level of education in Africa among young people aged 15 to 24 is often much higher than that of their parents. So, Africa also has a large intergenerational gap when it comes to education. The literacy and education rates for the youngest population group in poor countries can be up to three times higher than they are for the oldest population group.⁸ These large differences in outlook and expectations inevitably translate into discontent, and even violence. A prime example is the events known as the Arab Spring in North Africa in 2010/11, where the protests were generally led by younger, well-educated groupings, many of whom were unable to find formal sector jobs in economies stifled by state bureaucracy and corruption. At the time, the 15-to-24 cohort had in excess of two years more education than those aged 25 and older. While

North Africa will continue to improve its education endowment in the Current Path forecast, Southern Africa will stagnate relative to other regions, to the extent that even West Africa, currently well behind Southern Africa, could almost close the gap with Southern Africa by 2043.

The main reason for Southern Africa's slow rate of improvement is that the level of adult education in South Africa and Angola are forecast to remain stagnant. This is an alarming forecast for South Africa, the economic giant in the region, as it finds itself in a demographic sweet spot for growth with a ratio of 1.9 working age persons to every dependant (discussed in Chapter 3). Botswana will perform best in this region (and indeed on the continent), reaching almost 11 years of mean education by 2043.

South Africa is often used as an example of how to get education wrong. For two decades after Nelson Mandela was elected president in 1994, the country served as a guinea pig for educational experimentation. For example, the early dismantling of the country's separate teacher training colleges in favour of standard university teaching dealt teacher education a blow from which it is only now starting to recover. In addition, extensive unionisation of the teaching profession resulted in union leadership practically running schools. There are recent signs of progress, but that is little consolation for a population that expected more. Instead of focusing on getting the basics right, the rush to apply imported educational models with limited regard for the local context has meant that education has improved at a rate significantly lower than its potential.⁹ South Africa is also forecast to grow slowly, and slow growth translates into limited revenues to invest in education – implying that future options are limited.

Perhaps this is one of the reasons why some South Africans, and some in other African countries, are investing increasingly in private education, discussed next.

Private education

Private education in Africa is growing, and has become a source of controversy.

Historically, private schools have often been purely charitable undertakings, with mission schools providing education of a quality far

higher than colonial or segregated public schools. Today, however, the proliferation of private schools is associated less with charity, and more with commodification and profit seeking.¹⁰

The number of students in private schooling in Africa, in both aggregate and proportional terms, has been growing rapidly since the 1990s. By 2017, 19 sub-Saharan African countries had 20% or more of their primary and secondary school students being taught in non-state facilities, and private primary school enrolments approximately doubled during the 1990s; public school enrolments grew at approximately half that rate. Equatorial Guinea leads on private primary school enrolments at 54%, while Liberia has the largest proportion of secondary school students in private schools at 60%, followed closely by Mauritius at 57%.¹¹

Much of the growth in the number of private educational institutions has been driven by foreign investors and the World Bank's active promotion of private education through advice and lending.¹² The argument in favour of private education is that it fulfils a need that African governments have failed to fulfil, in both the quantity and quality of education across much of Africa; indeed – in some cases, at least – private education appears to be providing a much-needed, quality service. In Kenya, for instance, private education (previously viewed as an unnecessary extravagance) has become highly sought after. In Kenya's overcrowded public schools, teachers can sometimes be expected to teach classes of up to 100 students. As a result of this and other challenges, 40% of Grade 2 students have been found to be illiterate or innumerate. Top schools in many countries, including Ghana and South Africa, are usually private schools.¹³

But there is considerable criticism of and opposition to the mass rollout of private education in Africa. The key criticism is that, rather than being a solution to Africa's need for universal quality education, private education serves only a few, exacerbates inequality and diverts resources from the public education sector. For instance, the rise of private schools in Nigeria and Kenya has led to sharp and substantial inequalities in education outcomes. This widening of gaps in achievement between the haves and the have-nots is driven not only by improvements in quality by private schools, but also by a simultaneous drop in standards in public schools – itself seemingly driven by neglect of these schools in the face of the rise of private schools.¹⁴

Indeed, private schools are often funded, at least in part, from public sources, through public-private partnerships, state subsidies and intergovernmental organisation (IGO) financing. As such, rather than supplementing public educational provision, these institutions can compete for resources (both in the form of finances and teaching talent), with surpluses being captured by private investors rather than being turned into the better provision of education. In this sense, critics claim that governments abdicate their legal and moral responsibility to provide quality public education for all – at the expense of the poorest and most marginalised students, and in favour of wealthy citizens and foreign investors.¹⁵

While in many African countries private schools consistently achieve the highest rankings in school achievement indices, many fail to provide a better education than the public sector – while usually costing more. This is usually a result of the loosening of regulations on private schools (historically championed by the IMF and the World Bank), which allows profit-seeking investors to run schools with extremely low costs, inadequate resources and facilities, and poorly qualified, underpaid teachers.¹⁶

The role of private schools in achieving a basic level of education in Africa is uncertain and controversial. It is clear, though, that African states cannot and should not abdicate their responsibility for basic education, and that private education will inevitably play a crucial role as an essential public good at more advanced and applied levels – meaning that governments need carefully crafted regulations to prevent predatory practices by the private sector and need to fund their public systems adequately.¹⁷ The next section, then, explores the quality of public education in Africa that has contributed much to the rise of private education across the continent.

The low quality of education in Africa

According to research published by the World Bank in 2007,¹⁸ there is a stronger correlation between educational *quality* and economic growth than between educational *quantity* and economic growth. This makes intuitive sense, as attending class does not automatically guarantee that

one will learn anything. So, it's less about the quantity of schooling, measured by mean years of education at various age levels, than about the quality of education that Africa's public education systems are providing.

Hanushek and Woessman, who conducted the World Bank research, state that 'expanding school attainment, at the center of most development strategies, has not guaranteed better economic conditions. What's been missing,' they write, 'is ... ensuring that students actually learn'.¹⁹ While comparisons of education quality are very difficult across different cultural, economic and linguistic contexts, a number of international standardised tests have been developed in recent years to measure – systemically, albeit imperfectly – the learning outcomes at primary and secondary school levels across countries.²⁰ The scores of these tests show that sub-Saharan Africa consistently performs more poorly than the rest of the world. And the situation does not appear poised to improve: the most comparable region, South Asia, is likely to leave sub-Saharan Africa behind and join South America closer to the world average.

We know that learning starts slowly in low-income countries, where preschooling is mostly non-existent, and that even students who make it to the end of primary school often do not master basic competencies. In fact, the average primary school student from a low-income country would be singled out for remedial attention in a primary school in a high-income country!²¹ So, recent attention has shifted to the importance of early childhood development (ECD) which lays a foundation for cognitive functioning, behavioural, social and self-regulatory capacities, and physical health. It involves parents taking good care of children, including proper nutrition through feeding programmes, which help with the development of children's cognitive capabilities. The main importance of ECD is to ensure that students get appropriate cognitive preparation to produce quality learning outcomes at each level of schooling that are not fully captured by quantitative measures like completion rates.

In sub-Saharan Africa, fewer than half of students meet the minimum proficiency threshold that is used in standardised testing; the mean for developed countries is 86%.²² To put that into context, when it comes to

learning outcomes, ‘the top-performing country in sub-Saharan Africa has a lower average score than the lowest-performing country in Western Europe’.²³ It is, therefore, not surprising that in 2017 the World Bank warned of a ‘learning crisis in global education’.²⁴ The report presented an analysis of reading, mathematics and science outcomes: its results for sub-Saharan Africa make for disheartening reading.

Although school attendance is generally good in the region, many children suffer from illness, malnutrition, and/or income deprivation. Since teachers are often not particularly well educated themselves, the quality of teaching is poor, and absenteeism among teachers is rife. Many arrive at school, but then don’t attend the classes they are supposed to teach. Some even engage in a second (or third) job to support themselves and their families. Since schools are short-staffed, those teachers who do attend to their duties are inundated with administrative tasks.²⁵

For the World Bank, the immediate causes of the crisis are fourfold: children arrive unprepared to learn (generally, children from poor households learn much less); teachers often lack the skills or motivation to teach effectively; inputs like books and teaching material often fail to reach classrooms or affect learning; and poor management and governance often undermine schooling quality.²⁶

Finally, it is important to consider the devastating impact of the COVID-19 pandemic on education in Africa. Even in South Africa, where the education sector is relatively well resourced and ICT infrastructure is better developed than in many other countries, UNICEF has estimated that the average learner has lost three-quarters to a full year of schooling, and up to half a million children have dropped out of school entirely since the beginning of the pandemic. Once again, this has become an issue in which economic inequalities are decisive: wealthy students having access to well-resourced schools and homes that are equipped with high-speed internet saw minimal disruptions to their programmes, while many rural and poor students without such resources lost access to schooling entirely.²⁷

Countries with larger rural and extremely poor populations seem to have suffered the most. In many countries, children have received no education at all during the COVID-19 pandemic, either because a school without facilities to teach at a distance has closed entirely, or

because of inadequate ICT infrastructure for learners – and in many cases even teachers – to log in to classes. Even when they are able to access lessons, this sudden shift has undermined learning as learners struggle to focus in a home setting or receive inadequate personal attention through online classes or as a result of suffering from the mental health consequences of lockdowns. Outside of school, children are also more susceptible to exploitation in child labour, particularly girl children with respect to unpaid domestic work, further distracting them from their studies and undermining their fundamental rights.²⁸

While many of the factors in this section have affected children around the world, the higher levels of poverty and the significant digital divide in Africa have rendered Africans particularly vulnerable. Internet access rates are very low in Africa compared to the rest of the world, with a UNESCO study finding that at least 60% of African university students did not have the necessary devices or internet access to continue online education; the Organisation for Economic Co-operation and Development (OECD) has estimated that this figure is as high as 85%.²⁹ This highlights the need for a greatly expanded rollout of quality and affordable information and communications technology (ICT) infrastructure (discussed in more detail in Chapter 9), and the integration of these technologies into education – including reskilling teachers.

The Current Path forecast is that the gap in adult educational attainment between Africa and other developing regions will widen. By 2030, IFs forecasts that people in South Asia can expect to receive about 8 full years of education, while people in sub-Saharan Africa will only achieve about 6.2 years. It is highly unlikely, then, that Africa will be able to meet its education targets for the SDGs.

Rates of gender exclusion

Changing gender parity in education – the number of female students at a given level of education relative to the number of male students at the same level – is another important milestone on the road to improved education in Africa.

In sub-Saharan Africa, gender parity in education has improved over time but still trails behind regions such as North Africa – a region that

often has a bad reputation when it comes to the rights of girls and women. In sub-Saharan Africa in 2019, the average woman aged 25 and above had received about 4.6 years of education, compared to 6.1 years for the average male. The gap is slightly smaller when looking at the age cohort 15 to 24 years, where the mean is 6.7 years versus 7.2 years, also indicating the extent to which younger Africans are better educated than their parents. In North Africa, females aged 25 and above have more than 6 years of education, about 1.3 fewer years than their male counterparts – and those aged 15 to 24 and above have about 9.4 years, compared to 8.9 years for their male counterparts.

Improving levels of educational attainment is a slow process. Leaving quality aside, it took sub-Saharan Africa 14 years, from 2001 to 2015, to increase the average number of years of education for women by one year. The global mean for years of adult female education in 2019 stood at 7.4 years – a goal sub-Saharan Africa will only achieve after mid-century in the Current Path forecast, at which point the global average will likely have increased to about 10 years. While Africa is improving, there is no indication of it closing this gap with the rest of the world in the Current Path forecast.

In sub-Saharan Africa in 2019, 96 girls were enrolled in primary school for every 100 boys, a ratio that worsened significantly at lower secondary school level (only 91 girls for every 100 boys), and deteriorated further during upper secondary (87 females for every 100 males) and tertiary levels (78 females to 100 males). The reasons are not difficult to fathom: more females seem to drop out at each level than males. North Africa does better in each of these levels – here, gross enrolment at primary level is almost one to one, and at upper secondary and tertiary levels female enrolment outnumbers that of males. Central Africa does significantly worse than other regions at enrolment of girls at primary and at upper secondary school levels.

In 2019, women aged 25 and older had 3 fewer years of education than men in Somalia and 2 to 3 fewer years in an additional 10 African countries. Only in Namibia, Lesotho, Gabon and Libya do adult women have more education than men. Given the link between female education and fertility, this large difference to a great degree explains Africa's very high fertility rates as discussed in Chapter 3.

And finally, in the Current Path forecast sub-Saharan Africa could get within five percentage points of achieving its 2030 SDG indicators for primary level gross enrolment and completion rates – but will not be within striking distance of the parity target for lower and upper secondary levels of enrolment or graduation.

Africa's future education requirements

We've now looked at the state of education in Africa in the present. But what of the future? Before developing an improved education scenario and analysing its impact, we must first ask ourselves what future Africa's students need to be prepared for.

A recent study by the African Development Bank found that three main factors constrain more rapid job creation in Africa. Firstly, job creation has not kept pace with the number of graduates from secondary and tertiary institutions. Secondly, those who finish school are not equipped with the skills required in the available jobs. Finally, young people generally lack the soft skills, social networks and professional experience to compete with older job applicants.³⁰

In its study on the future of work in Africa, the Ghana-based African Center for Economic Transformation (ACET) is more specific:

There is far too little emphasis on relevant training in science, technology, engineering, and maths; on technical and vocational education and training; and on higher-order cognitive and analytical skills. Hence, the considerable skills mismatch, with most job seekers lacking the skills that employers require. They may have good paper qualifications but not 4IR [Fourth Industrial Revolution] skill sets.³¹

We know that education in Africa needs to respond to the demand for expanded smallholder farming and agribusinesses (which Chapter 4 looked at), which will allow African countries to enter low-end manufacturing (discussed in Chapter 7) and prepare for the rapid expanded use of modern systems and technologies (see Chapter 9) as digitisation and the Fourth Industrial Revolution present new

opportunities and risks for the future. The trend is away from low-skilled and even semi-skilled labour towards skilled labour.

Future job requirements differ from country to country and defy generalisation. Broadly, however, education must equip students with the skills for leading healthy, productive and meaningful lives. As the authors of the 2018 World Bank report on education explain, this means that students should, for instance, know ‘how to interpret many types of written passages – from medication labels to job offers, from bank statements to great literature’.³²

The modern trend appears to be towards broader sectoral training, then – a set of generic business and life skills, rather than preparation for a specific job such as being an accountant, welder, carpenter or chef. This allows an individual to move more readily from an entry-level job to a longer-term career. A report from the Commission on the Future of Work refers to ‘a universal entitlement to lifelong learning that enables people to acquire skills and to reskill and upskill’. Since the world of work ‘begins at home’, the report also emphasises the importance of strengthening women’s voices and leadership in addressing gender equality and the rural economy ‘where the future of many of the world’s workers lies’.³³

African educators should also balance the need for academic education with vocational training. For example, the *World Development Report 2018* devotes considerable attention to the need to replicate successful job skills training programmes and the extent to which most Africans aspire to academic versus technical training. In addition to advocating for technical and vocational education and training (TVET) as a parallel education stream from secondary school onwards, the World Bank advocates for workplace training and short-term job training programmes.³⁴

In addition to many other challenges, the low quality of education in most sub-Saharan countries means that students may not have fully mastered the foundational skills of reading, writing, numeracy, critical thinking and problem-solving that are required before entering the vocational training stream. The World Bank refers to this as ‘not just a lack of trained workers; it is a lack of readily trainable workers’.³⁵

Regardless of the continent’s preparedness, however, digitisation and the Fourth Industrial Revolution will require a large cadre of

technical skills, and the poor quality of general schooling in Africa implies that great care must be taken to ensure that students who do choose the vocational line of education have sufficient grounding.

Modelling improved education: The Education scenario

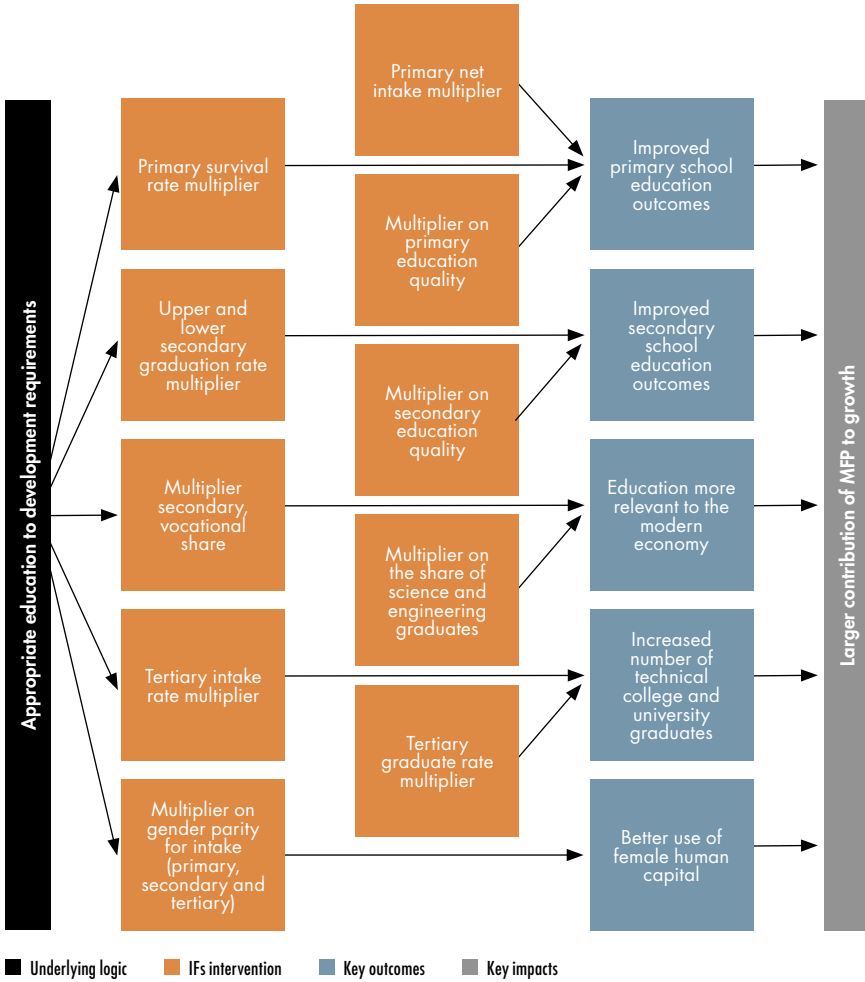
Against this background, then, this section sets out the Education scenario: interventions within the IFs modelling platform that represent ambitious but reasonable improvements in the quantity, quality and nature of education across gender in Africa. It then compares the impact of the Education scenario with the educational outcomes in the Current Path forecast, including growth rates, size of economies, average incomes and inequality.

The scenario's approach is systematic and comprehensive. The interventions target every level of the formal education pipeline, from primary education enrolment to tertiary graduation. Some omissions should be noted, however – particularly ECD, adult education and informal education. The IFs system does not yet include these aspects of education; indeed, informal education, in particular, remains hard to measure and compare across the African continent. While these elements deserve further investigation, the interventions and simulated investments in primary schooling here partially represent parallel improvements to ECD; similarly, improved adult education will be a small component of improvements to education through the length of the pipeline.

Chart 44 shows the logic of the interventions across 10 sets of variables, which target intake and survival or graduation rates as well as quality across all education levels. The interventions also target gender parity, particularly at the primary and secondary level, and the proportion of students studying key skills, including vocational and STEM (science, technology, engineering and mathematics) at higher levels.

The first set of interventions in the Education scenario improves throughput along the entire education pipeline. It increases intake (or enrolment), survival and graduation rates at primary, lower secondary, upper secondary and tertiary levels, as well as the transition rates between these various levels of schooling. The effect of this set of

Chart 44: *The Education scenario*



Source: Author

interventions is to improve rates for primary school completion in Africa from 76% primary school completion in 2019 for of-age children to 100% primary school attendance by 2036, instead of an increase to 92% by 2043 in the Current Path forecast. This is an aggressive intervention, for sure – but without a huge effort to improve this foundational aspect of Africa’s development, progress in most other dimensions is virtually impossible. In the process, Africa overtakes

South Asia in primary school completion rates by 2031, and catches up to South America's 100% primary completion rates by 2036.

The interventions in lower secondary education are less aggressive, but still ambitious. Africa saw a 50% completion rate in 2019 and can expect an improvement to just over 60% by 2043 in the Current Path forecast. Instead, this scenario contemplates an improvement to 71% by 2043. While this does not quite mean that Africa will catch up to other comparable regions, the continent will nevertheless exceed the 2019 South Asia figure of 67% by 2039. Africa will continue to lag behind South Asia and South America's rates of over 80% completion in 2043, demonstrating the size of the gap and the length of time required to improve the education system.

The Education scenario's improvements in upper secondary education see an increase of the Current Path forecast's roughly 46% completion in 2043 to 55%, a significant improvement from the 33% completion rate for of-age African children in 2019. Africa will continue to lag behind South Asia, which will nearly catch up with South America's 75% completion rate by 2043. This is despite the fact that Africa and South Asia had similar completion rates for upper secondary school in 2015. While the contexts are naturally very different, this demonstrates the plausibility of aggressive and sustained systemic improvements to education with the right policies.

The Education scenario's tertiary education interventions are less aggressive as improving tertiary education output relies decisively on improving lower levels of education first. Nevertheless, the scenario contemplates a two percentage point improvement in graduation rates by 2043, from 14% of of-age individuals to 16%. This represents a significant improvement from the low base rate of 8% in 2019.

These interventions would also be good news for Africa's SDG ambitions. In the Education scenario, Africa will get significantly closer to its SDG goals – by raising, for example, primary net enrolment from 85% of age-appropriate children to 89% by 2030, and primary gross completion from 86% to 91%.

The next set of interventions improves gender parity in education at primary, secondary and tertiary levels. Presently, Africa sees systemic gender inequalities across all levels of education. The Education

scenario pushes gender parity rates closer to the one-to-one ratio goal on almost every indicator, but only reaches this ratio for net enrolment rates at primary school by 2030. The Education scenario would also see 98 girls complete primary and secondary level education for every 100 boys (up from 97 in the Current Path forecast). This still falls short of the rates achieved in comparable regions, though – and falls short, of course, of the ideal one-to-one ratio by 2030. Gender parity at tertiary level is likely to follow the ordinary global trend of reaching a one-to-one ratio and then surpassing it (as female students often tend to be higher achievers at tertiary education levels) in both the Current Path forecast and Education scenario.

A third set of interventions improves the quality of education at primary and secondary levels. At primary level, Africa does not presently lag far behind South Asia on composite test scores (including in maths, reading and science). However, while South Asia's education scores are likely to rise by more than 6 percentage points (a 19% improvement) by 2043, Africa is set to stagnate in the Current Path forecast, seeing an improvement of only 2 percentage points (or 6%). The Education scenario's interventions would instead see Africa achieving similar levels of quality as in South Asia by 2043 (about a 20% improvement). Both regions will still fall behind South America's scores, however, but by under two percentage points.

The story is similar at secondary level, with the interventions boosting secondary schooling quality across maths, reading and science to keep up with South Asia by 2043. This is a more aggressive push, however, as the gap between Africa and South Asia was more significant in 2019. This would also require the quality of Africa's secondary schooling to catch up to that of South America (as South Asia will do in the Current Path forecast by about 2030) and to surpass it marginally – an ambitious but reasonable target, given South Asia's own improvements.

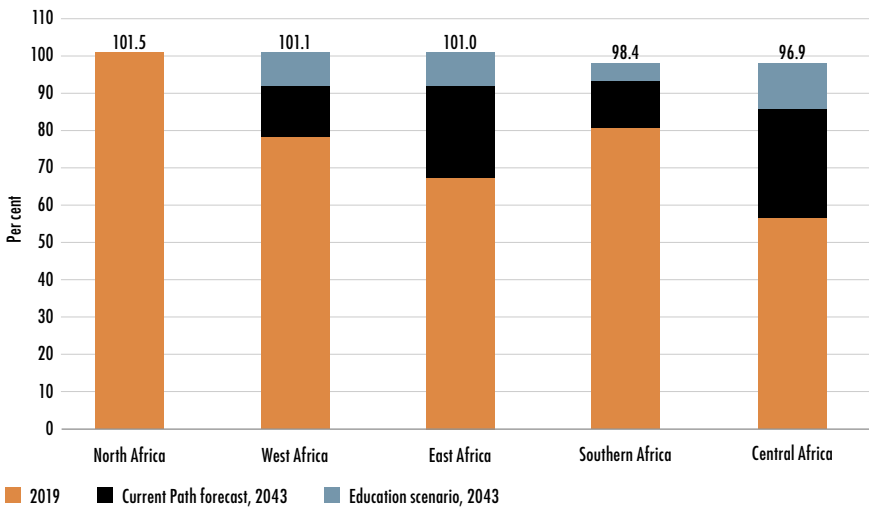
The final set of interventions is designed with an eye on skills requirements for the future. This involves boosting the percentage of upper secondary school students pursuing vocational studies from 20% to 22% by 2043, as well as the share of science and engineering graduates at tertiary level from 19% to 21% by 2043.

The impact of the Education scenario

There are many different ways in which to measure the impact of the Education scenario. Charts 45, 46, 47 and 48 present the completion rate for primary, lower secondary, upper secondary and tertiary education in 2019. It includes the Current Path and Education scenario forecasts for 2043. Progress slows after Chart 45's first graph, the primary school completion rates for children at the relevant age cohort for each of Africa's five regions. Thereafter, the averages decline – but North Africa consistently does better than other regions and there is evidence of a slowdown in progress in upper secondary completion and tertiary graduation rates in Southern Africa.

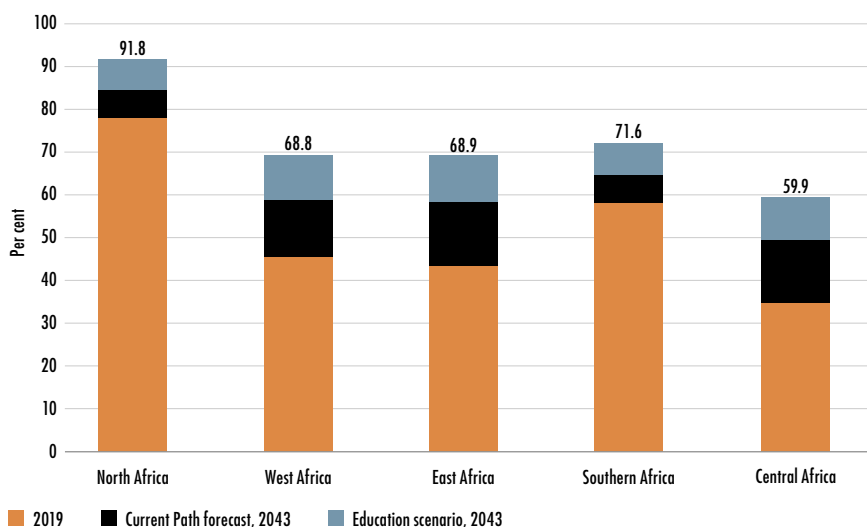
Then, Chart 49 compares the mean years of education for adults aged 20 to 29 with the 2043 forecast for South America and South Asia. By using a youthful age cohort, the findings reflect the improvements modelled in the Education scenario.

Chart 45: Primary completion rates per region in 2019 and 2043 in Current Path forecast and Education scenario



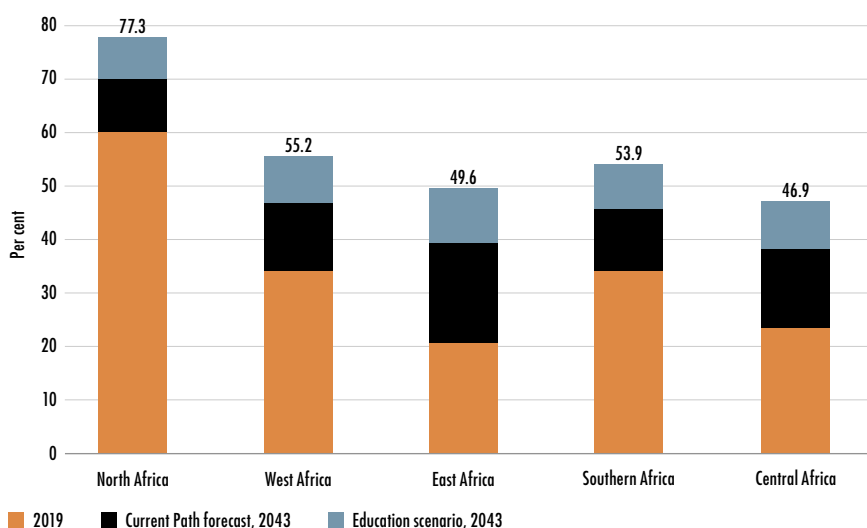
Source: IFs 7.63 initialising from UNPD medium-term forecast and Barro-Lee educational attainment dataset

Chart 46: Lower secondary completion rates per region in 2019 and 2043 in Current Path forecast and Education scenario



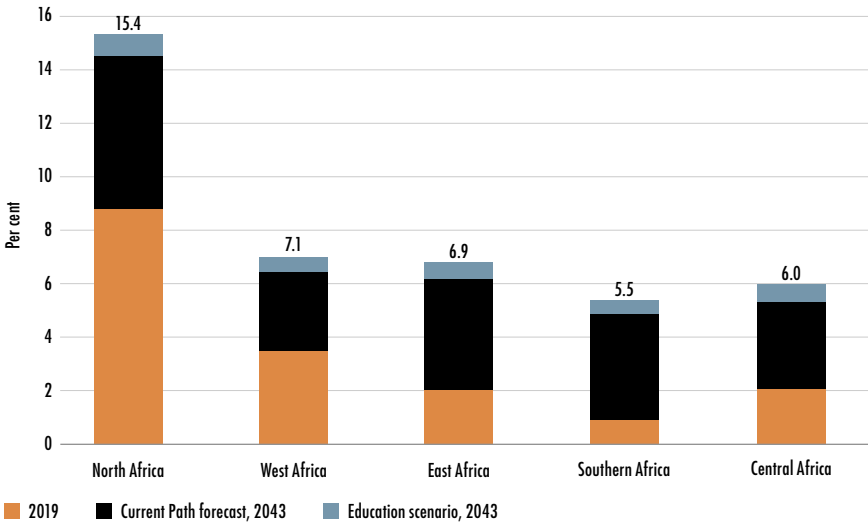
Source: IFs 7.63 initialising from UNPD medium-term forecast and Barro-Lee educational attainment dataset

Chart 47: Upper secondary completion rates per region in 2019 and 2043 in Current Path forecast and Education scenario



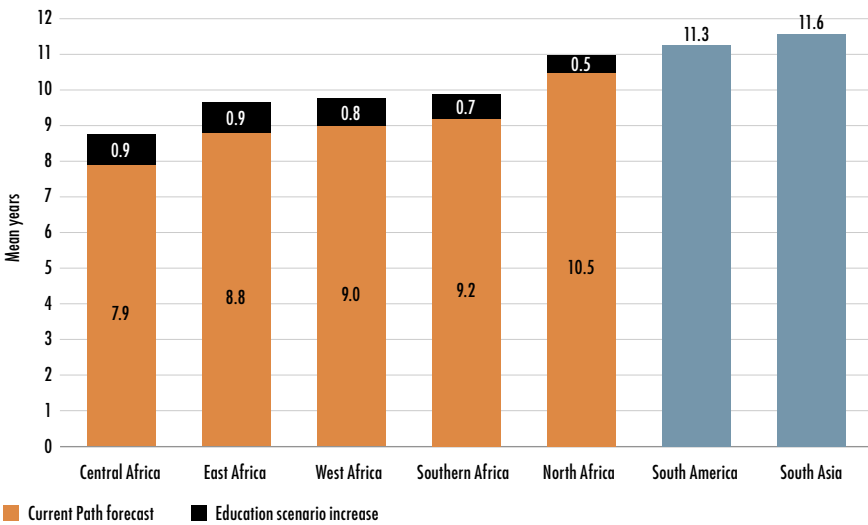
Source: IFs 7.63 initialising from UNPD medium-term forecast and Barro-Lee educational attainment dataset

Chart 48: Tertiary completion rates per region in 2019 and 2043 in Current Path forecast and Education scenario



Source: IFs 7.63 initialising from UNPD medium-term forecast and Barro-Lee educational attainment dataset

Chart 49: Mean years of education for cohort aged 20–29 years in 2043 on the Current Path and in the Education scenario for African regions, compared with South America and South Asia



Source: IFs 7.63 initialising from UNPD medium-term forecast and Barro-Lee educational attainment dataset

In the Education scenario, and when using this age cohort as a lens to measure progress, all five regions start closing the gap with the world except Africa. Even so, only North Africa surpasses the 2019 mean for the world except Africa by 2043. East Africa does the best in terms of increasing mean years of education from 6.4 years in 2019 to 9.7 years in 2043, a 51% improvement. Central Africa, generally a laggard in improvements, also sees an aggressive 50% increase, but coming from a much lower base it remains the worst-performing region.

The Education scenario increases expenditure on education in Africa by 0.113% of GDP by 2043, equivalent to US\$30.6 billion in additional funds in that year – on top of the US\$436.8 billion that Africa is forecast to spend on education in the Current Path forecast in 2043. That's a lot of money, but these additional costs produce a much larger economy. By 2043, the difference in the GDP growth rate between the Education scenario and the Current Path forecast will be 0.6 percentage points; as a result, in 2043 the African economy will be US\$405.4 billion larger compared to the Current Path forecast – an awesome return on investment. And as its level of skills improves, Africa's economies start to grow more rapidly and improvements to GDP snowball beyond the 2043 time horizon. It is this return on investment that results in the mantra about education lifting all boats. Better education reduces fertility, improves productivity and the quality of democracy and governance, and makes countries more stable.

Being a multiplier of human output, education improves productivity. However, its benefits inevitably accrue disproportionately to more developed countries that already have higher levels of productivity. Average GDP per capita (in purchasing power parity, or PPP) will increase by US\$132 per person in low-income Africa by 2043, by US\$310 for lower-middle income Africa, by US\$414 for upper-middle income Africa, and by US\$747 in the Seychelles, Africa's only high-income country.

Just imagine the effect if Africa could simultaneously reduce the size of the annual influx of primary school children by appropriate family planning interventions like those set out in Chapter 3. Reductions in the number of children entering primary school would soon cascade

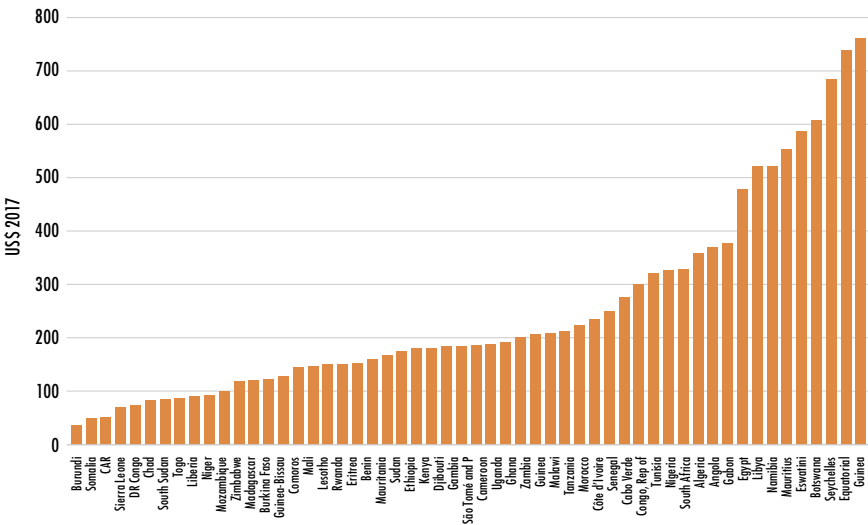
through the entire education system (on top of the decline in fertility associated with better education), meaning that more funds could be spent on the smaller cohort of children as they progress. The Demographic Dividend and Education scenarios, then, reinforce each other in a very powerful way.

Improved levels and quality of education also have a small positive effect in reducing inequality (using the Gini index) and would reduce extreme poverty by more than one percentage point across the continent, equivalent to about 39 million fewer extremely poor people in 2043 (using the US\$1.90 per person extreme poverty threshold).

Chart 50, then, presents the Education scenario’s effect on GDP per capita, above the Current Path forecast for 2043. Burundi, Somalia and the Central African Republic (CAR) gain the least (US\$37 to US\$52), and Seychelles and Equatorial Guinea gain the most (US\$741 and US\$763 respectively).

Better education reduces infant mortality (by an average of 1.2 fewer deaths per thousand live births in 2043 for Africa), reduces total fertility (by 0.08 births per woman in 2043) and increases life

Chart 50: Increase in GDP per capita in 2043 due to Education scenario



Source: IFs 7.63 initialising from WDI data

expectancy by more than 3 months by 2043. The result is an African population that is 7.2 million smaller in 2043 than it would be in the Current Path forecast (2.232 billion instead of 2.239 billion).

The power of education is such that academics such as Wolfgang Lutz and others argue that education and health, rather than age structure, bring about the demographic dividend that Chapter 3 modelled. It is investments in these aspects of human capital, they argue, that trigger both demographic transition and economic growth – and that declining youth dependency ratios even show negative effects on income growth when combined with low education. So, ‘the true demographic dividend is a human capital dividend’ and ‘global population policies should thus focus on strengthening the human resource base for sustainable development’.³⁶

Conclusion: Using technology and prioritising education outcomes

The previous chapters on health, demographics and agriculture reference the extent to which geography, slavery, colonialism and, after independence, the path dependency of wrong policies have played an important role in Africa’s poor development outcomes. Determined African leadership could have changed this, but it did not.

In the very, very long term, education is the great leveller in providing improved opportunities to poor people, and the relationship between better education and improved levels of income is strong. Better education is particularly powerful if it is accompanied by efforts to create associated demand, typically through industrialisation. The Education scenario could transform African economies and societies. but the results will not be achieved without great effort and new ways of thinking. Africa needs to get the basics right. The sheer magnitude of the challenge inevitably requires a very rapid uptake of modern technology to help compensate for deficits in teacher quality and numbers, and for governments to invest appropriately. Finally, it requires a policy framework in which the supply of higher-skilled labour is driven and absorbed by demand. The result is a virtuous circle of demand and supply that leads to ever-higher levels of complexity and productivity.

There is clearly a very powerful relationship between the level of education of citizens and the prosperity of nations, but it's also quite complicated. Duke University educationalist Ricardo Hausmann³⁷ provides an apt example:

In 1998, Ghana's workforce had an average of about seven years of education and its per capita income was about \$1 000. When Mexico's workforce first achieved an average of seven years of education – in 1993 – its income was over \$10 000, while France's per capita income when its workforce first got to an average of seven years of education (in 1985), was over \$20 000. These figures tell us that rich countries are rich not just because of education, and, conversely, that investing in education alone won't make you rich.

Hausmann attributes the ability to translate education and technology into growth to 'collective know-how' – the ability to *apply* knowledge. That, he argues, comes through imitation and repetition of tasks – learning by doing. What he does not examine, however, is the matter of the quality of the education provided in Ghana, Mexico and France, pointing to the need to dig deep when considering key relationships.

Governments need to fix education across the system, then, but from the bottom – starting with ensuring literacy, investing in primary school enrolment and completion, investing in ECD, and using modern technology in the process. Once progress is achieved in primary schools, the priority should shift to improving enrolment and completion in lower secondary schools. Then, investment needs to shift to fixing upper secondary and, eventually, tertiary education. Not all countries do this; some, such as Malawi and South Africa, spend inordinate portions of their budget on tertiary education while neglecting primary and secondary education.

Education quality is very important, as is focusing on vocational and technical training as opposed to the singular focus on academic teaching so evident across many African countries. Simply pushing children through school is not a solution if the education they receive does not comprehensively and fundamentally address the basics of

reading, writing and arithmetic – never mind the skills required for the Fourth Industrial Revolution.

The COVID-19 pandemic has stimulated changes in education, but also did an incredible amount of damage to it in 2020 and 2021. In its wake, teachers and policymakers will need to reassess education, particularly the limits of distance learning on a continent where broadband internet access is limited.

In Africa, large classrooms staffed by poorly educated teachers and containing minimal educational facilities are the norm. Moreover, many schools are attended by poor, often hungry children, who may have to walk several kilometres every day to get there. Looking at the rather dismal state of education in Africa, we desperately need to find a way to raise the bar, particularly in poorer schools.

How could we do this? Certainly, each African country faces different challenges, but more parent involvement, upskilling teachers, and designing teaching and learning methods that are sensitive to local conditions are central to creating functioning education systems in Africa. Not all of this requires sophisticated technology. Already, a number of schooling projects require teachers to post a daily selfie by 8 a.m. to prove that they are in class and teaching, showing how greater use of technology can help Africa to catch up in terms of education.

Technology in the form of 5G and augmented reality (AR) could, then, be the key ingredient to enable the progress modelled in the Education scenario. In just a few years, cell phones, tablets and even computers may all allow three-dimensional holograms as AR becomes a reality. Billions of dollars are being spent on research and development by companies such as Microsoft and startups like Mojo Vision to make this practicable. In 2017, spending on education technology investments surpassed US\$9.5 billion, up 30% from the year before.³⁸

New technologies could replace a teacher in front of a whiteboard (or chalkboard) with apps, gameplay and entirely new ways of teaching. For example, each student could have an artificial intelligence (AI) teaching companion that delivers information at the optimal speed for him or her if the promise of 5G speeds and connectivity examined in Chapter 9 comes to Africa. In this brave new world, students will be

able to consume lectures at their own pace, with time in class used for discussing problems or working collaboratively.

Instead of students huddling around a teacher in front of an oven to learn how to bake or around an electric motor to learn how to assemble, disassemble and repair it, each student will have his or her own virtual oven or motor. Using an AR headset, students will be able to experiment with different ingredients or take the motor apart, study each part and put it back together. Meanwhile, students studying biology will be able to dissect virtual animals and view their organs. Medical students will be able to do the same with the human body.

AR will make learning more immersive, exciting and effective. It could enable learners in the most isolated and disadvantaged rural areas to see and do things that they would otherwise never have the opportunity to do. It is a powerful way to provide individual and flexible learning, connecting theory with the real world. Want to get a child to learn a foreign language or understand computer coding? Get them to play a game in that language or experiment with coding. In tomorrow's world, understanding technology and coding will be crucial, and AR and AI can help understand computation, sensors, networks, digital printing, genetic engineering and robotics, to name a few. New technology will also help with basic literacy.³⁹

Education systems are notoriously slow-moving and those in most African countries are particularly so. Clearly, new teaching technologies and methods must be exploited to help meet the challenges of the future. African countries will not close the gap in average levels of education compared to the rest of the world by using their current systems and practices. Technology can fundamentally change the nature of education and enable the move away from brick and mortar campuses to electronic or virtual campuses that will facilitate much broader access for both students and teachers. Much of that is already possible in so-called point learning where the curious African can google how to make, disassemble, repair, cook or understand almost anything by watching a YouTube video. You won't need to be an accredited Apple dealer with years of formal training to understand how to repair a smartphone: you'll just need the internet and a set of very small screwdrivers.

Again, none of this is possible without electricity and broadband access.

Effective education requires students who are sufficiently nourished, stimulated and cared for; capable teaching; skilled management; and a government and education system that can pull all of this together. Many countries in sub-Saharan Africa do not have these key ingredients and face a crisis in education that the World Bank describes as a low-learning trap.⁴⁰ It is possible to escape this trap, as is demonstrated by the advances made in South Korea, China and Vietnam, but it will require a tremendous effort, political leadership, whole-of-society engagement and the use of modern technology.⁴¹

A review of the widening gap between education levels and quality when comparing Africa to the rest of the world makes it clear that much more strategic planning, innovation, investment and, most of all, leadership are required to address the continent's education backlog. The picture that has emerged from this chapter's review of the general African situation and likely prospects in the Current Path forecast is depressing when compared to the progress being achieved in other regions.

The stakes are, indeed, high: if the continent fails in this dimension, it will fail in all others.

7

Manufacturing and Africa's Productive Structures



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Chapter 3's exploration of demographics in Africa pointed to the continent's fast-growing population and the fact that rapid, inclusive economic growth is a prerequisite for reducing poverty and improving livelihoods. But what are the prerequisites for this rapid growth?

Sustaining rapid economic growth over long periods requires economies firstly to improve productivity in agriculture, industry and services. They need, secondly, to move labour and capital from low-productivity sectors like subsistence agriculture to higher-productivity sectors like modern manufacturing. And thirdly, they need to incentivise the formalisation of the informal sector, while allowing for the expansion of this sector to assist with poverty reduction in highly unequal regions such as Southern Africa, where the informal sector is particularly small.

In this chapter, the spotlight falls on Africa's manufacturing capacity and the complexities involved in improving it, starting with a look at the interplay between the changing face of industrialisation, servicification and development.

Industrialisation, servicification and development in Africa

Industrialisation is complex as, historically, it has not been a linear process. Instead, it has progressed in subsequent waves of innovation, starting with new ways to produce steel, mass production through assembly lines, electrical grid systems and increasingly advanced machinery. The third wave, the digital revolution, allowed the establishment of complex global production and supply chains that spanned multiple countries – a development that is still undergoing rapid evolution today. It follows advancements in robotics, artificial

intelligence (AI), nanotechnology, quantum computing, biotechnology, the Internet of Things (IoT), 3D printing and autonomous vehicles. Each wave has brought more jobs and improved living standards globally, even as large pockets, particularly in Africa, have progressed much more slowly than others. Today, amidst the Fifth Industrial Revolution – perhaps already the sixth – manufacturing and services together drive growth globally. These are not the heavy manufacturing industries of yesteryear, however – rather, they are increasingly disruptive technologies, some of which are mentioned above: AI, the IoT, cloud computing, 3D printing, robotics, drone technology, blockchain technology, virtual reality, smart agriculture and clean energy.

One of the key results of industrialisation the world over has been to increase employment. Formal sector employment is particularly important for it improves stability, reduces inequality and, most importantly, contributes to tax revenues that enable governments to invest in better health, more education and appropriate infrastructure. For the purposes of Africa's tomorrow, however, the essential question is: if there are sufficient jobs in Africa's small formal sector, and since it is going to take a very long time to improve average levels of education, as we saw in Chapter 6, what are the options for a continent facing such high levels of inequality and poverty? Chapter 12's discussion of employment prospects points out that, in addition to industrialisation and the agricultural revolution discussed in Chapter 4, most African economies will have to pursue various additional programmes to alleviate extreme poverty while simultaneously allowing the informal sector to expand – given the continent's rapidly growing population and the likely inability of industrialisation in the 21st century to unlock the job growth seen during previous industrial revolutions.

In addition, in many high-income countries such as the US and the UK, services have become the main engine of growth, while middle-income countries that rely on a services-led growth path struggle. The services sector already constituted half of Africa's economic activity by value in 2019; manufacturing and agriculture each constituted only about 15%. The Current Path forecast is for a steady increase in

the size of the services sector to 2043, with manufacturing as a portion of GDP remaining stagnant and agriculture declining. This African trend mimics global ones, with higher-end services such as transport, financial, health and recreational services growing more rapidly than any others in terms of their contribution to global GDP across all country income groups. The problem, therefore, is that, without industrialisation and an agricultural revolution, much of sub-Saharan Africa's economic future is likely to consist of a large subsistence agricultural sector in rural areas and low-end, informal services in urban areas – services that generally involve wholesale and retail trade.¹ And neither low-end services nor small-scale farming improves productive structures.²

In his best-selling book *Kicking Away the Ladder*, South Korean author and academic Ha-Joon Chang calls the view that it is possible for developing countries largely to skip industrialisation and enter the post-industrial phase, where services increasingly drive employment and productivity growth, 'a fantasy'. This is because the manufacturing sector has 'an inherently faster productivity growth than the services sector'.³ Estimates of the levels of productivity in different economic sectors in Africa differ, however. Carol Newman and colleagues find that the manufacturing sector in Africa is six times more productive than agriculture. Recent studies such as *African Economic Development* by Christopher Cramer, John Sender and Arkebe Oqubay agree, and find that '[r]umours of the demise of industrialization as the engine of development are greatly exaggerated'.⁴ And a 2016 report prepared by the United Nations University World Institute for Development Economics Research (UNU-WIDER) explains the importance of industrialisation as follows:

Between 1950 and 2006, about half of the catch-up by developing countries to advanced economy levels of output per worker was explained by rising productivity within industry combined with structural transformation out of agriculture. Industry is the pre-eminent destination sector at early stages of development because it is a high productivity sector capable of absorbing large numbers of moderately skilled workers.⁵

Organisations as diverse as the World Bank, the African Union and the African Development Bank have long argued that it is particularly important to unlock Africa's agricultural potential given widespread poverty and high levels of food insecurity, hunger and malnutrition. But beyond a basic, subsistence level of development, industrialisation determines agricultural efficiency and expansion, and even the development of high-value services. The knowledge spillover from manufacturing eventually makes it profitable to invest in more productive agricultural machinery and systems. In this way, growth in manufacturing also increases wages and productivity in the agricultural sector. A different way of thinking about this is simply to recognise that large-scale commercial agriculture in Africa depends on a large and diversified manufacturing base since the processes involved are similar – hence the term 'industrial agriculture' to describe modern practices in this sector.

You'll recall from Chapter 1 that, with a few exceptions, Africa tends to export unprocessed commodities such as coffee and cocoa, and to import processed products and finished goods from the EU, China and elsewhere. This trend is likely to continue, reflecting the limited value addition that characterises most African production and exports. The law of diminishing returns is that countries that specialise in supplying raw materials, unprocessed agricultural products or low-end services yield a progressively smaller return for every unit of capital or labour compared to those that provide value-added goods. For example, a recent study by the UN Conference on Trade and Development (UNCTAD) called *Identifying and Promoting Regional Value Chains in Leather and Leather Products in Africa* laments the fact that, despite Africa being the largest source of hides and skins in the world, these exports come with very little value addition.⁶ 'German' coffee, 'Swiss' chocolate, 'Italian' handbags or shoes – all demand high prices and their raw materials all originate in Africa, which receives nothing of the associated value-added profits. And growth that is based on increasing commodity exports, as opposed to exports of value-added products, cannot induce structural economic transformation.

Where, then, do development opportunities for Africa lie? Today, global value chains are shifting closer to the market and, in some

instances, becoming more regional as the complex global value chains that emerged prior to the 2007/8 global financial crisis contract and move closer to end markets. These developments offer opportunities for Africa, which is generally only peripherally part of these chains. Modern technology offers significant opportunities for industrial latecomers to skip over the brick-and-mortar institutions of yesterday into a world where banking and input sourcing are done remotely, while benefitting from a decline in the financial investment that is required to embark upon manufacturing. New technologies enable much greater flexibility and customisation, with production shifting closer to the consumer, as explained in Chapter 9 on leapfrogging.

But the most important drivers of shifting value chains are the signs of increased manufacturing nationalism and diversification of value chains, away from China, the global factory. The US's push for energy independence, China's trade surplus with that country, and internal and external xenophobia led to the election of Donald Trump as president, who routinely scapegoated China for what he and others believed were unfair trade practices. The result was a trade war, with the US imposing tariffs and non-tariff restrictions on Chinese imports before settling on an uncomfortable trade deal early in 2020. In March of that year, the EU released its policy on 'A New Industrial Strategy for Europe',⁷ which set out its ambitions to reinforce the EU's industrial and strategic autonomy – in other words, to delink from China for 'critical materials and technologies, food, infrastructure, security and other strategic areas'. The effect of Russia's invasion of Ukraine has been to accelerate these trends that are all to Africa's potential advantage. The continent offers a large future market, labour force and facilitating geography – provided it can unlock the potential of its segmented market, which is currently divided into 55 national geographies (see Chapter 8 on free trade).

As Chapter 4 showed, transforming the agricultural sector has the potential to alleviate poverty and improve general well-being in the early stages of economic development. Once economies in Asia, for example, gained some momentum from this, and basic education and literacy showed sufficient progress, they pursued a manufacturing transition that was facilitated by favourable

demographics and determined leadership. This eventually led to unprecedented rates of economic growth and improved incomes. This is the story of the Japanese economic miracle that took place between 1950 and 1990, for example, and was repeated in South Korea, Hong Kong, Macau, Singapore, Brunei, Taiwan and recently China. In Africa, Rwanda and Ethiopia have taken a similar path and the results are visible for all to see – for many years these countries have had the most rapid improvements in indices of well-being on the continent.

So far, this chapter has focused in part on activist government, moving up the agriculture value chain, export-oriented manufacturing and investments in human capital. This focus should not be misconstrued, however – the contribution of services to economies is indeed expanding at all levels of income, and most rapidly in low-income countries. This has become known as the servicification of the global economy and reflects the extent to which services have become an integral requirement of agriculture, manufacturing and other sectors. At high levels of development, financial services, computer and software services, as well as transport and distribution services have become a very dynamic requirement for continued growth. But high-value services constitute a very small segment of the large and growing services sector in Africa, much of which is in the informal, retailing sector.⁸

At low levels of development, predominantly service-based economies have less ability to export or trade. Lower export earnings mean a weaker ability to buy advanced technology from abroad, which in turn leads to slower growth. According to Célestin Monga, writing for the African Development Bank in 2017, the problem is that, at low levels of development, ‘most services are low-productivity, subsistence, and even informal activities that may help households escape poverty, but are not sustainable sources of growth’.⁹

India is often considered an example of a country that, until recently, has pursued a services-led growth strategy. The contribution of the services sector to GDP overtook that of agriculture in 1975, but the

contribution of manufacturing to GDP only overtook agriculture three decades later. India's developmental model has been unique among major economies in the way in which it has shifted from low-end agriculture to low-end services without major industrial expansion. In the Current Path forecast, Africa is following in India's low-growth footsteps. India's inward-looking economic model has relied on domestic markets more than exports, on consumption more than investment, on services more than industry, and on high-tech more than low-skilled manufacturing.¹⁰ The early growth in services and the fact that India only recently entered a favourable demographic window are two important reasons for India's lower-than-expected growth over a number of decades. However, this is set to change: a convergence of factors, including an improved ratio of working-age persons to dependants, prioritisation of investment in infrastructure and greater emphasis on expanding the manufacturing sector, all offer prospects for rapid future growth.

The diffusion of knowledge: Challenging the competitive advantage of industrialised economies

Knowledge flows are another factor that could present opportunities for Africa's economic development. In a widely acclaimed book on the impact of information technology on globalisation – aptly titled *The Great Convergence*¹¹ – Richard Baldwin argues that it is knowledge flows consisting of data, information searches, communications, transactions and video that dominate new globalisation, and not physical goods and financial flows across borders.¹² For example, in 2016 cross-border flows in data were 45 times bigger than they were a decade before.¹³

Global flows of knowledge contribute to economic growth and give lagging countries a chance to catch up through investment in information and communications technology (ICT). In theory, individuals can directly participate in globalisation by using digital platforms to study, find jobs, showcase their talent and build networks. In practice, this opportunity is limited to those who have electricity, are connected to the internet and have the inclination, knowledge and interest to pursue it.

This caveat aside, ICT-led globalisation and associated knowledge flows are undermining the competitive advantage that industrialised countries once had, and are changing the outlook for global value chains. This is because more jobs in the developed world are now in direct competition with jobs in emerging economies. The cross-border flow of data and knowledge has broken the monopoly that workers in wealthy nations once had on the use of advanced industrial-manufacturing intellectual property.

Globalisation may have had a disruptive effect in much of North America and Europe in fuelling populist politics, but it has had a cohesive impact on emerging Asia, where the middle class has flourished and millions of people have been lifted out of poverty. In an interconnected and globalised world, knowledge flows inevitably undermine the concept of country comparative advantage – even in countries that are part of integrated trade blocs, such as the United States–Mexico–Canada Agreement (USMCA), the European Union (EU), and East and South-East Asia, where regional value chains have been well established.¹⁴

In response to this ‘new globalisation’, industrialised countries have embraced policies to protect their knowledge – excessive use of patent protection being an important example – as well as requirements for minimum labour standards and production-related carbon emissions. Conversely, emerging factory economies have embraced policies that foster knowledge sharing and creation. It is for this reason that China champions globalisation (despite having significant domestic barriers to foreign companies), while the previous advocate of free trade, the US, now seeks to protect its domestic manufacturing sector from foreign competition. It does so by withdrawing from trade agreements or renegotiating them so that they include much higher domestic and labour content requirements; this raises the bar for less-developed countries.

The problem for the US and other high-income economies is that digital communication, the internet and the ICT revolution have broken the monopoly that industrialised nations once had on knowledge – and even on copyright. So, the barriers that manufacturers and specific industries and services in emerging countries, including in Africa, have faced are constantly being lowered, often quite dramatically.

Trends in robotics, automation, computerised manufacturing and AI all appear to reduce the advantage of low labour cost locations, but not necessarily to Africa's detriment. Companies once sought to locate manufacturers in countries with the cheapest labour. Today, rapid growth in multinationals and consumers occurs within emerging rather than developed economies: Vietnam, Malaysia, India and eventually also in African countries. According to one estimate, by 2025 almost half of the world's largest companies will have headquarters in emerging markets, closer to consumer growth.¹⁵ These trends will benefit the rest of Asia first but are also beginning to be felt in Africa.

Digital technologies (particularly in the media), new materials (such as bio- or nano-based materials) and new processes (such as 3D printing, AI and robotics) threaten to disrupt existing manufacturing patterns. Collectively, these new trends have caused widespread concern about the nature and availability of jobs in the future (discussed in Chapter 12) and our understanding of economic growth theory. The future should see the evolution of a more distributed global economy, where manufacturing and services are closely linked and value chains are shorter and closer to markets. All offer opportunities to Africa. Generally, new technology decreases the required input costs of manufacturing; it will become cheaper to manufacture, particularly smaller production runs. Technologies such as 3D printing may in due course put an end to the smokestack factory model of production; the world could even perhaps see the evolution of something akin to a cottage industry model.¹⁶

One of the unforeseen results of lower barriers to entry is that it allows companies to venture into new areas outside their traditional area of specialisation. Startups can quickly go up the productivity curve to threaten established business. It is even evident in something as established as the manufacturing of cars where companies such as BYD in China threaten to outflank traditional car manufacturers in Germany, the US, Japan and South Korea by investing heavily in future electric vehicle technologies.

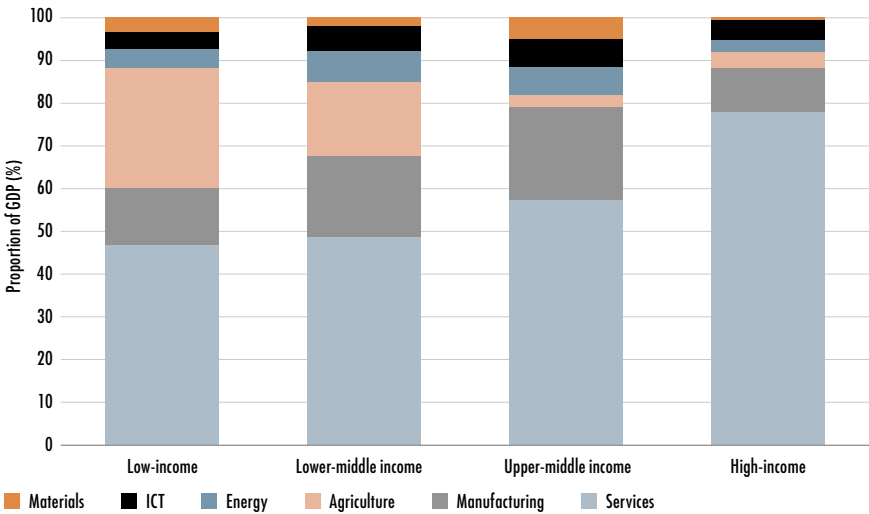
Digital platforms also allow and facilitate the development of a sharing economy, as opposed to an ownership economy – one in which individuals rent or borrow goods and services for a specific time or task,

instead of buying and owning them. So, production is shifting towards customisation, characterised by smaller production runs closer to end markets and greater flexibility.¹⁷ The local manufacturer of, say, a spare part for a car or a replacement gear in a machine will be able to purchase the plan from the cloud and print it locally. No more international shipping, tracking or customs – just instant gratification, at a lower environmental cost.

Ghanaian entrepreneur and president of mPedigree, Bright Simons,¹⁸ refers to this as the rise of 'Alibaba industrialisation'. He writes eloquently about the 'unsung industrial revolution underway in places like Ghana, Uganda, Senegal and Côte d'Ivoire' that is powered by 'a worldwide revolution in modular design, multi-purpose machinery, efficient small-batch production, global SME-SME [small and medium enterprises] engagement, new forex transfer practices, and the growing strategic transformation of China's late-phase industrial players'. This is a world where small and medium-sized Chinese suppliers provide large chunks of the industrial jigsaw and 'African hustlers and unconventional industrialists act as shuttle-brokers of the various factors of production between China and Africa'. According to him, the Fourth Industrial Revolution (digitisation) makes it easier for African states to become part of value chains from which they were previously excluded.

The current composition of African economies

What, then, do African economies look like at the outset of this chapter's proposed push towards manufacturing? Chart 51 gives an opening snapshot of this, by presenting the average composition of global economies by World Bank income group as modelled within IFs for 2019. It reflects the growth of the services sector's contribution to GDP as populations become wealthier, and the concomitant decline in the contribution of agriculture. It also presents a picture of a manufacturing sector that expands until countries achieve upper-middle income status, then contracts once countries graduate to high-income status – at which point high-end services become the driver of growth. Typically, the energy and materials sectors decline in their contribution to GDP, while that of ICT remains steady at 5 to 6%.

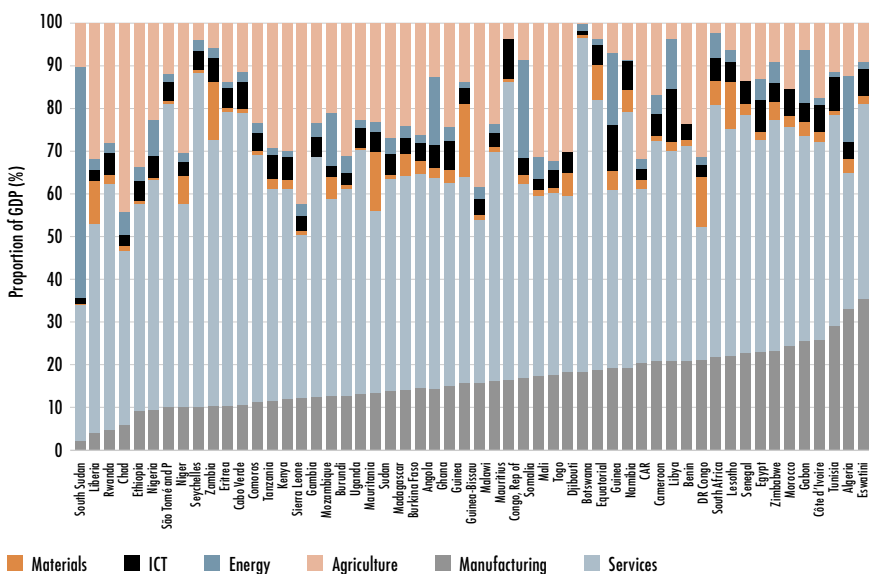
Chart 51: Sectoral composition of economies in 2019 using global country income classification

Source: IFs 7.63 initialised from IMF World Economic Outlook database

Over the past two decades, the information and communication sector (ICT) has overtaken agriculture as the third-largest contributor to GDP by value (about 6% of GDP globally), and has become particularly important in high-income economies. Despite its relatively small contribution to added value, ICT is a growth multiplier: countries go up the GDP per capita ladder because ICT facilitates knowledge exchanges, including the effective functioning of regional and multinational value chains that include goods and services. On average, the contribution of manufacturing to sub-Saharan African economies has steadily declined since independence, and never reached the manufacturing peak share of 20–35% of GDP that was achieved in Europe and North America. And generally, the contribution from agriculture is lowest in upper-middle income countries and highest in low-income countries. The contribution from energy and manufacturing is the opposite, with low-income countries having the smallest energy and manufacturing sectors.

Next, Chart 52 presents the sectoral composition of the African economies as modelled in IFs, with countries ranked according to the

Chart 52: Sectoral composition of African economies in 2019 ranked by contribution from manufacturing



Source: IFs 7.63 initialised from IMF World Economic Outlook database

contribution of manufacturing to GDP in 2019. With a few exceptions, Africa’s economies are dominated by large, low-productivity services sectors, and by subsistence farming in low and low-middle income countries.

Within the IFs system, Chad has the largest contribution from agriculture to GDP, at 44%, and in South Africa this contribution is among the smallest, at slightly more than 2%. Yet South Africa, which has an efficient commercial farming sector, is one of the few African countries that is largely self-sufficient in terms of foodstuffs. Countries like Sierra Leone, Guinea Bissau, Ethiopia and Mali all have very large agricultural sectors as a portion of their economy, but are all net food importers – and import dependency is set to expand significantly in the future.

The energy sector makes the smallest contribution to GDP in Benin, Togo and Mauritius, whereas in South Sudan it constitutes more than half of GDP, and about 23% in the Republic of Congo. Other countries

where the energy sector makes up a large portion of the national economy are Equatorial Guinea, Angola, Algeria and Gabon.

Guinea, Zambia and Mauritania have the smallest economic contribution from the materials sector. The two countries with the largest contribution from raw materials are Guinea (bauxite and iron ore), Zambia (copper) and Mauritania (mostly iron ore and phosphate). And the countries with the smallest services sectors are South Sudan, Algeria and the Democratic Republic of the Congo (DR Congo), all about 31% of GDP in 2019. The services sector constitutes more than 60% of GDP in Zambia (62%), Botswana, Cape Verde, Eritrea, Mauritius, São Tomé and Príncipe, Djibouti and Seychelles (at 78%).

Africa's upper-middle income economies trail behind those in the rest of the world in terms of the contribution made by ICT to the economy. In addition to the focus on manufacturing, a focus on ICT can also increase growth in Africa particularly as a means of delivering more effective education and improving service delivery – such as the rollout of identification systems and social grants.

Things are looking up, however. Recent analysis indicates that the share of people working in manufacturing in sub-Saharan Africa has modestly increased and that the long decline in manufacturing's share of GDP has bottomed out.¹⁹ That analysis predates the impact of COVID-19, the recent escalation of the trade war between the US and China, and the fallout from Russia's invasion of Ukraine, however, which may affect these trends.

Industrialisation and growth in Africa

From the analysis in the preceding section, a simple but important point becomes apparent: the low levels of manufacturing and ICT in Africa. That remains true even relative to comparable regions globally: South America and South Asia. In 2019, our standard year of reference, the manufacturing value added to GDP in Africa is respectively around one percentage point below the average for South America and eight percentage points below the average for South Asia. Comparatively, then, Africa is significantly under-industrialised.

This is partly why, in a 2017 working paper for the African Development Bank, Borhat and colleagues describe a sub-Saharan African productive structure that is 'inherently characterised by lower levels of economic complexity, which informed the notion of limited productive capabilities ... the African manufacturing sector is marginal in nature and points to limited employment opportunities'.²⁰

While some African countries' industrialisation policies are evidently self-defeating, others are not. South Africa, for example, which has a large domestic vehicle manufacturing industry, could stipulate that the government will only procure locally produced vehicles for official use, to support local industry, but it does not. An excessive regulatory burden, including requirements for black economic empowerment, ensure that South Africa's ability to compete against Chinese imports in its African hinterland is steadily eroding. On the other hand, there have been successful state efforts to support localised manufacturing development. Several years ago, Nigeria established a domestic cement industry by offering a four-year licence to import cement on the condition that the licence holder would invest in a domestic cement production plant. Today, Nigeria is a net exporter of cement and the deal has created the richest African (Aliko Dangote).²¹

But the biggest opportunity to grow domestic manufacturing is intra-African trade (see Chapter 8). Close to 60% of African imports are manufactured goods by value, while the dominant export segment is energy exports such as oil, coal and gas. Many of the imported goods can be manufactured locally and boost the value of regional trade. There is great potential to increase intra-African trade in a host of foodstuffs, beverages and cigarettes, rubber and plastics, electronics and non-metallic mineral products.²² Replacing imported manufactured goods with goods manufactured in Africa will not be easy: global value chains have improved efficiencies and reduced prices, making it difficult for new entrants to compete. Still, it remains a crucial step in the transformation of African economies – and previous sections have indicated that global value chains are evolving, with potential opportunities opening up for Africa.²³

The entry point for manufacturing traditionally involved labour-intensive segments of regional manufacturing value chains, meaning

that labour costs needed to be competitive. Given Africa's various disadvantages – poor physical infrastructure,²⁴ a high disease burden, poor rule of law, low regulatory and policy quality, and a lack of policy certainty, among others – the general view is that African labour costs need to be cheap enough to compensate for these deficits.²⁵

However, a 2017 study of Africa's manufacturing labour costs by Alan Gelb and others²⁶ concluded that poor African countries have higher labour costs than their average income levels would suggest. The study compared 12 African countries to 17 non-African countries. Only Ethiopia compared favourably; in all other African countries included in the study, labour costs were higher than those of their non-African peers. In this regard, South Africa stands out as a middle-income country with particularly high labour costs and a very capital-intensive industrial sector – which partly explains its extraordinarily large burden of unemployment.

But one of the effects of the Fourth Industrial Revolution is the declining importance of labour costs in the location of industry. And this chapter has already mentioned the trend of locating manufacturing closer to end markets. For these and other reasons, Carol Newman and her co-authors believe that industrialisation in Africa remains possible, although its shape and form will differ from that previously experienced elsewhere. Writing in 2016, they offer three considerations:

First, economic changes are taking place in Asia that create a window of opportunity for late industrializers elsewhere to gain a toehold in global markets. Second, the nature of manufactured exports themselves is changing. A growing share of global trade in industry is made up of stages of vertical value chains – or tasks – rather than finished products. Trade in tasks offers late industrializers an opportunity to enter global markets in areas suited to their factor costs and endowments of skills and capabilities. Third, trade in services and agro-industry is growing faster than trade in manufacturers. These 'industries without smokestacks' broaden the range of products in which Africa can compete, and a number of them are intensive in locations specific factors abundant in Africa.²⁷

Eventually, too, because Africa is growing so much more slowly than other regions, wages in Africa will become competitive and offset the productivity advantage of incumbent industrial producers, including those in East Asia. Even so, according to a 2017 analysis by Alan Gelb and others at the Center for Global Development,²⁸ most African countries (with the exception of Ethiopia) are still some distance away from this point. China and other countries in East Asia are, however, restructuring their economies to meet growing domestic demand, which will create space for Africa to compete with countries such as Bangladesh as the low-end manufacturing market of choice for future relocation.²⁹

In their 2016 multi-year study of industrial development, Carol Newman and her co-authors³⁰ compared eight African countries with Cambodia and Vietnam, and they offer a number of reasons which, taken collectively, explain Africa's lack of industry. The first is the widely held belief that the initial conditions for industrial development do not exist in Africa, including core infrastructure such as roads and rail, and human capital – basically, an educated, healthy workforce. Furthermore, as the belief has it, there are barriers to entry and the financial sector is not large or sophisticated enough, with small banks and underdeveloped financial markets being the norm. Without greater financial depth, many African countries have long struggled to attract larger investments. However, at the time of their industrialisation, these conditions did not exist in Japan, the so-called Asian Tigers (Hong Kong, Singapore, South Korea and Taiwan), or China. Greater financial depth, core infrastructure and a better-educated workforce developed in response to incentives, policies and effort. Governments are responsible for creating the right incentives to allow physical, human, social and knowledge capital to develop. That, in turn, requires a governing elite committed to economic growth and sufficient government capacity to formulate and implement policy. The challenge, examined in Chapter 13 that deals with governance is that many African leaders govern in the interests of their tribe, ethnic group or region, and struggle to keep broad interests and coalitions together.

The second is that few African countries (Mauritius is a rare exception) set out and implemented a concerted package of public investments, appropriate policy and institutional reforms to increase the share of industrial exports in GDP. In most African countries, little or no consistent effort has been made to boost non-traditional exports, which still mostly consist of commodities. This has changed – with Ethiopia (prior to the civil war) and Rwanda generally considered to be leading the pack.

The third is that, contrary to successes achieved elsewhere, most African governments have paid little or no attention to making special economic zones (SEZs) work. SEZs have played a large part in Asia's successful industrialisation. They allow export-oriented industrial agglomerations to benefit from the advantages of being in close proximity to knowledge-intensive institutions, including foreign and domestic companies that are more productive, research institutes, and universities, which in turn lead to information and knowledge spillovers.

Providing improved social services and infrastructure in a limited physical area attracts foreign companies and high-quality staff.³¹ In low-income countries, the domestic industry generally benefits from positive knowledge spillovers from foreign-owned firms, especially if it's part of the same value chain. Since African governments have not established local value chains, African firms have not benefitted from the SEZs that a number of countries have established.³² Instead, manufacturing firms are dispersed across urban areas with limited requirements or incentives to source locally, train locals and establish local value chains.³³ Ghana has gone as far as establishing a 'one district one factory' initiative, with little apparent focus on the associated requirements or benefits of locating factories closer to one another.

The fourth reason is that, even though African governments have created agencies and boards that advocate for foreign direct investment, they did this without real commitment and implementation support, which explains why these efforts achieved very little.³⁴ So, most African countries linger at the bottom of various indices that measure the ease of doing business and attractiveness to foreign investment.

And the final reason for Africa's lack of industry is that many African countries, such as Ghana, Kenya, Mozambique, Nigeria, Senegal and

Tanzania, have embarked on investment reforms in an effort to improve the physical, institutional and regulatory environments in which firms operate. However, active efforts to improve the competitiveness of domestic industries or practical measures to reduce trade friction costs resulting from poor trade logistics have not accompanied these reforms.³⁵

Bad luck has also played a role in Africa's inability to industrialise. When African economies spluttered back into life at the end of the 20th century after decades of poor growth, they had to compete with the industrial North and with a number of countries in East Asia, including China. The result was a spate of reports, most prominently a 2015 paper by Dani Rodrik of Harvard University,³⁶ who coined the phrase 'premature deindustrialization' by showing that employment in Africa's manufacturing sector, and manufacturing's share of GDP, were falling in sub-Saharan Africa. For Rodrik, and many others, the structural constraints on industrialisation were simply too large.

In this context, the increased role of Chinese companies in manufacturing in Africa in recent years (as opposed to exporting to Africa) presents an interesting paradox.³⁷ For example, the largest ceramic tile factory in Africa was recently built by China in Ethiopia. Nearly a third of the more than 10 000 Chinese companies that McKinsey & Company³⁸ estimates are active in Africa and are involved in manufacturing. Together, they are responsible for more than 12% of Africa's industrial production. Most of them are small and privately-owned companies, not state-owned behemoths, and their focus is on serving the needs of Africa's fast-growing market rather than on exports – with some exceptions, such as Ethiopia.

The dominance of Chinese firms is even more pronounced in infrastructure, a field in which they claim nearly 50% of Africa's internationally contracted construction market. Most of these companies are oriented toward serving the domestic market, not towards exports. They appear to 'represent a long-term commitment to Africa rather than trading or contracting activities'.³⁹ The McKinsey report goes on to argue that

... 89 percent of employees were African ... this suggests that Chinese-owned businesses employ several million Africans.

Moreover, nearly two-thirds of Chinese employers provided some kind of skills training ... Half of Chinese firms had introduced a new product or service to the local market, and one-third had introduced a new technology. In some cases, Chinese firms had lowered prices for existing products and services by as much as 40 percent through improved technology and efficiencies of scale. African government officials overseeing infrastructure development for their countries cited Chinese firms' efficient cost structures and speedy delivery as major value adds.

Why, when the Chinese are constrained by the same lack of infrastructure, a poorly educated workforce and other conditions, have so many privately owned, small Chinese companies been able to penetrate the African manufacturing market? If Chinese companies can enter and grow the manufacturing sector in Africa, why can't Africans?

The costs of a manufacturing pathway

Beyond more rapid growth, the pathway to a growing manufacturing sector ultimately has important spillover effects on other sectors. It generally leads to improved productivity in the agricultural sector and incentivises the development of higher-value services – but not without costs of its own.

First, a manufacturing pathway comes with short- to medium-term costs relating to poverty and even employment. Because it diverts expenditure towards investment in higher-value activities, it may not create more jobs in the short term, promising instead to increase formal employment in the medium and long term as rates of economic growth accelerate. Large increases in employment in the formal sector can push up low-end wages and reduce inequality. Being part of the formal sector locks workers into annual wage negotiations, allowing them to qualify for sick leave and other benefits and to be part of pension schemes. In addition, countries like Bangladesh, Vietnam and others built their manufacturing success on the back of extreme labour exploitation in the thousands

of factories and sweatshops that eventually made South-East Asia the global manufacturing hub. It is debatable if this pathway is open in the 21st century, on a continent where democracy is at significantly higher levels and where the voice of the people readily translates into street protests and even violence.

Years ago many of today's developed countries responded to the problem of inequality and large-scale unemployment with the creation of a welfare state. In exchange for paying taxes, the state protected and promoted the economic and social well-being of its citizens.

This was possible because these (mostly Western) states were strong, having evolved through external war and competition, including in many cases by the extraction of resources from colonies in Africa, into a system of governance that was underpinned by a social contract between the elected government and its citizens. In return for compliance and taxes, governments provided services and protected against external threats.

At the heart of the welfare model are various mechanisms through which the state provides key services such as education and healthcare, and redistributes income from richer to poorer people through a progressive tax system. Modern welfare states include Germany and France but it is most developed in the social democratic system in the Nordic countries. This system, which has created the most advanced, egalitarian and competitive societies in modern history, is rooted in the bitter experience of centuries of war and poverty.

These countries have sustained robust rates of economic growth over long time horizons, partly a function of the fact that as a group they have loitered in the demographic sweet spot for economic growth with ratios of 1.7 working-age persons to every dependant for successive decades (see Chapter 3).

A number of highly developed countries that are very exposed to international competition have therefore managed to simultaneously invest in greater social inclusion and in building globally competitive economies. Admittedly, this social consensus is under considerable political pressure today, even in a country like Sweden, but that may be due to the successes achieved in the past and the political impact of migration rather than to other factors.

The kind of welfare societies found in the Nordic countries with their low inequality and the economic security provided by the state is good for growth. Since the 1930s, economic growth per capita in Sweden and Norway (even if one excludes oil income in Norway) has been higher than in the US over the same time period.

In the long run, a more inclusive and less unequal society eventually also becomes a higher-growth economy. Contrary to the history of the US (a classic immigration country), these countries evidence strong labour unions and strong worker associations that have resulted in wage moderation and assisted in modernisation. The social contract is strong. As a result, high-end wages in these countries are lower than they otherwise would have been. The wage differential between the least and most productive enterprises is also much lower than in more unequal countries such as the US.

Social institutions have therefore been crucial in creating the high productivity economies of the Nordic countries. They serve as equalising institutions that constrain the growth of inequality by lifting low-end wages and pushing down on high-end wages. In spite of the obvious differences, there is much that Africa can learn from the Nordics.

Typically, when countries embark on a manufacturing transition, poverty levels (and often unemployment) marginally *increase* before the more rapid economic growth makes up for this initial increase. So, policies aimed at industrialisation need to be accompanied by measures to reduce extreme poverty. These could include efforts to support extremely poor families directly through social programmes like cash grants, in addition to investing in education, job creation and the provision of basic services. Indeed, Africa's situation in respect of extreme poverty is already dire, as Chapter 1 made clear.

The alternative to cash or social grants is to provide subsidies, particularly on fuel, bread and basic foodstuffs. These efforts have been particularly popular in many North and West African countries. Direct cash transfers over extended periods may lead to dependency and reduce the incentive to undertake or seek employment, but they have many advantages over subsidies: they are paid in local currency and go directly to the needy.

Social protection policies, then, are best employed in tandem with other economic reform efforts that focus on changing the productive structures. In Egypt, for example, the Takaful and Karama (Solidarity and Dignity) cash transfer programme was launched in 2015 and covers 2.26 million households – approximately 10% of Egypt's population. They were introduced to cushion the impact of Egypt's ambitious 2014 economic reform programme that included the removal of energy subsidies, the adoption of a flexible exchange rate and the introduction of a new value-added tax. The government has also scaled up its social protection programmes. The Takaful part of the programme provides modest, unconditional monthly pensions to the elderly and citizens with disabilities, while Karama provides conditional family income support aimed at increasing food consumption and reducing poverty, and encourages families to keep children in school while providing them with healthcare.⁴⁰

Modern technology now makes a social grant system that can avoid much of the inefficiency and corruption of past programmes feasible. However, none of this is possible without a huge push to provide Africans with secure identity systems and establish a national population register in each country. Even the SDGs recognise that some form of official proof of identity is a prerequisite for participating in a modern economy and accessing basic rights and services. Advances in digital technology, with biometrics and its incorporation into ID systems, make this available much more rapidly and cheaply than before, as Chapter 9 discusses.

The political and practical challenges of many of these measures should, however, not be underestimated. We should bear these in mind as we look at the kinds of interventions that Africa needs to stimulate its manufacturing sector and move to an exploration of a scenario that models this.

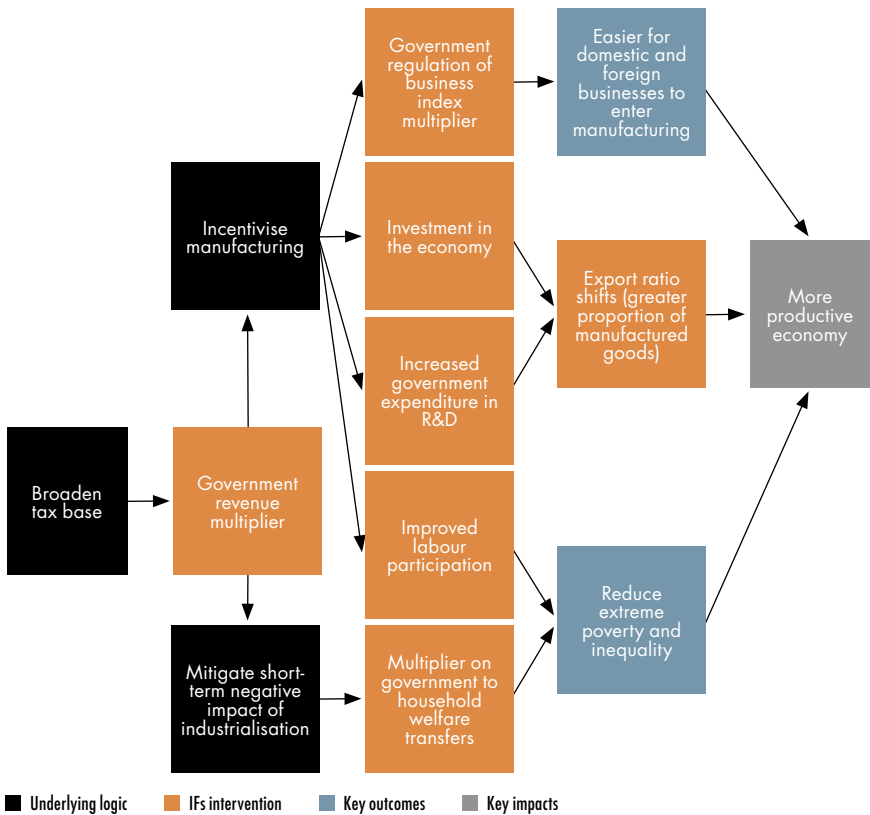
Modelling the Manufacturing scenario

In light of the current status of the manufacturing sector in Africa presented in this chapter so far, what would need to be in place in the continent's economies to buoy up the sector for sustainable growth?

This section briefly presents a set of interventions modelled within IFs to emulate a manufacturing push in Africa with a time horizon to 2043, and compares its impact to the Current Path forecast. Chart 53 conceptualises the Manufacturing scenario.

Clear industrial policy and determined government leadership and action are critical if African economies are to grow more rapidly. The first set of interventions in the Manufacturing scenario, then, increases government revenue to allow for investment in manufacturing and roll out a social grants programme. This reflects the determined efforts by forward-looking African governments to set the agenda for industrial development and reduce the short-term impact of these measures,

Chart 53: *The Manufacturing scenario*



Source: Author

which are often an initial increase in poverty and inequality until such time as more rapid economic growth reduces both.

In addition to low tax rates, complex and antiquated systems and inefficiencies in revenue collection mean that African governments lose out on large amounts of tax revenue. There are also lucrative new tax opportunities opening up through potentially taxing big tech companies such as Google, Facebook, Amazon, Netflix and Apple. There were 643 million internet users in Africa (including 255 million using Facebook alone) at the end of 2020 – so, taxing the digital economy could contribute to the fiscal demands of many African economies.⁴¹

Implementing such policies is not easy, since they require significant political determination and push.

The IMF suggests that 13% of GDP is the minimum tax to GDP ratio for funding basic state functions, and for making additional investments in physical infrastructure, education, health and other development requirements. Accurate data on tax revenues in Africa is limited to only 30 countries,⁴² where, according to the OECD, the average is 16.5%, ranging from 6.3% in Nigeria to 32.4% in Seychelles. In fact, it seems that more than half of African states do not meet the 13% threshold; some, such as Burundi, CAR and Chad, have rates of only about 4%. Without sufficient revenues, governments cannot deliver improved education, infrastructure or health, never mind providing security or democracy – or invest in more productive economies.

In the Manufacturing scenario, by 2043 African governments would raise US\$388 billion more in taxes than in the Current Path forecast. A large number, indeed – but the size of the African economy in 2043, in market exchange rates in the Manufacturing scenario, is forecast to be US\$9.6 trillion (an increase of 10% from the Current Path forecast). Total tax revenues increase by more than double that, implying an effective 10 percentage point increase in tax revenues as a result of the interventions in the scenario. A portion of this, roughly half, is then used to increase household welfare transfers in Africa, and the remainder is invested in support of expanding the economy's manufacturing base.

Transfers are an important instrument for cushioning the impact of policies that focus on economic growth; it is possible to be pro-growth and inclusive at the same time. Generally, cash transfers are much better than fuel or other government subsidies such as those used in Nigeria, Tunisia, Algeria and Egypt. Subsidies that lock governments into foreign exchange-linked expenditure (such as bread subsidies in Egypt that are linked to wheat imports, or fuel subsidies in Nigeria) are particularly problematic – large exchange rate fluctuations or deterioration of exchange rates create an external financial obligation that may escalate beyond the country's means to service the associated costs.

The next set of interventions in the Manufacturing scenario increases government expenditure in research and development by about US\$5 billion in 2043 compared to the Current Path forecast – a particularly powerful driver of improvements in the knowledge component of multifactor productivity. The increase maintains government consumption by destination on R&D at 0.13% of GDP across the forecast horizon, still quite low by comparative standards. In the Current Path forecast, it declines. Proportionately, the increase is largest for Tunisia, which has a particularly well-educated workforce for a lower-middle income country.

Since knowledge transfer is an important component of improved productivity, the next set of interventions in the Manufacturing scenario improves the quality of business regulation as a proxy for lowering the barriers to entry for foreign companies and increasing the ease of doing business for small domestic businesses.⁴³

Finally, an increase in manufacturing should increase employment in the sector. So, the Manufacturing scenario includes a modest increase in labour participation rates equivalent to two percentage points above the Current Path forecast by 2043. Generally, employment intensity of the manufacturing sector is declining globally when compared to the period when Asia experienced its most rapid manufacturing growth.⁴⁴

The result of the Manufacturing scenario is an African economy that is US\$833 billion (or 10%) larger in 2043 than in the Current Path forecast. Because the African economy grows more rapidly, all sectors are larger by 2043 than in the Current Path forecast for that year,

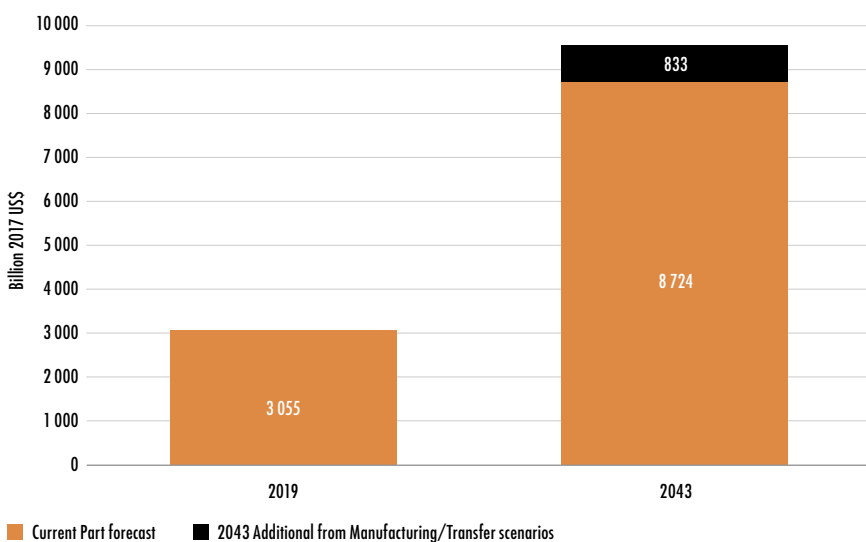
although the IFs forecast is for the energy sector to decline marginally in size from 2030 to 2036. Services grow rapidly under the scenario, constituting almost 55% of the total African economy by 2043.

Chart 54, then, presents the size of the African economy in 2019 and 2043 in the Current Path forecast and Manufacturing scenario. In 2019, the GDP of Africa is just over US\$3 trillion. In the Current Path forecast, it will increase to US\$8.7 trillion by 2043 at an average growth rate of 4.5% per annum. In the Manufacturing scenario, the 2043 African economy is substantially larger, at US\$9.6 trillion, and the average growth rate is 4.9%.

The scenario's initial impact may be limited, but compound growth is incredibly powerful. The rates of growth also accelerate over the forecast horizon and, since this growth alters the composition of Africa's economy, it sets the continent on a more positive growth trajectory.

Income levels also increase substantially in the Manufacturing scenario. By 2043, the average African would have an income of

Chart 54: Comparing GDP: Current Path forecast vs Manufacturing/Transfers scenario, 2019 and 2043

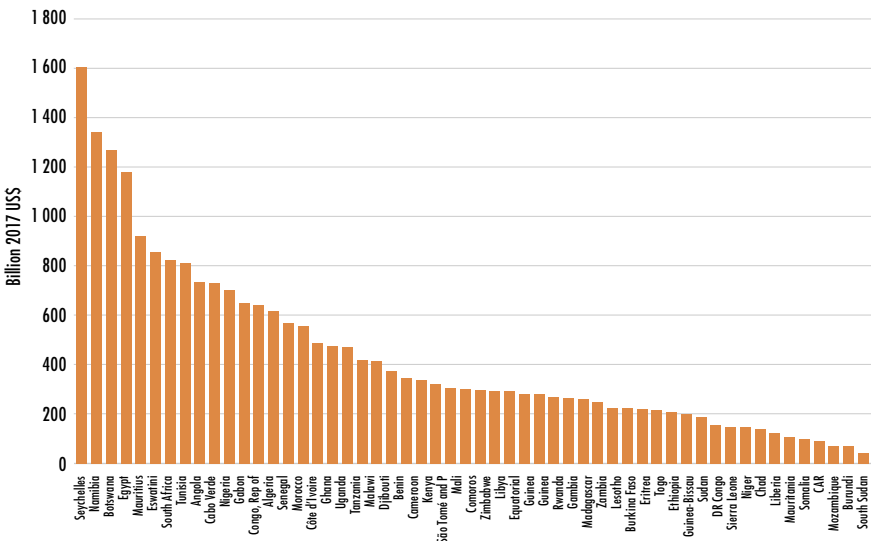


Source: IFs 7.63 initialised from IMF World Economic Outlook database

US\$459 more than in the Current Path forecast, with the largest increases in the seven upper middle-income countries at US\$807 (in PPP). The result is accompanied by a small decline in inequality using the Gini index. Seychelles, Namibia and Botswana are the three countries that gain the most from the Manufacturing scenario in improved average GDP per capita. The three countries that gain the least are Mozambique, Burundi and South Sudan. Chart 55 shows the increase in GDP per capita in 2043 compared to the Current Path forecast for each African country.

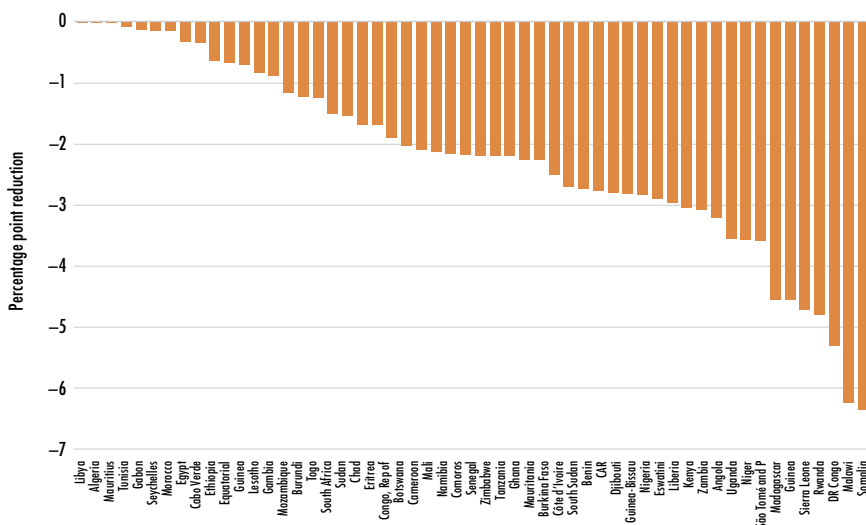
In terms of progress toward the SDG headline goal of eliminating extreme poverty by 2030, using the US\$1.90 income measure, the Manufacturing scenario will reduce extreme poverty in Africa by 9 million people, or by about 0.5 percentage points by 2030, and by 2.4 percentage points or 53 million fewer persons by 2043. The three countries that would experience the largest percentage decline in extreme rates of poverty are the DR Congo, Somalia and Malawi.

Chart 55: Increase in GDP per capita in 2043: Manufacturing/Transfers scenario vs Current Path forecast



Source: IFs 7.63 initialising from UNPD World Population medium variant like expectancy and WDI data

Chart 56: *Percentage point decline in rates of extreme poverty (US\$1.90) in 2043 compared to Current Path forecast*



Source: IFs 7.63 initialising from UNPD World Population medium variant like expectancy and WDI data

Inequality comes down in all the country income groups, although the impact is most significant in upper middle-income countries, coming off a higher base.

In summary, the Manufacturing scenario represents solid improvements in the livelihoods of a large portion of the African population.

Conclusion: Reducing poverty through rapid and inclusive economic growth

Since the 1970s, African economies have experienced a limited – as well as limiting – form of structural transformation from low-productivity agriculture to low-end services. Manufacturing and industrial development have never taken off. In fact, the continent appears to be deindustrialising from already low levels.

With a declining agriculture and manufacturing sector and an increase in the relative contribution of the low-end services sector in the

Current Path forecast, Africa is currently likely to experience only modest reductions in poverty. For example, one study found that 5.4% of the working poor were to be found in industry between 2002 and 2012, compared to 16.4% in services and 78.2% in agriculture.⁴⁵ Rapid poverty reduction in Africa is intimately associated with changes to and within the agricultural and manufacturing sectors. But with the right policies and a dedicated effort, more rapid progress is possible.

To develop, Africans now need to transform their economies to become more productive and enable more rapid income growth. Traditionally, this has been achieved through industrialisation, although the breakthroughs in productivity improvements in services also mean that services-led growth can translate more rapidly into improvements in other sectors.

The Manufacturing scenario presents the effects of efforts by African governments to reform the tax system while improving the business environment, reducing barriers to growth, incentivising domestic and foreign direct investment, spending more on research and development to unlock more rapid rates of economic growth, and increase formal sector jobs. It includes measures to counter associated increases in inequality. Industrialisation should generally be pursued when countries have graduated to lower-middle income status. It requires a stable and facilitating policy framework, government support and incentives, as well as a large enough private sector to drive the innovation agenda. And in many senses, this chapter's findings emulate the implementation of some of the components of the AU strategy for its Accelerated Industrial Development of Africa (AIDA) that was launched at the 10th Ordinary Session of the African Union Assembly of Heads of State and Government in September 2008.

Starting from a low base, where most workers engage either in subsistence farming or informal services, Africa has more to gain from structural transformation than other developing regions, but to date, it has not managed to achieve this. Industrialisation in Africa will create more formal sector jobs and because it would change the productive structures of African economies, unlock more rapid growth. James Manyika and colleagues remind us that the contribution of manufacturing to an economy shifts as a nation matures – and that, in

advanced economies, 'manufacturing promotes innovation, productivity, and trade more than growth and employment'.⁴⁶ More rapid growth ultimately translates into more employment – not in the heavy manufacturing industries of the first, second and third industrial revolutions, but in a steady movement towards a knowledge economy.

In the meantime, the continent needs to invest in lowering transport and infrastructure costs, and ensure policy certainty and a low regulatory burden to compensate for Africa's relatively high labour costs. It also must ensure the success of trade integration to provide larger markets and rapid digitisation. Collectively, these will attract and grow manufacturing.

In a future where more goods will be produced and consumed in regional rather than global markets, and possibly in a much more distributed manner, Africa has considerable opportunities for industrialisation as well as regional trade. But the continent can only realise these opportunities if it embarks on a deliberate effort to move up the manufacturing curve, establish and support SEZs, set clear industrial policies, provide relevant education, and invest in the necessary digital backbone. Digital production – particularly through the impact of AI, automation and robotics – will play a role in this journey, which points to the importance of investing in ICT.

But most importantly, the transition from low to higher productivity requires active governments that set up, nurture and support dynamic local industries and services, changing the dominant mode of production – in effect, governance that changes society as a whole. These are measures that will need very careful, if not surgical, engagement by a competent and modern bureaucracy.

8

Free Trade in Africa



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Trade and globalisation are often associated with neoliberal economics, the mention of which is something of a red flag to a bull in much of Africa. Yet, for all their shortcomings, they have made an immense contribution to humanity's current levels of unprecedented prosperity and development – but less so in Africa than in other parts of the world. Why is this, and what is required of Africa for it to emerge from the trade regimes of its past into a consolidated free-trade future?

To answer these questions, this chapter opens with a look at the history of free trade on the continent, how Africa has fared economically through the waves of trade globalisation, and the complex and often hostile way in which neoliberal policies are received in most African countries. It goes on to chart the move away from trade multilateralism and explore how Africa's trade relations with the rest of the world have shifted over time. After this look outwards, the chapter turns its focus inwards to the continent's intra-African trade efforts, before putting forward the African Free Trade scenario – a set of interventions for unlocking the continent's trade potential.

Free trade, trade globalisation and neoliberal policies in Africa

The reasons for Africa's general hostility towards globalisation are not hard to fathom. They have roots in the extent to which expanding trade during previous centuries was substantially fuelled by slavery, imperialism and colonialism, and the associated flows of goods from India, Africa and elsewhere to Europe and the Americas. To a large degree, the price of Europe and North America's wealth was Africa's immiseration.

To help us visualise this, the African Commodity Trade Database presents data from 1730 to 2010. It includes the value of the slave trade

in and from Africa in its estimates. Even when this distasteful measure is included, however, Africa has fared poorly in historical accounts of world trade.¹ During the second half of the 18th century, African exports grew quite rapidly as the regional production of gold, gum, ivory and palm oil overtook the value of the slave trade. After the Berlin Conference, however, the relative prices of major African export products started a prolonged descent until the eve of World War II. By 1940, Africa's terms of trade were back at their 1800 levels.

Even the discovery of diamonds (1867) and gold (1884) in South Africa did not alter this dominant trend. In the meantime, an increasing number of African colonies became dependent on the export of copper (including Northern Rhodesia, present-day Zambia, and the Belgian Congo, present-day Democratic Republic of Congo) – and after independence, on oil (Nigeria, Angola, Sudan, Niger and Equatorial Guinea).² Africa remained poor because it specialised in activities that had diminishing returns. Without the diversification of economies, free trade consolidated the position of the rich and kept the poor down. What Europe was doing was protecting and subsidising its expanding manufacturing sector, and only liberalising trade when it was to its distinct advantage to do so.

The first wave of modern trade globalisation peaked in the years immediately before World War I, when exports as a share of global gross domestic product (GDP) reached 11–12% – before crashing down during the Great Depression of the 1930s and World War II, to bottom out at 4% of GDP.

The second, much longer, wave of trade globalisation started in 1945. In the years that followed, the world experienced unprecedented improvements in general wealth, health and well-being as trade emerged as an important driver of improvements in national average incomes and productivity.³ The value of exports as a share of global GDP rapidly advanced from below 5% in 1945 to 9% in 1960, 15% in 1990 and 26% in 2008. After the global financial crisis, trade contracted to about 21% of global GDP before slowly recovering until the impact of COVID-19 in 2019 temporarily reversed these trends. Globally, pre-COVID-19 trade volumes were 40 times larger than they were at the end of the first wave of globalisation in 1913.⁴

The second wave of trade globalisation was enabled by advances in technology such as commercial civil aviation, modern communication and improvements in shipping.⁵ There was also no war between the core states at the heart of the bipolar system, such as between the US and the former Soviet Union, although several proxy conflicts were fought in Asia and Africa – particularly in the Horn of Africa and in Angola. China's rapid integration into the global economy, including its eventual admission into the World Trade Organization (WTO) in 2001, the impact of the single European market, and the opening up of the Russian and Indian economies also boosted trade.

As trade expanded, it had a significant positive effect on economic growth in participating countries, although the specific effects on wages, household incomes and poverty differ by country and by sector. Generally, the growth in trade in industrialising countries was driven by trade liberalisation. So, much of the increase in trade is believed to be the result of the reduction in average tariffs – from about 22% of trade value during the 1940s to below 5% by the time the WTO was established in 1995.⁶

The extent to which trade globalisation has led to a race to the bottom in terms of placing factories in locations where labour costs are low, resulting in sweatshop practices in developing countries, is often cited in mainstream media – and is another reason for the generally negative views about globalisation in Africa.

Whereas globalisation can, with some caveats, be considered a 'global good' that has the potential to improve well-being in most countries, the timing and point at which countries open up their economies is important.

But the most important reason for a general hostility towards the policies generally known as neoliberalism is undoubtedly the impact of the structural adjustment programmes that the World Bank and International Monetary Fund (IMF) foisted on Africa during the 1980s and 1990s, as discussed in Chapter 1. Government was bad and the private sector, free trade and open markets were the answer to all of Africa's manifold challenges, Africans were told, while the reality is that almost all of today's advanced economies, such as those of the US and Germany, have grown their industries largely through subsidies and

protectionism. Whereas development in countries as diverse as South Korea, Argentina, Mexico and Turkey had occurred through tariff barriers, quotas, industrial licensing and subsidies, Africa was not allowed to protect its new industries.

Generally, the continent has benefitted little from the advantages of trade globalisation compared to other regions. After independence, Africa's share of global merchandise exports declined from 7.4% in 1948⁷ to 2.5% in 2018.⁸

In 2008/09, the world economy experienced its most severe financial shock since the Great Depression of the 1930s and the deepest economic downturn since World War II. Trade collapsed; the economic contraction, beginning in the third quarter of 2008 and lasting through the second quarter of 2009, was even larger than during the first oil price shock and recession of 1973/74. It took several years to recover – and then, a decade later, COVID-19 saw an unprecedented disruption in the global economy as countries scaled back on production and consumption, followed shortly thereafter by Russia's invasion of Ukraine with its attendant shocks. In its October 2021 review, the WTO opined that 'the pandemic will not have had a fundamental structural impact on the relationship between world trade and income', which 'saw merchandise trade growing around twice as fast as world GDP' in the years before the global financial crisis.⁹ It is, however, increasingly evident that global trade has now become a driver of inequality within and between countries.

Although agriculture contributes about 15% of GDP, much has been made of Africa's potential in the belief that it has a comparative advantage, particularly with its traditional trading partner, Europe. For decades, no meeting about trade in Africa would start without reference to the large subsidies that cattle (and other) farmers in the EU receive and the regulatory hurdles that effectively prohibit most agricultural imports.¹⁰ Then there are the massive subsidies for large commercial farmers in the US, most of which go to large producers of corn (maize), soybeans, wheat, cotton and rice.¹¹

Access to agricultural markets outside Africa has served as an effective lightning rod to divert attention from other, more important, matters relating to trade – schemes that would incentivise value-added exports, low-end manufacturing and the beneficiation of the continent’s vast mineral exports. In this vein, Erik Reinert believes that ‘a deal should be struck by which the First World is allowed to protect its own agriculture (but prevented from dumping its surpluses on the world markets) while the Third World is allowed to protect its manufacturing and advanced services sectors. This’, he argues, ‘is the only policy that would be consistent with successful development policy over the last 500 years’.¹²

From GATT to the decline of multilateralism

In this context, a significant development to advance trade was the General Agreement on Tariffs and Trade (GATT) that was signed by 23 countries in Geneva in 1947. The international community undertook a series of subsequent negotiations to expand and broaden the impact of trade, but much of that was to the benefit of established trading nations. Whereas GATT gave attention to the special needs of developing countries, much of that changed with the transformation of GATT to the WTO.¹³ Eventually, at the conclusion of the so-called Uruguay Round of negotiations in 1994, WTO members agreed that the next round of negotiations, the Doha Round (dubbed the development round) would look towards the needs of poorer, developing countries.

This never materialised, for although the Doha Round commenced in 2001 it was never concluded and the focus has now decisively shifted away from global arrangements. In fact, in the decades since the Uruguay Round, its only success has been the conclusion of the Trade Facilitation Agreement (TFA) that entered into force in 2017.¹⁴ Under Donald Trump’s presidency, the future of the WTO also came under threat as economic nationalism and populist protectionism in the US ran their course, spilling over to other countries and eventually settling on China as the great evil. The result was an impasse as the WTO’s Appellate Body – the final arbiter on trade disputes – ground to a halt

when the Trump administration blocked the appointment of new judges to maintain its quorum. US President Joe Biden subsequently supported the appointment of a new head for the WTO, but the US remains opposed to the resolution of the appellate impasse until its ‘systemic concerns’ about the appellate body have been resolved.¹⁵

With the rules-based trading system in a mess, competition between the West and China intensifying, and with the recent Russian invasion of Ukraine, the trend in recent years has been towards regional agreements and the emergence of plurilateral negotiating structures that allow some countries to agree on specific issues beyond WTO rules, but which are insufficiently inclusive to be called multilateral agreements. Examples of plurilateral agreements include the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) which came into effect in December 2018 and the Regional Comprehensive Economic Partnership (RCEP) which entered into force in January 2022.

Preferential access and trade in Africa: Everything But Arms and AGOA

Even before the final Doha impasse, several efforts had been made to help integrate developing countries into the global economy and unlock the potential of export-driven growth – largely by granting Least Developed Countries ‘special and differential treatment’.¹⁶ Typically, these agreements provide greater access to large domestic markets, especially those of the EU and the US.

The legal basis for these trade preferences is the Generalised System of Preferences (GSP), which provided for exemption on the basis of a list of criteria such as per capita gross national income and economic vulnerability to external shocks.¹⁷ The two most important ones that relate to Africa are the EU’s Everything But Arms initiative and the US’s African Growth and Opportunity Act (AGOA).¹⁸

Africa is Europe’s third-largest trading partner, after the US and China. Cooperation between the EU and the 79-member group of African, Caribbean and Pacific (ACP) countries dates back to 1975. After three revisions, the Lomé Convention was replaced in June

2000 by the more expansive Cotonou Agreement, named after Benin's capital city, where it was signed. The Cotonou Agreement gives a stronger political foundation to EU–ACP cooperation and includes matters such as good governance, peace and security, arms trade and migration. Most important is that Cotonou replaces the previous system of non-reciprocal trade preferences to ACP countries with reciprocal Economic Partnership Agreements (EPAs). Aid is steadily being replaced with an emphasis on trade. Finalisation of the EPAs has, however, been complicated, with Nigeria, the largest African economy, refusing to sign based on fears that doing so would jeopardise industrialisation efforts.

Today, the EU's comprehensive and progressive trade dispensation has several layers. The first and most important is the Everything But Arms initiative introduced in 2001. It grants Least Developed Countries duty- and quota-free access to the EU single market for selected goods, but excludes arms and armaments. It is also the most extensive; currently, 22 of Africa's low and lower-middle income countries benefit from Everything But Arms. Countries in North Africa and some in Southern Africa are generally excluded, since none have Least Developed Country status. The scheme has no expiry date, and includes access for processed agricultural products as well as textiles.¹⁹

The next level in the EU layer is the so-called 'Standard GSP' that applies to low and lower middle-income countries. The Standard GSP reduces EU import duties for about two-thirds of all product tariff lines and currently applies to Kenya and Nigeria. Cape Verde is currently the only African country that benefits from GSP Plus, which is a special incentive arrangement for sustainable development and good governance that further slashes tariffs when countries implement 27 international conventions related to human rights, labour protection, protection of the environment and good governance.²⁰

However, as the EU has concluded trade agreements with other developing countries, the preferences granted to Africa have inevitably eroded, a problem also evident with AGOA.²¹ A more recent complexity is the introduction of the EU's Carbon Border Adjustment Mechanism (CBAM), which targets products that do not meet the European Green Deal's standards. The European Green Deal measures include new

trade requirements such as a planned carbon border adjustment mechanism to ensure that prices of imports more accurately reflect their carbon footprint as part of the EU's climate strategy to reach net zero emissions by 2050. Under this mechanism, importers pay if their product has a higher carbon footprint than their European counterparts. This implies that emerging economies and developing countries will need to invest in decarbonisation on their end to avoid the carbon border adjustment. This adjustment will need to be done rapidly and at a cost; as such, the European Green Deal could complicate trade between Africa and the EU in agriculture, fossil fuels and other natural resources. Europe, then, is essentially forcing African countries to bear the cost of decarbonisation.

Unlike Everything But Arms, the EPAs are not unilateral concessions by the EU. They also go beyond conventional free trade agreements to include sustainable development and poverty reduction goals. But they are controversial for two reasons. The first is that they include explicit language on human rights, democratic principles, the rule of law and good governance – language that is, of course, resisted by countries that do not meet these requirements. The second is that, in addition to the advantages that an EPA member would have in trade with the EU, each EPA states that countries in the same region (such as Nigeria in West Africa) should give one another at least the same advantages as they do to the EU, as an incentive to grow regional trade. Future trade agreements between ACP countries or with other developing countries will automatically also apply to the EU, granting the latter 'most favoured' nation status.²²

Moreover, some national governments now balk at the realisation that the agreements would initially reduce tariff revenues from trade with neighbouring countries – a challenge that will also face the African Continental Free Trade Area (AfCFTA).²³ The EU has been alive to these concerns and has, among other things, commissioned a Sustainability Impact Assessment (SIA) to 'provide a robust analysis of the potential economic, social, human rights and environmental impacts that the trade agreement under negotiation could have in the EU, in the partner country or countries, and in other relevant countries or specific regions'.

In December 2020, Kenya concluded a trade agreement deal with the UK shortly before the end of the Brexit transition period. The agreement gives duty-free access to Kenyan goods entering the UK, as well as for British exporters shipping to Kenya. Under the provisions of the East African Community (EAC) Customs Union Protocol, other members of the EAC can also accede to the agreement that seeks to provide full duty-free and quota-free market access conditions for goods originating from an EAC partner state into the UK market.

As opposed to Everything But Arms, the US AGOA of May 2000 is based on progress in meeting criteria such as the establishment of a market-based economy, adherence to the rule of law, elimination of barriers to US trade, and investment and protection of workers' rights. The US Congress determines annually which countries qualify for AGOA benefits. After its initial 15 years, AGOA was extended for 10 years to 2025. It provides tariff-free access to 6 500 products by 39 countries, ranging from oil and agricultural goods to textiles and handicrafts.

What have the effects of AGOA and Everything But Arms been on trade in Africa? These initiatives have modestly stimulated foreign direct investment (FDI) flows to Africa as foreign investors produce in Africa and export to EU and US markets. For instance, exports from the AGOA countries to the US market rose from about US\$8 billion in 2000 to roughly US\$54 billion in 2011. The duty-free entry of apparel into the US market has been AGOA's largest success, with apparel exports from a handful of African countries to the US increasing rapidly. But the limits of unilateral arrangements such as AGOA soon became evident when quota restrictions on apparel from China and other Asian countries were phased out from 2005, eroding the initiative's impact.²⁴

AGOA and Everything But Arms are not trade agreements negotiated between two partners, but rather a unilateral concession made by one party (the US or the EU) for the benefit of a developing country that meets certain minimum criteria. They imply temporary relief that can be revoked at any point – goods may be taken off the eligibility list, or the entire arrangement can be cancelled, meaning that the beneficiary countries have no recourse to remedies or dispute

resolution. The future intention is to negotiate reciprocal free trade agreements with Africa, either bilaterally or regionally. These would eventually replace the non-reciprocal AGOA; the first, with Kenya,²⁵ was under discussion at the time of writing. Such bilateral agreements present challenges: they could undermine continental and regional arrangements, such as the EAC customs union that operates a common external tariff. The continent's priority is to ensure that its rules of origin promote and support local production and value addition in Africa.

In addition to AGOA, there have been US programmes to provide guarantees, some equity, local currency loans and investment advice to US companies. The Obama administration launched the Doing Business in Africa Campaign, Power Africa and Trade Africa, while the Trump Administration transformed the Overseas Private Investment Corporation into the Development Finance Corporation, began negotiations for a free trade agreement with Kenya, and launched Prosper Africa – a government initiative to increase trade and investment between the US and the continent.

Although it appears, then, that preferential access does improve access to, say, the US or European market, it is much less clear whether this results in lasting improvements in export performance once countries exit preferential access. Like aid, these types of concessions have a limited effect if they are not accompanied by vigorous domestic reform. For lasting trade progress, preferential access should be complemented by domestic reforms such as improved access to imported inputs through reduction of tariffs, a lighter regulatory burden and enhanced access to infrastructure (such as through the creation of effective special economic zones) and flexible exchange rate regimes that lead to competitive exchange rates.²⁶

While Europe and the US have made various efforts to improve trade with Africa, China has been Africa's largest single bilateral trading partner since 2009. The speed at which China has achieved this is truly amazing. China has signed bilateral trade deals with more than

40 African countries, although the US remains the largest bilateral provider of aid, as examined in Chapter 10. This indicates the shifting nature of Africa's trade relations with the rest of the world, the focus of the next section.

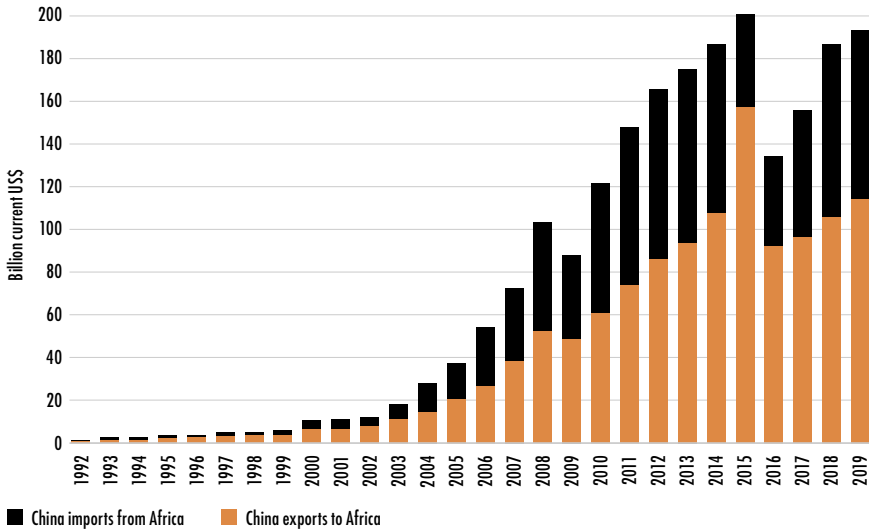
Africa's shifting trade relations with the rest of the world

In 1970, Europe represented nearly 70% of Africa's total trade and North America accounted for much of the rest. By 2018, the EU-28 was responsible for only 36% of Africa's exports and 33% of imports. In that year, only 7% of Africa's exports and 5% of Africa's imports were with the US. By contrast, African trade with countries and regions considered to be in the Global South has steadily increased over the past four decades – particularly trade with China.²⁷

As part of its trade policy towards Africa, in January 2005 the Chinese government implemented the Special Preferential Tariff Treatment (SPTT), removing tariffs from some 190 items from 25 least developed countries in Africa, though excluding countries that have diplomatic relations with Taiwan. In November 2006, it augmented the number of tariff items affected by SPTT to over 440, to increase the range of Africa's exports to China and address the negative trade balance. Then, in 2019 China entered into a free trade agreement with Mauritius, but to date, there have been no large Chinese firms located in Africa to export to that country. This would be a game-changer.

Of course, the changes are not linear, although the trends are clear to see in Chart 57. Bilateral China–Africa trade increased steadily from US\$10 billion in 2000 to US\$203 billion in 2015, before contracting in 2016 as the Chinese economy rebalanced and it became less dependent upon commodity imports for growth at a time when global commodity prices also weakened. Then, from 2017, trade between Africa and China expanded by 16% from US\$154 billion to US\$185 billion in 2018 and US\$192 billion in 2019.

The impact of China's Dual Circulation strategy, announced as part of its 2021–25 five-year plan, is still under discussion but does not appear to further incentivise trade with Africa, given its primary focus on expanding domestic consumption in China.

Chart 57: *China–Africa trade, 1992–2019*

Source: UNComtrade data from 1992–2019

Today, China is Africa’s largest single-country trading partner in both exports and imports, at 9% and 13% respectively. As China and India rise, they drag Africa up with them, for the continent has been able to maintain its relative trade position with both – but with an increased commodities content, as opposed to higher-value goods and services.²⁸ These numbers are considerably less than Africa’s trade with the EU countries, however.²⁹

Africa’s political orientation will inevitably follow these shifts in economic power and influence, in spite of the uncomfortable reality that over 90% of Africa’s trade with China consists of exports of unprocessed commodities, particularly crude oil, minerals, ores, tobacco and wood. China’s export profile to Africa, on the other hand, largely consists of high value-added goods; it is no wonder that the result is an ever-widening trade imbalance in China’s favour, as Chart 57 shows.³⁰

Early in 2019, Standard Bank³¹ predicted that bilateral trade should surpass US\$300 billion in the next three to five years, but warned of the widening trade imbalance. Even before COVID-19 hit Africa in 2020, more than 40 African countries ran a trade deficit with China,

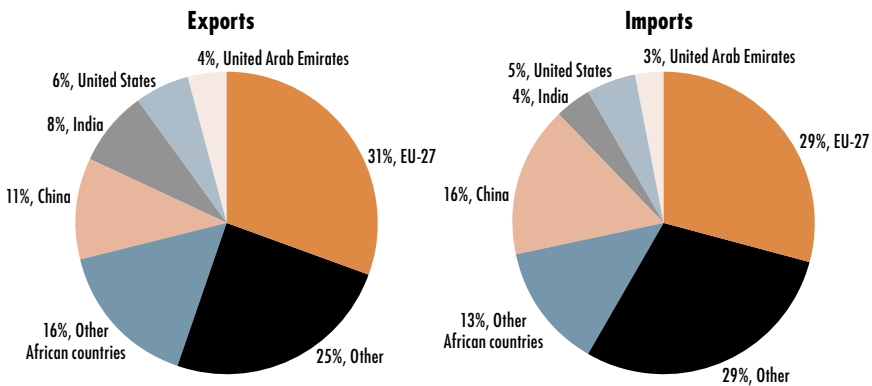
and that trend has accelerated. Kenya’s deficit was particularly large. The largest volume of China–Africa trade is with South Africa – also the largest African investor in China – while trade with the Democratic Republic of the Congo (DR Congo), Mozambique and Zambia was growing most rapidly before the virus struck.³²

Although China’s trade with Africa is only about 4% of its total trade, from a political perspective Africa is significantly more important given the sheer size of the African bloc within the context of multilateralism.

The problem is the declining value-added composition of Africa’s exports. The share of manufacturing in total African exports was close to 30% two decades ago but it declined for several years before increasing, from 2012 to about 27% by 2016. Generally, the value of commodity exports has increased in line with the commodities supercycle that was discussed in Chapter 1.³³

Africa’s trade with the EU is more balanced than with other regions but even here the lack of high value-added goods is glaring. The continent ‘only’ imported 70% manufactured goods from the EU in 2018, while its exports comprised 65% primary goods consisting of food and drink, raw materials and energy.³⁴ As mentioned above, after recovering from the global financial crisis in 2008, the share of manufacturing as a portion of Africa’s trade increased, from 2012, to

Chart 58: African export and import share with main partners, 2019



Source: UNCTAD data

about 27% by 2016. However, apart from Senegal and Togo, the share that manufacturing represents in total exports has declined recently again, including from countries such as Botswana, South Africa, Madagascar and Namibia – countries that have a relatively high share of manufactured exports.³⁵

It is obvious, then, that despite African countries benefitting from the various preferential trading agreements such as AGOA and Anything But Arms, preferential market access has not led to a stronger export performance or to more diversified economies. Rather, other factors such as the demand for commodities from China have come to dominate. Andrew Mold from the UN Economic Commission for Africa argues that there are three reasons for this:

The design of those preferential agreements is partly to blame, with strict rules of origin and unnecessarily tough phytosanitary and product standards. In addition, African firms have displayed a lacklustre response to the opportunities. However, the Achilles heel of these agreements has been their impermanence – they are concessional and can therefore be suspended or simply not renewed (requiring as they do a special dispensation through the World Trade Organisation).³⁶

The power of geography is particularly strong when it comes to trade, and it is typical that countries trade first with other countries in their neighbourhoods and not with countries that are further away. As a result, the natural market for North African countries inevitably lies within the Mediterranean basin, given the sea's potential for transporting high-volume goods and that the Sahara Desert forms a substantial barrier to the south. Algeria and Egypt, and to a lesser extent Libya, are already significant exporters of liquefied natural gas to primarily European consumers. In addition, initiatives such as the Mediterranean Solar Plan could eventually help the EU to meet its renewable energy pledge as the pressures of climate change mount globally. The plan, launched in July 2008, envisages generating 50 to 100 GW of solar power in North Africa for potential export to Europe. However, it has come to a standstill since the Arab Spring uprisings but

there is hope that the need to diversify European energy imports away from Russian gas could reinvigorate solar energy imports from North Africa.³⁷

The EU envisions a Euro-Mediterranean free trade area with Algeria, Egypt, Israel, Jordan, Libya (negotiations are currently suspended), Morocco, Syria, Tunisia, the Palestinian Authority and Turkey. In 2016, the region represented 9.4% of total EU external trade but progress is hampered by politics, instability and the very low level of intra-regional trade in North Africa.³⁸ But at some point, stability will return to North Africa. Its location proximity to the EU will then offer significant potential – only if the region can stop its incessant internal bickering, however.

Intra-African trade and efforts to advance regional integration

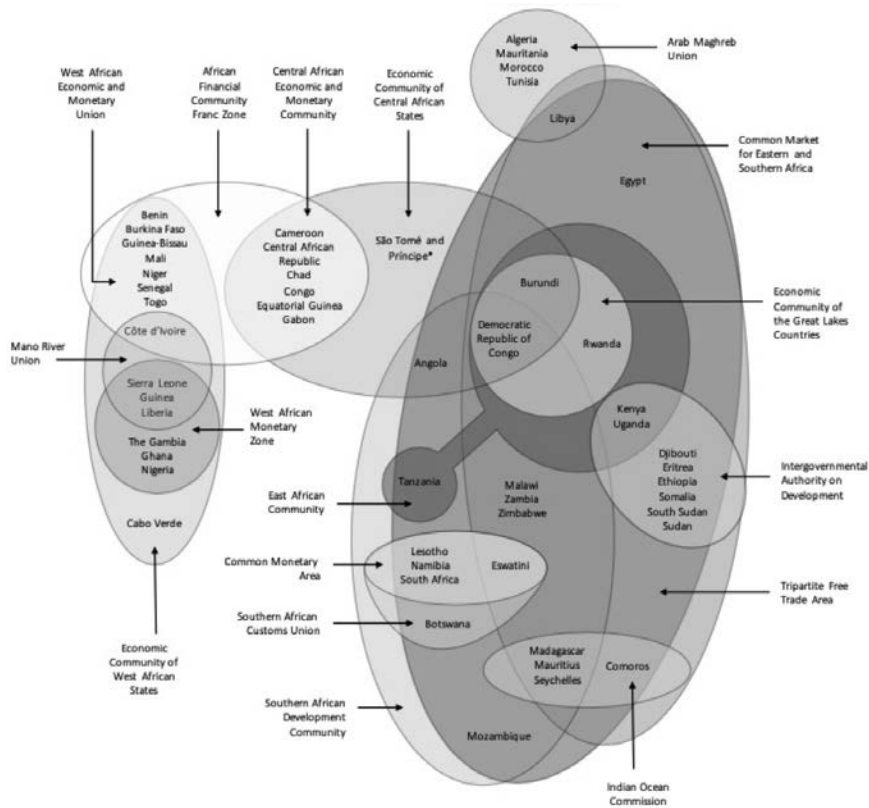
Against the background of the preferential trade agreements between individual African countries and countries outside the continent under the GSP, this section discusses Africa's web of intra-African trade agreements. These include eight Regional Economic Communities (RECs), recognised by the African Union and a plethora of other regional groups (see Chart 59).

Africa has, until recently, done little to increase intra-regional trade, even in foodstuffs. As a result, according to the African Export-Import Bank's *African Trade Report 2020*:

Africa remains on the sidelines of global trade, accounting for just 2.8% of official total trade flows last year [2019], while intra-African trade is severely limited, accounting for just 14.4% of total African trade in 2019. This contrasts sharply with intra-continental trade elsewhere in the world, which reached 73% in Europe and 52% in Asia last year. Intra-African trade was worth just \$147.8bn last year, down from \$156bn in 2018.³⁹

Ironically, given the lack of real trade integration progress in Africa, its advantages were recognised even before the establishment of the Organization of African Unity (OAU) in 1963. The Southern African

Chart 59: Regional trade arrangements in Africa



Source: African Development Bank

Customs Union (SACU) is the oldest in the world, having recently celebrated its centenary. SACU was, of course, not originally established as a vehicle for regional integration but to facilitate commercial integration and tax management by Great Britain, which had various colonial territories in Southern Africa under its control. Then came the Southern Rhodesia Customs Union, established in 1949, and, in 1967, the EAC. The latter two arrangements eventually failed and were disbanded, although the EAC has been resuscitated with the DR Congo joining in 2022. The impact of these first regional economic communities was limited, although today the SACU accounts for more than 50% of the continent’s entire intra-regional trade, and the SADC⁴⁰ approximately 70%.

Later, the 1980 Lagos Plan of Action, which – as Chapter 1 showed – was essentially Africa’s response to the World Bank’s structural adjustment programmes, and the 1991 Treaty Establishing the African Economic Community (the Abuja Treaty), elaborated on the specific economic, political and institutional mechanisms needed to achieve Africa’s economic integration. Neither of these made much progress, but the tradition of grand schemes continued unabated. The African Union Development Agency-New Partnership for Africa’s Development (AUDA-NEPAD) provides an overall integration and development framework for the continent, which again assumes regional integration as one of its core objectives. The most recent grand visions are Agenda 2063 and the AfCFTA.

To varying degrees, these continental schemes view the various subregional economic groupings such as SADC, the EAC and the Economic Community for West African States (ECOWAS) as building blocks towards greater cooperation, or as implementing agencies for the continental scheme.

Since formal trade volumes among African states are low, intra-Africa trade tariff revenue is much smaller than the tariffs on imports from the rest of the world – although it is important to note that the large portion of informal cross-border trade is unrecorded. The *2020 African Trade Report* estimates that formalising informal cross-border trade could potentially increase official trade numbers by 30–50%, depending on the region.⁴¹ Formalising trade would need to ensure tariff levels are kept low. Carlos Lopes, a former head of the UN Economic Commission for Africa (UNECA) estimates that ‘the majority of businesses on the continent pay an average of 6.9% tax on cross-border transactions. The cost of the transactions, added to the cost of production, has a huge impact, not only on the competitiveness of the businesses but also on the quality of life of consumers’.⁴²

Hefty tariffs, poor infrastructure, cumbersome customs procedures and so-called non-tariff barriers invariably inhibit trade flows across borders and often also contribute to smuggling and the growth of the shadow economy if borders are not very well policed. Vast amounts of money can be made smuggling items such as petroleum and cigarettes across borders when prices differ substantially between countries. This

is particularly characteristic of economies in West Africa, the Sahel, North Africa and Central Africa.

A study of Tunisia⁴³ found that its informal and parallel economic sector is substantially larger than the average for other low-middle income countries when measured as a portion of the total economy. Many Tunisians are forced to engage in the informal sector despite their high levels of education, a situation that contributed to the overwhelming frustration that underpinned the Freedom and Dignity revolution that commenced there at the end of 2010 and ignited the Arab Spring. While democracy has since flourished, Tunisia's new political dispensation has not been able to sufficiently displace the opaque insider/outsider economic system that constrains opportunity and forces many into the informal and parallel economy. As a result, Tunisia's large informal and parallel economy is more than survivalist and involves considerable illicit activity – a view borne out by a World Bank estimate that about 25% of the fuel consumed in Tunisia has been smuggled from Algeria, where fuel is cheaper.⁴⁴

Much of the informal sector in Tunisia could, therefore, more appropriately be described as being part of the shadow economy, consisting of black market transactions such as smuggling and undeclared work – a textbook example of what happens when a ruling elite constrains the economy to meet its own ends.

An important reason for the low levels of intra-African trade, then, is that much of that trade is informal and not captured in formal trade statistics. Thus, according to the African Export–Import Bank, 'the low level of intra-African trade is a consequence of largely unrecorded informal cross-border trade (ICBT), a prominent feature in intra-African trade not accounted for in the balance of payment and national account statistics'.⁴⁵

In addition to the various structural reasons for Africa's poor growth, such as a declining demographic dividend until the late 1980s (see Chapter 3) and its role as a proxy battleground during the Cold War (see Chapter 2), bad governance, poor policy and lack of implementation of agreements have all played an important role. Structurally, the continent has not developed regional value chains and does not substantively trade among its members. So, it did not form

part of the global value chains in goods and services that have been developing between parts of Asia, North America and Europe since the 1990s. North Africa has done the worst. The Maghreb is the least economically integrated bloc in the world, with a share of intra-regional trade of only about 5% of total trade. Instead of trading with their neighbours where they could be competitive, North African countries trade with the EU. The lack of regional integration is a significant obstacle to diversification and growth for countries in the region. For example, only 4% of Algeria's trade is within the Maghreb and the 1 600 km border between Algeria and Morocco has been closed since 1994, reflecting the extent to which the fraught political relations (in this case, the dispute over Morocco's occupation of the Western Sahara) in the region determine economics.⁴⁶

In a 2019 report by the IMF on trade potential, the authors point to the lack of regional considerations about trade and the restrictions on trade and capital flows that constrain regional integration in the Maghreb. The report lists the manifold economic benefits that would flow from such integration, including attraction of FDI, ease of movement of capital and labour, more efficient resource allocation and the extent to which it would make the region more resilient to external shocks and market volatility. Countries could, on average, add one percentage point to growth rates with regional integration. However, instead of increasing, trade openness has steadily declined in every country in the region, except for Morocco – and traders face significant hurdles.⁴⁷

The results are stark, with Africa essentially not part of global discussions about trade. Outside of Africa, analysis is no longer fixated only on the growth and structural change in individual economies, but rather uses the lens of regional and global value chains – the complex network that ties the flows of goods, services, capital and technology together across national borders – to evaluate the strength of economies.

Global value chains continue to evolve and may do so more rapidly following the trade shocks associated with COVID-19 and the trade competition between the West and China. First, goods-producing value chains are becoming less trade-intensive and trade in cross-border services is growing more rapidly than trade in goods. Second, goods-

producing value chains are becoming more regionally concentrated, especially within Asia and Europe. Companies are increasingly locating their production facilities in closer proximity to the market, rather than closest to cheap labour, as Chapter 7 showed. The general trend is towards regional instead of global value chains as trade integration in Asia gains momentum and Western countries step away from their heavy reliance on China. In time, this could offer advantages to Africa, with its growing population and consumer base.⁴⁸

But for trade to flourish, whether regional or international, Africa needs good connecting infrastructure and reduced non-tariff barriers, the focus of the next section.

The need for connecting infrastructure and the challenge of non-tariff barriers

Organisations like the World Bank, the African Development Bank and UNECA regularly bring out reports that quantify the extent to which Africa's lack of connecting infrastructure, such as road and rail between neighbouring countries, increases transport costs and creates delays. Poor infrastructure development and bad maintenance of existing infrastructure reduce the competitiveness of businesses and undermine much-needed investment flows. In some East African countries, for example, transport costs are estimated at five times more than in countries in Europe and North America.⁴⁹ The large number of landlocked states means that many, such as Ethiopia, Uganda, Rwanda, Burundi, Lesotho, Eswatini, Zimbabwe, Malawi, Uganda, Burundi, Rwanda and South Sudan, depend on their neighbours for access to the sea.

According to the African Development Bank, Africa has an annual infrastructure funding gap of US\$130 billion to US\$170 billion, with an annual financing gap of US\$68 billion to US\$108 billion.⁵⁰ The numbers speak for themselves. Africa has an average of 204 kilometres of roads per 1 000 square kilometres, of which only one-quarter is paved. That density lags far behind the world average of 944 kilometres per 1 000 square kilometres, of which more than half are paved. Most of the continent's paved roads can also be found in a single country,

South Africa, where they are degrading seriously due to corruption and lack of maintenance.⁵¹

Anyone who has had to travel around West and Central Africa can testify to the dire need for better connecting infrastructure. For example, the capital city of Cameroon, Yaoundé, and Nigeria's capital city, Abuja, are about 100 km closer to each other than Madrid is from Paris. Yet the estimated drive time from Yaoundé to Abuja is about five and a half hours longer than the drive from Madrid to Paris. There are only direct flights from Yaoundé to Abuja on Tuesdays and Thursdays, which means the weary traveller who wants to avoid multiple stops on any other day needs to fork out US\$5 000 for a one-stop Air France flight via Charles De Gaulle International Airport in France or fly across the continent to Addis Ababa to get a connecting flight there. It is for these reasons that the various continental development agencies in Africa are promoting an open skies agreement.

The Yamoussoukro Declaration of 1988 and the subsequent Decision of 1999, both named after the Ivorian city in which they were agreed, commit their 44 signatory countries to deregulate air services and promote regional air markets open to transnational competition. In 2000, the Decision was endorsed by heads of states and governments at the OAU and became binding in 2002 – but it has largely been ignored. Then, in 2018, 23 countries created the Single African Air Transport Market (SAATM) to allow for the full liberalisation of African air travel and a true open skies agreement.⁵² Progress remains painfully slow, however.

In 2015, the International Air Transport Association (IATA) estimated that cross-border deregulation between just 12 African countries would create 5 million new passengers, US\$1.3 billion in annual GDP growth and 155 000 jobs. Instead, Africa's aviation sector remains constrained by excessive bureaucracy, high costs and a lack of an accommodating regulatory environment. Instead of facilitating business and tourism, access by air constrains it, as many African countries restrict access to their skies to protect the share held by inefficient state-owned air carriers – with the sole exception of Ethiopian Airlines, which is thriving.⁵³ Most African countries remain wedded to the notion that a national air carrier, owned by the

government, is a non-negotiable signpost of independence, instead of looking to the most cost-effective way to connect.

There has, however, been recent progress in building and financing infrastructure projects. This was largely spurred by the excess capacity to build infrastructure that became available from China some years ago as its economy restructured towards domestic consumption. In the process, China effectively exported the excess infrastructure-build capacity that had seen the country build large dams and connect its vast territory with modern road, rail and other modes to facilitate its remarkable leapfrog to prosperity. At the time, China was running a large current account surplus with the rest of the world. Eventually, it packaged that excess capacity as its Belt and Road Initiative, which intends to connect China to the rest of Asia, Africa and even Europe – although the COVID-19 pandemic has upended progress.

Africa's infrastructure deficit, then, is widely known and acknowledged. To this end, the AU launched the Programme for Infrastructure Development in Africa and its Priority Action Plan (PIDA-PAP) which is being championed vigorously by AUDA-NEPAD, the AU Commissioner for Infrastructure, Energy and Tourism, the African Development Bank and UNECA. (More on PIDA-PAP in Chapter 11.)

Africa's infrastructure gap is not the only substantial constraint on trade in Africa, however. Another takes the form of non-tariff barriers. Non-tariff barriers include onerous regulatory procedures, expensive visa requirements, corruption and inefficiency – import prohibitions, quotas, export subsidies, export restrictions, technical barriers to trade (such as regulations, standards and assessment procedures), as well as with food safety and animal and plant health standards.⁵⁴ Whereas free trade agreements are subject to long and drawn-out processes associated with the negotiations, the removal of non-tariff barriers results from unilateral efforts and bilateral cooperation between neighbours. Exactly how powerful removing non-tariff barriers are was illustrated in a study done by the Stellenbosch-based Trade and Law

Centre (TRALAC), which found that reducing, by only 20%, the time it takes to move goods across borders would be more economically advantageous for Africa than removing all import tariffs!⁵⁵

At Beitbridge, the congested border crossing between South Africa and Zimbabwe, it takes on average 35 hours for a truck to clear the border from the South African side into Zimbabwe. In response, the South African cabinet, in 2018, adopted a One-Stop Border Framework – and prospects for improvements may be on the horizon. Significant progress has already been made in East Africa, where border crossing times have reduced from several days to between three and six hours as part of the reforms associated with the East African Community – a demonstration of potential progress possible elsewhere.⁵⁶

The World Bank's ease of doing business index for 2019⁵⁷ still only has nine countries from Africa in the top 100, namely Mauritius (at 13), Rwanda (at 38), Morocco (at 53), Kenya (at 56), South Africa (at 84), Zambia (at 85), Botswana (at 87), Togo (at 97) and Seychelles (at 100). The COMESA-EAC-SADC Tripartite Free Trade Area website lists examples of 25 non-tariff barriers to trade that range from import bans and product classification to corruption. Progress on eliminating these barriers is slow, for each non-tariff barrier reflects a vested interest or a local practice along a border region, sometimes spanning several generations, upon which the livelihoods of communities may depend.⁵⁸

The promise of the African Continental Free Trade Area (AfCFTA)

Against this rather concerning backdrop, much hope has been placed in the African Continental Free Trade Area (AfCFTA) as a vehicle to boost trade and help transform African economies to produce higher value-added goods and services. The logic is compelling. Medium- and high-technology manufacturing account for 25% of intra-African trade, but for only 14% of African countries' exports to developed countries.⁵⁹ This speaks to the advantage of regional over international trade. African countries face tariff escalation when it comes to exporting manufactured products. This situation is not unique to Africa, and is typical of the situation in other regions, given the extent to which countries protect and subsidise domestic industry. The AfCFTA is an

opportunity to mitigate the constraint of tariff escalation, encouraging countries to focus on more value-added products and hence to diversify exports away from commodities.

As seen earlier in this chapter, trade integration in Africa has been tried so many times that we can count as many as 14 overlapping regional economic communities, ranging from the 21-member Common Market for Eastern and Southern Africa (COMESA) to the three-member Mano River Union. Africa has a spaghetti bowl of regional structures, although the African Union recognises eight (see Chart 59). Then, in addition to AfCFTA, another large trade-integration initiative is the Tripartite Free Trade Area, which includes COMESA, the EAC and the SADC. It is now, actually, a challenge to harmonise these efforts, given the vested interests and bureaucracy that have accompanied each one.

The decision to establish the AfCTFA was taken at a summit meeting of the AU in January 2012. It aimed to create a single market for goods and services, as originally envisioned in the 1991 Abuja Treaty. The original target date of 2017 was missed, but after a high-level signing ceremony in Kigali on 21 March 2018 momentum has built rapidly. The treaty entered into force on 30 May 2019. Lots of work remains, however, since the agreement is essentially a framework for progressively eliminating tariffs and non-tariff barriers, liberalising trade in services, and cooperating in matters of investment, intellectual property rights and suchlike.⁶⁰ The AfCFTA does not yet provide for continental trade under a single preferential regime; this will require further deliberation and action.

Under the AfCFTA, the African Trade Observatory (ATO) will collect and analyse trade and trade-related qualitative and quantitative data and information; establish a database for African trade; monitor implementation; and evaluate the implementation process and effect of the AfCFTA and the Action Plan for Boosting Intra-Africa Trade (BIAT). The ATO will also serve a capacity-building function, equipping national governments and businesses to analyse and use trade and related data.

The plan is that, by 2034, Africa will have achieved tariff liberalisation on 97% of goods in a staged manner. Ninety per cent of

goods will be liberalised in 5–8 years; 7% of goods will be classed as sensitive and liberalised over 10–13 years; and 3% of goods will be exempt from free trade entirely.⁶¹ The agreement also provides for a Dispute Settlement Body to respond to dumping of foreign products at reduced prices; allows for Special and Differential Treatment to provide flexibility for states at different levels of economic development; and provides Infant Industry Protection, which allows states to impose measures to protect strategic infant industries.⁶² An assembly of state parties will provide strategic guidance, supported by a council of ministers and a committee of trade ministers.

Trade facilitation will be funded by the AU, member states, and external investors, and will address transport infrastructure, customs clearance, technical assistance and capacity building.⁶³

Many obstacles remain in implementing the AfCFTA, however. The most obvious is simply the ambition and diversity of its members. The AfCFTA includes countries with much bigger levels of income disparity than in blocks such as the Association of Southeast Asian Nations (ASEAN) and the Caribbean Community (CARICOM).⁶⁴ Agreeing on tariff liberalisation schedules with such large differences is going to require steadfast respect for Special and Differential Treatment by all concerned. The experience elsewhere, particularly in Europe, is that the inclusion of member states at different levels of development tends to benefit the more advanced members, while the weaker ones continue to fall behind. To work, the AfCFTA would need to benefit producers in smaller, poorer countries, as well as in the more industrialised parts of the continent. To this end, compensatory mechanisms need to be put in place for the losers: the AfCFTA will bring additional competition to domestic markets, leading to heightened competition, firm closures and possibly higher unemployment. Addressing these negative externalities may require proactive policy approaches such as safety nets and training opportunities for those who will lose their jobs, to shift them to other sectors.

An important feature of the AfCFTA is that it will build on, rather than replace, Africa's several existing regional free trade areas. For example, in Southern Africa the SACU and SADC free trade areas will continue. The general principle will be that, where these regional free

trade areas offer better trade terms than the AfCFTA does, the former terms will apply. The same principle will apply to the Tripartite Free Trade Agreement mentioned previously. The result, as with most of these types of arrangements, will be complex.

Having looked at trade in Africa's past and present, we move now to the continent's future, in modelling a free trade scenario for Africa's development.

The African Free Trade Area Scenario

Modelling trade within the IFs forecasting platform presents several challenges, the most important being that the platform uses a pooled model for trade. This means that countries each trade with a pool that reflects the rest of the world, and not directly with one another. This section's approach is therefore to emulate the impact of the AfCFTA using the results from the studies and modelling that others have done, to create the African Free Trade scenario. For example, UNECA estimates that it has 'the potential to boost intra-African trade by 52.3% through the elimination of import duties, and by over 100% through the elimination of non-tariff barriers'.⁶⁵ In a paper released in February 2018, UNCTAD modelled two scenarios reflecting full and partial elimination of tariffs and concluded that:⁶⁶

In both long-term scenarios, the largest employment growth rates are found in the manufacturing industry followed by some services and agriculture subsectors. All sectors grow, with the exception of a stagnant mining sector. This is in line with the CFTA objective for structural transformation and industrialization.⁶⁷

Trade tariffs in Africa are already quite low, in fact, and the short-term revenue losses that governments may suffer due to tariff reductions (one estimate is US\$4.1 billion) will be wiped out within a matter of a few years as trade increases and countries grow more rapidly and economies expand. UNCTAD concludes that 'with adequate flanking policies and social safety measures, the AfCFTA has an immense potential to

promote equitable and inclusive growth'.⁶⁸ In a scenario that emulates the full AfCTA implementation where all tariffs are eliminated, UNCTAD estimates that net welfare gains could be in the region of US\$16 billion and almost GDP growth that is 1% more rapid. Total employment improves by slightly more than 1%, intra-African trade is forecast to grow by one-third, and Africa's total trade deficit is cut in half.⁶⁹

According to the IMF, long-term income gains would be at least 2.1% with increased investment, innovation and knowledge diffusion; 'intra-regional trade ... would expand by more than 80 per cent – but [have] relatively limited adverse effects on trade with non-member countries ("trade diversion"). Increased intra-regional trade would add about US\$60 billion to African exports and support ongoing diversification efforts'.⁷⁰

During the 2018 African Economic Conference in Kigali, the African Development Bank indicated that it expected the AfCTA to boost intra-African trade by up to US\$35 billion per year, reflecting a 52% increase in trade by 2022 and a US\$10 billion decrease in imports to Africa.⁷¹ The African Economic Outlook 2019, presented a scenario in which, if current bilateral tariffs were eliminated, Africa would gain US\$2.8 billion in real income and intra-African trade would increase by 15%. Additionally, removing non-tariff barriers could increase total real income gains by US\$37 billion and intra-African trade by 107%.

To reach such a deep level of integration, however, further progress needs to be made on rules of origin, free movement of persons, financial governance frameworks, and regional public goods (infrastructure and regional bodies).

In its estimate of the impact of the AfCFTA, the UN Department of Economic and Social Affairs (UNDESA) finds that:

Growth in Africa is expected to accelerate by 0.3-0.6 percentage points by 2040 (depending on the liberalisation approach or scenario adopted), when compared to the baseline scenario. All African countries would experience an increase in their GDP with the AfCFTA reforms, whatever the scenario ... However, these forecasts are likely to substantially

underestimate the economic benefits of the AfCFTA, as they do not take into account the impact of liberalisation in other areas such as services and investment.⁷²

Finally, in its estimation, the African Export-Import Bank calculates the export potential of intra-African trade at more than US\$84 billion. If tapped, this would take total intra-African trade to US\$231 billion. The untapped proportion, the bank noted in its 2020 report:

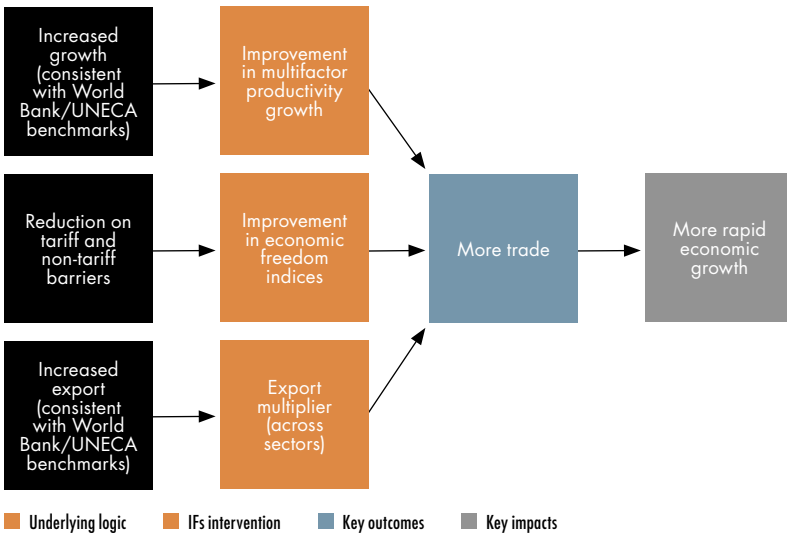
Is based on sectors that have already proven to be internationally competitive and which have good prospects for export success in other African markets. Among the products with the greatest export potential are mineral commodities, machinery, food products, motor vehicles and parts, and plastics and rubber. The untapped figure of \$84bn is overwhelmingly concentrated in Southern Africa, with \$53bn of the total. North Africa comes next with \$13.4bn, followed by West Africa with \$9.5bn and East Africa with \$7.8bn. Central Africa comes firmly in last place with just \$840m.⁷³

Based on these studies and estimates, we rely on various proxies to emulate the effects of expanding trade in Africa. The first effects are improvements in economic freedom using the economic freedom index from the Fraser Institute as a proxy for the impact of the harmonisation of rules of trade within Africa.⁷⁴ The second effect is to boost exports of each of the sectors modelled within IFs (manufacturing, agriculture, services and ICT, and more modestly also for materials and energy) since the impact of the AfCFTA is to accelerate regional trade. These two sets of interventions increase economic growth, but not to the extent evident in the scenarios modelled by UNCTAD, the UNECA and UNDESA referred to previously. The final intervention is therefore to improve multifactor productivity to make up for the shortfall in trade.⁷⁵ Here, I calibrate the combined effects in accordance with the lower end of the modelling done by others, and the interventions differ by country. Collectively, these three interventions simulate the impact of the full implementation of the AfCFTA, if imperfectly.

Timewise, the African Free Trade scenario assumes that the implementation of the AfCFTA starts in earnest in 2025, hence allowing for the impact of COVID-19 and other factors, and that tariffs are reduced over the subsequent 10-year period in line with current expectations. So, the interventions within IFs ramp up from 2025 to 2035, then level off to 2043. For sure, this is an exceptionally optimistic forecast for an agreement as complex and politically fraught as the AfCFTA. That said, if leaders do manage to stick to their commitments and take African citizens, business, labour and other stakeholders along with them, the impact will be very large.

By 2043, Africa’s economy should be steaming ahead at an economic growth rate of 7% in the African Free Trade scenario, compared to 5.6% in the Current Path forecast. Across the forecast horizon, from 2020 to 2043, the average economic growth rate for Africa would be 0.6 percentage points above the Current Path forecast. The result is that the African economy grows by about US\$1.3 trillion (in market exchange rates) by 2043. This growth translates into more than 80 million fewer people living in extreme poverty by 2043 (using

Chart 60: *The African Free Trade scenario*



Source: Author

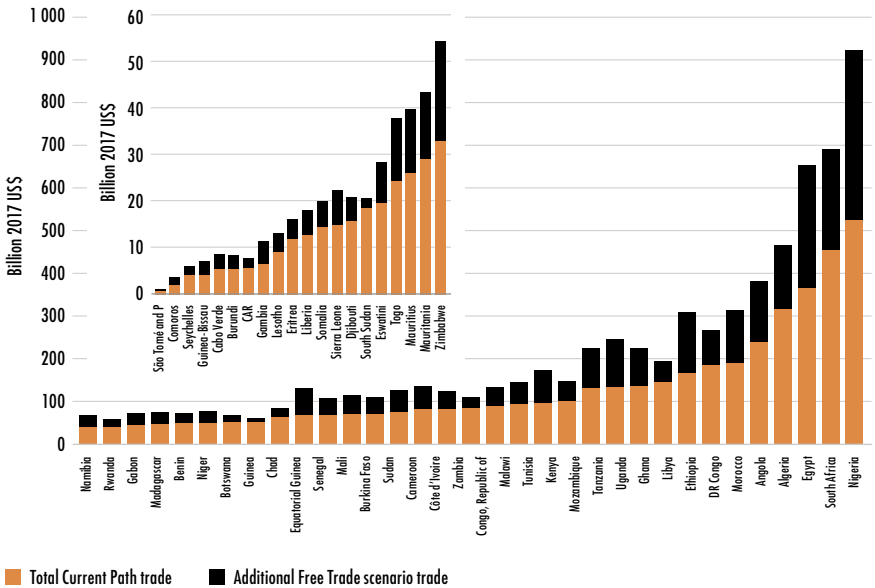
US\$1.90). By 2043, GDP per capita in Africa is US\$723 higher for a continent that is then home to 2.2 billion people.

Since more intra-African trade in particular is to the advantage of Africa’s productive sectors, the services and manufacturing sectors could, on average, be 2 and 0.8 percentage points larger in 2043 than in the Current Path forecast. The contribution of the agriculture and energy sectors marginally decline as a portion of the total African economy – but not in absolute values, since by 2043 the African economy is significantly larger. These sectoral shifts follow the natural and expected evolution of economies that become more productive over time.

Chart 61 presents the 2043 value of trade for each African country in the Current Path forecast and the additional trade that each will gain in the Free Trade scenario ranging from an increase of US\$1.1 billion in 2043 for São Tomê and Príncipe, to US\$921 billion for Nigeria.

By 2043, the value of Africa’s exports will be US\$1.377 trillion larger and imports US\$1.473 trillion larger, indicating a deterioration in

Chart 61: Trade value in Current Path forecast and African Free Trade scenario, 2043



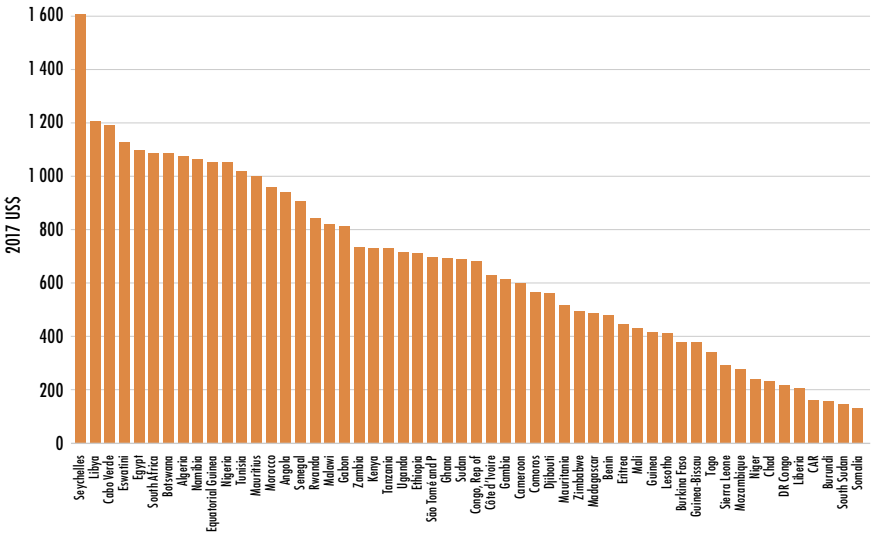
Source: IFs 7.63 initialising from World Bank and OECD national accounts data

Africa’s trade balance towards the end of the forecast horizon. But the cumulative value of exports from 2024 to 2043 exceeds the cumulative value of imports by US\$522 billion, only becoming more negative as from 2041. Additional scenarios such as industrialisation (Chapter 7) and agriculture (Chapter 4) would further improve Africa’s trade balance. In general, then, the current account improves, government debt reduces (by about 1.5 percentage points) and household saving rates increase.

Nigeria gains the most in the absolute increase in exports and imports, not unsurprising given the size of its economy, followed by South Africa and Egypt. However, measured in percentage point increase of exports and imports as a portion of GDP, Seychelles does significantly better than any other country in Africa, boosted by its status as Africa’s only high-income country, followed by Djibouti, Botswana, Mauritius and Cape Verde. South Sudan gains the least.

Chart 62 shows the improvements in GDP per capita for each African country that follow from the scenario, arranged from largest

Chart 62: *Improvements in GDP per capita from the African Free Trade scenario, 2043*



Source: IFs 7.63 initialising from UNPD World Prospects medium variant life expectancy and WDI data

positive impact (Seychelles at US\$1 613), to smallest (Somalia at US\$130).

In addition, in this scenario, by 2043 extreme poverty in the DR Congo, for example, would be 12.7 percentage points below the Current Path forecast – instead of an extreme poverty count of 82 million people, the number will be 60 million. The country with the second-largest decline in the percentage of extremely poor people is Nigeria, where poverty declines by 12 million people compared to the Current Path forecast for 2043 – a reduction of 3.1 percentage points. Tanzania and Madagascar follow.

The result for Burundi, where the African Free Trade scenario increases extreme poverty, reflects that country's manifold development challenges across all sectors and the challenges that it would experience in participating in, and gaining from, the implementation of the AfCFTA.

Conclusion: Advancing Africa's trade

This chapter has set out the reasons why African countries need to deepen trade agreements with one another to grow trade, develop and diversify their economies, and progress up the value-add ladder. Most African economies are simply too small, and Africa is currently too fragmented, to build competitive productive capacity at scale – or indeed to offer sufficiently large markets to attract substantive foreign investment without such agreements.⁷⁶ Intra-African trade levels are very low; the continent's countries trade more with the outside world than among themselves, which is ironic since trade potential in goods inevitably diminishes with distance. African countries are best served by first trading with other African countries.

Eventually, the success of free trade will be determined by regional value chains with frictionless trade, fast customs procedures and cost-efficient multimodal transit corridors to make trade through the AfCFTA a reality. Ultimately, success will come down to the actions of leadership and interests at the country level.

That said, the extent to which Africa will be able to leapfrog to higher-end value in trade will depend on the investments it makes in selected, well-targeted infrastructure that can support competitive

industries and sectors in industrial parks and export-processing zones linked to regional and global markets. But more is required. This chapter has noted the importance of removing non-tariff barriers, the red tape and corruption that keeps countries from trading with their neighbours. And then there is the requirement to improve the quality of Africa's human capital. For example, a recent study on the future of Ethiopia,⁷⁷ until recently one of the fastest growing economies in the world in the past decade, found that the average of 2.7 years of education in the adult population over the age of 15 is still one of the lowest in the world. Along with low levels of overall attainment and poor-quality outcomes, there is also a pronounced gender gap in Ethiopia's education system, with males receiving more than twice as much schooling as their female counterparts. Structurally, Ethiopia needs to unlock this constraint if it wants to improve its human capital endowment and the productive structure of its economy.

Digital technologies can help overcome Africa's large infrastructure deficit, but will likely dampen trade in goods while further fuelling the growth in trade in services. A smaller share of the goods rolling off the world's assembly lines is now traded across borders, while cross-border services are growing significantly more rapidly as global value chains become more knowledge-intensive and reliant on high-skilled labour.

Trade integration can help African countries to prioritise investment in sectors where they have a comparative advantage. Comparative advantage is dynamic and changes over time, within and between sectors, and such an approach will require ongoing vigilance and adjustment of policies. But irrespective of their comparative advantage, African countries need to enhance export diversification and reduce their vulnerability to external shocks by trading regionally – and, eventually, globally. Additionally, regional integration would improve the diversification of goods and the technology content of Africa's exports.⁷⁸

In other words, trade liberalisation works only to the benefit of countries when they actively manage levels of openness to trade.⁷⁹ For this reason, the policies and support of a national government that invests in the quality of institutions and provides policy certainty is important.⁸⁰ China is the poster child for successfully managing access to a large domestic market, protecting and nurturing an infant industry,

and demanding technology transfer from foreign companies. Today, it is the world's factory.

Going up the products and services complexity curve requires establishing national and regional value chains where cities, regions and national economies can collaborate on a cost-competitive basis in bringing diverse skills together to produce ever more valuable products and services. So, initiatives like the AfCFTA are crucial for growth and prosperity in Africa. They have the potential to trigger a virtuous cycle of expanded trade on the continent that will, in turn, drive the structural transformation of economies. Detail negotiations are, however, likely to take a long time – and several uncertainties, for instance about tariff schedules, remain.⁸¹ For this reason, the EAC, SADC, ECOWAS and the Tripartite Free Trade Area need to press on and pursue trade facilitation reforms and trade integration.

Many countries such as the UK, the US and China are entering into bilateral free trade agreements with individual African countries. For Africa, the goal must be a more rapid diversification of African economies – and we need to keep three questions in mind: Do these agreements provide African countries with sufficient support for the development of agricultural and industrial value creation? Do they offer sufficient protection for Africa's infant industries? And finally, do they help or obstruct the implementation of the AfCFTA?

When all is said and done, the major obstacles to regional trade in Africa are often political and are shaped by the short-term pain (loss of tariff income) that is required before the long-term gains (higher growth) offset these losses. Regional integration will eventually grow tax revenues as more rapid growth translates into more government revenues. But in the shorter term, governments will have to work hard to get domestic buy-in once the pain from the loss of tariff income becomes evident.⁸²

And finally, provided there is the political will to overcome the initial tariff losses, the biggest challenge for African integration structurally will remain: integrating extremely unequal partners such as South Africa and Botswana on one hand – both upper middle-income countries – with neighbouring low-income countries like Mozambique, Eswatini and Lesotho on the other.

9

Africa's Leapfrogging Potential



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What distinguishes the 21st century from the periods before it? It is surely the exponential rate at which scientific knowledge is advancing, and our ability to more rapidly apply that knowledge practically. In other words, it is the rate at which we are leapfrogging.

Each new generation of technology stands on the shoulders of its predecessors, and today the rate of progress from version to version is driving advancement at rates of change that are sometimes breathtaking, particularly evident in the speed at which vaccines were developed for COVID-19 and, at the time of writing, were progressing to oral antiviral medicines. At a sufficient scale, technology can have a transformative effect on nations and the relations between them. Technology is particularly crucial as part of our efforts to deal with the dire impact of humanity on the planet – although it is always important to remember that what is technologically possible is not always commercially feasible.

Chapter 5 on health and basic infrastructure gave an overview of the extent to which Africa trails in basic infrastructure such as potable water and waterborne sanitation. The story, of course, is much broader: Africa trails on every dimension of infrastructure, with the largest deficits being the lack of reliable electricity and transport, particularly roads and rail. But when we speak of infrastructure today, we refer to much more than roads and railways. We refer, increasingly, to digital infrastructure – the ability to transact and act globally through the access that the internet provides. And digital infrastructure can compensate for a lack of physical infrastructure, although not in all dimensions.

We generally underestimate the potential for leapfrogging in physical infrastructure since we are locked into a particular vision of how things

should be done.¹ Once a country has invested in and built an elaborate network of railway lines, pipes, wires, roads, bridges, buildings and other expensive physical infrastructure, all of which characterise today's developed countries, it becomes very difficult to imagine or take the risk of investing in a different way of doing things. Every piece of existing infrastructure creates vested interests that are difficult to uproot. The result is a tendency towards 'path dependency': governments and the private sector doing things in a particular way because that seems to be how things should be done and because it is difficult to get the public to change their ways and to undo sunk investments.

Furthermore, since other countries have done things in one particular way for so long, Africans tend to believe that they should follow the same infrastructure and development pathway as their former colonial masters in Europe, or as illustrated by the pop culture of the US and, today, the rapid improvements in livelihoods and poverty reduction in China.

Consider, for example, the extent to which production and consumption subsidies have locked the world into its current carbon-intensive development pathway. Production subsidies consist of tax breaks or direct payments that reduce the cost of producing coal, oil or gas, and lock in infrastructure such as oil pipelines and gas fields. Consumption subsidies (common in oil- and gas-producing countries in Africa) subsidise fuel prices at the petrol pump so that it is below the market rate.² By one estimate, governments around the world pour about half a trillion dollars every year into subsidising fossil fuels — more than triple the amount that renewables receive. What would happen in the event of the widespread commercialisation of energy storage systems that can cheaply store surplus electricity, such as that from solar systems, for use during high demand periods? Or the ability to extract drinkable water directly from the air, even in dry regions?

The 2008 financial crisis provided a huge boost to cloud computing, and COVID-19 has accelerated new technologies for vaccine development and the expansion of the digital and e-commerce sectors. The African e-commerce platform Jumia, for example, reported a 50% jump in transactions during the first six months of 2020. Home

delivery of food and remote working will lead to further innovation in the future. The online education market is set to quadruple, then double thereafter: the culture change to online learning is here to stay, then, although it is likely to deepen inequality, for leapfrogging in the 21st century generally requires access to electricity, the internet, a smartphone, desktop or suitable computer, and funds to maintain access.

Once we find ways of fully developing a circular economy, where waste is used as biomass, households become steadily more independent of delivery of bulk services such as water, electricity and waterborne sewage. This is the long-term impact of modern technology: greater independence and more choice. Along these lines, in 2019 the eThekweni municipality in South Africa's KwaZulu-Natal province completed a pre-feasibility study that found that the powerful Agulhas current, which runs from north to south along the country's steep continental shelf in the Indian Ocean, has the potential to generate 50.4 GW of power. This is roughly equivalent to South Africa's *total* domestic electricity generation capacity.³ And South Africa is, by a substantial margin, Africa's largest electricity producer, although beset by regular power outages from its old fleet of coal-fired generating stations due to poor planning and corruption. Instead of importing power from dirty coalfields further inland, the province could generate all of its electricity needs offshore from a renewable source with limited environmental impact.

Can we even begin to imagine the impact of the wide adoption of contour crafting – a layered fabrication system similar to 3D printing that can be used to rapidly construct buildings and other large pieces of infrastructure using local materials (such as soil), which does not require the construction company to truck in bricks, cement, conduiting, roof trusses and other bulk items?⁴ And the ability to remove deadly bacteria such as *E. coli* from water? Once upscaled, this technology has the potential to improve the rapid treatment of large volumes of water significantly, and can be integrated into current solar water disinfection technology in countries with limited access to fresh water.⁵

These are all examples of technological innovations that will bring about major changes. This change is well underway, in fact; it is only

when we look back that we realise the journey that has been travelled. That's what happened with smartphones, which have literally transformed the way we socialise, work and play.

Perhaps the best recent example of technology's potential literally to shift the ground beneath our feet is the way in which the US shale gas and oil revolution has reshaped the global energy market and global politics. This is our first stop in our exploration of Africa's potential to leapfrog.

The shale gas and tight oil revolution in the US

By 2005, US domestic oil production had been declining for 35 years after its 1970 peak at 9.6 million barrels per day. The US was importing almost half of its total petroleum consumption. The future appeared to consist of growing imports of oil and gas from unstable countries like Venezuela and dictatorships like Saudi Arabia. To the chagrin of the Americans, Russia was also rapidly emerging as an energy superpower. The situation with natural gas was only marginally better.⁶

Then came the fracking revolution.

Fracking has been around for several decades and has been used extensively to increase production rates from conventional oil and gas wells. It involves the high-pressure injection of water, chemicals and sand into shale deposits to release more of the gas and oil trapped within the rock. The original mode of fracking entailed drilling vertically through a deposit, but today, horizontal drilling and other improvements in technology are commonly used. Once in the permeable layer of rock where the gas or oil is locked up, the drill is turned horizontally to access a greater portion of the deposit. In this manner, fracking is able to harvest large stores of gas and oil that could not previously have been commercially extracted.

Gas suppliers were the first to benefit. From 2005, US natural gas production increased every year for a decade and by 2015 the US was the world's largest gas producer. From 2008, oil production followed. By 2018, domestic US crude production was running at about 11.6 million barrels per day, a little ahead of Russia, the world's second-largest producer.

In just a few years, the shale oil and gas revolution in the US has changed geopolitics. It reduced the price of energy and thus broke the stranglehold that the Organization of the Petroleum Exporting Countries (OPEC) had on energy production. It also led to a severe slump in the prospects of many oil-exporting countries, such as those in the Middle East, Venezuela, Angola and Nigeria.⁷ By 2025, US oil production could equal the combined output of Saudi Arabia and Russia and, according to the head of the International Energy Agency (IEA), ‘completely change the balance of oil markets’.⁸

In the process, the Middle East and Africa lost much of its strategic relevance to the US. But the US has not fully achieved energy independence as the law of unintended consequences has taken its toll: low energy prices have pushed up domestic demand as consumers flock to petrol-guzzling sports utility vehicles, and consumption of liquid fuels may soon be back to the 2005 peak of 20.8 million barrels of oil a day.⁹ Then the COVID-19 crisis of 2020/21 collapsed energy demand, along with the profitability of many shale gas and oil operators until Russia’s invasion of Ukraine reversed their fortunes. With insufficient oil and gas, storage prices had plummeted until such time as Europe woke up to the extent to which it was beholden to Russian gas.

Fracking for gas is, of course, a sure-fire way to compound our carbon crisis, examined in Chapter 14.

Africa’s renewable energy potential

Whereas the shale gas revolution in the US is based on a large oil and gas industrial ecosystem that is still difficult to replicate elsewhere, rapid advances in technology, such as those linked to renewable sources of energy, require a much smaller technology footprint. They will have a significant impact in Africa.

Geothermal, solar and wind have the potential to revolutionise electricity access in Africa in a way not dissimilar to fracking in the US, with the result of empowering the local versus those further away. This potential is coming to Africa in three forms. The first is through distributed local systems using renewables, mostly solar, wind and geothermal. The second is through the improvement and distributed

installation of electricity storage systems, such as new types of batteries. The third is through new technologies such as harnessing the energy in ocean currents and waste-to-biomass conversion.

In addition to its large hydro schemes, Ethiopia alone has the potential to generate up to 10 GW of power from its geothermal resources. Power Africa, the initiative started under former US president Barack Obama, already supports 15 geothermal projects, with a potential generation capacity of 1 GW. Different from the fluctuating energy supply from wind and solar, ocean currents and geothermal sources can probably provide near-stable baseload electricity generation comparable to that provided by hydro, coal, oil, gas and nuclear sources.¹⁰

In 2019, about 11% of global primary energy came from renewable technologies, mostly from hydropower, but wind, solar and other renewables are growing rapidly. Primary energy must not, however, be confused with electricity. Electricity (or power) is just one component of total energy consumption, the other two being transport and heating. And while there is a rapid increase in the share of electricity that comes from renewable sources, transport and heating are still dependent upon fossil fuels. The share of oil, coal and gas, the three components of fossil fuel energy in the global energy mix, has remained at above 80% for the past two decades and is declining much more slowly than required to avoid rapid climate change.

The IFs Current Path forecast points to a plateauing of fossil fuel use in the 2030s, followed by a steady decline after 2040, with non-fossil fuel sources overtaking coal in about 2038, oil in 2042 and gas in 2048. By 2050, solar and wind power would constitute about 32% of energy production. Leaving the huge challenge of the environment and climate change aside for the moment, this will be a world where electricity for households will likely be provided by individual supply or decentralised micro- or mini-grids that are powered by renewables. Some electricity will still come from large-scale coal or hydro schemes, but less with each year. Once the challenge of energy storage is resolved, renewables and adequate storage will be able to provide both base and peak electricity demand. According to a 2019 report,¹¹ at least 19 000 mini-grids installed in 134 countries already provide electricity to about 47

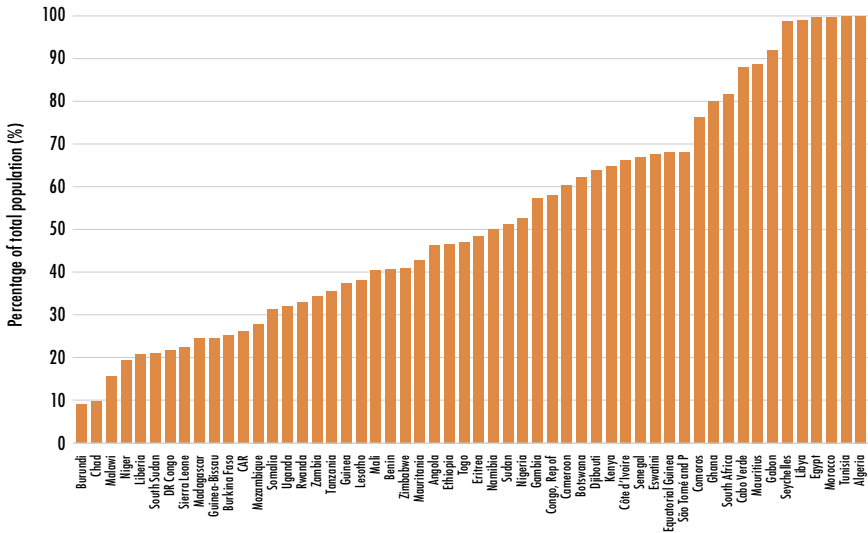
million people, most of whom are in rural areas. At some point in the future we will enter an era of energy abundance at a time when the lack of electricity is generally considered one of the largest constraints on Africa's development.

Currently, in much of Africa, electricity is often an unaffordable luxury even where connections exist. The average retail price for electricity in Africa varies hugely. It can be as high as US\$4.90 per kilowatt hour in Liberia due to the high cost of running a backup generator during regular power shortages, or as little as US\$0.24 in Ethiopia.¹²

High electricity prices and intermittent supply means that many households in Africa do not even try to access electricity from a central system. Those homes that do have an electricity connection often find the supply inconsistent and expensive. Lack of electricity also acts as a strong disincentive to private investment, especially in sectors where a dependable supply is crucial, such as cold storage in the distribution of food from farm to consumer, minerals beneficiation and manufacturing.¹³ Consider that in 2019 only about 53% of Africa's population had access to electricity, in contrast to about 87% in South Asia and over 98% in Latin America, the other two developing regions against which this book benchmarks.

The rapid electrification of the African continent would improve both human development and economic prospects. Among its obvious economic benefits, affordable, reliable electricity eliminates the need to use traditional fuels inside the home for cooking and heating – reducing the potential for respiratory ailments – and also allows children to study for longer at night. It would speed up education, improve health and allow for farming and micro-manufacturing.

Currently, Africa generates very little electricity. The continent has about 254 GW of installed capacity, but more than half of this is concentrated in three countries: South Africa, Egypt and Algeria. Together, these countries account for only about 15% of the continent's total population. In contrast, China has about 2 207 GW of installed capacity – eight times that of Africa. At current rates of growth, China's installed *solar* capacity will soon equal Africa's *total* installed capacity.

Chart 63: *Electricity access in Africa, 2019*

Source: IFs 7.63 initialising from WDI data

However, a number of large hydroelectric schemes are currently being built in Africa. For example, Ethiopia recently completed the US\$5 billion Grand Ethiopian Renaissance Dam (GERD) on the upper reaches of the Blue Nile, close to its border with Sudan. Once the dam is filled and the turbines start turning, it will be the third-largest hydroelectric facility in the world in terms of installed capacity, capable of generating almost 6.5 GW in peak operating conditions. But it threatens livelihoods further downstream, in Egypt – whose entire population, virtually its survival, is dependent on the waters of the Nile.¹⁴ Ethiopia's ambitions are to alleviate its own electricity shortages and to eventually emerge at the hub of a regional distribution network to sell electricity in the larger Horn of Africa. Other large projects include the Julius Nyerere hydropower project in the Rufiji River basin in Tanzania that, once completed, should deliver 2.1 GW.¹⁵

Wind and solar generation are already having a transformative effect on well-being in parts of the continent. In 2017, Kenya finished construction of the Lake Turkana Wind Project, the largest wind project in Africa that is capable of delivering 310 MW (or 17% of

Kenya's installed capacity) to the grid. This is small by international standards, but is more than the installed capacity of several African countries, including Chad and Liberia.¹⁶

At the same time, Lake Turkana is emblematic of the governance failures that hamper Africa's technological adaptation and economic growth. Although the wind farm was completed in 2017, it was only connected to the grid the following year since the connecting infrastructure, which was the responsibility of the Kenyan government, was not in place in time. In the interim the Kenyan government had to pay royalties in lieu of electricity sales to the investors.¹⁷

In 2020, global capital investment in renewable energy replaced investments in oil and gas, accounting for US\$87.2 billion of a total capital investment of US\$528.2 billion.¹⁸ China's impact on global solar markets has been well documented. In 2020, the country had about 253 GW solar capacity, and will, in 2021, add up to 65 GW, taking total solar installations beyond 300 GW.¹⁹ Uptake has also been rapid elsewhere, including in developing countries, fuelled by rapidly falling prices; this has enabled countries like India, Mexico and Chile to offer electricity from photovoltaic solar (US\$0.03 per kWh) at a fraction of the cost of electricity in Africa.

We are only at the start of the solar energy revolution. According to the UN, the greater Sahara, which is one of the most uninhabitable places on the planet, has a solar potential equivalent of approximately 13.9 billion kWh/year. Consider that, in 2016, global electricity consumption was 0.02 billion kWh/year.²⁰ A solution to the current challenge of how to store large amounts of energy effectively would unlock much of this potential, and the geostrategic incentives are substantial, such as diluting Europe's increased energy dependence on imported gas from Russia – which became increasingly important in 2022 following Russia's invasion of Ukraine and the sanctions imposed on Russia as a result – and compensating for Europe's own limited solar capacity during its long, cold winter.

Beyond the need for technological innovation, the most important impediment to the opportunity that the solar energy revolution offers Africa is the lack of stability in North Africa and the animosity that characterises relationships between its constituent states, particularly Morocco and Algeria.

Solar energy prices have dropped to less than US\$0.05 per kWh in some regions, and can now compete with those of electricity generated by burning fossil fuels. In Africa, solar energy could significantly change the overall picture of electricity supply. Electrifying rural areas would make many other development goals easier to achieve: access to clean water, independent economic activity, the use of electrical appliances in general, and access to information via communication technologies.

Once the storage problem has been resolved, renewable energy could also fundamentally change the political landscape in many countries, leading to a redistribution of political and economic power as cities become less dependent on central governments.

Off-grid solutions could reach consumers in rural areas without the hefty expense of large coal, oil or gas powered plants that are linked to the hinterland through massive transmission lines and complex distribution systems. Mini-grids powered by sun and wind, and that are independent of the larger national grid, could provide many opportunities. These technologies can also be deployed much more rapidly than traditional methods of electrification. In fact, a 2018 study on the long-term future of Kenya²¹ found clear evidence of the impact that leapfrogging is having on dramatically increasing electricity access when taking renewables into account.

Remotely deployed renewables are already bringing about major shifts in how Africa will provide electricity to its people. What could really prove to be transformative is a breakthrough in energy storage technology, allowing cooking, space, heating and energy-intensive economic activity. The sun does not shine every day, or for 24 hours a day, and neither does the wind blow constantly. Consequently, electricity grids that include a large component of renewables currently have to allow for large redundancies (surplus capacity) to be able to meet demand on a guaranteed basis. This is the focus of the section that follows.

Power-to-X: The challenge of energy storage

Apart from our dependence on carbon sources of energy, the inability to store excess energy supply at large scale during periods of relatively high production and low demand is a significant obstacle.

Some systems do this, for example water storage schemes that use surplus electricity to pump water into an upstream dam when electricity demand is low, so that it can be released to generate surge electricity when demand increases. South Africa, Africa's largest electricity producer and consumer by a substantial margin, has two pumped-storage hydroelectricity schemes. One is at Palmiet near Grabouw in the Western Cape, and the second is the Drakensberg Pumped Storage Scheme in KwaZulu-Natal.

Currently, most battery technology focuses on lithium ion (Li-ion) batteries that power most mobile phones and electric cars, but these are generally too expensive for large-scale grid application. Other energy storage technologies include flow batteries, thermal cells, compressed air, efforts to conserve energy by using kinetic rotational energy (flywheels), thermal storage (such as molten salt) and gravity solutions – the use of cranes and wires to lift and stack heavy bricks using surplus energy and unstack them to generate electricity. At the industrial, large-scale level there is a lot of innovation in this field, generally known as 'Power-to-X', the ability to convert and store energy and then reconvert it through decoupling of power from the electricity sector for use in other sectors (such as transport or chemicals), possibly using power that has been provided by additional investments in generation. Examples include power-to-chemicals, power-to-fuel, power-to-gas, power-to-heat, power-to-hydrogen, power-to-liquid, power-to-methane, power-to-mobility and power-to-food.

In Africa, the leapfrogging potential for energy storage lies in the widespread application of these technologies in a decentralised and dispersed manner, where individual households, buildings and businesses manage their own energy production and consumption. In the era of intelligent energy management, energy efficiencies are designed into buildings and production processes. In this vision, rural dwellers will be able to produce their own electricity through renewable systems as part of thousands of mini-grids.

The transition to renewable energy will accelerate dramatically once the challenge of affordable energy storage has been resolved. Huge resources are being poured into this challenge, particularly by vehicle manufacturers such as BYD, Volkswagen, Tesla and General Motors.

In 2016 Bill Gates launched Breakthrough Energy Ventures, a US\$1 billion fund for new energy technologies that prioritises investments in energy storage companies, as well as in nuclear fusion power and geothermal systems.²² It's just a matter of time ...

Then there are the massive investments being made in fuel cell technology. Hydrogen fuel cells could emerge as an alternative to batteries, particularly to power heavy-duty, long-distance road transport and to provide a decarbonisation pathway away from diesel for non-electrified trains. Fuel cell technology does not require a host of scarce metals, such as the cobalt, lithium and nickel that lithium ion batteries use. Most fuel cells require only platinum, of which there is abundant supply – especially in Southern Africa, which has 80% of the world's known platinum reserves and the three largest platinum minerals group mines in the world.

China alone spent US\$12.4 billion on supporting fuel cell powered vehicles in 2017 and, in 2021, Chinese car maker Great Wall Motors (GWM) unveiled plans to develop hydrogen fuel cell vehicles for private use, joining Japan's Toyota and South Korea's Hyundai.²³ By 2030, about 40% of vehicles sold in China will be electric.²⁴

An advantage of fuel cell technology is that surplus electricity can be used during off-peak times to split water molecules through electrolysis to produce hydrogen that can be stored to generate electricity during peak demand, or transported elsewhere. This is a particularly useful application of surplus electricity in a country such as China, where an estimated 150 GW of renewable energy generating capacity is lost every year because it cannot (yet) be integrated into the grid.²⁵

The ability to produce green hydrogen is particularly important in Africa. For example the potential of the Grand Inga hydroelectric scheme in the Democratic Republic of the Congo (DR Congo) is equivalent to nearly a quarter of the entire installed capacity of Africa. The full series of dams could eventually yield up to 50 GW at full operating capacity.²⁶ The Grand Inga project has been perpetually held back by uncertainty, poor planning, delays, inefficiencies and corruption to the extent that the World Bank has withdrawn its support for the third phase of the project due to transparency issues. There are also large practical challenges including the need for a transmission

network extending to the energy markets in South Africa and to Nigeria, across some of the most unstable regions of Africa and hence vulnerable to physical and political disruption. However, instead of building several thousand kilometers of transmission lines, if Grand Inga is repurposed to produce hydrogen at source, which could then be shipped by sea to investment grade markets worth an estimated US\$300 billion by 2050, it changes the entire calculation.²⁷ Using its massive electricity output to produce hydrogen to be stored and shipped to markets in Africa, Europe and China, could unlock Grand Inga's potential – much like liquefied natural gas did in the US.²⁸

Among other things, distributed energy from renewables will facilitate the rapid expansion of communications and the internet, important enablers for leapfrogging across dimensions as diverse as education and infrastructure. This is what this chapter looks at next.

Cell phones and broadband: A big leap for Africa

Literally every ICT improvement has a positive effect on the economy, from more fixed line phones to more cell phones, better internet use, fixed broadband and, most positively, access to always-on mobile broadband (typically defined as download speeds of 256 kbps or greater).

When the price of mobile technology fell through the floor – prices dropped by about 40% globally and nearly 60% in Africa in the last five years of the 20th century alone – so did demand for costly fixed telephone lines. This led to a rapid increase in the proportion of the population with access to a mobile phone, with little additional cost to the consumer. It also allowed governments to focus on other priorities.

In 2000, Nigeria's 122 million inhabitants had just over 553 000 fixed line phone connections – a number that has since roughly doubled, but is still an abysmal rate. But cell phone subscriptions have gone through the roof – they are now at 99 per 100 people, largely due to MTN, a South African company that has provided access at a fraction of the cost of fixed line installation. Nigerians can now access digital education and online advisory services in the health and agricultural sectors. Leapfrogging, then, means the democratisation of

knowledge and unlocks opportunities in literally all sectors ranging from education to agriculture.

Although only about half of Africans own a cell phone, another 15–20% have access to one, making the cell phone access rate about 65–70%. The paradox of poverty is that more Africans have access to cell phones than to electricity or improved sanitation.²⁹

Cell phones provide much greater flexibility than fixed line telephones, and open up all the opportunities of internet access. The result is that Africa and Asia have been able to leapfrog over expensive and time-consuming technologies, and to close the internet access gap with other parts of the world. Moreover, much of the mobile network in Africa was largely built by the private sector, illustrating the potential of local markets to attract foreign investment under the right conditions. The continuation of these investments would, in time, enable cell phone and internet access rates in sub-Saharan Africa that would have seemed unthinkable a few decades ago.

Broadband internet connectivity is a powerful general-purpose technology, although it requires a certain threshold of penetration before significant effects are discernible. Thereafter, it drives widespread changes in the IT sector, enabling services such as cloud computing and mobile apps. Furthermore, there is no clear finding about diminishing returns at higher levels, as it influences innovation across many other sectors – including health, transport and government. Generally, a 10% increase in national broadband penetration results in an increase of 0.6 to 2.8% of GDP.³⁰

And internet connectivity is not only about people speaking to and texting one another. Increased cell phone penetration guarantees further innovation and additional investment. Google was one of the first to try, with Project Loon, to send a fleet of balloons into the stratosphere to beam internet service to people below, but abandoned that effort two years later. Other tech giants such as SpaceX (since abandoned), Facebook and SoftBank-backed startup Altaeros all have similar plans involving satellites, drones and blimps respectively.³¹ And then there is the 37 000-kilometre undersea cable that Facebook and a host of partners is building around Africa, which will connect 35 countries in Africa, the Middle East and Europe. The project,

dubbed 2Africa, will provide nearly three times the total network capacity of all the subsea cables that currently serve Africa, and is scheduled for completion in 2024. That effort is in addition to a project by Google, which is working on an undersea cable, called Equiano, that will connect Africa with Europe.³² But perhaps the most exciting projects were announced by the telecommunications firm AST & Science and by Starlink. In partnership with Vodafone, AST³³ plans to establish a space-based mobile network to connect directly to 4G and 5G smartphones without any need for specialised hardware such as ground antenna systems. The first phase of the project aims to transform mobile network coverage north and south of the equator, where Vodafone will integrate its technology into existing brands in the DR Congo, Ghana, Mozambique, Kenya and Tanzania. Also, in May 2022, US technology billionaire Elon Musk announced that users in Nigeria and Mozambique will soon be able to access the Internet using the Starlink satellite-based service. Starlink uses a constellation of low earth satellites that can provide reliable internet speeds in excess of 100 megabits per second, regardless of the state of local infrastructure.³⁴

Internet access in and to Africa is set to explode.

Providing household electricity, and then internet access, to all of Africa could unlock unimaginable progress.

M-Pesa and innovation in mobile money and services

Cell phone and internet technology not only rapidly expand communication and information – they also spawn new innovations.

It is notoriously difficult, for example, to obtain credit in Africa, even for borrowers who qualify – in part because currencies and markets are so vulnerable, but also because many institutions lack the capacity or resources to run large-scale lending operations. Mobile telephony makes it possible for people who have had no access to bank accounts to transfer and withdraw money, and to take out loans or insurance. Today, mobile money has become a significant driver of social inclusion. And much of it started with M-Pesa (‘pesa’ means ‘money’ in Kiswahili, widely spoken in East Africa).

M-Pesa is a mobile money service that was launched in 2007 by Vodafone for Safaricom (Kenya) and Vodacom (Tanzania), the largest mobile network operators in their respective countries. It allows users to store and exchange money on their mobile phones. Orange, Airtel and MTN followed suit with their own versions a few years later; non-telco operators like Paga, Firstmonie, Ecobank and Standard Bank have also joined the fray, adding diverse models to the business environment. The result is that, by 2021, at least 11 countries in sub-Saharan Africa had 5 or more deployed mobile money services, from 5 in Kenya to 17 in Nigeria. More than half of the 310 live mobile money services in the world are in Africa.³⁵ In 2020, sub-Saharan Africa was responsible for almost half of mobile money activity in the world, with a transaction value of US\$490 billion. Some of the world's largest financial institutions, such as Mastercard, are hedging their bets by investing in mobile money, given the convergence between mobile wallets and traditional credit and other plastic cards.³⁶

By the end of 2021, M-Pesa had 50 million customers across seven countries in Africa processing more than 15 billion individual transactions per annum.³⁷ Its success has created an entire mobile banking industry. In Uganda, one of many countries to seize upon the subsequent opportunities, the digitisation of utility services such as the provision of water and sanitation has followed, among others, benefitting from the rapid growth in mobile access.

Mobile money and the ability of digital solutions to coordinate a range of public, private and civic stakeholders is driving inclusion and enabling informal sector workers to climb the formality stairway. Even more impressive than the success of mobile money in Africa, though, has been the impact of the new service on people's livelihoods. A 2016 study by Tavneet Suri and William Jack from the Massachusetts Institute of Technology³⁸ estimates that M-Pesa has lifted nearly 200 000 households out of poverty since its inception – and that number would have increased substantially since. The improvements were more significant for female-headed households, and have helped about 185 000 people move from agriculture to some other business venture. Access to mobile money helped borrowers navigate uncertainties caused by drought, adverse health conditions and other

unforeseen events.³⁹ And the mobile money service has also driven an increase in savings rates of more than 20%, because this more secure method of storing money instils confidence in people that the future is worth investing in.⁴⁰

While national mobile payment systems are seeing rapid progress, cross-border payments are often still slow, expensive, opaque, cumbersome and inaccessible to many. Although technology has ushered in a new era of innovation in payments, linking up the plumbing between countries – by directly connecting existing payment systems across borders – is still at an early stage. In a September 2021 webinar on this matter, IMF managing director Kristalina Georgieva⁴¹ pointed to the importance of getting the incentives right, using the Southern African Development Community (SADC) regional payments system as an example. The platform now includes 74 commercial banks and 8 central banks across 15 countries.

‘Imagine,’ Ms Georgieva noted, ‘a virtual marketplace where payment providers across countries can meet to transact according to common rules and procedures, and a common technical infrastructure. Or a platform that allows households and firms to send Central Bank Digital Currencies directly to each other, immediately and without going through multiple costly intermediaries.’⁴² There are, of course, significant risks given the ‘tension between open and interoperable cross-border payments – a technical objective – and countries’ policy objectives to manage capital flows, limit volatility, and retain control over monetary policy and exchange rate regimes’. That, she mentioned, underlines the importance of macro-financial stability to underpin such cross-border systems.

Beyond their direct impact on economic growth and prosperity, internet access and mobile phones have also become tools for social transformation. They allow small-scale farmers to link up with markets, citizens to report and record videos of instances of the abuse of state power; election officials and observers to document and report results instantaneously; and citizens to identify crime incidents. For example,

shoppers in Dubai regularly posted photographs on the internet of African leaders' latest luxury purchases, including those made by Grace Mugabe, the wife of former president Robert Mugabe of Zimbabwe. The alleged money-laundering perpetrated by relatives and other close associates of Equatorial Guinea's President Teodoro Obiang Nguema Mbasogo has also been disseminated to a wide audience.⁴³

Mobile money also serves nefarious purposes, however. Following the terror attacks in Palma, Northern Mozambique, in 2021, during which Al-Sunna wa Jama'ah (ASWJ) managed to rob and destroy two banks, SADC established a technical mission to assess the nature and capabilities of the group ahead of a regional military intervention. One of the preliminary findings of the mission was that ASWJ receives funding through mobile money transfer platforms like M-Pesa, mKesh and e-Mola from sympathetic individuals and private organisations in the region. Currently, mobile money transfer services generally fall outside the purview of national financial regulations, ensuring the continuation of poor monitoring and oversight.⁴⁴

In today's world, it is much more difficult to hide and conceal wrongdoing – as the release of thousands of confidential US government and private sector documents by the website Wikileaks proved most dramatically in 2010. In South Africa, whistleblowers released troves of emails that documented the extent to which the Gupta family and their associates had used former President Jacob Zuma and others in the ruling African National Congress party to defraud South African taxpayers of hundreds of millions of dollars.

Finally, the impact of internet access and mobile phone technology on elections, government accountability and, potentially, on the spread of democracy has been profound. For example, after no candidate received the required 50% in the first round of presidential elections in Ghana on 7 December 2008, in the runoff between former foreign minister Nana Akufo-Addo and former vice president John Atta Mills on 28 December fewer than 31 000 votes separated the winner from the loser (a margin of less than 0.4%, with 73% of registered voters voting). Despite its history of coups and social turbulence, the country and the region accepted Mills's victory. The tradition was maintained when, in December 2020, Nana Akufo-

Addo narrowly won, with 51% of the valid votes.⁴⁵ The reason was that civil society had been able to harness technology to place thousands of trained election monitors armed with cell phones and an SMS-based coding system to check, report and tabulate results. In this manner, a parallel civil society system could verify official tallies and ensure a credible result.⁴⁶

This pattern has been emulated in various forms across the continent, reducing the ability of incumbents and special interest groups to manipulate and distort results to their own advantage – although not always successfully so.

Technology, development and formalising the informal sector

Closely linked to democratised access to technology and the leapfrogging that it facilitates, which has been discussed in this chapter so far, is the effect that digitisation can have on increasing the pace at which Africa's informal sector could formalise. Chapter 12 looks more closely at the relationship between the formal and informal sectors, and examines the potential benefits that the more rapid formalisation of the informal sector would have on Africa's economic and developmental prospects. But for the purposes of this chapter, we look next at one more aspect of leapfrogging before modelling a scenario for this for the continent: using technology to bridge the gap between Africa's formal and informal economies.

For the International Labour Organization (ILO), the transition to formality in an economy is 'a central goal in national employment policies'.⁴⁷ All things being equal, reducing the size of the informal sector has distinct advantages – as long as it does not detract from economic activism, is carefully managed, incentivises employment, and does not stunt growth. The informal sector plays an important role in providing employment and incomes for millions of poor Africans, and will continue to do so for many future decades.

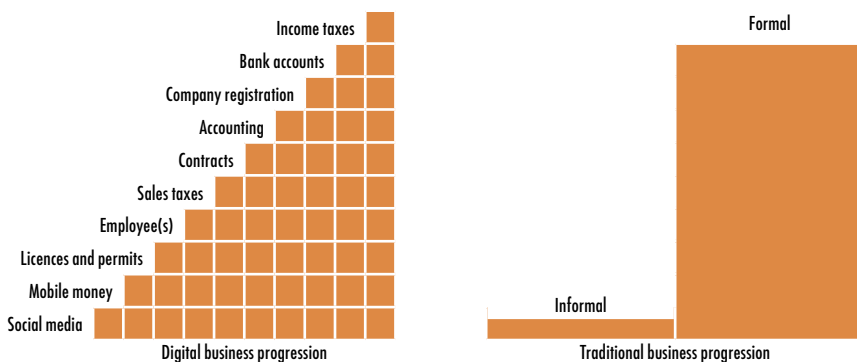
The internet, cell phones and digitisation all allow African governments to break down the barriers between the formal and the informal sectors and facilitate more rapid development. Steadily lowering the barriers for access to credit could allow governments to

‘crowd into’ the informal sector and even raise taxes (at very, very low levels) for all types of services. This needs to happen incrementally and carefully.

The use of the digital economy and modern technology is generally an unexplored avenue through which to look at the potential for leapfrogging, increasing government capacity and catalysing more rapid economic growth.⁴⁸ Normally, as GDP per capita increases, the size of the informal sector decreases – or, put differently, the informal sector gradually ‘formalises’, reflected graphically in the stairway to formality in Chart 64. This is positive: workers in the formal sector in African countries are four to five times more productive than those in the informal sector.⁴⁹

Using the IFs forecasting platform, we find that the size of Ghana’s economy, for example, increases by roughly US\$1 billion dollars (in PPP) over a 10-year period for every 1% decrease in the size of the informal sector as a portion of GDP. And the benefits keep on growing. In other words, if Ghana could use digitisation to draw people into the formal sector, and hence reduce the size of the informal economy as a portion of GDP by five percentage points from 2023 to 2033, it would gain US\$5 billion in the size of its economy by 2033.

Chart 64: *The stairway to formality*



Source: Amolo Ng’weno and David Porteous, *Let’s Be Real: The Informal Sector and the Gig Economy are the Future, and the Present, of Work in Africa*, 15 October 2018

A larger economy translates into higher average incomes; the result of a one percentage point decline in the size of the informal sector is an increase of US\$31 in GDP per capita above the Current Path forecast by 2033 – at which point Ghana’s population would have increased to 40 million. That is an enormous improvement. Other livelihood improvements that follow are decreases in poverty and inequality.

Modern technology provides the opportunity to leapfrog in this most unexpected area, the incremental formalisation of the informal sector.⁵⁰ In its report *Digital Solutions for the Urban Poor*, the GSM Association notes that pay as you go (PAYG) models, as one example – which allow low-income customers to make small, incremental payments towards otherwise unaffordable goods, and that have demonstrated great results when applied to rural electrification – are now also unlocking a range of urban services such as water, clean cooking gas and sanitation.⁵¹ PAYG leverages the ubiquity of mobile money to make goods and services more affordable in low-income communities, particularly in urban areas that have a higher density of mobile money agents than rural areas and where populations are more likely than their rural counterparts to use mobile internet.

Digital identification, for example, unlocks access to banking, government benefits, education and other critical services. In the words of a recent study on digital ID and payment, digital technology enables ‘the precise identification of all parties to an interaction; low-cost communications; and accurate, accountable, and convenient payment processes’.⁵² In fact, a McKinsey study of seven focus countries (Brazil, China, Ethiopia, India, Nigeria, the UK and the US) found that extending full digital ID coverage to citizens could unlock economic value that is equivalent to 3 to 13% of GDP in 2030 – if the digital ID programme enables multiple high-value use cases and attains high levels of usage.⁵³

In the scenario that follows, then, we include this section’s considerations as a powerful component of leapfrogging.

Modelling the Leapfrogging scenario

The Leapfrogging scenario illustrates the outcomes if African governments were to take maximum benefit from the potential of new

technologies and the digital economy to extract development benefits for their societies. It consists of five sets of interventions.

The first set of interventions emulates a more rapid transition to an energy solution that includes more solar and wind power, and better storage of energy that is then used in intelligent power systems in decentralised micro-, mini- and off-grid solutions. To model such a scenario, we reduce the capital cost to output ratio for renewables, implying even more rapid technological progress than the forecast within the IFs forecasting platform. An example of such progress would be reductions in electricity transmission loss, such as those achieved by China in rolling out ultra-high-voltage direct current transmission technology on a large scale.⁵⁴

A next step is to improve rural and urban electricity access. The size of the interventions ranges from 3 to 27% more rural electricity access by 2033 than in the Current Path forecast, and 3 to 8% more in urban areas. The impact is that, on average, electricity access in low-income African countries improves by 15% above the Current Path forecast by 2043, by 8% for lower-middle income countries and 7% for Africa's seven upper middle-income countries, with quite large country to country differences. By 2043, 84% of Africans have access to electricity, compared to 73% in the Current Path forecast. Instead of 342 million Africans with electricity connections in the Current Path forecast, the 2043 number is 395 million in the Leapfrogging scenario. By 2043, the Leapfrogging scenario realises an improvement of 0.530 billion barrels of oil equivalent (BBOE) from other renewables (wind and solar), a significant 32% improvement on the Current Path forecast. But because renewable production comes off a very low base, it only improves its contribution to energy production by one percentage point, to 18%. This modest result needs to be viewed, however, in the context of an African economy that is almost nine percentage points larger in the Leapfrogging scenario than in the Current Path forecast.

The third intervention is faster rollout of fixed and mobile broadband. In spite of rapid uptake, African countries trail significantly behind others in this regard. Because mobile broadband already increases very rapidly in the Current Path forecast, the Leapfrogging scenario only realises an improvement of two additional persons per

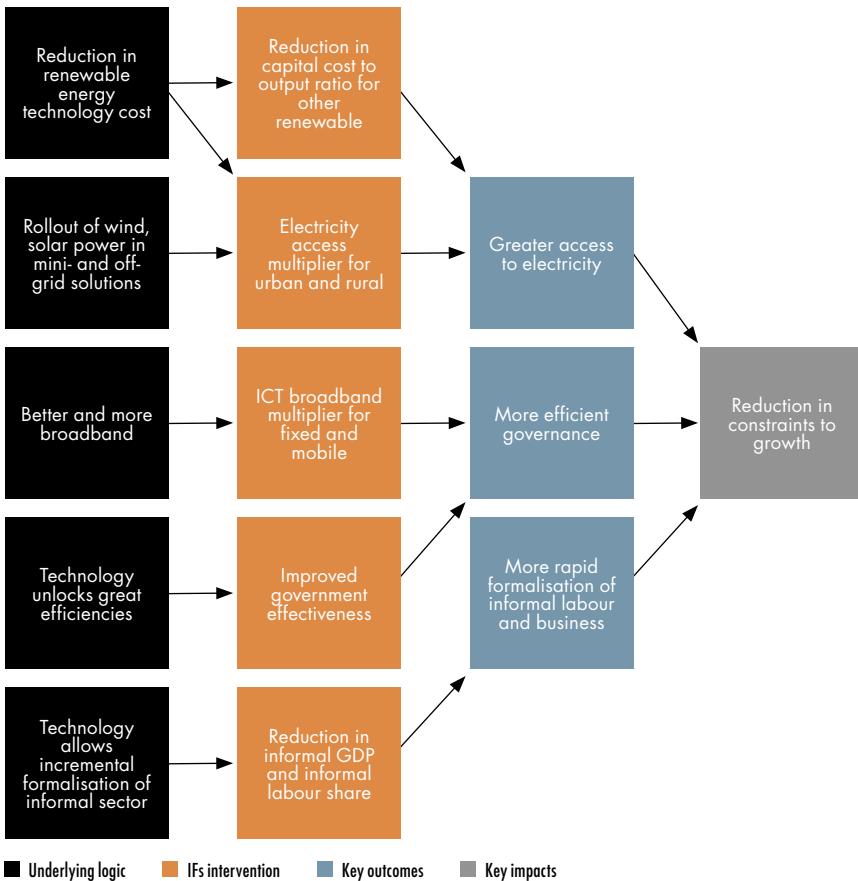
100 people, a difference of 41 million people. It's not only the number of connections that is important, however, but also their speed and reliability. 5G mobile networks will have almost no delay, be at least a hundred times faster than 4G networks and be able to serve a hundred times more devices within a square kilometre. They will allow driverless cars to make decisions through the cloud, medical robots to become more common and doctors to perform more complex operations remotely as precision transforms healthcare, enabling health systems to provide more targeted and accurate diagnoses and treatments.⁵⁵ Moving to 5G will require a step change in the rollout of infrastructure and much more rapid shifts in technology. Without efforts to increase uptake of 4G networks, 3G will likely remain the dominant network (58%) for the 1.05 billion mobile connections projected for Africa by 2025.⁵⁶ Indeed, 4G connections are expected to account for only 27% of mobile connections by 2025 – up only 4% from today.

In the Leapfrogging scenario I also increase rates of fixed broadband access to 48 instead of 28 persons per 100 by 2043. Since it is coming off a low base the difference is equivalent to 451 million additional people.

As a result, the contribution of the ICT sector to African economies increases by roughly US\$59 billion, in 2043, above the Current Path forecast (equivalent to about 0.1 percentage point of GDP) – although, even then, the ICT sector will constitute less than 7% of the African economy. Imagine what a more aggressive investment and determined government implementation could deliver!

In a fourth intervention, the Leapfrogging scenario emulates the effect that digitisation and modern technology could have on more rapidly formalising the informal sector, building on the example of Ghana discussed in the previous section. By 2043, the size of the informal sector, as a percentage of GDP, is on average 5% smaller for low income African countries, 4% smaller for lower-middle income African countries and 1.2% smaller for upper-middle income African countries. The reduction in the percentage of the total labour force employed in the informal sector is slightly larger.

A final intervention modestly improve the effectiveness of African governments using the World Bank index of Governance

Chart 65: *The Education scenario*

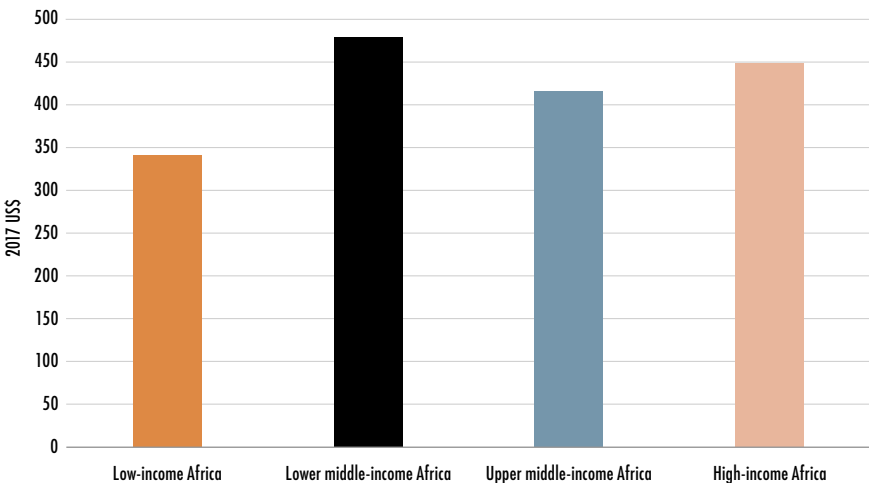
Source: Author

Effectiveness.⁵⁷ The intervention is, on average, a 5% improvement on the Current Path forecast by 2043. The impact of digitisation would be to improve the ability of African governments to raise taxes, provide services and oversee regulatory implementation, hence improving effectiveness. This intervention improves the average score for Africa by 8% in 2043 – with low-income Africa doing slightly better, on average, than lower-middle and upper-middle income Africa. Madagascar gains the most from this intervention, followed by South Africa and Uganda. and Sierra Leone the least.

The result is that the average growth rate for Africa for the period 2023 to 2044 improves from 5% in the Current Path forecast to 5.4%, resulting in an African economy that is US\$740 billion larger in 2043. Chart 66 shows the strong in GDP per capita in 2043, between the Current Path forecast and the Leapfrogging scenario for Africa's 2043 population of 2.239 billion people.

In the Leapfrogging scenario, six countries experience an increase in the size of their economies of more than 15 percentage points, ranging from Malawi (at 15 percentage points) to Somalia, Mali, Uganda and Madagascar, with the latter forecast to experience an increase of 30 percentage points. Of course, lots of additional work needs to be done to verify these very large increases, but the forecast does indicate the extent to which leapfrogging can unlock potential. Most increases are generally in the range of five to eight percentage points. Because the economies being compared are quite different in size, the actual dollar numbers are much more impressive. For example, the Nigerian economy will, in 2043, be US\$198 billion bigger than in the Current Path forecast – the largest increase in absolute terms –

Chart 66: *Difference in GDP per capita in 2043 between Leapfrogging scenario and the Current Path forecast*



Source: IFs 7.63 initialising from UNPD World Population Prospects medium variant life expectancy and WDI data

followed by Ethiopia at US\$68.2 billion. The corresponding figures for Egypt and South Africa, Africa's other large economies, are US\$61 billion and US\$27 billion respectively.

Leapfrogging is not only about improving growth, infrastructure and income. The Leapfrogging scenario will also reduce poverty in Africa. Madagascar, a low-income country, will benefit the most, reducing its 2043 poverty headcount (using US\$1.90) by 13 percentage points below the Current Path forecast. Zambia, a lower-middle income country, will reduce its poverty headcount (also using US\$1.90) to three percentage points below the Current Path forecast. But Africa's seven upper-middle income countries do not experience large decreases in poverty.

Conclusion: Harnessing technology as an enabler

This chapter started by examining the notion of leapfrogging and then moved on to present examples of how different technologies offer opportunities for Africa to start closing the gap with developed countries. It noted that modern technology may even obviate the requirement for traditional infrastructure such as large electricity grids to provide household electricity. It therefore examined the notion of stage-skipping, where a country bypasses traditional stages of development such as using mobile phone connections instead of landlines. It also explored the potential of forging an alternative path of technological development involving emerging technologies with new benefits and new opportunities (path-creating), such as the use of renewables instead of carbon fuels for energy and the potential of hydrogen.

Many areas of leapfrogging were not examined in this chapter, of which health and education are the most important. General improvements in medical science could curb malaria, HIV infections, respiratory infections, tuberculosis and other diseases that currently ravage large populations in Africa, modelled in the Health/WaSH scenario. The chapter on manufacturing and transfers explores the potential to use digital technology as an effective means towards targeted cash transfers to their citizens.

Whichever example we wish to use, technological innovation and leapfrogging will shape development on the African continent in numerous and fundamental ways, particularly if governments decide to actively pursue those options in a deliberate manner. Should African leaders seize the opportunities offered by modern technology, they need to build the productive structures of their economies in a way that will unlock rapid growth, alleviate poverty and improve incomes in a manner that is sustainable in the long term. Writing for the Center for Strategic and International Studies, Erol Yayboke offers an important insight in this vein. ‘Enthusiasm for taking advantage of leapfrog opportunities’, he cautions, ‘should not distract developing nations from what should be their overarching goal: becoming producers in their own right, rather than simply consumers of technologies and services developed elsewhere.’⁵⁸ Leapfrogging is therefore not merely copying high technology from others. It is a sequential process of learning by latecomers, building the skills such as in product design and acquiring the capability to create new products – particularly to overcome the extent to which the developed world locks in patent and intellectual property rights to their exclusive use.⁵⁹ The real drivers of economic growth, after all, are innovation, new knowledge and new technology.

The primary challenge that Africans and international finance institutions face is therefore twofold: first, the ability of African governments to apply the innovative business models and flexible regulatory approaches to growth – an agile approach to regulation perhaps most evident in Rwanda that has seen the country provide 4G cell phone coverage to 95% of its (admittedly small) territory within just four years and establish a domestic drone startup to establish itself as an international supplier of drone delivery services.⁶⁰ The second challenge is for governing elites in poor countries to carve out space for industrialisation policies that do not run foul of the dictates of the World Trade Organization, among others.

Levering the potential of leapfrogging is, therefore, not about merely asking regulators to get out of the way, but also about flexibility and a willingness to embrace experimentation, reflecting ‘the bottom-up nature of most instances of leapfrog development and the need for policymakers to proactively engage with entrepreneurs and

technologists to ensure that growth in new technologies isn't stunted by regulations meant for a different age.⁶¹ It is the development and application of a deliberate industrial strategy aimed at this exclusive goal, not unfettered free markets or laissez-faire economic policies. Erik Reinert is one of many analysts that cautions poor countries to learn from the real causes of American and European prosperity, instead of taking advice from their forgetful successors. 'Rich countries got rich,' he writes, 'because for decades, often centuries, their states and ruling elites set up, subsidised and protected dynamic industries and services ... having moved through a stage without free trade, which – when successful – subsequently made free trade desirable.'⁶²

This chapter touched on a wealth of innovation that is already available for electricity provision, for example, through off-grid solutions using wind and solar energy, which can take power to remote locations across the continent. Above all, this requires governments to be willing and able to seize these opportunities. The impact of digitisation and the Fourth Industrial Revolution will be magnified by efficient markets, clear and transparent regulatory frameworks, and effective governance in the public and private sectors.

For those reasons, the hurdles to leapfrogging may largely also come from African governments themselves as some shut Internet access down, for example, particularly ahead of elections, worried that social media platforms could be used to remove them from power.⁶³

Technology alone is not a silver bullet. Countries have to invest in people and institutions to establish an infrastructural base for economic development. New technologies may make it possible to provide more and better education to more people, but cannot replace the institutions bound together by social capital and public trust that is a prerequisite for development. The installation of CCTV cameras to monitor crime will not work in an environment where basic policing services are not provided.

Eventually, if Africa is to benefit from leapfrogging, it needs to produce new technologies, not merely consume the high technologies of others. That, UNCTAD warns, requires strategic innovation policies to promote and facilitate the deployment and adaptation of frontier technologies to their production needs and to build capacity for developing them further.⁶⁴

10

Africa's Financial Flows: Aid, Foreign Direct Investment, Illicit Financial Flows and Remittances



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Against the background of the growing gap in average development indicators between countries in Africa and the rest of the world outlined in Chapter 1, and the many challenges the continent faces explored in this book up to now, this chapter deals with the most important financial flows to and from Africa. It gives an overview of the role that development assistance (aid), foreign direct investment (FDI) and remittances play in development, and comments on the burden of illicit financial flows. And it focuses on the growing footprint of China in Africa, particularly in FDI. The subsequent Financial Flows scenario includes an increase in aid to poor African countries, more foreign investment to middle income countries, maximising remittance inflows and using a proxy to emulate reduced illicit financial outflows.

These flows are complex, consisting of inflows and outflows from and to each country in what is known as a pooled approach. In this approach, flows are not between individual countries (i.e. bilaterally), but from each country to the rest of the world. Trade flows (Chapter 8) follow the same approach. In reality, Africans don't only receive remittances from the diaspora outside the continent, but also send remittances to their families and support extended families in other African countries, while a country like South Africa is a major investor on the continent. South Africa is also a net provider of remittances, recording annual outflows, while, other countries, such as Lesotho, are net recipients.

Before COVID-19, the general trend was for a steady decline in aid dependency in Africa, measured as a portion of GDP or contribution to government revenues, with an increased number of countries

receiving more FDI than aid. In 2019, the year before COVID-19 disrupted matters globally, Africa received US\$72.7 billion in net foreign aid; about US\$89.4 billion in remittances and US\$84.2 billion in FDI (all numbers in constant 2017 US\$). In summary, remittance flows outpace both aid inflows and FDI investments today – but looking longer term, the potential of FDI is significantly larger than that of any other flow.

The next sections take a closer look at aid and its shifting landscape, FDI and China's increasing role in this, remittances on the continent and illicit financial flows.

Aid and development

Despite regular pronouncements on its death, aid remains important for small and fragile economies, few of which attract private capital in the form of FDI. Aid to Africa is a contentious matter, with proponents and detractors dug into unyielding positions on either side of the policy divide. But since the aid sector is complex and the environment in which it works is diverse, the sweeping generalisations associated with these two camps often shed little light on the matter.

The levels of aid to Africa over the years tell an important geopolitical story.

After an initial period of benign aid neglect after African independence, the Cold War sustained ever-higher levels of aid until the collapse of the Soviet Union in 1989. With aid having largely been used for geostrategic rather than development purposes until then, the end of the Cold War eventually allowed the aid community (then largely consisting of OECD countries) to pay greater attention to aid effectiveness and value for money. But corruption, poor governance and high levels of debt led to a significant degree of pessimism about Africa's development prospects in the years that followed.

Matters turned around after the 2000 United Nations Millennium Summit in New York, followed by the Report of the Commission for Africa, released in 2005, and the European Consensus on Development – an EU policy declaration on aid – also issued in that year. Collectively, these efforts paved the way for the 2005 World Summit in New York,

which called for increased aid transfers for Africa to reach the eight Millennium Development Goals (MDGs) set in 2000.

The 2005 Paris Declaration provided a series of specific implementation measures and established a monitoring system to assess progress and ensure that aid donors and recipients hold each other accountable for their commitments. The 2011 Busan Partnership for Effective Development Cooperation (named after the city in South Korea that hosted the final meeting) took the Paris agreement several steps further. It established, for the first time, an internationally agreed-upon framework for development cooperation that included traditional and new donors from the South, civil society organisations, and private philanthropy. Donors agreed to allow aid recipients to use their aid dollars to procure from the cheapest suppliers and not those prescribed by donors – an issue for which aid advocates had been lobbying for decades – as well as various other measures that harmonised aid modalities among donor countries.

These reforms precipitated more effective aid that began, increasingly, to be channelled towards low and lower-middle income countries, where the majority of poor people are to be found, rather than towards upper-middle income countries that, for many aid providers, were economically and politically more important. Whereas, if aid were distributed equally amongst African countries, it would equate to a modest 2.4% of GDP, these reforms would see aid to Africa's 23 low income countries increase to an average of more than 8% of GDP in 2019 and below 2% in upper-middle income countries, illustrating the progress that has been made in shifting aid to where the need is greatest.

While the amount of aid is forecast to increase over the next two decades, largely because of economic growth among aid providers, the importance of aid as a per cent of GDP in Africa will decline from 2.4% of GDP in 2019 to 1.2% in 2043. Since North African countries have long since graduated to middle-income status, more than 90% of the aid to Africa now goes to sub-Saharan Africa, although the shift in aid from Europe to low-income countries has started to reverse in recent years in line with the concerns about migration that has seen a larger share of aid go to Europe's immediate neighbourhood in North Africa

and the Sahel.¹ Russia's invasion of Ukraine will, however, divert large amounts of aid away from Africa in the short term.

Most aid is provided bilaterally – that is, directly from a national agency, such as the US Agency for International Development (USAID) or the Swedish International Development Cooperation Agency (SIDA) – to the country or region concerned. Multilateral aid is provided through organisations such as the World Bank and the African Development Bank as grants and concessional loans (that is, at below-market rates).²

For many years, the debate about the efficacy of aid pitted microanalysis of the clear and proven contribution that aid makes to the livelihoods of local communities against broader macroanalysis that held that aid contributed little to poverty reduction and economic growth, stifled competition and created unhealthy dependency. So, on the one side were well-documented aid success stories, such as the eradication of river blindness in West Africa, the eradication of smallpox, improvements in modern contraception, reductions in malaria deaths, improvements in education and improvements in basic healthcare. On the other side of these achievements is the apparent inability of sub-Saharan Africa to progress in poverty reduction, with blame often laid at the door of 'bad aid' by detractors.³ 'Many critics,' write Tony Addison, Oliver Morrissey and Finn Tarp⁴ 'correlate weak or negative growth with aid flows, without much (if any) attention to the direction of causation, the overall determinants of growth (of which aid is just one) or the counterfactual to aid.'

The reasons for the slow reduction in rates of poverty in Africa have little to do with the intrinsic nature of aid as positive or negative, although there is little doubt that Africans have generally not worked hard enough on the domestic reforms that could translate the additional revenues from aid into better impact. Instead of using aid strategically, many African governments view it as an additional source of income, a tax that the rest of the world pays to compensate Africa for a global system that is skewed against it – or as a token recompense for the damage caused during colonialism. Aid, including humanitarian support, can ameliorate the worst effects of war, hunger, poverty, poor governance and a lack of provision of services, but it cannot take the

place of government policies and actions aimed at sustained and inclusive growth that, alone, could raise incomes, grow employment and reduce poverty.

Poor countries often have little tax revenue and are unable to finance the provision of services or to close the savings-investment gap that would – in theory, at least – lead to more rapid growth. In the absence of significant domestic savings and private investment, aid serves as an avenue through which donors can augment government capacity or compensate for lack of capacity.

For example, without aid, total government revenues in Africa's 23 low-income countries would be 10% of GDP instead of 19%, allowing the recipients to provide more and better services. In an environment where income from domestic revenues is low (partly a function of bad governance), aid, therefore, boosts government revenues in these countries by nine percentage points. In addition, SDG 17, which includes aid targets, calls on states to 'strengthen domestic resource mobilisation, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection'.⁵ The impact of aid on government revenues for Africa's 23 low-middle income countries is more modest at two percentage points. The problem is, of course, that aid means that African governments are partly relieved of the burden to raise taxes on its citizens. Tax rates in Africa are generally significantly below global averages and undermined by various exemptions and large inefficiencies. African governments are, as a result, not held accountable by their people for poor service delivery, which is the nub of the reason why detractors consider aid to be doing more harm than good.

These considerations aside, aid will likely remain important for Africa's low and lower-middle income countries for some years to come in the wake of COVID-19 and the global supply disruptions that followed the Russian invasion of Ukraine. The determining factor is how the recipient government manages the aid it receives. With clear leadership, aid can improve development outcomes – but it requires much more commitment by African governments than is evident in most aid-recipient countries.

The experience of three countries in East Africa best illustrates the potential and pitfalls of aid in Africa: Ethiopia, Kenya and Tanzania, which each received about the same amount of aid per person (US\$45, US\$48 and US\$44) in 2019.⁶

Measured by the size of the monies that it received, Ethiopia received more aid than any other country in Africa before the 2020/22 civil war in Tigray wreaked havoc on its development prospects. Ethiopia also has the second-largest population on the continent after Nigeria, so its large aid volumes partly reflect its population size. In 2018, donors provided US\$4.9 billion in aid, most of which (34%) was for humanitarian aid – but US\$838 million (17%) went to health and population, accounting for up to half of the total health spending in the country.⁷ Aid has enabled rapid reductions in maternal and infant mortality rates, which accelerated Ethiopia's demographic transition and had a very positive impact on the nation's long-term future development prospects – until the political choices made by Prime Minister Abiy Ahmed and the conflict with Tigray upended things.

In neighbouring Kenya, decades of rampant corruption and outright theft of donor money have given the country and donors a bad name. Kenya has consistently received significant amounts of aid (US\$2.5 billion in 2018, of which 12.2% went to humanitarian assistance and 37.3% went to health and population). In a speech made in July 2004 to the British Business Association of Kenya, the UK high commissioner in Kenya, Edward Clay, famously remarked that the 'gluttony' of senior figures in the government of then-president Mwai Kibaki was causing them to 'vomit all over our shoes'.⁸ Perhaps as a result of *ujaama* (African socialism) under Tanzania's first independence president, Julius Nyerere created a culture of dependency, with low levels of entrepreneurship, in marked contrast with neighbouring Kenya which is emerging as one of Africa's high growth countries. The latter also does better on indices on government effectiveness and the ease of doing business.⁹ For that reason, it is no surprise that the Fraser Institute scores Tanzania below Kenya, at 6.94, in the most recent index of economic freedom, although both score much better than Ethiopia.¹⁰ And whereas Ethiopia and Tanzania are both ranked 87th out of 180 countries (with a similar score of 39 out of a possible 100) on the 2021 Transparency Index, Kenya's

score is 30 and it is ranked some 40 countries further down, at 128th – indicating much lower levels of transparency.¹¹

One of the reasons for Kenya's high levels of corruption is that it is much more democratic. Without the associated institutions able to oversee, moderate and regulate the allocation of government resources, successive ethnic elites in Kenya have been able to milk the coffers to a large extent whereas, in Ethiopia and Tanzania, more autocratic leaders have invested in building a national identity.

Levels of development also matter. Tanzania was recently classified as a low middle-income country. Kenya has been low-middle income since 2014. Although Ethiopia achieved very rapid progress until the war in Tigray, it is now unlikely to graduate from its low-income status. Compared to the others, Tanzania is, however, more stable.

This brief comparison show the importance of history, governance and domestic context in dealing with aid effectiveness.

Despite its generally bad press, aid has chalked up quite a few victories, some of which were highlighted in a 2020 report by Oxfam.¹² Health programmes supported by the Global Fund to fight Aids, tuberculosis and malaria, the report noted, have saved more than 27 million lives since 2000. The Global Polio Eradication Initiative has galvanised funding to vaccinate hundreds of millions of children, saving an estimated 18 million children from paralysis and eradicating the disease in many parts of the globe. As a result of an aid package agreed upon at the 2000 Dakar World Education Forum, 34 million children have had the chance to go to school, while the Civil Society Education Fund supported national coalitions in 60 countries to advocate for better education policies and resources. Zambia's coalition successfully lobbied for education's share of the national budget to increase to a historic 20.2% high in 2014. Finally, the Oxfam report noted, that aid funds the entire social protection programme of seven countries in sub-Saharan Africa.

Aid has a modest positive effect on economic growth, improves social indicators and helps reduce poverty, although the magnitude of this relationship is modest, varies greatly across recipients, and

diminishes at high levels of aid.¹³ Aid can, therefore, contribute to poverty alleviation and human development. But on its own, it cannot change a country's development trajectory.

The shifting global aid landscape

The US is the world's largest aid donor, providing almost a quarter of total aid, and is also Africa's single largest bilateral aid donor – but both levels and interest are declining.

In 2019, USAID, then still under the malignant Trump administration, published its strategy on the 'Journey to Self-Reliance', which aims to 'end the need for' foreign assistance in partner countries. In 2018, it provided US\$10.7 billion of aid to sub-Saharan Africa, equivalent to 21% of total aid disbursements, but the 2019 appropriation declined to US\$7.1 billion (all in current figures). Aid to North Africa is part of US support to the Middle East.¹⁴

In response to domestic and international affairs, the US's primary interests in the African continent have shifted and the future evolution of its role is unclear. After 9/11, US focus shifted to the war on terror, culminating in the disastrous Western interventions in Iraq and Libya that destabilised the Middle East and North Africa and ignited terror elsewhere in Africa. In addition, the shale energy revolution has reduced America's dependence on imported oil – and hence its relationship with oil-producing countries like Nigeria and Angola. US trade with Africa has reduced quite sharply as a result.

The US and other large donors are redoubling their efforts to push for a larger role for the private sector, along the line that what Africa needs is trade and investment, not aid. For example, after several years of inaction, the Better Utilization of Investments Leading to Development (BUILD) Act (passed in the US Senate in October 2018) supports private investment in Africa.¹⁵ The US International Development Finance Corporation (USIDFC) that was subsequently established can guarantee up to US\$60 billion in investment in Africa, focusing on small- and medium-sized enterprises and support to local companies.¹⁶

BUILD was part of the Trump administration's Prosper Africa initiative to 'support US investment across the continent, grow Africa's

middle class, and improve the overall business climate in the region.¹⁷ Launched on 13 December 2018 as part of the Trump administration's afterthought about competing with China in Africa, Prosper Africa is aimed at helping US companies navigate the bureaucracy to benefit from its various programmes and services across 17 agencies. Its primary aim is to open markets for American businesses.

What the US had under the chaotic presidency of Donald Trump was a China strategy, but nothing like a coherent view on the continent. Its transactional approach was also evident in the US requirement for Sudan to recognise Israel in return for removal from the US's State Sponsors of Terrorism list. In 2020, the Trump administration held progress on a free trade agreement with Kenya hostage to the same requirement, while recognising Morocco's occupation of the Western Sahara in exchange for Morocco's recognition of Israel. Until Russia's invasion of Ukraine rekindled American interest in Africa as an arena of contestation with Russia and China, little had changed with the presidency of Joe Biden, who continues with an America First foreign policy.

Europe, on the other hand, remains connected with Africa through shared histories, languages and physical proximity, although its foreign and development policies are increasingly shaped by its concerns about migration from Africa to Europe – and recently singularly focused on dealing with the fallout of the war in Ukraine.

Before Brexit, the various EU institutions provided about 13% of aid to Africa plus 7% bilateral aid from Germany, 4% from France, etc. Before Prime Minister Boris Johnson slashed the UK aid budget at the end of 2020, it provided about 7% of aid to Africa.¹⁸ For the 2017–2020 External Investment Plan, the EU budgeted €32.5 billion in grants to Africa and, in its 2021–2027 budget, it provided €40 billion. In addition, the EU budgeted €3.7 billion in grants for blending and guarantees. These amounts exclude bilateral aid from individual EU member states.¹⁹

Cognisant of the colonial history of a number of its member states in Africa and its geographic proximity, the EU has been diligent in nurturing a collaborative and consultative relationship with Africa over successive decades. Whereas the US is cautious in engaging with

regional organisations such as the African Union (AU) and Africa's various regional economic communities, the EU often sees them as its primary point of engagement and reflects its own supranational economic and political architecture. After decades of European investment in building the capacity of the AU, and given the legacy of colonialism, the relationships of aid and trade have created a network of friendship and collaboration that remains important for both parties, although Brexit and widespread anti-migrant sentiments across Europe have tested the strength of this relationship.

In 2017, the EU launched its External Investment Plan (EIP) that includes a new guarantee mechanism in which aid is used to mobilise private capital flows through 'blended arrangements' and the provision of guarantees to mobilise additional resources for investment in Africa, generally aimed at addressing the socio-economic causes of migration.²⁰ Considerable attention is being given to efforts such as Aid for Trade and arrangements to mobilise additional financial support to the region in the form of loans or equity.²¹ That was followed, in 2018, by the announcement of a new Africa-Europe Alliance for Sustainable Investment and Jobs and the establishment of the Emergency Trust Fund for Africa (€4.7 billion or US\$5.56 billion as of 31 December 2019) following the significant inflow of migrants and asylum seekers. Increases in spending to halt migration flows have led to increases in aid from the EU and many of its members in recent years.

For its 2021–2027 Multiannual Financial Framework (MFF), the EU is merging several of its development instruments under a consolidated Neighbourhood, Development and International Cooperation Instrument (NDICI) that will receive €70.8 billion (US\$83.6 billion). At least €26.0 billion (US\$30.7 billion) of this will go to sub-Saharan Africa.²² And the 2022 EU–AU Summit approved partnerships in five key areas: green transition; digital transformation; sustainable growth and jobs; peace and governance; and migration and mobility.²³

Similar to the impetus that the Cold War gave to aid in Africa, the concern about China's expanding footprint in Africa in Europe and North America is again rekindling interest in Africa. Thus, in June 2022, the G7 countries launched the Partnership for Global Infrastructure and Investment (GPII) to counter China's Belt and

Road Initiative to mobilize US\$600 billion by 2027 in infrastructure investments in developing countries.²⁴

Moving to China, sources differ widely in their calculations of the amount of Chinese money that qualifies as aid as opposed to loans. Thus, the China Africa Research Initiative (CARI) at Johns Hopkins University²⁵ estimates that China provided US\$2.94 billion globally in 2020, of which 45% went to Africa, but there is disagreement about how much of it would qualify as aid as opposed to commercial loans.²⁶ A more detailed estimate from the JICA Ogata Sadako Research Institute for Peace and Development estimated that China's foreign aid on a net disbursement basis increased from US\$6 billion in 2015 to US\$6.8 billion in 2018. It expected that aid levels for 2019 would be similar to those in 2018, and predicted a decrease to US\$6.2 billion in 2020.²⁷

Although much of its lending and grant-making occurs in secrecy and is guarded by stringent confidentiality clauses, China has established itself as the financier of first resort for many low- and middle-income countries. The vast majority is in the form of debt provided at commercial, and not concessional, rates. In fact, since 2014 the Chinese ratio of loans to grants is at 31 to 1, and against significant collateral. Nearly 70% of China's overseas lending is now directed to state-owned companies, state-owned banks, special purpose vehicles, joint ventures, and private sector institutions in recipient countries rather than to central government institutions, giving rise to the notion of vast amounts of 'hidden debt' discussed in Chapter 1. 'These debts,' AidData found, 'for the most part, do not appear on their government balance sheets. However, most of them benefit from explicit or implicit forms of host government liability protection, which has blurred the distinction between private and public debt and created major public financial management challenges for developing countries.'²⁸

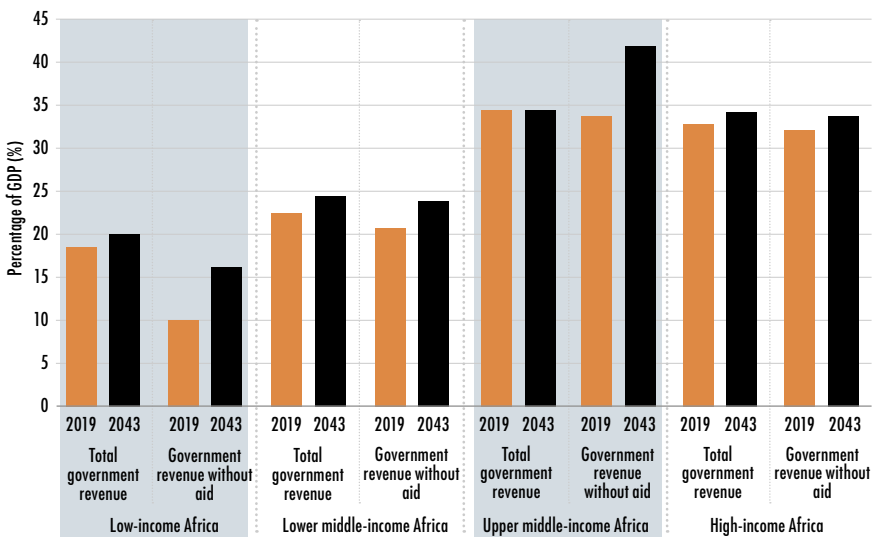
And what of private sources of aid to Africa? Until recently, calculations of aid flows excluded contributions from sources like the Open Society Foundations of billionaire George Soros and the Bill and Melinda Gates Foundation. The OECD's large-scale survey on global private philanthropy estimates annual flows of just below US\$8 billion, which is equivalent to about 5% of government aid flows. Most of this comes from the Gates Foundation and goes to stable middle-income

countries (that is, not least-developed countries), and slightly less than a third of private donations go to Africa.²⁹

In the Current Path forecast, Africa will receive US\$89.8 billion in net official aid in 2030, and US\$105.2 billion in 2043, excluding contributions from private sources. Most of the increase will (and should) go to low-income countries that are expected to experience a doubling of aid between 2022 and 2043 to US\$73.2 billion – although as a portion of GDP the contribution of aid to these countries will decrease from just below 8% to 3.8%. The reason for the decline in aid as a portion of GDP is, of course, due to the rapid economic growth that most of these countries will experience, in part because they all have young and fast-growing populations.

Aid is important for many African countries, although it is declining as a portion of government revenues. Whereas the difference in government revenues with and without aid in 2019 was 8.5 percentage points of GDP, by 2043 it would decline to 3.8 percentage points. Chart 67 presents a comparison of average government revenue with

Chart 67: *Government revenues with and without aid in 2019 per World Bank income groupings for Africa*



Source: IFs 7.63 initialising from IMF

and without aid for low, lower middle- and upper middle-income African countries.

The increase in the amount of aid within the International Futures forecasting platform (IFs) is driven by the growth in the size of the donor economies rather than any increases in aid as per cent of their GDP by donors. The expected near doubling of aid in constant dollar amounts would be significantly larger if developed countries met the 0.7% of gross national income (GNI) target for aid contributions as set out in the SDG ambition.³⁰ That is unlikely. Wealthy nations spent just 0.3% of their GNI on international aid in 2019, and only five countries – Luxembourg, Norway, Sweden, Denmark and the UK – met or exceeded the 0.7% target. The following year, UK Prime Minister Boris Johnson indicated that his government would reduce aid levels to 0.5% as COVID-19 and Brexit hammered his country; that would see the UK drop off this list.

Finally, the COVID-19 crisis is affecting aid. In the short term, donor resources were shifted closer to home, to projects such as housing or using development funding to cover the costs of migrants within Germany's borders, for example. The longer-term impact of COVID-19 in Africa will be to slow the rates at which poverty declines and, hence, migrant flows to Europe. Inevitably, partners will then be forced to consider how best to improve the ability of African governments to constrain migration; this may, in time, modestly increase rather than decrease aid flows. In 2022, Western nations again shifted aid budgets to pay for Ukrainian assistance and the costs of millions of refugees that fled from there.

Having looked at aid to Africa, and its changing landscape, the next area of focus is FDI.

Leveraging foreign direct investment for Africa

Firstly, how is FDI different from foreign aid? FDI is essentially a long-term investment of one country in another, in exchange for an ownership stake in domestic companies and assets. It implies an active role in management, or an equity stake large enough to enable the foreign investor to influence business strategy.

FDI typically consists of a *stock* of investment that has been built up (or that is depleted) through annual *inflows* or *outflows*. In 2019 Africa has a stock of FDI equivalent to about 39% of GDP (roughly US\$285 billion in current US\$) and annual inflows amounting to 1.1% of GDP.³¹ Inflows increased rapidly during the global commodities boom that is discussed in Chapter 1; it peaked at 3.8% of GDP in 2008 at the start of the global financial crisis. FDI inflows declined thereafter and, by 2017, had recovered to 3% of GDP or US\$42 billion – a fraction of the US\$476 billion that went to developing Asia. But then again the African economy is only 14% the size of developing Asia's.³²

Historically, Africa has received less FDI as a percentage of GDP than a region such as South America. Africa gets about 3% of global FDI (more or less equivalent to the size of the total African economy as a portion of the global economy), yet its stock of FDI represents less than one per cent of the global total.³³ With limited exceptions, then, Africa is a marginal investment destination – particularly for US investors.

FDI has many advantages, some of which were examined in Chapter 8's discussion of trade. Because FDI typically involves the transfer of technology, capacity and skills from a multinational (or mother) corporation to an affiliate in the host country, it is an important catalyst for economic development. To attract FDI from the large capital markets in the West, countries typically need a sovereign credit rating by an international rating agency as a measure of their creditworthiness. In mid-2020, the only African countries with a sovereign credit rating by all three key rating agencies (Moody's, Standard & Poor's and Fitch) were Angola, Egypt, South Africa, Mozambique and Morocco, so it is perhaps no surprise that most private sector FDI goes to these countries.³⁴ But with all the important rating agencies located in the West, which typically view Africa through a jaundiced lens, African countries often end up paying punitive interest rates. Chinese investments, on the other hand, are not subject to market sentiment since they are almost invariably state-backed loans, but are generally offered at market-related rates similar to that of Western private banks and not at concessional rates as with most loans to Africa from the World Bank or IMF.

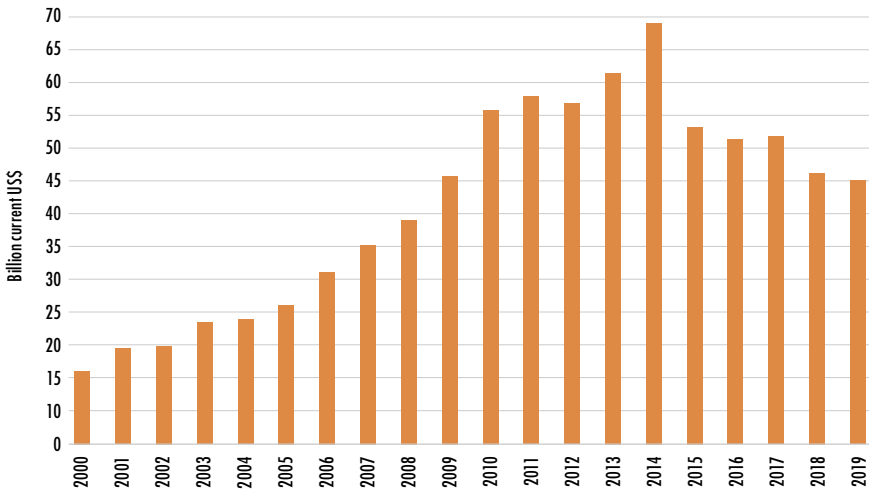
Low levels of FDI from the West underline a strange paradox. Africa has the highest rate of return on FDI globally but receives the lowest

FDI levels.³⁵ Conventionally, capital is expected to flow from countries with low returns to countries with high returns. Odusola³⁶ posits that the explanation for this is Africa's poor infrastructure, and low levels of human and institutional capital, which serve as an effective tax on returns on investment. But most important is the continent's bad investment reputation, even though the business climate in many African countries can now be equated to that of most other developing countries. In addition, a recent study by the IMF³⁷ on FDI inflows in 178 host countries for roughly 16 years found that e-government services appeared to stimulate the inflow of FDI. Specifically, countries that have implemented and adopted strong information and communication technologies, regardless of their level of development, were found to attract more inflows.

Whatever its source, public or private, FDI is not a substitute for efforts by national governments to maximise domestic revenues that are critical to the development of large, basic infrastructure, such as water and sanitation systems. Domestic factors often determine how effective FDI inflows translate into growth and development. Generally, it seems that productivity spillovers of FDI can only be materialised within an environment that promotes quality education (human capital), sound and credible institutions, good infrastructure and active local financial markets. Weakness in these areas undermines local firms' ability to adopt the advanced technologies, and reduces their capacity to respond to the challenges associated with FDI activities.³⁸ So, expectations of the potential role that FDI can play in unlocking growth and development in poor countries are often too high.

Because of the size of its economy and wealth, the US has higher FDI outflows than any other country and leads on the stock of FDI that it has built up in Africa compared to any other single country, although inflows have declined since 2014. Yet FDI to Africa only breached 1% of total US FDI in 2010 to 2014 before falling back again. In 2019 the US only invested 0.72% of its US\$5.96 trillion of its direct investment in Africa.³⁹ At the end of 2017, the Trump administration introduced tax reforms that allowed the large-scale repatriation of accumulated foreign earnings by US multinationals. Companies rushed to shift monies back to the US with the result that foreign direct investment,

Chart 68: Annual FDI flows from the US to Africa in current US\$, 2000–2019



Source: US Bureau of Economic Analysis

including to Africa, amounted to only US\$44.4 billion in 2018, significantly below the 2014 peak of US\$69 billion.

The large stock of FDI from the US is followed by the UK and France. Investments by South Africa in the rest of Africa have also expanded rapidly as its private sector seeks greener pastures elsewhere. However, when comparing the stock of FDI from all the EU member states with that of the US and China, the EU accounts for 40%, the US for 7% and China for 5%.⁴⁰ Europe, then, is by far Africa's most important investor – although in recent years China has also come to play an important role.

While stocks tell one story, flows are changing. China pumped more than US\$72 billion worth of FDI into Africa between 2014 and 2018, followed by France (US\$34.17 billion), the US (US\$30.85 billion), United Arab Emirates (US\$25.27 billion) and the UK (US\$17.68 billion). Coming off a low base, the flow of FDI from China to Africa is therefore steadily increasing its stock of FDI in Africa.⁴¹

FDI flows to Africa started to slow before COVID-19, largely due to the impact of the Arab Spring on stability in the region and declining oil prices, with subsequent economic stagnation in Algeria, Angola and

Nigeria. COVID-19 has dramatically accelerated this short-term trend. In its *World Investment Report 2021*, UNCTAD reported that the pandemic had reduced FDI flows by 16% to only US\$40 bn in 2020, ‘a level last seen 15 years ago’.⁴²

Ensuring that FDI benefits the recipient requires effective government regulation and oversight. For example, a recent study of control rights over gold, copper and diamond production in African states south of the Sahara analysed the well-being of individuals living close to internationally controlled versus domestically controlled mines. It found that ‘domestic mineral production stimulates local income more than internationally controlled extraction since national mining companies promote more backward economic linkages and have higher incentives to engage in local capacity building’.⁴³ So, ‘domestic mining companies are associated with increased local wealth. Multinational firms, by contrast, are linked to increased regional unemployment’.⁴⁴ This generally happens when FDI has a crowding-out effect on domestic investment. FDI flows to manufacturing and services sectors usually create direct employment within multinational enterprises (MNEs) and indirect employment through the backward and forward linkages of MNEs in host countries.

Most FDI in Africa is in the extractive sector (known as resource-seeking FDI), examined in Chapter 1, typically in oil, gas or scarce minerals. This is because, historically, investment from the West required a return on investment high enough to attract interest from a risk-averse private sector, the primary source of FDI. For example, in June 2019, the US energy firm Anadarko Petroleum Corporation⁴⁵ agreed to the construction of a US\$20 billion gas liquefaction and export terminal in Mozambique – the single-largest liquefied natural gas project in Africa and an amount equivalent to almost half of the total FDI to Africa. By the end of 2019, total investments in Mozambique for the next decade were estimated at US\$128 billion.⁴⁶ That is before terrorism in the Cabo Delgado province brought the investments to a temporary halt. By the end of 2021, more than 20 countries were helping Mozambique fight the insurgency.⁴⁷

Importantly, for African countries, a foreign firm’s decision to *divest* from a country has multiple negative effects. For example, a recent

study by the OECD⁴⁸ examined 62 000 foreign-owned affiliates from 41 OECD and G20 countries, and revealed that divested foreign affiliates experience, on average, 28% lower sales, 24% lower value-added and 13% lower employment than firms that remain under foreign ownership. In brief, African governments should work hard to keep foreign companies invested in the continent, even as they incentivise local partners, encourage technology transfer and ensure a modicum of local ownership.

The IFs Current Path forecast is that annual FDI inflows to Africa will increase from 2.8% of GDP in 2019 to about 3.8% by 2043 – below the increase in the size of the African economy as a portion of the global economy (expected to increase from 3% to 5%), possibly indicating that the forecasts are conservative. This will be a continuation of a trend that has seen FDI flows go overwhelmingly to Asia. African governments should also be aware that not all FDI is good for the continent. For instance, the large share of food FDI in Africa is directed towards agricultural land acquisition. Studies indicate that the bulk of the 115 million acres of agricultural land acquired by foreign investors worldwide is in Africa. And food production by multinational companies in Africa is mainly tailored towards crops that are not the staple food of African people – rather, they are for export.

Then, much more needs to be done to increase FDI flows to Africa, particularly from the private sector in cash-flush developed economies. In the meanwhile, the steady increase in tensions between the US and China may reward Africa, since it exposes the vulnerabilities of concentrating manufacturing in a single location instead of closer to future markets. And, ultimately, the rise of India will also increase the expected growth in demand for natural resources required for infrastructure.

Chinese investments, typically of a government-to-government nature, follow different incentives and practices.

China's growing footprint in Africa

Earlier chapters have outlined China's unprecedented economic growth and its burgeoning presence in Africa. There is much that African

leaders share with China, particularly its emphasis on the importance of sovereignty and non-interference, as originally reflected in the Eight Principles that Chinese premier Zhou Enlai unveiled in Accra, Ghana, in 1964.⁴⁹

In addition to the political and military support that China provided to various liberation parties in Africa during their struggles for independence, its best known early infrastructure project is probably the Tazara Railway line, built to reduce landlocked Zambia's economic dependence on export infrastructure linkages through Rhodesia (now Zimbabwe) and South Africa. The single-track line of some 1 860 km connected Zambia to the port of Dar es Salaam in Tanzania and was completed in 1975 at a cost of some US\$406 million (US\$2.67 billion today) – provided as an interest-free loan to Zambia and Tanzania.⁵⁰ The expenditures of Tazara and other solidarity projects placed a huge burden on the Chinese economy. 'By the end of the Cultural Revolution, large foreign aid projects had become part of chairman Mao Zedong's legacy: foreign aid amounted to 5.9% of total government spending from 1971 to 1975, peaking at 6.9% in 1973.'⁵¹

The intervening years saw China transform from a poverty-stricken developing country to a global power challenging the influence and dominance of the US. In 1994 China commenced with a reform of the institutions involved in administering FDI and aid by establishing two new policy banks, the Export-Import Bank of China and the China Development Bank, which now provide most of China's overseas development loans. Some years later, in 2018, China established the China International Development Cooperation Agency (CIDCA) to coordinate aid and, early in 2021, published a white paper on development cooperation that sets out its belief in support of endogenous growth. Unlike most Western countries that have specific departments tasked with aid, Chinese development assistance is managed by various government departments with the bulk done from within the Ministry of Commerce.

China has, since 1995, run a year-on-year positive trade balance – one that, from 2004 to 2009, increased tenfold. Between 2008 and 2019, the Export-Import Bank of China and the China Development

Bank lent US\$462 billion, just short of the US\$467 billion extended by the World Bank – although only a modest portion of this went to Africa.⁵²

However, data on the extent of FDI and aid from China is opaque (not unlike those of Western banks) and unreliable. China is not a member of the Paris Club (an informal group of creditor nations established in the 1950s for restructuring debt owed to its member's official lending agencies) or the OECD (which collects data on lending by official creditors), but its lending practices and collaboration with these institutions has steadily intensified.

However, roughly half of China's loans to developing countries are unreported.⁵³ In early 2020, the *Harvard Business Review* released research that found that the Chinese state and its subsidiaries had extended about US\$1.5 trillion in loans and trade credits to 150 countries, making China the world's largest official creditor.⁵⁴ Africa is the third-largest destination for Chinese investment after Asia and Europe, although investment in sub-Saharan Africa declined slightly in 2017 in line with a drop in aggregate Chinese investment.⁵⁵

Building on China's deep relations with a number of African liberation parties, the Forum on China–Africa Cooperation (FOCAC) was established in 2000 and the partnership between China and Africa has deepened with each passing year. Today, FOCAC is a vehicle for strategic collaboration in trade, investment and finance, as well as a basis for diplomatic and political collaboration. The relationship is becoming more complicated, for, with the ongoing privatisation of the Chinese economy, the number of Chinese firms active on the continent increases year on year. McKinsey has estimated that more than 10 000 small, privately owned Chinese companies were operating in Africa in 2017. The official data from China's Ministry of Commerce is about a third of that.

In its comprehensive study on China in Africa published in June 2017, the McKinsey Global Institute opined that 'the Africa-China opportunity is larger than that presented by any other foreign partner – including Brazil, the European Union, India, the United Kingdom, and the United States'.⁵⁶ McKinsey concluded that China's engagement in Africa is 'unparalleled', and that the true picture is understated – with total financial flows about 15% higher than official figures convey.⁵⁷

To illustrate the scale of this, at the opening ceremony of the Beijing Summit of FOCAC held in September 2018 Chinese President Xi Jinping proposed that China would launch a number of initiatives, including a decision to open a China–Africa economic and trade expo in China. The first China-Africa Economic and Trade Expo (CAETE) was subsequently held in 2019 in Changsha, the capital city of central China’s Hunan Province. The second CAETE was held in 2021, and attracted nearly 900 enterprises from 40 African countries and China.⁵⁸

Africa has already benefitted significantly from China’s remarkable economic transition – first through China’s demand for commodities, then from its positive balance of payments and ability to extend credit, and finally from its coordinated effort to export its surplus construction capacity, which eventually led to the Belt and Road Initiative. Africa, which was not part of the original scheme, was included in 2015, as it and other regions clamoured to get a slice of the associated infrastructure investments.

China has since become the biggest single-country financier and builder of infrastructure projects in Africa, having spent about US\$11.5 billion per annum from 2012 to 2018.⁵⁹ It is playing an important role to fill Africa’s gap in infrastructure, which the African Development Bank estimates is valued at anything between US\$130 to US\$170 billion annually.⁶⁰ It is, therefore, no surprise that Chinese FDI is often associated with infrastructure construction. Firms from China have also contributed to establishing complete industrial chains in some African countries. And it is estimated that every US\$1 billion investment in infrastructure made by Chinese firms has created roughly 110 000 jobs in Egypt, Morocco and Tunisia.⁶¹ Africa’s trade with China has also exploded, as Chapter 8 explored. China has been Africa’s single largest trading partner for several years, with oil and extractives accounting for the largest share of this trade.

In 2020, the Chinese ambassador to South Africa estimated the stock of Chinese FDI in Africa at US\$110 billion, which would be much larger than most other estimates. According to the China Africa Business Council,⁶² the total investment flows in Africa peaked at US\$53.9 billion in 2018 and stood at US\$29.6 billion in 2020. But there

are clear signs that the pace of loans has started to slow. According to the CARI, Chinese lending to Africa has slowed over the past few years, from about US\$9 billion in 2018 to US\$5-8 billion in 2019, the lowest Chinese loan commitments to Africa since 2011.⁶³

Chinese overseas lending is different from capital outflows from the US and Europe in three important respects. The first is that the vast majority comes from the government and various state-owned entities. Second, it's lending generally occurs at market rates and the conditions are opaque, whereas the World Bank typically lends to Africa at concessional rates, and provides longer maturities. And third, Chinese loans are often backed by collateral and barter-trade type arrangements, meaning that debt repayments are secured by revenues, such as those coming from commodity exports and in-kind services of Chinese companies instead of payment. In 2020, for example, Angola had a debt-to-GDP ratio of 91%, half of which was owed to China and much of which was paid by way of oil exports.⁶⁴

Chinese flexibility in accepting 'non-traditional' collateral, airports, harbours and mines as security has raised alarm bells in conservative circles in the US, who see this as a ploy through which China could lay its hands on strategic infrastructure – with potential security implications. This complaint is, however, seldom a concern in Africa and is not borne out by deeper analysis. But there have been several instances in which African governments have entered into expensive prestige projects (such as the airport in Lusaka) and overpriced projects (such as the 472-kilometre Mombasa–Nairobi Standard Gauge Railway), with negative consequences.

China's increasing presence in Africa, then, seems to have important benefits. But what are the downsides of Africa relying on this presence? In 2020, China announced its new five-year plan for establishing a Dual Circulation economy, which includes a goal to advance Chinese self-sufficiency that may reduce investment flows to Africa. There is also evidence of rising concerns in Beijing about the ability of key African governments to service their loans from China, and the debate within

that country is becoming steadily more critical of Africa's mounting debt burden,⁶⁵ accentuated by the impact of the COVID-19 crisis.

In addition, concern has often been repeated in mainstream media that many of the large Chinese construction (and other) projects provide little work for locals. This may have been the situation several years ago, but field research in Ethiopia and Angola⁶⁶ indicates that national labour participation is substantially higher than generally assumed in Western media, that wages in Chinese firms abroad are largely similar to those of other firms in the same sector, and that Chinese firms contribute as much to training and skills development as other companies in the same sector. And then there is the issue of the quality of infrastructure, which is often quite poor, and the extent to which China is 'exporting corruption' in using development assistance to buy influence (and contracts) from African leaders. The obvious challenge here is that Chinese public sector companies and financial institutions cannot be held to account in China through shareholder activism or public disclosure as would be the general case in the West.

These concerns are accentuated by the fact that Chinese contracts typically contain stringent confidentiality clauses that bar borrowers from revealing their terms or even the existence of the debt. The cancellation, acceleration and stabilisation clauses potentially allow China to influence the debtors' domestic and foreign policies, including commentary from government officials and in government-controlled media – particularly in relation to mentions or dealings with Taiwan and Tibet, and human rights issues such as voting in the Human Rights Committee in Geneva.⁶⁷

Large Chinese loans do not come with a requirement to discuss the rule of law, good governance or human rights, as is the case with loans from the IMF and the World Bank. China simply does not share the views and approaches of the West in terms of rule of law and transparency, of competitive tendering as an antidote to corruption, and of what has generally become known as standards of good governance. It has few qualms, therefore, about offering inducements to ensure favourable consideration of contracts.⁶⁸ There is no surprise, then, in the decision by Uganda's long-standing President Yoweri Museveni to intervene in a bidding process for a contract to surface the highway

linking Kampala to Jinja in favour of his choice of the appropriate investor, China Railway 17th Bureau Group Company.⁶⁹ A study of 100 debt contracts with foreign governments thus finds that China uses ‘creative design to manage credit risks and overcome enforcement hurdles, presenting China as a muscular and commercially-savvy lender to the developing world’.⁷⁰

For Africa, infrastructure is not the only (Chinese) game in town. To ease the long-running pressure on the naira after it steadily lost value against the US dollar since 2015, Nigeria began selling Chinese renminbi (yuan) to local traders and businesses. The move has made it easier for local businesses in Nigeria to trade and engage with their Chinese counterparts, without the need to convert their local currency to dollars first. After the 2015 drop in global oil prices, Nigeria faced a major dollar shortage and its foreign reserves dwindled; setting up the renminbi as an alternative trading currency eased all of this.⁷¹ Several other African countries have followed suit in allowing the renminbi as a trading currency.

To safeguard its growing investments in Africa, China has also expanded its direct and indirect role in peace and security on the continent, particularly after 35 000 Chinese citizens and some 30 firms were caught in the crossfire of NATO’s intervention in Libya in 2011. China first fielded non-combatant peace operations in 1998, then became involved in the international anti-piracy campaigns in the Gulf of Aden in 2009 and the Gulf of Guinea in 2014. The former evolved into the establishment of a permanent military base in Djibouti in 2015, one of many indications that China’s views on non-interference and its hands-off approach were evolving. In Mali, for example, the Chinese position on French military involvement shifted from outright condemnation to active support. In 2012, China deployed its first combat-ready peacekeepers in Africa; it now participates fully in UN peacekeeping missions.

Collaboration on peace and security was institutionalised with the inaugural China-Africa Defence and Security Forum that was held in June/July 2018 within the framework of the FOCAC. The following year, in February 2019, China announced that it had provided US\$180 million to fund peace and security efforts in Africa (through the AU). It is already the largest supplier of weapons to sub-Saharan Africa and the role of its private security companies is also expanding. So, China’s role

in support of the AU and numerous African armed forces is steadily increasing, as are its efforts at mediation, such as in South Sudan where the ongoing conflict is threatening its investments.⁷²

But the future trajectory of China in Africa is less certain. On the one hand, Chinese attention may be shifting closer to home, particularly regarding the implementation of the Belt and Road Initiative in Asia in tandem with its growing concerns about the ability of African governments to service debt. On the other hand, as Chinese relationships elsewhere became more negative, such as with the US and Europe, Africa's political value to China has increased, particularly in multilateral forums on issues such as the technology company Huawei and matters such as Taiwan, Tibet, Hong Kong and Xinjiang. Here, China's over-emphasis on the impact of development on security; its insistence on dealing only with fellow sovereigns and neglecting governance problems; and its principle of non-interference in the internal affairs of member states are coming under pressure as its external relations become more complicated.⁷³ At the root of all of this is China's belief that economic, developmental and group rights are more important than individual, political, civil or human rights.

Today, Africa's dependence on China is such that its prospects are closely tied. If China stumbles, it will have a massive effect on Africa. This dependence on China makes many African governments toothless when it comes to responding to Chinese involvement in matters such as illegal mining and fishing in Africa. For instance, the Ghanaian government has been the subject of much criticism by the population and opposition leaders for its inability to end China's illegal gold mining in the country.

In an important 2019 book, Nicholas Lardy argues that China's growth prospects are now being shadowed by the spectre of resurgent state domination.⁷⁴ Whereas China's private sector is responsible for much of its economic growth, President Xi Jinping has placed more trust in its ailing, underperforming and indebted state-owned companies. Inefficiencies are therefore mounting. Additionally, the country has a debt problem that was accelerated by the large stimulus project that Beijing launched in response to the global financial crisis in 2008. Chinese debt may already be responsible for a loss of up to two

percentage points of economic growth, Lardy writes. According to Bloomberg, China's credit boom has been 'the largest factor driving global growth' in the decade from 2010, but its debt is rising fast, particularly in its property sector.⁷⁵ Over the same period, China's debt to GDP ratio has risen from about 140% to more than 250%.

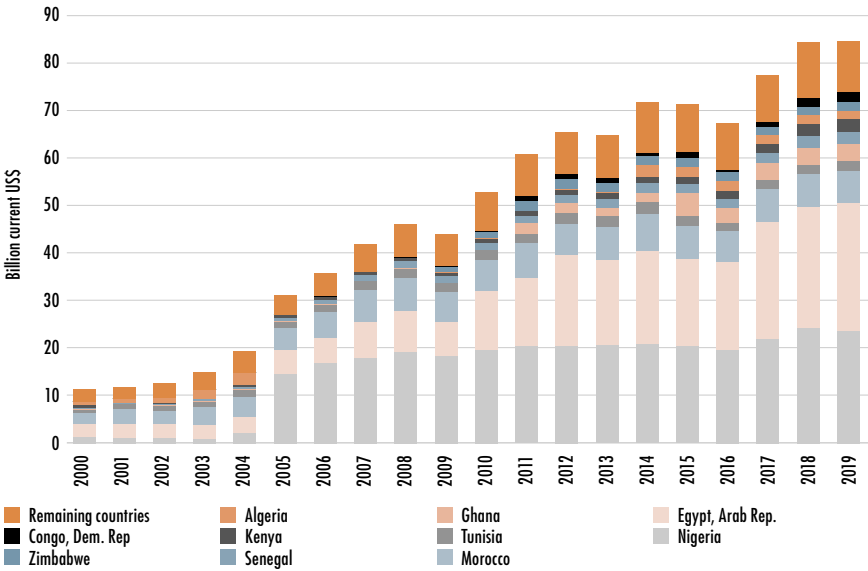
Having looked at aid and FDI, and at China's growing role in inflows to the continent, this chapter's focus now moves to the final – and largest – inflow of funds to Africa: remittances.

Remittance flows to Africa

The largest flow of external funds to Africa is through remittances from Africans in the diaspora, which is growing at about 5% annually. Whereas aid is typically a transfer of public and private philanthropic money between countries, remittances consist of private money or goods that migrants send back to families and friends in Africa. Capturing this general understanding in data on remittance flows is problematic, however.⁷⁶ Flows mostly occur through informal channels and are driven by the size of the migrant population, for which data is often also unreliable. Unlike aid and FDI, remittance flows do not directly affect government revenues (although they do so indirectly through consumption taxes such as VAT); they generally serve to support the livelihoods of families in recipient countries and are often an additional source of sustenance – cushioning the impetus towards social unrest.

According to a study by the Mo Ibrahim Foundation,⁷⁷ African migrants (including refugees, regular and illegal migrants, short- and long-term migrants, and so on) represent about 14.1% (or 36.3 million) of the global migrant population. An estimated nine-tenths of African migrants stay on the continent, moving to neighbouring countries or elsewhere within their regions. The EU hosts nine million African migrants, five million of whom are from Algeria and Morocco and reside in France, while Spain hosts large populations from Morocco. Most migrants from Egypt, the largest recipient of remittances in North Africa, can be found in Saudi Arabia and the United Arab Emirates. Nigeria is the largest recipient of remittances in sub-Saharan Africa.

Chart 69: Remittance inflows to Africa in current US\$, 2000–2019



Source: World Development Indicators data

Viewed as a portion of GDP, the countries that receive the largest portion of remittances are Lesotho, The Gambia, Cape Verde, Comoros and Senegal, all of which receive more than 10% of GDP.

Generally, migrants have a positive economic impact in hosting countries and are often less likely to be involved in crime. According to the IMF, each 1% increase in the share of migrants in the adult population of advanced economies can increase the GDP per capita by up to 2% in the long term. But anti-migrant sentiments have become an important domestic policy issue in most Western countries, as well as in some African countries like South Africa.⁷⁸

The IFs Current Path forecast is that remittance flows to Africa will increase from about US\$51.4 billion in 2019 (1.7% of GDP) to about US\$131.3 billion in 2043 (1.5% of GDP).

Remittance flows benefit from new technologies that have lowered the costs of sending small amounts of money privately from one country to another, but the impact of the war on terror and concerns about money flows to groups and individuals associated with terrorists have created numerous obstacles for Africans sending money home. It

still costs more to remit money to sub-Saharan Africa than to any other region globally. Moving money between neighbouring African countries is even more expensive.⁷⁹

Illicit financial flows

Illicit financial flows (IFFs), or ‘cross border exchanges of value, monetary or otherwise, which are illegally earned, transferred or used’,⁸⁰ have received a lot of attention in recent years. The 2015 report of the High-Level Panel on Illicit Financial Flows from Africa⁸¹ (also known as the Mbeki report after former South African President Thabo Mbeki, who chaired the panel) estimated that 65% of IFFs from Africa originated from commercial activities of multinational companies through transfer mispricing, trade misinvoicing, misinvoicing of services and intangibles, tax treaty shopping, and unequal contracts; the remaining 35% is linked to criminals and funds stolen by government officials.⁸² Recent work by the Brookings Institution⁸³ estimated that US\$1.3 trillion left sub-Saharan Africa in the form of IFFs from 1980 to 2018, but that the relative share of IFFs as a percentage of GDP appears to be declining. The outflows are concentrated in a few countries (South Africa, the DR Congo, Ethiopia and Nigeria) and a few sectors, mostly in the extractive and mining industries – oil in particular – that all present lucrative opportunities for misinvoicing.

According to UNCTAD’s *Economic Development in Africa Report 2020*, an estimated US\$88.6 billion leaves the continent as illicit capital flight every year, equivalent to 3.7% of Africa’s GDP and nearly as much as the combined annual inflows of official development assistance, and foreign direct investment.⁸⁴ Most of the money goes to China and the US.

In the case of China, the increase in IFFs has followed very rapid increases in trade between most African countries and China. In response, Chinese President Xi Jinping launched an anti-corruption campaign in 2012 that appears to have contributed to a decline in IFFs from their peak in 2014.⁸⁵

In the case of the US, the problem is its status as a ‘secrecy jurisdiction’ that facilitates private offshore tax evasion. The US

Foreign Account Tax Compliance Act (FATCA) requires foreign financial institutions and signatory governments to disclose information about US citizens' assets in their jurisdiction to the US government. But the US government is not providing reciprocal information to the 113 participating governments about the assets that are held domestically, and has resisted joining the OECD Common Reporting Standard for the automatic exchange of information on foreigners' financial accounts with their home country governments. It's no surprise, then, that in 2020 the US ranked second only to the Cayman Islands on the Tax Justice Network's Financial Secrecy Index, surpassing Switzerland, Hong Kong and Singapore.⁸⁶

Following the release of its 2020 annual report devoted to IFFs, the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Office on Drugs and Crime (UNODC) finalised a conceptual framework for measuring IFFs.⁸⁷ The framework identifies four main types of activities that can generate IFFs: illicit tax and commercial activities; illegal markets; corruption; and exploitation-type activities and financing of crime and terrorism. Strangely, it does not include a high tax burden, rampant inflation and political instability in its list. The framework includes aggressive tax avoidance (since it is empirically challenging to separate some of these from illicit activities), illegal tax and commercial practices, trade misinvoicing and abusive transfer pricing; criminal activities, including the drug trade, human trafficking, illegal arms dealing and contraband smuggling; and bribery and theft by corrupt government officials and their collaborators.⁸⁸ Pilot projects using the new framework are ongoing in Afghanistan, Colombia, Ecuador, Mexico, Nigeria, Panama and Peru, and the project will eventually produce global data estimates.

IFFs fuel conflict and work against the acceleration of sustainable development on the continent by undermining institutions and democracy and eroding the base by diverting vital resources for sustainable development and poverty reduction. In doing so, IFFs undermine the implementation of SDG Goal 16 and Agenda 2063 priorities and aspirations.⁸⁹

It is clear, then, that illicit financial outflows from the continent pose a central challenge to development financing, and that African

policymakers should make more effort to work with their counterparts in advanced countries to address this problem. Governments in African countries should strengthen the capacity of their local tax authorities. Curbing IFFs also requires international cooperation to improve the sharing of tax information across countries, counter money laundering, create international standards for tax transparency, and counter base erosion and profit shifting. Profit shifting takes advantage of differences and gaps in tax legislation to artificially shift profits from one tax jurisdiction to another and avoid paying taxes in certain jurisdictions. For example, a 2021 report from the IMF⁹⁰ has found that African countries are estimated to be losing about US\$450–\$730 million in corporate income tax revenue a year, on average, from mining multinational enterprises' tax avoidance. The 2021 report from the Tax Justice Network⁹¹ calculated a much higher number – US\$17 118 million – as an estimate of total tax lost, not just from mining.

Several important agreements already underpin the efforts to stem IFFs, such as the Financial Action Task Force, the Global Forum on Transparency and Exchange of Information for Tax Purposes, and the Inclusive Framework on Base Erosion and Profit Shifting including the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting.⁹²

More is required, however. Support from the Biden administration in the US of a global minimum tax on large multinational companies, based on the sales in each company regardless of its physical presence in a given country, was an important step in this regard. And in October 2021, the G20 formally endorsed a global deal: a minimum corporate tax rate of 15% for companies whose annual revenue exceeds €750 million (US\$865 million). It requires companies with an annual turnover of €20 billion (US\$23 billion) and profit margins above 10% to pay taxes in the countries where they sell their products or services. These rules are to be implemented in 2023.⁹³ Clearly, a more stable and equitable international tax system will contribute to the proliferation of national digital taxes and constrain tax avoidance and profit shifting.

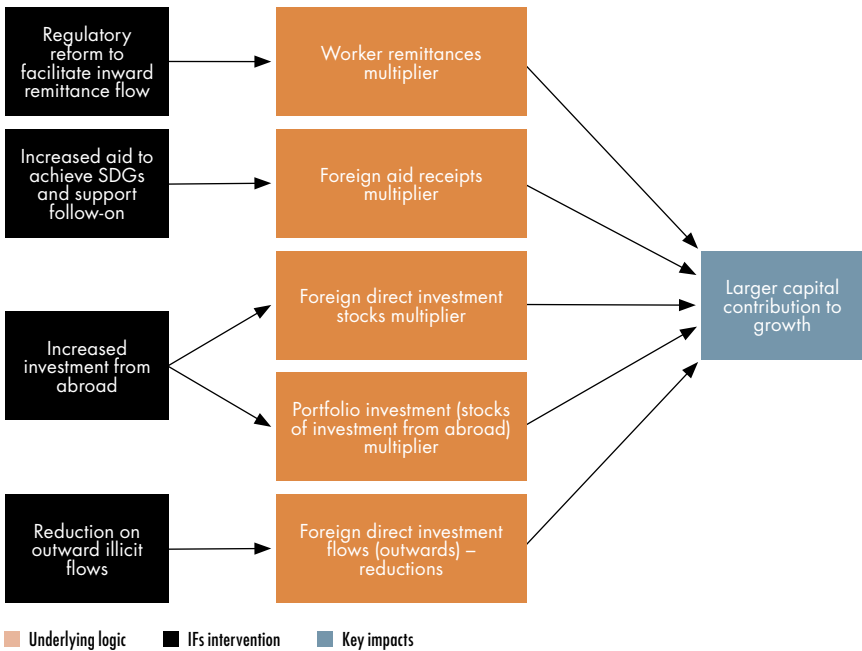
IFs does not model IFFs, as there is no global dataset or substantive methodology for estimating them. For the scenario

modelled in the next section, I simply reduced outward FDI as a proxy for IFFs. In 2019, outward FDI flows from Africa amounted to US\$20.8 billion, with outflows from Libya the largest, at US\$6.9 billion, given the civil war in a country nominally classified as upper-middle income. On the Current Path forecast, total outward FDI from Africa would reach US\$93.8 billion by 2043, ranging from US\$25.6 billion from Nigeria to US\$12.1 billion from Egypt and US\$9.9 billion from South Africa.

Modelling the Financial Flows scenario

Against the background of aid, FDI, remittances, the presence of China in Africa and the problem of IFFs discussed in previous sections, the Financial Flows scenario models ambitious but reasonable increases in aid, FDI and remittances, and a reduction in FDI stocks of outward

Chart 70: *The Financial Flows scenario*



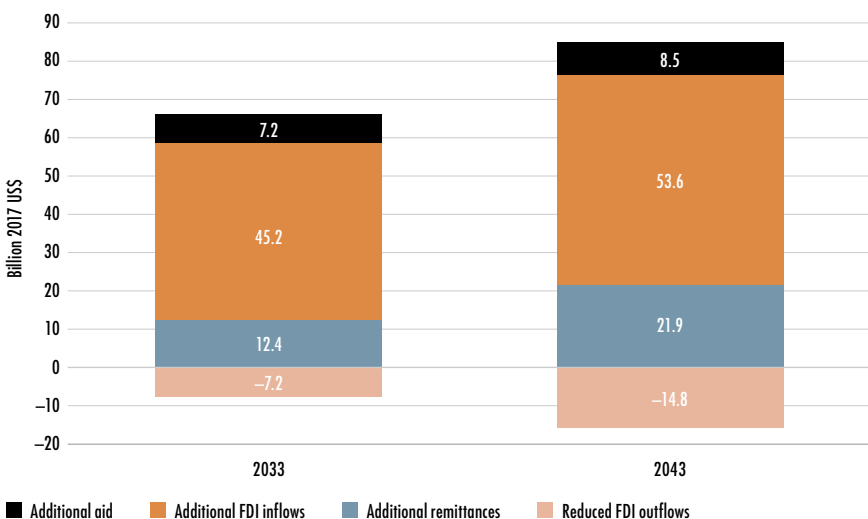
Source: Author

investment as a proxy for reduced IFFs from Africa. Chart 70 shows a schematic of this scenario.

Chart 71 presents the additional contribution from remittances, aid, inward investment flows and the reduction in FDI outflows (as a proxy for reduced IFFs) in the Financial Flows scenario compared to the Current Path forecast for 2033 and 2043 in Africa. It shows the extent to which remittances, aid and FDI increase, with the bulk of increases coming from larger FDI inflows. The net increase in financial inward flows for Africa is US\$57.7 billion in 2033 and US\$69.2 billion in 2043, with a large impact on the contribution that capital can make to economic growth (as opposed to labour and technology).

In the context of a global focus on the achievement of the SDGs by 2030, and the impact of COVID-19, the aid component of the Financial Flows scenario envisions an increase in the amount of development aid to Africa in the run-up to the 2030 target year – which is then maintained thereafter, on the assumption that the international community will design and commit to follow-on goals. In the Financial

Chart 71: *Additional remittances, aid, FDI inflows and reduced FDI outflows in 2033 and 2043 for Africa: Current Path forecast vs Financial Flows scenario*



Source: IFs 7.63 initialising from UNCTAD and WDI data

Flows scenario, Africa would receive US\$5.1 billion more aid in 2030 than in the Current Path forecast, and US\$8.5 billion more aid in 2043 – equivalent to an increase of 8%. Instead of US\$89.8 billion in aid in 2030, the final year of the SDGs, Africa would get US\$94.86 billion. Most of the additional funds would go to low-income countries, with Mozambique, the DR Congo and Malawi receiving the most.

In 2019, FDI inflows in Africa were equivalent to 2.8% of GDP, set to increase to 3.7% of GDP in the Current Path forecast. But in the Financial Flows scenario, inward FDI flows increase to 4.2% of GDP, equivalent to an additional US\$53.6 billion in inflows in 2043. The result is that the stock of FDI increases from US\$3.58 trillion to US\$4.115 trillion – an increase of 15%. The increase is large, but by 2043 Africa would still only have 4.5% of the global stock of FDI, instead of 4.1%. Such inflows would, of course, require improved levels of stability and policy certainty, but would still constitute a relatively small portion of global FDI flows.

The pool of money from which FDI can draw is so large that it needs to be prioritised as a source of growth and development for Africa – hence the importance of measures such as trade facilitation (through Aid for Trade and other measures), ease of doing business and efforts to establish special economic zones as vehicles to attract FDI, all of which were discussed in Chapter 8. As could be expected, Nigeria, Africa's largest economy, attracts most of the additional FDI (an additional US\$7.6 billion in 2043), followed by Egypt, South Africa and Angola.

In the Financial Flows scenario, remittances also increase – by 17%, so US\$153.1 billion by 2043, instead of US\$131.3 billion. In addition to the results of better financial governance, African countries could increase remittance flows by reducing fees paid by remittance senders and recipients, removing taxes on remittances, increasing market competition in the remittance industry, using digital technologies, and risk-based know-your-client requirements, innovation and credit enhancement and the like.⁹⁴

Finally, the US\$14.8 billion reductions in outward investment flows from Africa that serves as a proxy for the reduction in IFFs has the largest impact in Angola, Libya, South Africa, Egypt and Nigeria – not unexpectedly so, as these are Africa's larger economies.

Outward investment flows from these five countries all reduce by more than US\$1 billion by 2043. Much can be done to reduce IFFs, such as detecting and deterring cross-border tax evasion, clamping down on anonymous shell companies, strengthening anti-money laundering laws and practices, working to curtail trade misinvoicing, and improving the transparency of multinational corporations and lending practices, such as those of China and private banks in the US, Europe and elsewhere.⁹⁵

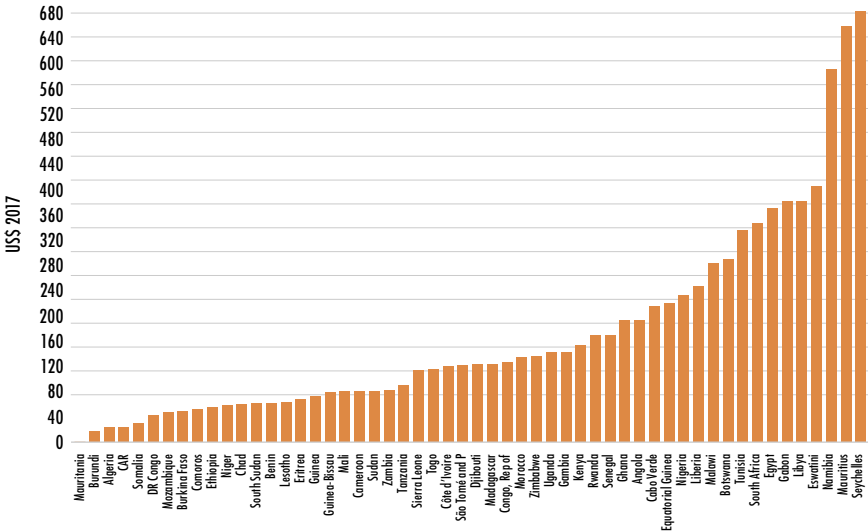
Putting it all together, the combined impact of the Financial Flows scenario, then, is to increase total government revenues in Africa by US\$33.8 billion in 2033 and by US\$81.15 billion in 2043. The cumulative increase in government revenues from 2020 to 2033 is US\$141.8 billion, and US\$762.5 billion by 2043. Although the interventions in all three areas are aggressive, the impact of FDI is significantly larger than that of aid and remittances as FDI's contribution grows much more rapidly than that of the others. More revenue means that governments can spend more on education, health and security. As a result, Africa's infant mortality rates decline by an average of 0.5 deaths by 2043 and average life expectancy increases by almost 10 months.

Increased flows to Africa mean that the total African economy is US\$84.38 billion larger in 2033, and US\$255.4 billion larger in 2043. As expected, countries with large economies – such as Nigeria, Egypt, South Africa and Angola – benefit the most. Average GDP per capita for Africa increases by US\$67 in 2033 and US\$140 in 2043 – and it is important to remember that the continent will, by 2043, have a total population of more than 2.2 billion.

As a concluding snapshot, Chart 72 shows the improvement in GDP per capita for each African country. Seychelles, Mauritius and Namibia do particularly well in the Financial Flows scenario.

Beyond these findings, though, the Financial Flows scenario reminds us that the impact of more FDI is not necessarily pro-poor without additional policy efforts. Botswana, an upper-middle income country with among the highest levels of inequality globally, actually experiences a small increase in levels of extreme poverty, although only from 2042. The reason is that additional FDI modestly increases

Chart 72: Increase in GDP per capita in 2043: Financial Flows scenario compared to Current Path forecast



Source: IFs 7.63 initialised from UNPD World Population Prospects medium variant life expectancy and WDI data

inequality without additional efforts to ameliorate its impact. Given its positive developmental status, Botswana does not receive aid – and, on a net basis, sends more remittances than it receives. By 2043, 27 000 more Batswana (of a population of 3.2 million) live below US\$1.90 than in the Current Path forecast.

But by 2033, the Financial Flows scenario reduces the number of Africans living in extreme poverty (using US\$1.90) by 12.5 million. Then, by 2043, the number increases to 20 million (or 0.9 percentage points), of which two-thirds are in low-income countries. As a portion of the population, the largest poverty reduction is in Liberia (a 6.8 percentage point difference, but only 561 000 fewer extremely poor people), followed by Sierra Leone, Madagascar, South Sudan and Malawi. Because of Nigeria’s large and poor population, the Financial Flows scenario has the largest impact on reducing the number of extremely poor people in Nigeria (at 4.4 million fewer), followed by the DR Congo, Madagascar and Tanzania.

Conclusion: Accessing financial flows

This chapter's opening sections gave an overview of trends in aid, FDI, remittances and IFFs in Africa, and highlighted the important role that China has come to play on the continent. However, as a recipient of the percentage of global aid and FDI, Africa is standing still. Aid levels are moderating, offset by the increase in remittances – but most concerning are the persistently low levels of FDI that average between 1 and 4% of the global total.

Aid is not a solution for Africa – although it does help to alleviate suffering, and can, if used wisely, improve outcomes in specific sectors such as malaria prevention. It is often best used to complement government funding, to undertake strategic initiatives such as assistance in improving the efficiency of revenue collection or, in the worst case, to offset the suffering caused by bad/corrupt governance.

The growth of private capital flows from outside Africa has benefitted only a few countries but will grow in importance, particularly once nervous investors stop penalising African countries with excessive additional risk-adjusted payments. African countries will have to learn to manage the associated volatility of these flows. FDI is conservative – it follows rather than leads other sources of investment since it generally tracks investment decisions by locals and requires policy stability.

Remittances have become significantly more important for some countries, but their impact is limited. Infrastructure development in Africa will ultimately depend largely upon own governments' investment decisions, which need to focus on sectors and segments for which other financiers have little appetite – water and sanitation infrastructure, for example, as Chapter 5 discussed. That said, the continent needs to work much harder to unlock investment from the pent-up dam of money searching for returns in Europe, North America, China and, eventually, India. More FDI boosts economic growth and contributes to knowledge transfer – and hence to Africa's economic transformation. Africa's inadequate technical, governance and implementation capacity requires a dedicated effort to strengthen domestic legislation, institutions and policies governing investment, as well as to negotiate and oversee the associated agreements.

If the international community wants to help Africa, it needs to incentivise private investment in African countries through tax benefits, de-risking foreign investment and building African capacity to negotiate, manage and evaluate projects. The world also desperately needs an international public credit rating agency to provide objective, expert-based ratings of the creditworthiness of sovereigns and companies, instead of relying on a handful of companies such as Fitch and Moody's, based in the West. UNCTAD calls for exactly this in its *Trade and Development Report 2020*, arguing that such an agency would promote global public goods and help to promote competition in a highly concentrated private market.⁹⁶ A more equitable global taxation structure that grants African countries access to a fair share of profits raised in Africa (such as from Google) and places limits on base erosion and profit shifting by international companies will also make a huge contribution to improving government revenues.

Although China's footprint in Africa has grown enormously in recent years, Europe – and the EU in particular – remain Africa's most important partners in trade, stock of FDI and aid. The focus of China's Belt and Road Initiative is largely on connecting China to its immediate neighbourhood in Asia, so its impact in Africa is likely to be limited. Africa may already have experienced peak Chinese infrastructure interest – and may increasingly have to look elsewhere for future investment and growth, most likely to emerging India. The G7's announcement, in June 2002, of its Partnership for Global Infrastructure and Investment can play an important role in this regard.

The rise of China is certainly the most noteworthy feature of the 21st century and its demand for natural resources has played a big part in the story of Africa's growth for several decades. We see this in how commodity exports from Africa have increased more rapidly than the global average. As a result, Africa's broad pattern of increased dependence on commodity exports to earn foreign exchange, and continued deindustrialisation from already low industrialisation levels, have continued unabated. In the meantime, the Chinese economy is rebalancing to rely more on domestic consumption for future growth, and its once insatiable appetite for commodities has tempered. As the

hubris of the Belt and Road Initiative tapers, China will not maintain its breakneck speed of investment growth in Africa of the past two decades.

Africa should not rely exclusively, then, on China's hunger for raw materials, its loans and its future investment in infrastructure projects. China itself is concerned about African governments' ability to service loans, evident at the 2018 Forum on China-Africa Cooperation meeting in Beijing. China seems to be scaling back on its forecasts of its future partnership with Africa, has expressed its concern about rising debt levels, noting that projects needed to be subject to cost-benefit analysis, and has warned that it intended to pull back on vanity projects.⁹⁷ In the meantime, the most developed countries have crafted a new narrative on aid that is more strongly linked to climate change, humanitarian crises and national interests such as countering migration. This new conditionality hides the fact that the claim of the demise of aid is premature: together with remittances, aid will remain important for many poor African countries well into the future, particularly in the wake of COVID-19.

What does the future hold, then, for Africa's financial flows? Africa has significant scope to improve matters by investing in its skills and capacity to oversee and manage trade, FDI and aid, and to develop formal remittance processes. For Africa it does not matter where the aid and investment support comes from and African countries do not want to be forced to choose particular alliances, as happened during the Cold War. We need to encourage collaboration and mixing and matching of partner interests instead. In this vein, the recent trend in funding large projects is positive: combining a basket of funding, such as from the World Bank, the African Development Bank, the European Investment Bank and the Bank of China, and collaborating on project implementation, with a German engineering company overseeing technical compliance, American project management and Chinese construction capacity that does the heavy lifting, for example, all with a significant component of skills and technology transfer to Africa.

For Africa to achieve sustainable growth and eradicate poverty, it needs substantial inflows of external resources to fill its savings and foreign exchange gaps. External resources – FDI in particular – are a

key element of the Agenda 2063 vision. So, African countries should improve their domestic conditions – by becoming more stable politically, nurturing a well-educated workforce, improving their infrastructure, and building a more efficient legal system, among others – to enable us to set FDI conditions and push foreign investors into sectors that are in line with our developmental goals.

There is little difference, in the end, between Africa's old and new partners. Each inevitably puts their own interests first, as should Africa. But this time around, Africans should work more diligently in setting the terms of how best they can benefit from aid, FDI and the flow of remittances. Africa needs to become a rule-maker and assume a larger role in its own destiny, particularly in the mode of development that it pursues.

11

Closing Africa's Infrastructure Gap



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Since the earliest days of our evolution, agriculture, technology and infrastructure have facilitated human development. They have allowed denser settlements, and improvements in human livelihoods and productivity in various forms. The three are intimately connected: early infrastructure often took the form of efforts to manage water resources for agricultural purposes around the cradles of humanity along rivers like the Tigris, Euphrates and Nile. Access to water was key to the Neolithic revolution, as Chapter 4 showed, as was the domestication of various animals to allow for transportation and rudimentary energy infrastructures.

Today, the extent and quality of a country's physical infrastructure largely defines its development. Infrastructure means efficiently moving goods, people and services from one location to another, reliable energy for cooking, farming and agriculture, access to safe water for drinking and washing, the treatment of sewage, the ability to trade and, generally, an improved quality of life. Countries with well-developed and well-maintained infrastructure can sustain dense populations and better cope with shocks, including the impact of climate change.

Like some others in this book, this chapter starts with a look back – at the origins of Africa's infrastructure deficit. It then looks forward to the continent's future infrastructure development prospects, before exploring the links between infrastructure, growth and jobs, investigating how Africa's infrastructure development could be financed, and examining some of the obstacles to closing the infrastructure gap between the continent and the rest of the world. And finally, it presents a scenario for intensive infrastructure development and estimates the impact.

But first, a step back, to the Berlin Conference.

The origins of Africa's infrastructure deficit

For this chapter's purposes, once again the 1886–7 Berlin Conference and its aftermath is a defining moment – this time for Africa's modern infrastructure development. Its subsequent colonial infrastructure focused on extracting resources from the interior and delivering it to coastal ports for transport to Europe – important assets during both subsequent world wars.

Connecting Africa's cities and promoting regional trade was not of interest to colonial powers. Much more important was military considerations (such as to transport British troops to fight the Ashanti in Ghana, or Belgian officials to punish Congolese peoples who failed to meet rubber production quotas), accessibility to minerals (such as the diamonds and gold found in Kimberley and the Witwatersrand in South Africa), and connecting agriculturally rich areas with the coast. These extractive infrastructure systems were reflected in sub-Saharan Africa's colonial railroads that, in turn, shaped population density and the location of economic activity. Instead of railway lines that could play a role in development by connecting towns and cities, the purpose of colonial rail was to find the most direct (and cheapest) route to connect the point of extraction with the nearest port to load cargo for transport to Europe. One example, nicknamed the Lunatic Express, ran from Kisumu (Lake Victoria) to the port of Mombasa. It was built between 1886 and 1901, and it literally bypassed every highly populated area. Only in places with significant and permanent white settlement, particularly South Africa, saw any meaningful rollout of infrastructure designed to improve the welfare of the local population – and then only for the colonist minority.¹

When colonial railroads were built, Africa was poor and rural. As Chapters 3 and 4 showed, population densities were low and most Africans survived through traditional agriculture practices, often in marginal areas to which they had pushed by the invading forces or to where they had fled to avoid being captured as slaves. The railway lines even used a narrow 'colonial gauge', which constrains speed and weight distribution. Eventually, as in Ghana, railroads created economic

incentives to the extent that the colony became the world's largest exporter of cocoa by 1911.²

After independence, most railroads fell into disuse due to conflict, mismanagement and changes in national priorities. Attention shifted to roads – a shift that was compounded by a lack of attention to basic infrastructure that could facilitate human development (such as to deliver clean water), or to infrastructure to advance regional integration that would unlock Africa's development potential. Instead of having to rely on infrastructure such as piped water, waterborne sewerage and the like to keep communicable diseases at bay, advances in medicine served that purpose, allowing urbanisation in much of Africa to proceed with limited basic infrastructure, as recounted in Chapter 5.

But even as the advantage of colonial railways disappeared, their impact persisted. Path dependency has been strong in Africa; locations along the old railway lines are still more developed and urbanised today and the towns and cities that emerged with the construction of railways are wealthier than their non-railroad counterparts. In summary, 'the railroads built during the colonial period strongly predicted the current location of cities'.³

Postcolonial Africa has also had a long history of white elephant projects, where a large infrastructure investment would follow as the pet political project of an incumbent leader. This was a particular problem during the hubris that followed general independence in the early 1960s and during the 1980s, after the adoption of the (overly) ambitious Lagos Plan of Action. Projects were often embarked on without proper economic analysis, consideration of potential synergies and regional cooperation, and led to oversupply or inappropriate development in a region with low demand for that infrastructure.⁴

For example, by the time President Julius Nyerere inaugurated the Southern Paper Mills (SPM) pulp and paper mill in Tanzania in October 1985, its costs had already doubled from the initial US\$261 to nearly US\$600 million (roughly US\$4.2 billion today). Observers doubted the plant would ever achieve more than a fraction of its annual 60 000-ton production capacity. It was also totally reliant on spare parts, fuel and chemicals from abroad, all of which had to be purchased in hard currency. Its paper costs three to four times as much as foreign

imports, which the government banned in a failed effort to support the plant. SPM never operated beyond 53% of its capacity, and by 1995 the plant was producing a mere 5 189 tons of paper – and 1 800 tons in 1997. It was sold to a private investor for US\$1 million in 2004 and renamed Mufindi Paper Mills.⁵

The SPM project is one of many white elephants that many African governments pursued after independence. As debt levels increased, donor concerns about the continent's spiralling debt levels intensified. The situation would eventually lead to various structural adjustment programmes by the International Monetary Fund (IMF) and the World Bank during the 1980s, discussed in Chapter 1 – programmes that sought to adjust countries' economic structure, improve international competitiveness and restore their balance of payments. The last-mentioned intention inevitably discouraged government expenditure, including on infrastructure – with the result that Africa generally regressed in rates of access to key indicators, such as water, sanitation and hygiene (WaSH), as Chapter 5 explained. And as Chapter 3 discussed, Africa's generally low population density has played an important role in precluding economies of scale. Infrastructure development in Africa has also primarily been considered and planned on a project-by-project basis, so it generally lacks the integrated, systemic approach evident in many more developed regions.⁶

Some of the ambitions pursued by African governments have been massive in scale – grandiose urban projects driven by local politicians and global investors. The visions typically reflect images of Dubai, Singapore or Shanghai, with presentations of glass towers and landscaped freeways that suggest fashionable smart cities. The Nairobi 2030 Metro Strategy⁷ unveiled by the Kenyan government in 2008 aimed to make Nairobi 'a world-class African metropolis'. After an international competition to design a spatial concept to accompany the plan, some 15 satellite cities were proposed to redirect future population growth away from a congested Nairobi and provide alternative lifestyle choices. Another is Hope City in Ghana – a US\$10 billion IT hub to be built outside Accra. When President John Mahama launched the project in 2013, Africa's tallest building was to have been completed within three years.⁸

Spending on infrastructure began rising again in the commodity boom years of the early to mid-2000s, to peak in 2013.⁹

Recently, infrastructure has also been driven by Chinese interest in African infrastructure, examined in Chapters 8 and 10. This began in the 1970s with aid, but has increasingly transitioned to foreign direct investment (FDI) and debt, culminating in the Belt and Road Initiative. China has become Africa's single biggest trade partner, investor and lender, and is driving the expansion of trade-catalysing infrastructure such as ports, particularly on Africa's eastern seaboard. However, it has been accused of using debt-trap diplomacy – extending loans to African countries for white elephant projects, sometimes knowing that these countries are unable to repay them, for economic and political leverage. Those who accuse China of building a neocolonial empire point not only to this, but also to the extractive nature of these infrastructure developments, as akin to the type of infrastructure that Western colonisers developed to extract value from Africa without improving the lives of locals.¹⁰

Alarmed at the extent to which Chinese investment was gaining traction in Africa and spurred on by the closer axis that was developing between China and Russia in the wake of the war in Ukraine, the G7 announced its Partnership for Global Infrastructure and Investment in June 2022. The target is to mobilize project funding to the tune of US\$600 billion for infrastructure development in low and middle income countries by 2027.¹¹

With mistrust of foreign investors and international institutions high, and the historic record of coordination of regional projects between African nations poor, Africa now looks, among other institutions, to the African Union Development Agency (AUDA-NEPAD) to coordinate and catalyse regionally integrated, major infrastructure projects across the continent. Mentioned in Chapter 8, AUDA-NEPAD's flagship Programme for Infrastructure Development in Africa (PIDA) in particular intends to pull in foreign state and private funding while centering on pan-African interests. PIDA has already collected and examined hundreds of projects across the continent, though it remains to be seen whether a turning point in the infrastructure development paradigm has been reached.

This brings us to Africa's present infrastructure situation, and its prospects for the future.

Africa's current infrastructure situation and future prospects

Rapid population growth in Africa is increasing the demand for more infrastructure, while the continent is simultaneously facing major expenditure requirements in education and health. The challenge is less serious in North Africa, which boasts the best infrastructure in terms of both quantity and quality on the continent, followed by Southern Africa. Central Africa has the least infrastructure.

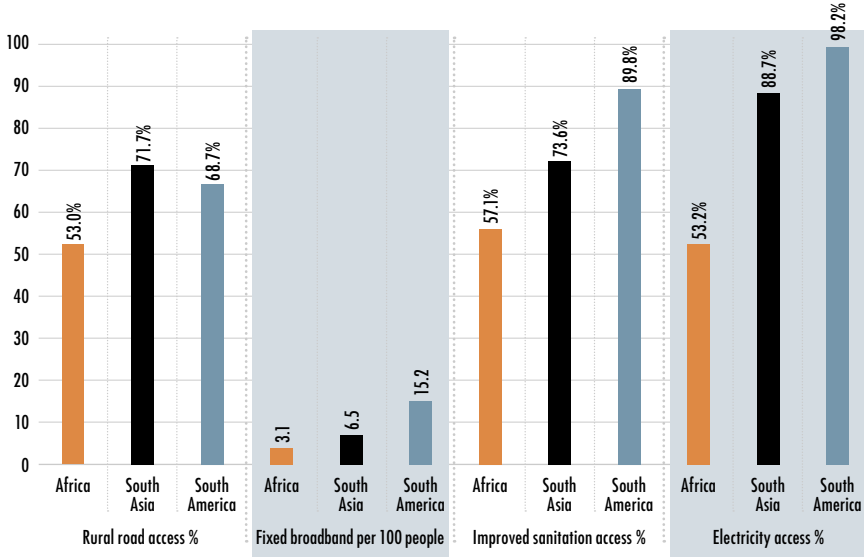
Wagner's Law posits that as countries develop, governments require more revenue (as a share of GDP) to invest in the provision of services such as health and education and associated infrastructure.¹² As a result, state spending steadily increases as a portion of GDP in tandem with higher GDP per capita and outpaces improvements in average income, suggesting a strong relationship between governance capacity and levels of income. The relationship is also evident in Africa, where governments in Africa's 23 low-income countries spend, on average, 22% of GDP, compared to 23% in lower-middle and 35% in upper-middle income countries. Were it not for overseas development assistance, these numbers would be 12%, 20% and 29% respectively, pointing to the important role that aid from richer countries plays in supporting government capacity in poor countries, examined in Chapter 10.

Major transformations in modern infrastructure have often consisted of layering new or additional systems over existing systems to reduce costs. In wealthy countries, this layering has occurred over centuries; in much of Africa, the infrastructure challenge is to build in mere decades what more developed countries have built and refined over much longer periods.

And clearly spending is below that required. Compared to South Asia, which spent almost 7% of GDP on infrastructure in 2019, Africa spent only 4%.

By way of illustration, Chart 73 compares rates of access to rural roads, fixed broadband, improved sanitation and electricity between

Chart 73: Infrastructure access in Africa, South Asia and South America compared in 2019



Source: IFs 7.63 initialising from WDI data

Africa, South Asia and South America in 2019. It provides a snapshot of Africa’s infrastructure backlog within a comparative context. If I were to include the forecast, it would show that, although Africa is set to improve substantially over the next few decades, it will continue to trail in all four categories by 2043. This is also not simply a case of watching Africa catch up, as Africa’s stock of infrastructure is also much lower than in China and India when these countries were at similar levels of development.¹³

Electrical infrastructure, as one example, is particularly lacking in Africa today, with approximately 698 million Africans (or approximately 47% of the population) without access in 2019. Only five African countries – Algeria, Tunisia, Morocco, Egypt, Libya and Seychelles – have universal access. The situation in rural areas is much worse: only 19% of low-income Africans in rural areas had access to electricity in 2019, and only 51% in lower-middle income Africa and 77% in rural upper-middle income Africa. As many as 15 African countries have less than 10% rural electricity access and some, such as

the Democratic Republic of Congo (DR Congo), don't even get to 2%. In the Current Path forecast, rates of access should increase, but slowly. In fact, the absolute number of Africans without access to electricity in low and lower-middle income countries will either remain static or modestly increase beyond 2030, with investment in electricity infrastructure lagging behind rapid population growth even as the portion of those with access improves. Consumption of electricity is also low; instead of catching up, Africa is falling further behind.

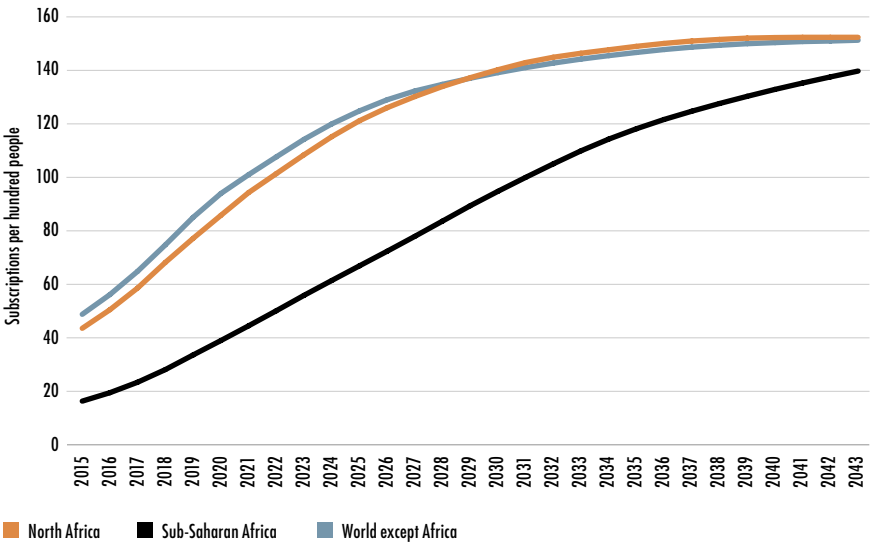
It's not only that access to electricity in Africa is low – it's also several times more expensive than in other regions, largely driven by the lack of investment in generation capacity and the associated distribution networks. The irony is that a number of African countries export significant amounts of energy, largely unrefined oil and gas, as well as coal, and then import refined fuels – while also being highly reliant on generators to supplement power during times of frequent outages, particularly in sub-Saharan Africa.¹⁴

There is no shortage of demand for electricity in Africa, which is expected to be four times higher in 2040 than it was in 2010,¹⁵ making improving supply and distribution of energy infrastructure a priority. This is despite the fact that Africa's electricity generation potential is also not only immense, but also green. Sites for wind, solar and hydroelectric power are abundant, and Africa is using less than 10% of its hydroelectric capacity.¹⁶ As Africa seeks to grow and industrialise, green energy should enable it to leapfrog past a heavy and environmentally catastrophic dependence on fossil fuels, straight into a future of renewable energy.

Secondly, ICT infrastructure is becoming easier and cheaper to expand across the continent, which explains why the rollout of mobile broadband is accelerating, even in the Current Path forecast. Even low-income Africa is expected to have at least one mobile broadband subscription per person by 2034, with lower-middle income, upper-middle income and high-income Africa achieving this milestone in 2030, 2028 and 2021 respectively. However, fixed broadband subscriptions lag far behind. Upper-middle income Africa in particular seems to be underperforming on this measure, despite its relative wealth.

Chart 74 presents a forecast for mobile broadband access per hundred people for North Africa, sub-Saharan Africa and the world

Chart 74: Mobile broadband access per hundred people in North Africa, Sub-Saharan Africa and World except Africa 2015–2043



Source: IFs 7.63 initialising from ITU data

except Africa. The forecast is aggressive in all instances although Central and East Africa (not shown) progress least rapidly. Rates in North Africa are comparable to those in the world except Africa.

While mobile broadband access is improving, data remains extremely expensive for the average person. In Africa, 1 GB of data costs nearly 18% of average income, while in Asia, the same amount of data costs only 3% of average income.¹⁷ Chapter 9 discussed this gap in ICT infrastructure and Africa’s potential to close it.

Thirdly, transport infrastructure is a major bottleneck for development across much of Africa, reflected in the low rates of access in rural areas. Poorly constructed roads that wash away during rainy seasons can make rural areas inaccessible and travel dangerous. Yet:

[t]he provision of safe, reliable, and affordable rural transport infrastructure and services is essential to facilitate rural access to markets, services, enterprise and employment opportunities, the delivery of health and education, to increase agricultural

production, to develop modern supply chains for crop delivery, to prevent food loss, and hence achieving zero hunger and alleviating poverty. Rural transport is indeed an essential rural facilitator for SDG fulfilment.¹⁸

Improvement in low-income and lower-middle income Africa is slow, and only likely to reach 51% and 68% of the rural population by 2043 in the Current Path forecast. Poor road infrastructure contributes to traumatic injuries through avoidable road accidents, further stressing Africa's health system, still overburdened by rampant communicable disease and increasing non-communicable disease burdens, as Chapter 5 examined.

On the other side of the transport spectrum, there is a significant shortage of deep-water ports able to handle large vessels, thus increasing transport costs and depriving certain regions of the benefits of trade.¹⁹ Recent years have seen significant investment in ports and associated infrastructure, however, such as Tanger-Med in Morocco (the world's 18th-largest port), Port Said in Egypt, Durban in South Africa, Djen Djen in Algeria, Mombasa in Kenya and Lagos in Nigeria, with a number of upgrades and new ports under construction. But the deficit in access will require sustained and substantial investment to eliminate.

The challenge is not only that poor countries with rapidly growing populations have to spend more on building infrastructure compared to rich countries with their slow growing populations – they also then have to spend more money on maintenance, with the per cent of GDP spent on building and maintaining infrastructure declining as countries climb the income ladder.

According to the African Development Bank (AfDB), closing Africa's infrastructure gap will cost US\$130–US\$170 billion a year²⁰ While significant funding is flowing into Africa to address this need, the AfDB estimates there remains a shortfall of between US\$68 and US\$108 billion annually.²¹ The gap is attributable mostly to WaSH (approximately 41% of the gap), followed by power and transport (about 28% each), with ICT infrastructure making up the remainder.²² Although rates of GDP spending on infrastructure differ according to how it is calculated and compared, according to IFs Africa spent 5.8% of GDP on all aspects of

infrastructure (core and maintenance, public and private) in 2019, compared to 4.4% in South America and 9.1% in South Asia.

There is evidence that higher levels of development are associated with lower returns from infrastructure.²³ A village without a road connection to the capital city, for example, may benefit greatly from the first paved, single-lane road that makes such a connection, while a major city like Cairo or Johannesburg could add many miles of additional road with a barely measurable impact on its fortunes. This is true not only of cities, but of entire economies – and indeed it has been found that infrastructure spending is far more potent, dollar for dollar, in less-developed economies.²⁴ Accordingly, increasing infrastructure when stocks are low (such as in low-income Africa, for instance) will likely have a greater impact on economic development than the same proportional increase in an upper-middle income country that has a much larger stock of infrastructure.²⁵

And finally, most studies show that spending on ICT and energy infrastructure tend to show the greatest impacts. But ultimately, how infrastructure is prioritised depends greatly on country-specific bottlenecks and opportunities.²⁶

Closing the infrastructure gap in Africa, then, is not a simple task. It requires governments to overcome a number of major obstacles, including financing, government capacity and corruption. Africa generally looks to financial institutions such as the World Bank and the AfDB, or state-backed lending from a country with deep pockets such as China, to fund its infrastructure deficit.²⁷

China has a number of additional advantages when it comes to building large infrastructure projects in Africa: it largely operates on a government-to-government basis instead of between private sectors; boasts significant finances to invest since it has consistently had a positive balance of trade since 1990; and has massive overcapacity and significant domestic experience in building infrastructure, from roads to railways. I vividly remember the differences in construction techniques in Addis Ababa and in Nairobi, both cities that I often visit, where major road passway construction by Chinese companies will start and continue without any cordoning off of the pedestrian traffic that flows over and around even as the building project proceeds. Actually a staff member in our Addis office broke his leg

when falling into a deep ditch during the refurbishment of Bole Road some years ago.

None of these advantages is readily available from the US or Europe who typically pursue careful risk and quality control standards but often with much longer time delays and at greater cost. As a result, China dominates in building African infrastructure – although others such as Turkey are also gaining a foothold. The results then, is something of a choice between the eventual quality, look feel and durability of infrastructure constructed by Western companies compared to Chinese-constructed infrastructure.

The next section takes Africa's future prospects further by exploring the interplay between infrastructure development, economic growth and employment.

Linking infrastructure, growth and jobs

An IMF study of infrastructure spending in several countries from 1985 to 2014 found that an unanticipated 1% increase in public infrastructure boosted GDP by 0.4% the following year, but by 1.5% four years later.²⁸ The Economic Policy Institute agrees, noting in a 2014 report that 'our analysis conforms with a large and growing body of literature persuasively arguing that infrastructure investments can boost even private sector productivity growth'.²⁹

In general, the positive relationship between infrastructure and development is uncontroversial – but the benefits of investment in different types of infrastructure over shorter horizons is heavily debated in academic and policy literature. The type of infrastructure, levels of development, how it is financed and how quickly it is rolled out all matter.³⁰

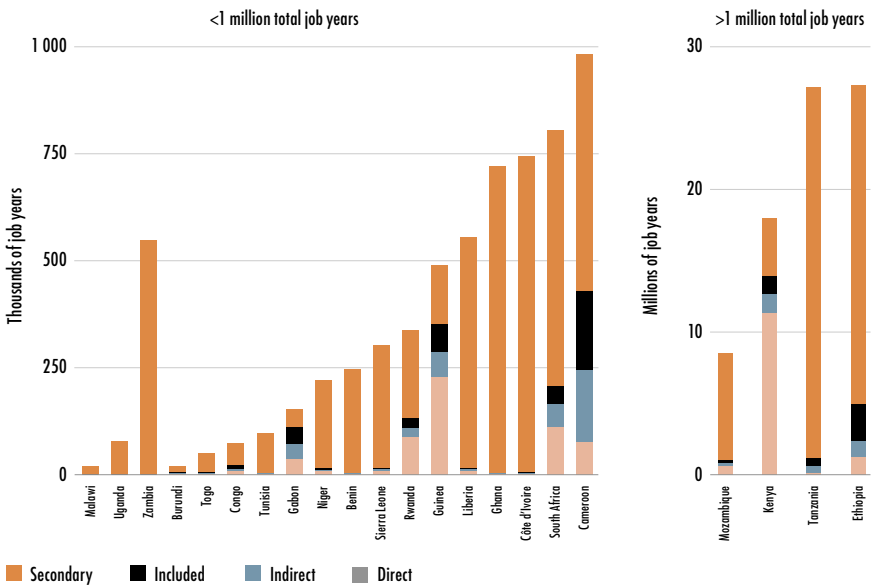
In the short term, goods and services are consumed during the construction phase in building the infrastructure when additional workers are hired. This temporary fiscal stimulus precedes a more lasting improvement in productivity: completed roads and railways open new markets and make product delivery and worker commutes more efficient, and power plants produce more energy more cheaply, catalysing power-heavy secondary industries. Long-term benefits depend substantially on the kind of infrastructure. Core economic infrastructure such as roads,

utilities and ports have the largest economic effects, since they unlock more economic activity than other investment. Among other things, the productivity impact of the new infrastructure improves the competitiveness of firms, which allows them to expand and increase employment.

Provided that the poor are not priced out of accessing it, expanding basic infrastructure – roads, ICT, electricity and WaSH infrastructure – should reduce inequality by improving equal access to essential services.³¹ The impact of projects such as freight rail, ports and airports may be more indirect, reducing inequality through raising employment, for example, though such investments may also disproportionately benefit wealthy holders of capital – which raises inequality and poverty in the short term.

To this end, in 2019 AUDA-NEPAD estimated that Mozambique, Kenya, Tanzania and Ethiopia could create 8.5, 18, 27.2 and 27.3 million job years respectively through the implementation of the PIDA suite of projects.³² Chart 75 shows this AUDA-NEPAD jobs forecast,³³ which distinguishes between secondary, induced, indirect

Chart 75: Job forecast due to PIDA projects



Source: AUDA-NEPAD, PIDA Jobs Outlook 2019, <https://www.nepad.org/publication/pida-jobs-outlook-2019>

and direct job years. Direct jobs are created in the construction, maintenance and operation of the project, while indirect jobs are created through the suppliers of necessary goods and services for the projects. Induced jobs are created by the multiplier effect associated with the spending of income acquired through direct and indirect employment, and secondary jobs are created by the improved infrastructure itself (such as new businesses and factories opening in response to cheaper, more reliable electricity, or better road access to an underdeveloped district).

Without careful consultation and good planning, infrastructure development can, of course, have short-lived or negative effects, particularly for local communities. A freeway could cut through a poor community that still largely walks or cycles everywhere, and reduce its mobility. Infrastructure developments could lead to increased conflict over land as projects increase or decrease the value of the land around them as happened in Ethiopia (see Chapter 2). And in many poor African countries, large, prestigious projects such as railways and airports have distracted from potentially more helpful but unglamorous projects such as investing in WaSH infrastructure and rural road construction.³⁴

In addition, the quantity and quality of infrastructure are both significantly and positively correlated with growth in income, though not equally so. In one World Bank study, it was found that quantity contributed almost nine times as much to per capita income growth than quality across Africa. This effect is region-specific, however, and the potency of increasing quantity over quality appears to be particularly strong for sub-Saharan Africa where there are very large deficits in infrastructure stocks. In North Africa, on the other hand, where the infrastructure deficit is smaller, improving the quality of infrastructure, specifically roads, was determined to have the greatest potential impact on income.³⁵ It matters, then, what type of infrastructure for a particular context maximises growth – relative to the development stage of the country and the time period over which its impact is assessed.³⁶ While increasing the amount of infrastructure in sub-Saharan Africa remains the most decisive factor in infrastructure development in the region, a commensurate increase in quality would make the impact of infrastructure on economic growth far more potent.³⁷

The demand for infrastructure in Africa is increasing as its population continues to grow and becomes increasingly more urban, putting immense pressure on creaking colonial-era networks. Africa's dependence on trade is also large, as shown in Chapter 8. The continent relies disproportionately on commodity exports, but even as it seeks to grow and industrialise, trade is inescapably important. Yet poor logistical infrastructure makes trade expensive or difficult, undercutting Africa's ability to engage and compete in global markets. Tariff barriers to trade were also discussed in detail in Chapter 8, but arguably far worse than these are non-tariff barriers.³⁸ The simple ability to physically get tradeable goods to a remote market affordably and on time is directly relevant to a discussion on major infrastructure. As Chapter 8 indicated, by one estimation, reducing non-tariff barriers 'could increase global GDP up to six times more than removing all import tariffs'.³⁹ Better rail, road and port infrastructure would allow Africa to tap more effectively into global markets and maximise growth.⁴⁰

But how is this infrastructure to be financed?

Africa's infrastructure ambitions and financing needs

Major infrastructure projects are expensive and often unaffordable for Africa's many low-income countries. Even upper-middle income and high-income countries can rarely pay for an infrastructure project directly from an annual budget, if ever; they usually require substantial financing and often face high debt-to-GDP ratios, which make lending for such projects unaffordable and unwise.⁴¹ Governments alone cannot bridge the estimated infrastructure financing gap of between US\$68 and US\$108 billion per year for the continent. A key problem with funding projects via private capital, however, is finding bankable (commercially viable) projects in an environment where perceived risk requires large returns on investment.⁴²

McKinsey has estimated that up to US\$550 billion in finances is sitting with large private-sector institutional funders, eager to find good investments.⁴³ *The Economist* has estimated that US\$710 billion has been raised for major infrastructure projects in Africa by large

institutional investors since 2008, of which US\$220 billion was unspent by the beginning of 2021.⁴⁴ So, money is available, particularly from large institutional funders like major pension funds, investment corporations and government agencies seeking better returns in the context of historically low interest rates in the developed world.⁴⁵ As funders are hungry for projects, and projects are hungry for financing, then, why aren't more projects funded by the private sector, which currently provides just over a tenth of the funding for infrastructure in Africa?⁴⁶

Africa has no shortage of ambition for infrastructure. There are up to US\$2.5 trillion worth of infrastructure projects in the pipeline for completion by 2025, but many are likely to fail: 50% of them are in the feasibility phase, and only 10% of projects at this phase ever make it to financial closure. Half of these projects are found in only 6 African countries, with 17% in Nigeria alone⁴⁷ – suggesting that while some countries are pulling ahead, others are falling behind.

AUDA-NEPAD emphasises the importance of corridor-type infrastructure projects in Africa: multi-country projects such as the Abidjan–Lagos corridor, incorporating road, rail and ICT links, facilitating regional integration. With such an approach lies the hope of fewer non-tariff barriers to trade, greater economic linkages between African nations, and inclusive and integrated approaches to cross-border issues such as water management.⁴⁸ Spearheading this regional focus is AUDA-NEPAD's Programme for Infrastructure Development in Africa (PIDA) – Priority Action Plans (PAP) initiative, now in its second incarnation as PIDA-PAP 2. PIDA-PAP is a kind of infrastructure master plan for Africa. Although it regurgitates many previous ambitions, some of which date from colonial times, it has seen some implementation.⁴⁹ The PIDA-PAP portfolio from 2012 to 2020 numbered 51 cross-border programmes in transport (of 235 projects), energy (54 projects), ICT (113 projects) and trans-boundary water resources management (9 projects).

The concept note for a November 2018 PIDA-PAP workshop at Victoria Falls⁵⁰ revealed that the capital cost of delivering the plan was estimated at US\$68 billion, or US\$7.5 billion annually – a relatively modest ambition, compared to the infrastructure funding gap

calculated by the African Development Bank quoted earlier. Of the more than 400 projects, the conference heard, 26% are moving from concept to pre-feasibility or feasibility phases; 16% are currently being structured for tendering; and 32% are either under construction or are already operational, reflecting steady progress. Implementation is slow, however, and, at the end of 2019, PIDA-PAP 2 was being finalised for implementation from 2021 to 2030, based on an integrated corridor approach – including a scoping study for a Continental High Speed Railway Network.⁵¹

PIDA currently oversees and facilitates 409 projects across the continent, of which 232 are in the transport sector. The regional focus of these projects is reflected by the fact that 13 are airports, 38 are border post upgrades, 5 are bridges, 45 are port-related projects, 23 are railway lines, and the remaining 113 projects pertain to roads. ICT is PIDA's second-largest category, at 114 projects – 71 of which relate to cross-country and cross-border fibre optic cable links.

Energy is the third largest group, with 54 projects, although this includes only a few renewable energy projects. While eight of these projects are major hydroelectric dams, including Ethiopia's Grand Ethiopian Renaissance Dam and DR Congo's Inga III Hydropower plant, PIDA does not oversee any solar, wind or other renewable energy projects – a significant shortcoming. The remainder of the energy projects relate to cross-country and cross-border power connections, as well as three petroleum or gas pipelines. PIDA also oversees nine water projects, including reservoirs and regional river basin and aquifer management programmes, primarily located in more arid regions – particularly the Sahara in North Africa and the Kalahari Desert in Southern Africa.

Historically, little private sector investment occurs in building basic infrastructure. From 2012 to 2016, only 8.3% of infrastructure commitments in Africa came from the private sector (this figure was even lower, at 2.6%, in 2016). National governments provided the lion's share of funds, at 40%, with donors from the Infrastructure Consortium for Africa and China making up the next two biggest sources of finance.⁵² However, by 2020, private sector commitments for infrastructure had increased to 12%, with government spending

covering 37% of commitments. The rest came from public sector investors from abroad, a whopping 25% of which from China in 2020.⁵³

Given Africa's rising debt levels, discussed in Chapter 1, and the decline in China's appetite for additional loans as its economy restructures, touched on in Chapter 8, it is very likely that much of Africa has come to the end of government financing (using taxpayers' money) as a model to finance large infrastructure projects – particularly those that play a larger economic than a social role. The future is likely to shift to public–private partnerships (PPP) projects, in which a country grants concessions to a company using a build–operate–transfer (BOT) model. PPP projects are relatively new in Africa, but could allow access to more private-sector finance based on a 'user-pays' principle. A port, for example, is funded by charging berthing and storage fees, and a road can be funded by charging toll fees, although larger toll roads are currently limited to South Africa, Morocco and recently Senegal. The challenge is, however, for the user-pays principle not to further penalise the poor in providing access to usage, such as roads, water and other necessities.

The Chinese-built Mombasa–Nairobi Standard Gauge Railway (SGR), originally intended to run from Mombasa through Nairobi, on to Naivasha and then on to Uganda's capital, Kampala, is an example of some of the challenges. From its inception, the SGR came in for considerable criticism, in part because the loans for the US\$3.6 billion project were granted in 2014 at commercial, and not concessional, rates, and that it did not follow the existing, colonial railway route, adding significant costs to the construction. Then there is the secrecy that surrounds the associated agreements.

Because of the SGR, Kenya is now massively in debt to China and construction has been halted at Naivasha despite repeated trips by Kenyan President Uhuru Kenyatta to Beijing to plead for better terms and the continuation of the project. Much of the construction was also undertaken by Chinese contractors, in contrast to the substantive use of local companies and labour with the Nairobi Expressway, a more recent BOT project.

The Expressway is a four-lane, 27 km highway cutting through the heart of Kenya's notoriously traffic-congested capital city at a cost of

US\$550 million.⁵⁴ Once completed, the expressway will connect Jomo Kenyatta International Airport in the east of the city to the Nairobi-Nakuru Highway in the west. Anyone that has spent hours on the previous congested road to the airport from Nairobi would know how vital this new project is. But the associated arrangements have raised eyebrows, since they grant the China Road and Bridge Corporation (CRBC), which is building (and will operate) the highway for a 27-year concession, a guaranteed US\$988 million in profit to be earned by charging toll fees of US\$2 to US\$3 per vehicle. This implies that many poor Kenyans will be precluded from usage, while their erstwhile commutes are disrupted by construction and the new obstacle of a major freeway.

Many question the wisdom of large projects such as the SRG that have little chance of becoming commercially viable, while others remark upon the eye-watering profits that have to be guaranteed to attract investment in PPP projects in considering the Nairobi Expressway. These criticisms point to an important area where well-meaning donor governments with an established reputation for transparency and probity such as the Nordics can assist in project planning, oversight and even management.

In this light, the final aspect of infrastructure in Africa to be explored, before I move to to model an infrastructure development scenario, is the obstacles to improved infrastructure development outcomes on the continent.

Obstacles to infrastructure development in Africa

A major obstacle to developing African infrastructure, not unique to the continent, is the corruption and politics generally associated with large infrastructure projects. The fact that two-thirds of American foreign bribery cases concern major infrastructure projects illustrates the magnitude of this global problem.⁵⁵

In South Africa, the Medupi and Kusile projects⁵⁶ involved the construction of two massive, 4.8 GW, coal-fired, direct dry-cooled power stations. When the contracts were signed in 2007 with a completion date of the end of 2015, the project costs for Medupi Power

Station were R80 billion (roughly US\$10 billion). By 2018, these had increased threefold, completion had been repeatedly delayed and the South African rand had weakened considerably. Some of the primary reasons for the cost escalation were the imported components being affected by a fluctuating exchange rate, substantial redesigns that had to be done midway through the project, labour disputes and standing time. A week after Medupi was eventually finished, in August 2021, one of its units exploded; the repair bill was estimated at R1.5 billion over the next two years.

Construction of the equally large Kusile Power Station started in 2008 and was supposed to have been finished by 2014. The initial budget of about R81 billion had doubled by 2020, with completion now scheduled in 2024/5 as the one design fault after the other was exposed.

Both projects have been mired in controversy and corruption, particularly in the manipulation of the associated contracts to provide coal, and have landed the public electricity company, Eskom, with an unsustainable debt burden. Ironically, in 2001 Eskom was named power company of the year at the *Financial Times* Global Energy Awards in New York. South Africa had cheap, surplus electricity - although almost all of it is from dirty coal. More than two decades later, South Africa is experiencing regular blackouts due to insufficient electricity supply that continue intermittently up to time of writing and are likely to continue to 2023. In addition to efforts by members of the governing party, the African National Congress, and their associates to gain from the project themselves, decisions about the procurement of additional electricity supply had been delayed for several years. In the run-up to and during the hosting of the Soccer World Cup in 2010, South Africa literally ran its power stations into the ground in an effort to keep the lights on for soccer fans who were visiting the country. Without additional generation coming on to the grid, for which there has been considerable agitation year on year with little concomitant action, the country has effectively capped economic growth.

Even disregarding the seemingly ever-present disease of corruption, gearing infrastructure projects to the private sector is no easy task. Project development at the preparatory stages can cost between 5 and 12% of the project's total value and take several years to complete. For

multi-million- and billion-dollar projects, this is a substantial cost, particularly if the feasibility study then concludes that the project is not commercially viable. Even when project preparation is done, however, the quality of the preparation and planning is often low, representing a large and expensive risk for private sector investors.⁵⁷

Numerous delays and cost overruns, together with problems with distribution networks and regulatory uncertainty, can make infrastructure projects in Africa simply unattractive to private sector investors. Up to 90% of these projects fail at the preparatory stages and before financial close, and 80% of projects fail at the feasibility stage, when preliminary studies determine that the project is not financially or practically viable.⁵⁸

Closely connected to project preparation are the institutions and legal frameworks that should support these processes. The legal frameworks of PPPs are poorly developed in much of Africa, and major potential institutional investors, such as pension funds, are often barred from investment in the sector due to the high risk associated with countries that are considered below investment grade by various ratings agencies.⁵⁹ Financial feasibility can also be undermined by inefficient use of the infrastructure or the inability to collect revenues. Poor delivery infrastructure for utilities such as electricity and water can lead to wastage of up to 50%, while illegal connections to these utilities can also contribute to costs. Furthermore, 70 to 90% of bills for utilities go uncollected across Africa, representing a major loss of expected revenues. These inefficiencies can turn potential profit-making enterprises into loss-making assets, scaring potential funders off.⁶⁰

Many of these challenges are reflected in the ambitions for the Grand Inga hydroelectric scheme in DR Congo, also discussed for its leapfrogging potential in Chapter 10. Electricity in rural parts of DR Congo⁶¹ is almost non-existent; most rural households use firewood and cook on traditional cookstoves. Those who are lucky enough to be connected to the grid soon find out that the very limited power supply is unstable, and that electricity shortages and power blackouts are recurrent. For instance, it is estimated that, in Kinshasa, about 21% of those who have access to electricity receive less than four hours of power per day, and on average, electricity shortages occur 10 days per

month in the country. Due to this unreliable electricity supply, about 60% of firms in DR Congo have backup generators against 43%, on average, in sub-Saharan Africa. These penalise the productive sectors of the economy, and hamper productivity and growth.

In addition, the state power utility, Société Nationale d'Électricité (SNEL), is highly inefficient. Almost half of the electricity it produces is lost during transmission and distribution due to the obsolescence of its equipment and the absence of an adequate maintenance system. Aside from the national grid, there are some mini-grids, albeit very limited.

Of DR Congo's 100 GW hydroelectric potential, less than 2.7 GW has been installed, and only 1.1 GW is being exploited. This power is mainly generated by the Inga I and Inga II dams that operate at about 50% of their capacity due to lack of maintenance. The World Bank has been leading efforts to rehabilitate the turbines at Inga I and II, but the project is not yet complete.

Against this background, the Grand Inga hydroelectric scheme has an expected capacity of 44 GW. It could meet the needs of the entire country and still export large amounts. The project is estimated to cost US\$80 billion. Inga III, which is estimated to cost US\$14 billion, will generate 4.8 GW of electricity. Its entry into service was initially scheduled for 2024 or 2025. However, the execution of the project that has been on the cards, in some way, for several decades and has again been significantly delayed. In 2016, the World Bank suspended its funding because the then president, Joseph Kabila, decided to bring the project oversight committee into his presidency; it would therefore lack transparency. Inga III is now estimated to come on stream in 2030 at the earliest, dependent upon a partnership between South Africa and DR Congo.

How best could these obstacles be overcome? A 2020 study published by McKinsey proposes a number of solutions to make projects less risky and thus more attractive to private capital. According to the study, governments, international financial institutions and private investors can all play a role in this: governments should reduce regulatory, currency and political risk for investors, ensuring that their investments will not be easily expropriated or rendered unprofitable by

capricious decision making or delays in necessary regulatory approvals (a tax system that incentivises investment, but is also fair to local citizens, may be difficult to achieve but is an important objective nevertheless); international financial institutions should offer risk-sharing instruments to private investors, such as guarantees; and private investors should invest more in early feasibility studies (with the assistance of international financial institutions as necessary).⁶²

Perhaps unsurprisingly, the study recommends that governments take on low-return projects, such as basic WaSH and transport projects, and set aside high-return projects for the private sector.⁶³ This is an important caveat, as the primary goal of governments in their infrastructure strategy is to develop the economy and improve citizen well-being. That goal must be balanced by the need to attract private investment in the sector.⁶⁴

AUDA-NEPAD is attempting to address some of these concerns by providing greater financing and technical assistance for feasibility studies, implementing the PIDA quality label (for projects that perform well at feasibility studies) as a measure of bankability for infrastructure projects, and providing risk-sharing arrangements such as the African Infrastructure Guarantee Facility.⁶⁵

There remains much work to be done, however; a great deal more cooperation between national governments, international financial institutions (and even among the various organs of these institutions), and the private sector is needed to make financing of major infrastructure projects more efficient.⁶⁶

The African Infrastructure scenario

So far, some of the scenarios in this book have dealt with different *classes* of infrastructure – basic infrastructure for WaSH in Chapter 5, education infrastructure in Chapter 6, agriculture infrastructure in Chapter 4, and ICT and electricity infrastructure in Chapter 9. This scenario differs by looking at infrastructure *investment* more comprehensively.

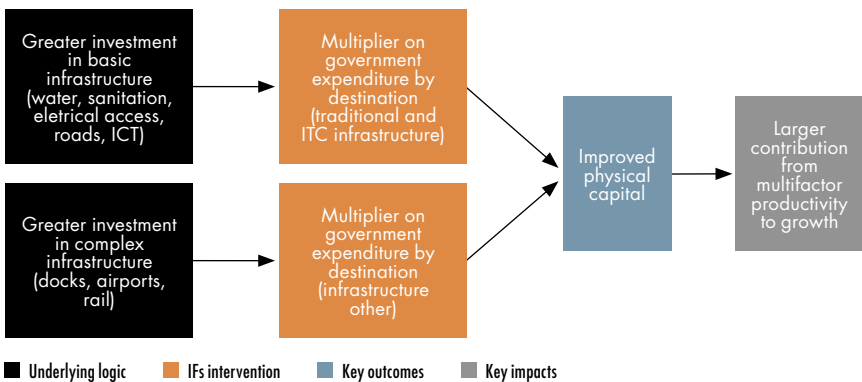
IFs distinguishes between traditional infrastructure (water, roads, electricity and water, sanitation and wastewater), ICT infrastructure (cell phones, fixed broadband and mobile broadband) and a residual

category – which it calls ‘other infrastructure’ – such as ports, airports, railways and the like. The African Infrastructure scenario increases infrastructure investments, and allows the IFs algorithms to ‘allocate’ the additional spend and forecast the associated impact.⁶⁷ IFs considers both public and private spending on core infrastructure, and public spending on other infrastructure, but does not provide for infrastructure that is explicitly funded through PPPs (one could argue that this is captured through domestic and foreign direct investment in the economy). It also models and forecasts the construction and maintenance of public and private infrastructure.⁶⁸

The African Infrastructure scenario uses spending on core and other infrastructure as the key variable. In general, the intervention pushes harder on investments in core infrastructure in lower-income countries than in higher-income countries, where the inverse is true, pushing harder on advanced or ‘other’ infrastructure. It is important to note the difference in this scenario’s approach, which pushes input (more spending on core and other infrastructure) – unlike those of the other chapters so far which have pushed outputs. Examples of these outputs are levels of safe water, improved sanitation and treated wastewater in the Health/WaSH scenario in Chapter 5.⁶⁹

Chart 76 presents the interventions for the African Infrastructure scenario. Greater investments in core and ‘other’ infrastructure lead to

Chart 76: *The African Infrastructure scenario*



Source: Author

improvements in physical capital – which, in turn, improves the contribution of multifactor productivity (MFP) to economic growth. In addition to physical capital, MFP within IFs consists of contributions from human, social and knowledge capital.

The African Infrastructure scenario models a gradual increase in spending on core and other infrastructure (including for construction and maintenance), which takes infrastructure spending in Africa up to 6.8% of GDP in 2033, instead of 5.7% by 2043 in the Current Path forecast. By 2043, Africa will spend US\$89 billion more on infrastructure than in the Current Path forecast, a difference of 21%. Cumulatively, the difference amounts to an additional spend of US\$1 024 billion from 2024 to 2043. The largest increase in spending is in Africa's 23 lower-middle income countries.

The algorithms in IFs follow the logic that lower-income countries should focus on basic infrastructure (even at the expense of more prestigious projects), while higher-income countries should be looking to invest in more advanced infrastructure as their economies become more complex. Thus investments in advanced infrastructure by 2033 drop marginally in low-income Africa, and rise by 32% in lower-middle income Africa, 45% in upper-middle income Africa and 79% in high-income Africa.

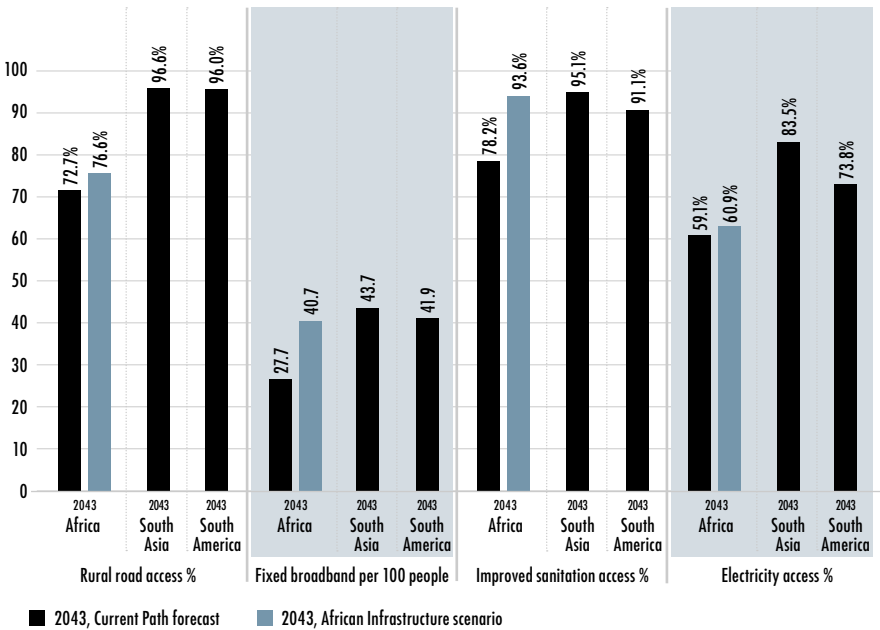
The African Infrastructure scenario makes a significant dent in the World Bank's estimation of Africa's infrastructure shortfall, the impact of which is discussed next.

The impact of the African Infrastructure scenario

The African Infrastructure scenario results in substantial improvements in the provision of physical infrastructure across the continent.

Chart 77 (the impact of the scenario in 2043) should be compared with Chart 73 (the situation in 2019). It compares the forecast for Africa in the African Infrastructure scenario with South Asia and South America in 2043 for each of the four infrastructure categories: per cent of the rural population with access to a road, fixed broadband per 100 people, access to improved sanitation and electricity access. It

Chart 77: Infrastructure access in Africa, South Asia and South America compared in 2019



Source: IFs 7.63 initialising from WDI data

illustrates the general improvements experienced in Africa in each of these four types of physical infrastructure that will follow from the implementation of the scenario.

Low-income Africa generally benefits most in the percentage improvement of basic infrastructure. The impact of this scenario’s interventions, while still potent, drops off proportionally for lower-middle income Africa, and then again for upper-middle income Africa, with the exception of electricity generation capacity and paved roads. Here, upper-middle income Africa sees improvements that are proportionally greater than those in lower-middle income Africa but are still lower than those in low-income Africa.

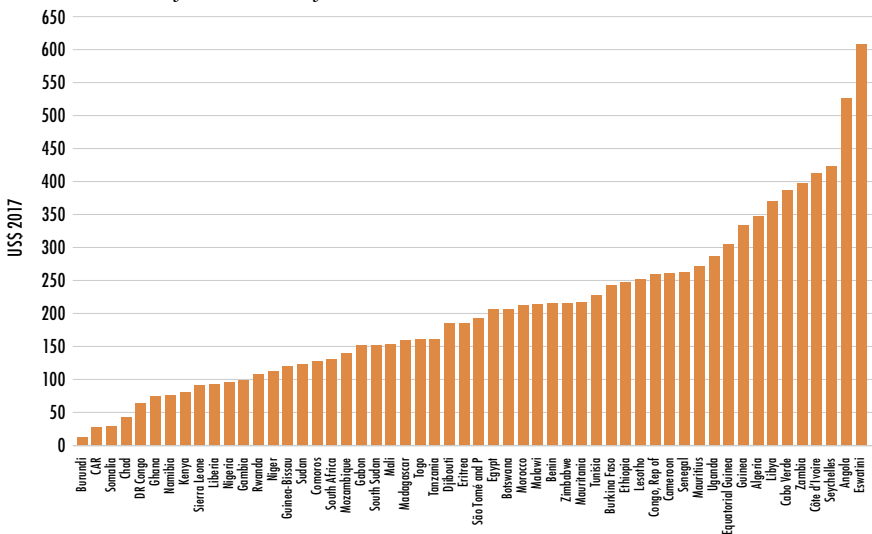
The scenario is most potent in improving access to fixed ICT broadband subscriptions, followed by improvements to sanitation, access to improved water infrastructure, and then to electricity access and generation. Aggressive spending on basic infrastructure would see

low-income Africa reaching near universal access to improved water and improved sanitation by 2043.

The African Infrastructure scenario leads to an increase of US\$399 billion, or 2.5%, in the continent’s economic size (aggregate GDP at market exchange rates) by 2043 compared to the Current Path forecast for that year. Ethiopia does the best: its 2043 GDP is US\$47.5 billion larger than that of the Current Path forecast for that year, followed by Nigeria and Angola. Egypt and Uganda also do well.

The scenario also leads to significant improvements in GDP per capita, as Chart 78 shows. On average, GDP per capita for Africa increases by US\$178 by 2043 compared to the Current Path forecast for that year. The five countries that gain the most from the African Infrastructure scenario using GDP per capita are Eswatini (US\$610 increase), Angola, Seychelles, Côte d’Ivoire and Zambia (US\$398 increase). The five countries that gain the least are Burundi (US\$12), Central African Republic (CAR), Somalia, Chad and the DR Congo (US\$64).

Chart 78: Increase in GDP per capita for each African country in 2043: Current Path forecast vs Infrastructure scenario



Source: IFs 7.63 initialising from UNPD World Population Prospects medium variant life expectancy and WDI data

investments for low-income Africa on the one hand, and the potency of investments of more advanced infrastructure for higher-income Africa on the other – consistent with the expectations set out in the literature this chapter has discussed.

Indeed, the positive economic impacts of these interventions may be underestimated. In pushing this kind of spending, the IFs model takes funding from other priorities, including key sectors such as education and health. As such, the results for GDP and GDP per capita capture not only the impact of increased spending on infrastructure, but also slightly reduced spending on other key priorities. This may explain why some very poor countries, such as Burundi and Central African Republic (CAR), show very limited improvements: their budgets are so small that there simply isn't enough available to push infrastructure without cutting a significant portion of some other portfolio. If, with the assistance of organisations like AUDA-NEPAD, African countries can increase this spending without drawing from other portfolios (particularly by mobilising private sector funding, as discussed above), these economic benefits may, in fact, be greatly improved. This would also likely lead to better results on poverty alleviation as well.

As a result of the African Infrastructure scenario, extreme poverty (using US\$1.90) is almost one percentage point lower in 2043 than on the Current Path forecast, a difference of more than 20 million people. DR Congo benefits most: here, extreme poverty declines by 3.4 million people in 2043 compared to the Current Path forecast for that year. The second-largest decline is in Madagascar, followed by Nigeria, with 1.2 million fewer extremely poor people by 2043.

Because of the improvements in the provision of basic infrastructure such as clean water and better sanitation, infant mortality in Africa's low-income countries declines by more than 2.2 deaths per thousand live births by 2043 and by 2 for lower-middle income countries. The change among upper-middle income countries, where the focus of our interventions is on advanced infrastructure such as ports, is a more modest 0.3. With more children surviving, births start to decline – such that Africa has 433 000 fewer children born in 2043 than in the Current Path forecast, with more children ultimately surviving and making it to productive adult lives. Since improved infrastructure

modestly increases life expectancy, the impact on total population size is negligible, however.

Conclusion: Africa's increasing infrastructure levels

Much of Africa's current infrastructure endowment reflects the patterns first established under colonialism, given the lack of investment in new infrastructure for several decades after independence in many countries. Low levels of investment and little maintenance means that major deficits have developed in infrastructure to facilitate human well-being, advanced industrial development and regional integration.

Closing this gap requires more spending on infrastructure, but this must strike a balance with other priorities, such as education and health. The good news is that much of this is happening. Infrastructure investment in Africa has been steadily increasing over the past 15 years, mostly funded by African governments – although others, China in particular, play an important role. The challenge is to move more projects in the large infrastructure pipeline along more rapidly to financial close. Here, the international community can play an important role: funding and supporting feasibility studies, providing insurance against risk, reducing the risk premium charged by private banks (based on the negative views through which Western ratings agencies view the continent) and assisting African governments to manage and oversee complex projects. Transforming projects into bankable, sustainable assets requires appropriate procurement and investment reform, including investment in the associated feasibility studies.

In some places – the US and EU in particular – generous fiscal stimulus during COVID-19 has unlocked large amounts of capital that can be used for additional infrastructure spending, and low interest rates have made borrowing for large projects more affordable than in the past, although that is now changing with the impact of the war on Ukraine. The shift to remote work among office workers is driving demand for improved ICT infrastructure, while the fight against climate change continues to drive demand for investment in renewable energy.⁷⁰

Mobilising the private sector is clearly part of the solution to Africa's infrastructure backlog, reflected in the G7's Partnership for Global

Infrastructure and Investment, but government resources will remain essential – for basic infrastructure in particular, especially WaSH. Proper prioritisation of projects is key. While major power plants and highways may indeed be appropriate in many contexts, the resources invested in these high-profile projects are often better spent on the basics.

If African governments can properly prioritise projects, and make the reforms they need to close the funding gap, infrastructure development across the continent could be transformative. As this chapter's look at the African Infrastructure scenario has shown, closing this gap even partially could lead to a significant increase in incomes across the continent.

12

Africa at Work

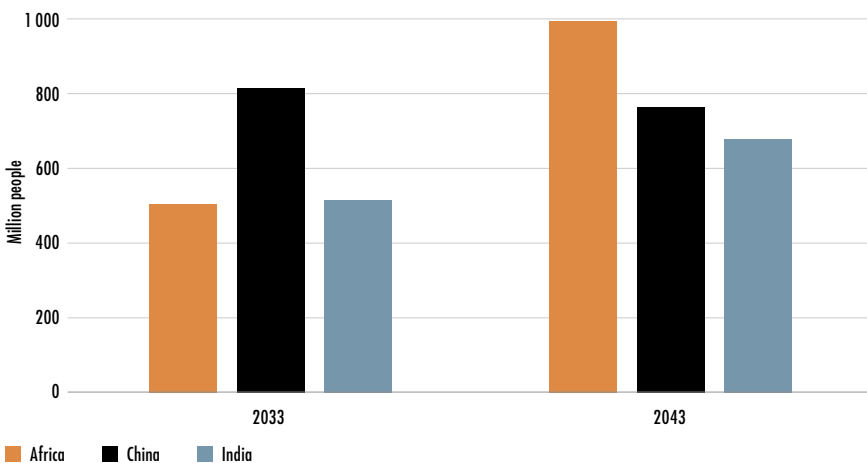


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Africa’s labour force – the portion of its total population considered able to work – is large, and rapidly increasing in size. Important to underline that the definition of what constitutes the labour force includes both employed and unemployed persons - its about those members of society able to work irrespective if they are in the formal or informal sectors, employed or unemployed.

This chapter starts by examining the labour supply and employment situation in Africa relative to India and China, two countries that are roughly comparable in labour force size, but with quite different characteristics. As a first step, Chart 79 presents the size of the the labour force of each in each and includes a forecast for 2043.

Chart 79: *Labour force size: Africa, China and India: 2019 and 2043*



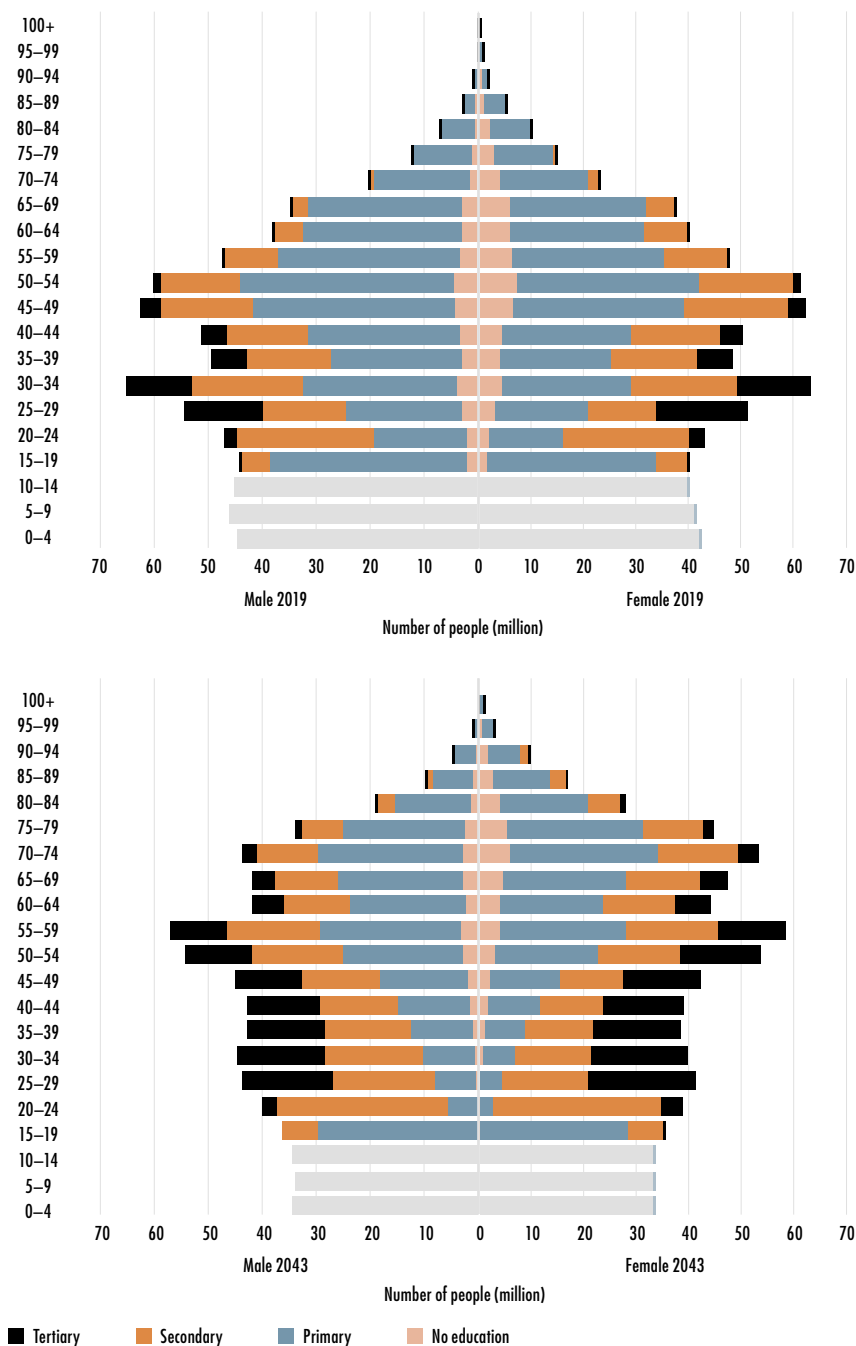
Source: IFs 7.63 initialised from International Labour Organization using World Bank population estimates

In 2019, Africa's labour force was estimated to number 503 million, very close to India's 515 million, which it should surpass in 2021; by 2035, Africa's labour force will also be larger than China's, at 808 million. By 2043, Africa's labour force will have increased to over a billion since it is growing more rapidly than elsewhere but is very young. As labour contributes significantly to growth at low levels of development, Africa has large potential – but that potential, based on size alone, is misleading without drastic improvements in areas such as education and health. In addition, the impact of technology is steadily reducing the traditional contribution that labour makes to economic growth given the focus in the developed world on mechanisation, artificial intelligence (AI), robots and other labour-saving devices.

Chapter 6 examined the state of education in Africa and found that both the quality and quantity of education in Africa lag behind that of other regions. This is important because education is the first key indicator of a workforce's potential productivity. In this regard, a significant difference between Africa, India and China is that Africa's population pyramid retains its broad base to 2043 (as Chapter 3 explained), reflecting its youthful population structure and its large cohort of child dependants, while that of India increasingly takes on the image of the Taj Mahal – a rounded and fat belly of working-age persons who are becoming increasingly better educated. China, on the other hand, faces the opposite problem compared to Africa: its large elderly population needs to be supported by a shrinking working class, but it is on track to provide secondary education to most of its younger population by the end of the forecast horizon – a target that India is only likely to achieve several decades later.

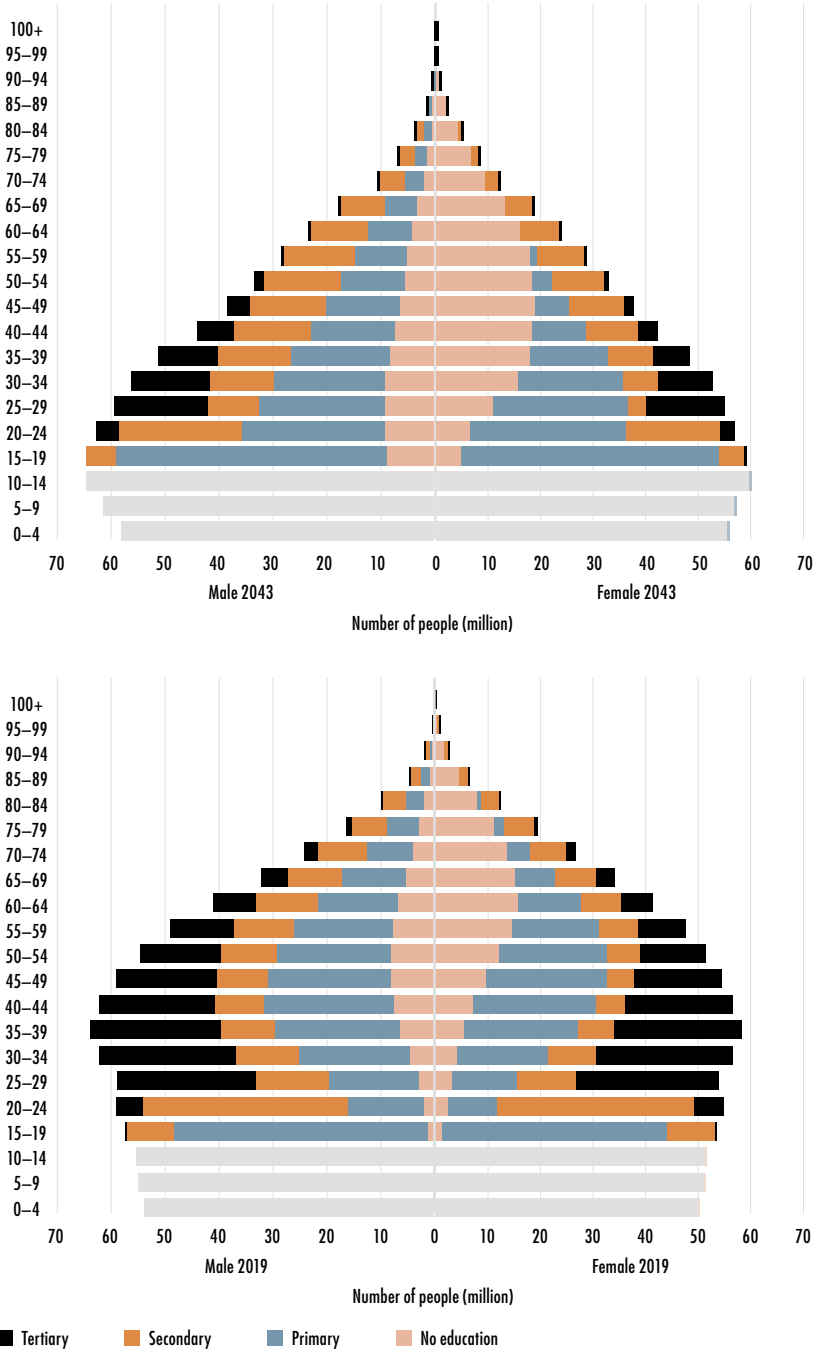
Charts 80, 81 and 82 present the human capital endowments of China, India and Africa in 2019 and 2043 in the form of a traditional population pyramid, overlaid with levels of educational attainment at each age cohort. Among the many indicators beyond the basic shape of the pyramid is the large peach cohort of Africans who do not have primary school education at the heart of the pyramid and the growing cohort of Chinese, in black, who have completed tertiary education. Note that, while the charts for China and India are on a common

Chart 80: Education by age, sex and level for China, 2019 vs 2043



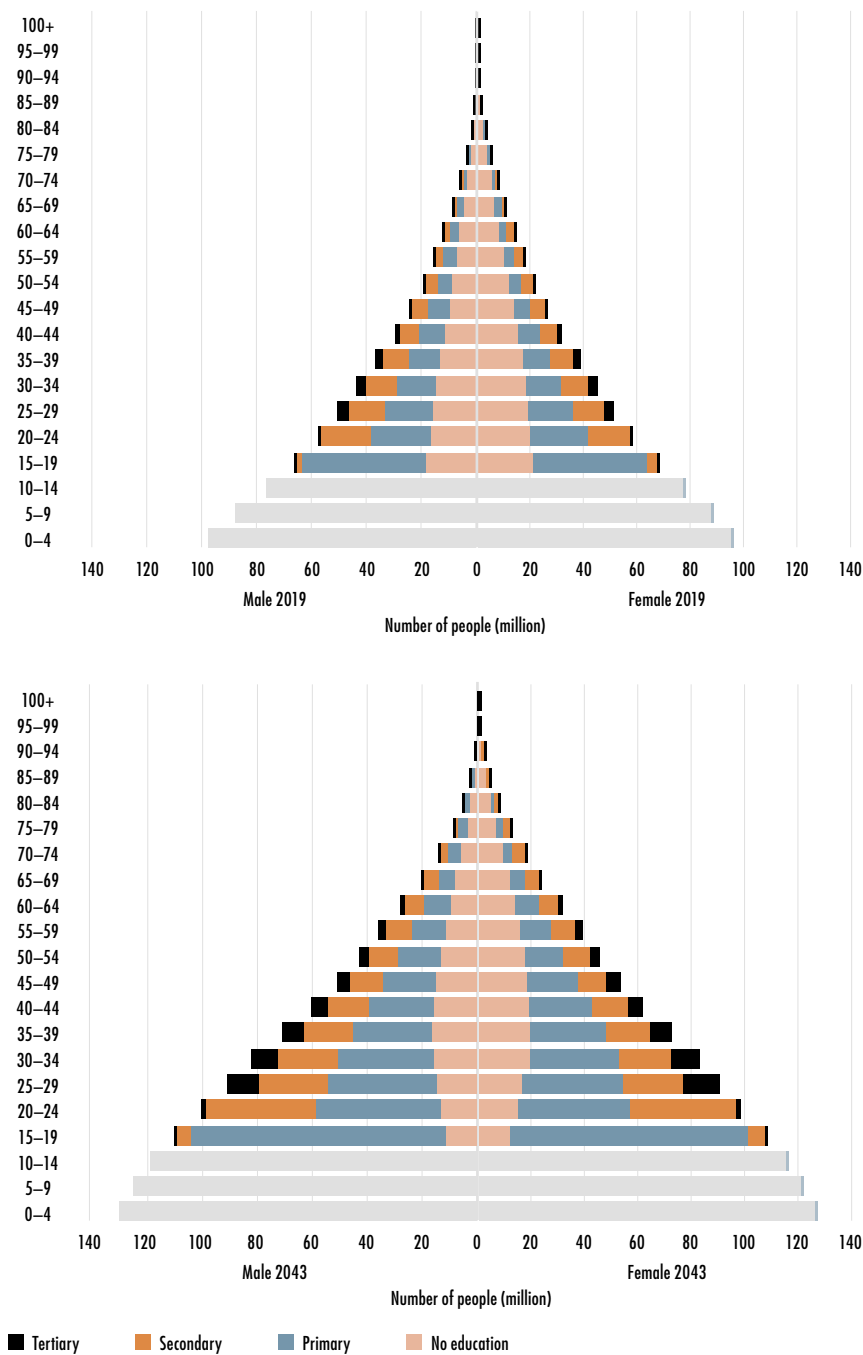
Source: IFs 7.63 initialising from UN Population Division medium term forecast and UNESCO and Barro-Lee educational data

Chart 81: Education by age, sex and level for India, 2019 vs 2043



Source: IFs 7.63 initialised from UN Population Division medium term forecast and UNESCO and Barro-Lee educational data

Chart 82: Education by age, sex and level for Africa, 2019 vs 2043



Source: IFs 7.63 initialising from UN Population Division medium term forecast and UNESCO and Barro-Lee educational data

x-axis scale of 70 million on either side of the median, the scale for Africa is double that at 140 million on either side.

In addition to its youthful population structure, it is clear from Charts 80, 81 and 82 that Africa lags significantly behind both India and China in the provision of education at all levels.

Whereas the mean years of education in Africa for adults aged 15 and above was 6.2 years in 2019 and expected to increase to 7.6 years by 2043, that for China was 8.3 years in 2019 and forecast to increase to 10.1 years by 2043. Mean years of adult education in India will increase from 7.2 years to 9.1 years. While the amount of education that adults receive in Africa is improving, the continent is likely to fall further behind China and India over the next two decades since it has to accommodate a larger annual influx of children each year while the others experience declining numbers. Africa also trails in education quality to the extent that the adult education in India and China was respectively 5% and 21% higher in 2019 than in Africa.

A second key indicator of the ability of a workforce to be productive is its general health. To compare this aspect of countries and regions, we turn to a combined indicator of premature mortality and the years lived with a disability due to prevalent cases of the disease or health condition. The two are combined in the measure termed disability-adjusted life years (DALYs), which Chapter 5 explained. One DALY represents the loss of the equivalent of one year of full health. In 2019, DALYs in Africa were 0.471 million per million of its population, compared to 0.33 in India and 0.241 in China. In other words, the disease or ill-health burden in Africa is almost double that of China. Coming from such a high level, rapid progress is possible, however.

The cumulative effect of poor levels of education and bad health, then, is that labour productivity in Africa is, on average, significantly below that of China and India. In 2019, the average labour productivity in Africa was about one-third of that in China and significantly below that of India. By 2043, the gap will widen significantly: by then, labour productivity in Africa is forecast to be less than half that in India and only 17% of that in China. The IFs forecast is for very slow improvements in Africa, and growing divergence compared to China and India.

There are, of course, large country-to-country variations in Africa that these general numbers conceal. Productivity in Seychelles is 99 times higher than in Burundi, for example, reflected in the fact that the GDP per capita of Burundi is only 2.7% of that of Seychelles, Africa's only high-income country.

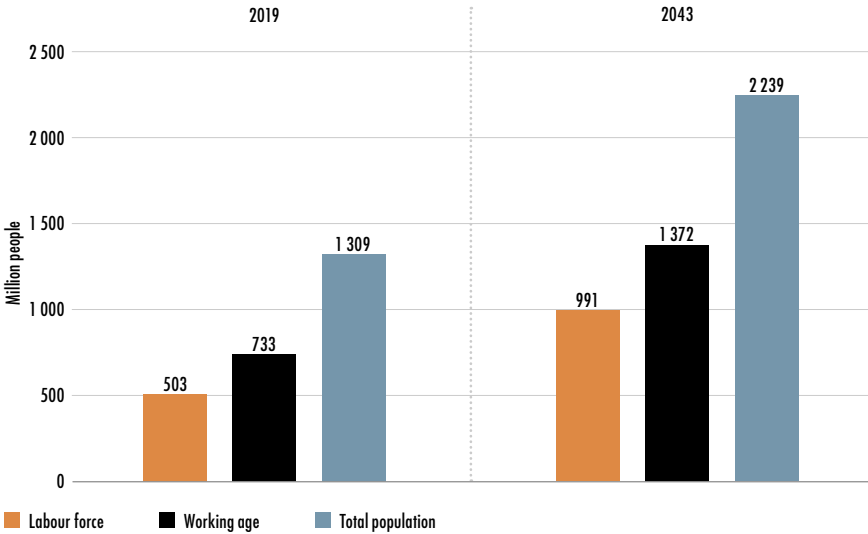
Having introduced Africa's situation relative to India and China, this chapter now turns to a closer analysis of work in Africa by examining labour force participation rates and employment in the formal and informal sectors.

Labour force participation rates and employment in the formal and informal sectors

The labour force participation rate is generally used to indicate the percentage of active workers in an economy. The rate is calculated as the number of people employed as a percentage of the total working-age population, typically 15 to 64 years of age, as Chapter 3 discussed. In 2019, Africa's labour force participation rate was 65%, set to increase to 67% by 2043. Outside of Africa, labour force participation rates are slowly declining – from a current rate of 61%, largely determined by the increase in numbers of people who are above the retirement age of 64 and who exit the labour market. The increase in the labour force participation rate in Africa, then, reflects the fact that more young Africans are joining the labour market than leaving it.

Labour force participation rates in low-income countries, which typically have a large informal sector, are usually higher than those in middle- or high-income countries. In effect, vulnerable workers in poor countries are forced to resort to any means to earn a living, regardless of the quality of that employment – including whether they are paid a living wage – but also because low-income countries have younger populations.

Chart 83 shows Africa's total population, working age and labour force breakdowns in 2019 and 2043. In 2019, Africa had a total population of 1 309 million, of which 56% was of working age (aged 15 to 64), and a labour force participation rate of 65%. The result is an estimated total labour force amounting to 503 million people, of which about 58% is employed in the informal, rather than the formal, sector.

Chart 83: Total population, working age and labour force: 2019 and 2043

Source: IFs 7.63 initialising from UNPD and ILO

Typically, labour participation for males is higher than for females (by about 16 percentage points in Africa), and particularly high in North Africa (by about 47 percentage points, compared to an 11 percentage point difference in sub-Saharan Africa).¹ Females struggle to find employment in North Africa, given the numerous barriers to female advancement in most Muslim countries, although to a lesser extent in Tunisia. Whereas the gap between males and females is below four percentage points in West, East, Central and Southern Africa, female unemployment in North Africa is significantly higher; here, the role of women is still generally stereotyped as caregivers and that of men as the breadwinners. In this region, and in most Arab states, female labour underutilisation is therefore particularly pronounced.²

However, in contrast to its poor performance in gender inequality, North Africa does much better than sub-Saharan Africa on most other counts. Unemployment in North Africa is ‘only’ 12.3%; it is more than double that in West, Central and East Africa. The share of workers in the formal sector (39% vs 59%) is also higher, and poverty rates are much lower. In fact, North Africa has already achieved the Sustainable

Development Goal (SDG) of eliminating extreme poverty (meaning a national rate of under 3% using US\$1.90 per person per day), whereas extreme poverty in sub-Saharan Africa was at 41% in 2019.

Because the definition of employment used by the International Labour Organization (ILO) includes work in both the formal and the informal sectors, nominally a very large portion of Africa's large labour force is employed.³ According to the ILO, unemployment in Africa is about 7% compared to 5% in India and China. However, the vast majority of 'employment' occurs within the informal sector, which is significantly larger in Africa than elsewhere. In this context, the actual meaning of employment – a situation of having paid work or earning an income – means earning something – anything – but seldom a living wage. So, employment data would include an executive of a company who may be earning a million dollars a year and a teacher in the Democratic Republic of Congo (DR Congo) who earns US\$100 per month. It also includes a street vendor in Soweto who sells packets of peanuts by the side of the road, and may be earning 20 or 30 cents per day in the informal sector. It is no surprise, then, that the ILO has found that over 630 million persons in employment globally survived in extreme or moderate poverty in 2019 – a number that increased substantially with COVID-19.⁴

Generally, one would assume that persons employed within the formal sector would enjoy better job quality, including adequate earnings, job security and safe working conditions – decent work – while those employed in the informal sector would be worse off. But the reality is more complex, with many in the formal sector actually classified as extremely poor. The ILO refers to these people as working poor – employed people who live in households that fall below the poverty line and who are unable to lift themselves and their families above the poverty threshold. The working poor is, of course, generally better off than unemployed persons or those outside the labour force who are also poor and survive from hand to mouth.

While it is possible to imagine a growing informal economy alongside a growing formal sector, disproportionate growth in the informal sector hinders long-term inclusive growth. As a result, the reverse is more likely and has also been observed historically: the size of the informal sector

generally declines as economies develop and grow. Typically, a larger portion of the economies of poor countries are informal compared to rich countries, and many more people are employed in the informal sector in poorer countries than in wealthier ones.

Many people in the informal sector live below or just above rates of extreme poverty, which makes interpreting ILO data on employment challenging. In the absence of a social safety net, employment in the informal sector is, of course, better than no employment or income. But informal workers lack benefits such as health insurance, unemployment insurance and paid leave. Most informal workers, many of whom are self-employed, need to work every day to earn their living and pay for their basic household necessities. Their lives are precarious, so their ability to survive shocks such as lockdown strategies to prevent the spread of COVID-19 is limited.

While the informal sector provides employment for unskilled and undereducated individuals, employment in this context is clearly not ‘decent work’, which the ILO defines as including ‘a fair income, security in the workplace and social protection for families’.⁵ At low levels of development, the informal sector provides an important means of survival for poor people – so, Goal 8 of the SDGs explicitly refers to the formalisation of micro, small and medium-sized enterprises.

In recognition of these and other challenges, the ILO is now in the process of revising the statistical standards that it uses for the measurement of work and economic activity in the informal economy.⁶

Across Africa, like elsewhere, youth aged 15 to 24 are much less likely to be in employment than adults (older than 25) and underemployment in rural areas is higher than in urban areas.

Before COVID-19, the ILO estimated that the unemployment rate for adults (aged 15 and older) was highest in Southern Africa, at 26%. This makes it the region with the highest unemployment rate globally. An important reason is that the informal sector is smaller in Southern Africa than elsewhere on the continent, with 40% in informal employment when the agricultural sector is included.⁷ The size of this sector in the rest of the continent is much larger. In this subregion, the informal sector, therefore, serves as less of a cushion to unemployment than elsewhere. With low levels of employment, inequality is generally high.

There is a historical reason for this, rooted in the extractive policies based on cheap labour and minerals in much of Southern Africa – a region that only achieved the transition to majority rule quite recently and whose ruling parties are heavily infused with ideological models from several decades ago, most prominently the former Union of Soviet Socialist Republics (USSR). In addition to the skewed economic structures inherited at the time of transition to majority rule, all are stuck in a mindset of economic centralism and top-down control that offers little room for self-help. As a result, the economic emancipation of its majorities has not yet taken place. Governments promise to provide for their citizens, but their policies have the opposite effect.

In South Africa, the most recent country in the region to transition to majority rule, the previous system of mining, education and business was premised on the extraction of maximum profits and burdened the country with huge inequalities. With limited and poor-quality education, and low levels of entrepreneurship, employment is particularly low and inequality is exceptionally high. In fact, on both of these counts, South Africa is the worst in the world. In the IFs forecast to 2043, South Africa is also set to buck the informality trend. Whereas the size of the informal sector is set to slowly decline elsewhere (in both its contribution to GDP and as a portion of the total labour force), in South Africa it is likely to increase – largely as a result of low rates of economic growth and the fact that it comes off a much lower base than elsewhere in the continent.

The next issue to consider is productivity in the informal sector – which typically differs when comparing low, lower-middle, upper-middle and high-income countries – in addition to country-specific conditions.

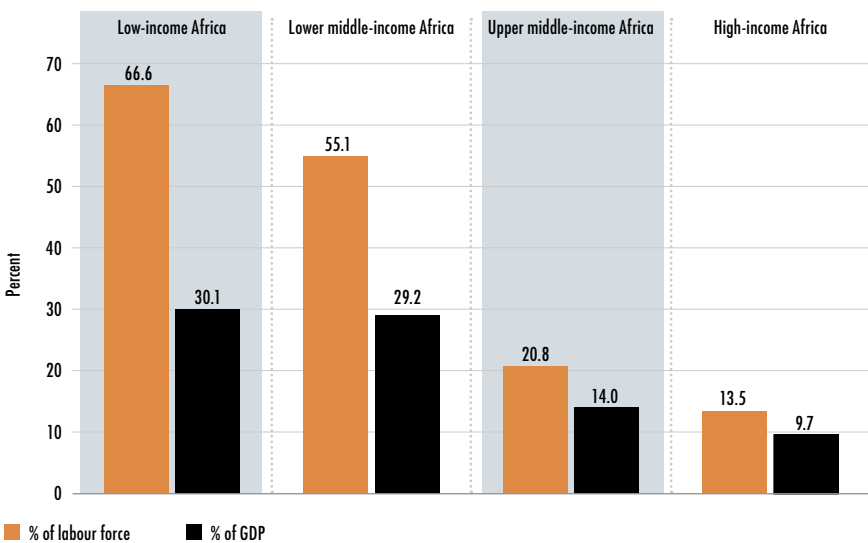
Generally, at low levels of development, the informal sector is significantly less productive than the formal sector. But typically, the productivity gap between the informal and formal sectors reduces as countries move up the income ladder; at higher levels of development, a large informal sector may often reflect a determined effort to avoid regulation. That is because informality is survivalist-orientated at low levels of development, and is often more nefarious at higher levels of income. In high-income countries, productivity in the informal sector

could, in select instances, be comparable to that in the formal sector since the primary orientation here is often not survival but regulatory avoidance. Therefore, productivity in the informal sector in a country such as Italy or Greece, where the shadow or illicit economy is large, is not likely to differ from that in the formal sector. These characteristics are reflected in the modelling within IFs.

Whereas the informal sector accounts for only about 3% of the gross domestic product (GDP) of the 35-member Organization of Economic Development (OECD) countries and 10% of the labour force, the ratio for Africa’s country income groups is much higher and reflected in Chart 84.

Irrespective of its level of development, a large informal sector is costly for society and constrains sustainable development. Workers active in the informal sector do not contribute to direct taxes (since they are not registered to pay personal or company tax) but the informal sector still has to be served by police and requires infrastructure such as roads, water, sewerage and electricity. The

Chart 84: *Size of the informal sector in Africa by country-income group: Contribution to GDP and portion of labour: 2019*



Source: IFs 7.63 initialising from ILO and IMF data

result is that a large informal sector places an additional burden on service delivery and congests public infrastructure, while not contributing to either, except through indirect taxes such as value-added and service taxes. This well-known drag is, however, balanced by the extent to which the informal sector soaks up people who would otherwise have no employment or opportunity.

For these reasons, the ILO data on unemployment in Africa quoted elsewhere in this chapter are actually quite misleading without appropriate context. Exactly how misleading is revealed in the response to a 2018 open-ended survey question by Afrobarometer:⁸ ‘Which three problems in your country would the government need to address most importantly?’ A total of 40% of the respondents pointed to unemployment – significantly more than concerns about health, poor infrastructure and a host of other matters. In light of this, the next section’s focus is on trends in employment in Africa.

Employment trends in Africa

Simply put, Africa’s job prospects in the Current Path forecast are not good.

Between 2000 and 2014, formal employment in Africa expanded by less than 1.8% annually,⁹ but the labour force expanded by 2.6% per annum. Even at the robust 4.8% per annum average economic growth rate during these years, Africa’s economy was not growing rapidly enough to create enough formal sector jobs. According to the African Development Bank,¹⁰ 10 to 12 million youths, many of them educated, enter the African workforce annually, yet only 3 million formal jobs are created each year. The International Monetary Fund (IMF)¹¹ calculates that sub-Saharan Africa has to create 20 million formal jobs per year for the next two decades, compared to an average of 9 million jobs added annually since 2000. The Africa Growth Initiative at the Brookings Institution¹² believes that Africa needs to create 12 to 15 million jobs annually to absorb the youth entering the labour market.

Across all country income groups, the share of employment in services (the largest economic sector in most countries) is growing, and the share of employment in both agriculture and manufacturing employment is

declining. This applies as much to Africa as to the rest of the world. The question is whether services-led growth will provide sufficient jobs.

Historically, technology-driven shifts in employment – following the introduction of the personal computer, for example – have created more jobs than they have destroyed.¹³ In this future, the demand for skilled and semi-skilled workers is steadily increasing while the demand for unskilled labour (of which Africa has a large supply) is decreasing. Chapter 4 on agriculture and Chapter 7 on industrialisation noted that workers in much of Africa are moving out of subsistence agriculture in rural areas into low-end services in the informal sector in urban areas. Working conditions are generally worse in the services sector than in the manufacturing sector, and only marginally better than in the subsistence agriculture sector.

Currently, most Africans are employed in the agricultural sector, which accounts for roughly a third more employment than the size of the labour force employed in the services sector, although the contribution of the services sector to GDP is substantially larger than that of the agricultural sector. Services, in turn, employ more than double the number of Africans than are employed in the manufacturing sector. Other sectors such as energy, materials and information technology employ significantly fewer people. Much of Africa's agriculture consists of subsistence agriculture and most services are low-end services in informal and slum areas in urban areas, characteristics that translate into low levels of productivity in Africa's agricultural and services sector. It is no surprise, then, that Africa is growing slowly.

In a nutshell, employment in the agricultural sector dominates in low-income and lower-middle income countries (accounting for 46 of 54 states in Africa within IFs), but agriculture's contribution to GDP is quite low. Generally, the services sector dominates in contribution to GDP for all country income groups, particularly for upper-middle and high-income African countries. Employment in this sector is growing.

Employment versus contribution to GDP per sector could be seen as a broad indication of productivity in each sector, although the relationship is complex. For example, due to the large surplus of labour on the continent, economic growth in Africa is actually more employment-intensive than it would otherwise be.¹⁴ It's often cheaper to

employ more labour than to invest in better systems or technology, or perhaps even in training, for existing employees. Consequently, labour productivity is low due to a skills gap, the result of meagre investments in the continent's human capital – particularly in health and education.

As a further reflection of this situation, we can turn to the World Bank's Human Capital index, which measures the lost productivity of the next generation of workers as a consequence of underinvestment in health and education. For the reasons set out above, sub-Saharan Africa is at the bottom of this index's global ranking.¹⁵

Against this background, then, future employment growth under the various scenarios discussed in this book is likely to be modest – insufficient, in fact, to affect rates of unemployment substantively.

Economically, there is an unavoidable tension between employment-intensive growth and productivity-intensive growth. If an economy does not grow, the pressure for more output per worker will contribute to the steady decline in employment or a reduction in average remuneration. Typically, this would happen through the process of automation. To grow employment, Africans need to pay particular attention to measures that can unlock more rapid economic growth, while also focusing on the nature of that growth. The often-unspoken challenge is whether it is politically possible for Africa to pursue the exploitative manufacturing labour practices through which other countries such as China and the Asian Tiger economies initially developed. We discuss this in Chapter 13, on democratisation and governance, only to note here that it is inherently more difficult for low-income democracies (of which Africa has a large number) to institute the measures required for rapid economic growth than for authoritarian states. Then again, the latter is seldom focused on implementing pro-growth policies in any case, with China, Rwanda and – until recently – Ethiopia as the obvious exceptions.

Chapters 1 (on Africa's current path) and 7 (on manufacturing) briefly examined the phenomenon of premature deindustrialisation from already low levels in Africa, and argue that it appears unlikely that

Africa will be able to grow employment rapidly based on growth in manufacturing, as was the case during industrialisation in today's developed countries. The analysis presented there is that middle-income countries are experiencing declining shares of manufacturing as a contribution to GDP, and hence declining shares of employment in manufacturing. This is occurring at an earlier stage of development than it did in the history of today's developed countries.¹⁶ But because manufacturing is important for changing the productive structures within the entire economy – that is, within the agriculture and services sector too – African countries need to pursue industrialisation aggressively wherever possible.

The trend of premature deindustrialisation complicates the potential impact of structural transformation towards more formal and less vulnerable employment in many African countries. In effect, the opportunity for industrialisation in Africa as a pathway to employment and productivity improvements seems to be slipping away. And since manufacturing is the single most important vehicle through which economies transition to higher productivity, the long-term impact of premature deindustrialisation could be debilitating. The conclusion, presented by many, is that African countries need to look elsewhere for growth – primarily towards tourism, agriculture, natural resource extraction and information technology services.¹⁷

The problem is that few of these sectors offer particularly exciting employment or productivity prospects. Africa is already overly dependent upon natural resource extraction and very vulnerable to the associated swings in commodity prices. Commodity dependence can provide growth, but is often linked to political dysfunction and may trap a country at the low end of the value chain. Tourism is employment-intensive, but not all countries have the offerings to be able to provide attractive packages or destinations. Nor does tourism offer the kind of learning-driven productivity improvements generally common to manufacturing. And agriculture, where Africa has significant potential, automates even faster than industry.¹⁸

In the short to medium term, the African Agriculture Revolution scenario modelled in Chapter 4 appears to have the most employment-creation potential. But these jobs will not be created on the farm, where

employment will only increase if there is a substantial increase in the size of the agricultural sector and its contribution to GDP, but more likely in the associated supply and distribution chain. The African Agriculture Revolution scenario is about transforming traditional agriculture from subsistence to smallholder and, eventually, to part of value chains that link smallholding farmers to retailers using ICT and a host of applications – which ultimately becomes the glue holding this complex system together. In this manner, agriculture moves into manufacturing through agro-processing, with significantly higher levels of productivity.

The analysis of manufacturing in Chapter 7 illustrates that, over a time horizon of a decade and longer, a manufacturing growth path unlocks more rapid economic growth and ultimately also provides more jobs than agriculture – although not initially. On top of this, improvements in agricultural productivity are bound to reduce employment intensity, as these introduce modern technology into the sector – although a growing agricultural sector would increase the total number of jobs, even as employment intensity declines. In other words, the agriculture sector will not provide the jobs that Africa so desperately needs, although it certainly would play an important role in doing so.

Indeed, the results from IFs support these tentative findings. Total employment does not change much between the various scenarios, although there is a shift of employment between sectors – most noticeable in the African Agriculture Revolution scenario, which sees a large decline in employment in agriculture with a roughly similar number of jobs being created in services, ICT and other sectors. No more jobs, then – just different jobs.

Of all the scenarios in this book, the Manufacturing scenario has the most positive impact on employment. Chapter 7, therefore, emphasised the importance of growing Africa's manufacturing sector not because of the (limited) potential of manufacturing to create jobs in the 21st century, but because of its importance in changing the productive structures of African economies and unlocking faster growth. The evidence is that a larger manufacturing sector has important enabling spillover effects. For example, it incentivises high-end services such as financial intermediation, which is crucial for the development of the

private sector and encourages a more productive agricultural sector – and, consequently, the transition into agro-processing and agribusiness. These changes eventually produce higher growth rates and a more rapidly growing economy that in turn creates more jobs, though only in the medium to longer term.

Also important, although less explicit, in that scenario are the limits of Africa's higher-than-expected levels of democratisation in affecting a manufacturing-led growth path. Whereas authoritarian countries such as Ethiopia and Rwanda can pursue exploitative manufacturing labour practices that enable them to compete on cost with emerging Asia, it is doubtful whether that is replicable in countries where democratic accountability is more deeply entrenched.

The African Center for Economic Transformation (ACET) in Ghana is one of many institutions to advocate that both agriculture and light manufacturing are key requirements for the future. In its *African Transformation Report 2017* it argues in favour of 'a dual-track to industrialisation. The one track should leverage their relative labour-abundance for labour-intensive and export-oriented light manufacturing, while the other should leverage their advantages in agriculture for globally competitive agriculturally based manufacturing'.¹⁹ While an agriculture growth path is appropriate for low-income countries, once these countries achieve middle-income status, a manufacturing growth path generally becomes more important.

However, as a contribution to GDP, or a portion of the total economy, the services sector already dominates. In the Current Path forecast, the contribution from the services sector to Africa's economy steadily increases from 50% in 2019, to 55% by 2043, while that of agriculture declines by more than half to 7%. This is in line with a global trend towards more service-oriented economies, with job growth in non-routine work, such as personal care services, in particular. Most future employment growth on the African continent is set to come from the services sector – tourism, retail, trade, transportation, finance and other activities.

These trends are confirmed by Louise Fox, Alun Thomas and Cleary Haines, who writes for the IMF that 'Sub-Saharan Africa will

not be able to transform through manufacturing as East Asia did over the past two decades'.²⁰ According to them, the African growth experience over the past 35 years can, in general, be characterised as:

growth in capital-intensive resource- and energy-based industries – which in turn have not generated a sufficient number of jobs. Africa's manufacturing sector has stagnated in output and employment terms. The latter happened in an environment of an unproductive agriculture sector and an employment-intensive, urban-based informal retail sector.²¹

The authors then add a caveat to their conclusion by pointing out that most of the new jobs 'were created in sectors with low productivity levels, such as subsistence agriculture and low value-added services. Self-employment has continued to be predominant'.²²

The implication of this analysis is that Africa will have to look at other means, such as public work programmes and an extensive system of social grants, to help alleviate extreme poverty. Even then, most job growth is likely to take place in the informal sector. Given the size of the informal sector and the nature of work in Africa, the key question when looking to the future of work, then, is whether digitisation and the use of modern technology can more rapidly formalise African economies and accelerate employment growth, with all the associated benefits.

The case study in the next section goes some way towards answering this question.

Ghana and the potential of digitisation

Academics often compare the dismal development outcomes in independent Ghana with the stellar progress made in South Korea.

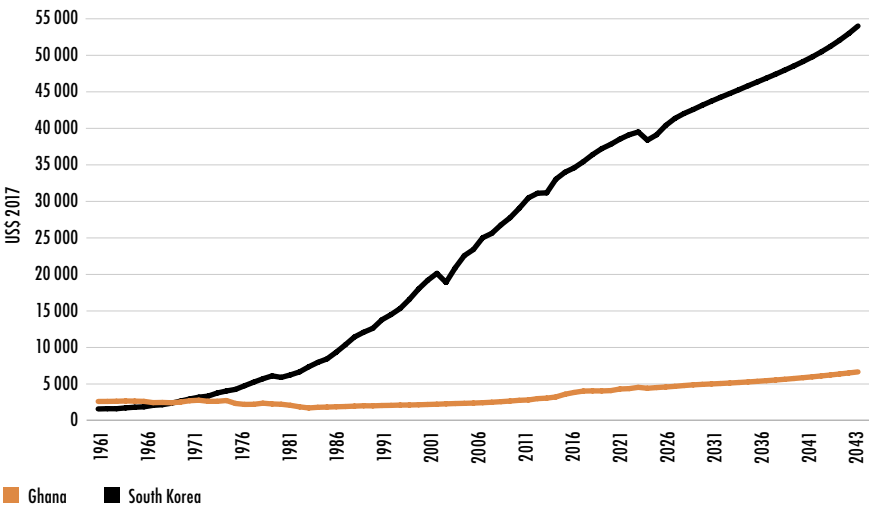
When Ghana and South Korea gained independence, South Korea was the poorer of the two, but today its average income level is nine times that of Ghana. South Korea had few natural resources, but not Ghana, which had, for five centuries, been part of a region known as the Gold Coast as Portuguese and later British mariners grabbed land, built forts, traded slaves and generally served European treasuries.

Today, gold is actually still Ghana's most valuable export; with a crippling debt burden, the government recently attempted to sell the rights to most of its bullion royalties through the Agyapa Gold Royalties Deal – a questionable initiative fraught with risks.²³

By way of illustration, Chart 85 presents GDP per capita for Ghana and South Korea from 1960 and includes the Current Path forecast to 2043.

Compare this to South Korea, which placed an early focus on food self-sufficiency, basic education, family planning and the provision of basic healthcare. Because it managed to reduce its rates of fertility rapidly, it experienced a steady increase in the ratio of working-age persons to dependants. Thanks to this demographic dividend reflected in Chart 86, the ratio of working-age persons to dependants went from 1.2 in the late 1950s to a recent peak of almost 2.8 – an extraordinarily high ratio, achieved before only by China and the other Asian Tiger economies globally in modern history. This helped South Korea to transform its economy, and average incomes grew very rapidly, as seen in Chart 85. With fewer mouths to feed and schools to build, South

Chart 85: *GDP per capita: Ghana vs South Korea, 1960–2043*



Source: IFs 7.63 initialising from UNPD World Population medium variant life expectancy and WDI data

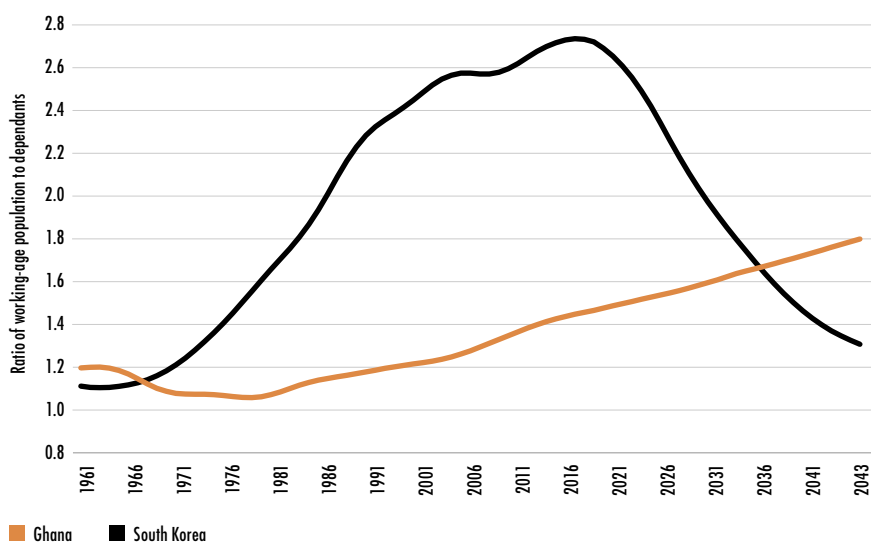
Korea could invest in improving the human capital endowment of its existing youthful population, making sure that its children could read and write and were well fed and schooled, to contribute to increased productivity.

Labour, of course, is only one contributor to economic growth, but still – with the right policies and technology – Ghana too may now be poised for take-off though several decades later.

By African standards, Ghana has a small population, about 31 million people. It is more urbanised than most African countries, allowing for a more rapid transition to digital services and also making it easier to provide water, sanitation and other services. By 2043 an additional ten percentage points of its citizens will live in urban areas – a huge advantage that will accelerate economic growth and possibly allow Ghana to graduate from its current lower-middle to upper-middle income status.

Partly because of higher-than-average rates of urbanisation, the total fertility rate (currently at four children per woman) is declining rapidly

Chart 86: Demographic dividend: Ghana vs South Korea, 1960–2043



Source: IFs 7.63 initialised from UNPD World Population medium variant life expectancy and WDI data

and Ghana will enter its demographic sweet spot earlier than most other West African countries: in about 2038, more than half a century later than South Korea. Thereafter, the positive ratio of working-age persons to dependants should ensure more rapid growth rates – provided that Ghana manages to sustain the progress it has demonstrated towards inclusive, democratic governance over the past decade and if it can maintain focus, and leapfrog toward more rapid development by using ICT and digital systems.²⁴

If Ghana can stay its course, this may just be possible.

In 2012, Ghana introduced biometric voter registration and since May 2018, a smart national ID system (dubbed Ghana Card) that uses biometrics has been rolled out (free of charge to all Ghanaians). This is being done region by region and intends to provide each Ghanaian with a unique personal identification number or PIN. On completion of this rollout, a smart national ID will be a requirement to open a bank account, apply for a passport or driver's licence, register a SIM card, buy property, register a business or even enrol children in school (children are linked to the ID of their parents). Nearly a billion of the world's people lack any type of legally recognised form of identification, without which it is impossible to access banking, government benefits, education and many other critical services.²⁵

Exports or imports are also directly linked to the PIN to eliminate fraud and theft in the shipping and clearing of goods at ports and harbours. Already the number of agencies required to inspect a container in Ghana has been reduced from 16 to just 3, which cuts out a lot of red tape. Furthermore, the PIN will be used to verify a person's identity during job searches and applications, for e-tickets at airports, at border crossings, police checkpoints and the like. It will eventually become mandatory for the validation of payments, particularly electronic payments.

Most importantly, an ID number allows large portions of the informal sector to be brought into the formal economy. This is a huge leap forward in a country that has, until recently, had no comprehensive identity system. It is also occurring at a pace that would astound bureaucrats in China and Western countries, where such systems were originally rolled out manually and with great effort over several decades.

In addition, GhanaPostGPS, an addressing system, will provide a unique digital address for every five square metres of land area in a country that previously had no formal system of finding a specific location without local knowledge. Armed with a digital address, small and informal businesses can now register for a bank account, and access credit and delivery via drones. It basically means that anyone with a phone technically has a bank account and can receive a parcel delivery. And the unique digital address will allow door-to-door (or drone) delivery of literally everything. The delivery of emergency medical and COVID-19 vaccines by drone has already started through the company Zipline. Here, Ghana is copying the example of Rwanda, where this has been done for some time. Corporate social responsibility funds were used for the initiative.²⁶

Besides their many other benefits, these innovations will improve tax collection since both informal and formal businesses will steadily be forced to use electronic payment systems that are all part of the formal economy, increasing government revenues. This, again, will enable the state to deliver other services such as education, roads, water and sanitation.

Soon Ghana will also have a fully digital platform for the payment for all government services, including smart driver's licences and digital car registration. Moreover, Ghana is busy with the digitisation of land ownership as part of the Ghana Enterprise Land Information System (GELIS) project. The intention is for a new base map survey (the first since 1974) to use blockchain technology to secure and verify the ownership of all land, although implementation has run into a number of challenges.²⁷ Furthermore, with the support of the World Bank, the Ghanaian Ministry of Education is adopting modern technology by delivering its lessons through e-learning technology.

A 2019 report on Africa by the United Nations Commission for Africa (UNECA) finds that, in the long term, government revenue on the continent can be increased by 12–20% of GDP through the rigorous pursuit of tax and non-tax income collection, which is possible through digitisation. Leveraging digital systems to increase revenue collection through e-taxation has increased revenue collection

in Rwanda by 6% of GDP. And South Africa has used online tax payments to reduce compliance costs and the time to comply with value-added tax by 22%.²⁸

Technology also enables the documentation of vital events in a person's life (births, adoptions, legitimations and recognitions, deaths, marriages, divorces, separations and annulments) that are fundamental to having a legal identity and guaranteeing human rights and access to public services. It can provide access to finance and information about health and offers a way to educate and connect people.²⁹

Modern technology also allows for better policing of things like mining licences, for example. In many African countries, including South Africa and DR Congo, illegal mining is rife, often by desperate illegal migrants who mine at night in extremely dangerous conditions. Already, 150 drone pilots have been trained to monitor illegal mining across Ghana.³⁰

In recognition of Ghana's efforts, Google opened its first African Artificial Intelligence research centre in Accra, bringing top machine learning researchers and engineers dedicated to AI research and its applications together. The centre will work with local universities, and jointly with a small number of other centres in Paris, Zurich, Tokyo, Beijing, Montreal, Toronto, Seattle, Cambridge/Boston, Tel Aviv/Haifa, New York and Google headquarters in Mountain View, San Francisco.³¹ In 2021, Twitter CEO and co-founder Jack Dorsey announced that Ghana would serve as the company's headquarters in Africa, following the announcement, in 2020, that the secretariat of the African Continental Free Trade Area (AfCFTA) would be located in Accra.³²

Many challenges remain, however – most notoriously the tendency to rush into spending public monies ahead of every election on projects that are never completed. Ghana's countryside is littered with half-built bridges, as one example. In fact, since 2000 the fiscal deficit seems to have increased with every election (barring one). Ghana's National Development Planning Commission has now teamed up with the Copenhagen Consensus to create a new initiative, Ghana Priorities, that intends to steer the government away from pork-belly politics by using evidence to assess which project gives the most

return on each cedi spent. By September 2020, the partnership had assessed more than 400 ideas and narrowed them down to 79. An example is a pilot scheme for the early diagnosis of tuberculosis that could save more than 3 000 lives in six years. Benefits outweigh costs by more than 100 times.³³

And finally, Ghana announced its One District One Factory (1D1F) initiative in 2017 as it seeks to change the focus of its economy from raw material exports to manufacturing, value-addition and the export of processed goods.³⁴ According to its website, 1D1F ‘is private sector led. Government creates the necessary conducive environment for the businesses to access funding from financial institutions and other support services from Government agencies to establish factories. Ghanaian entrepreneurs will thus own the companies, operate them and bear all the risks and rewards of the projects’.

Time will tell whether this ambitious effort to spread domestic industry across the country can compete with the traditional model that aims to attract foreign companies and which clusters infrastructure and incentives in specialised industrial zones, discussed in Chapter 7.

Digitisation, automation and the future of work

The analysis in the previous section corresponds broadly with the gist of an article by Amolo Ng’weno and David Porteus in a contribution for the Center for Global Development.³⁵ The authors argue that the explosion of digital platforms is slowly changing the nature of what it means to be in the informal or formal sector. The result is the incremental formalisation of the informal sector through a process of digital business progression in which each small step is low-cost and low-risk. Instead of being casual labour, many workers who are active in the informal economy already live in the gig economy – internet employment that is characterised by freelance, on-demand work.

In the short term, it looks like technology is going to create a set of new opportunities in the gig economy: shared-ride drivers, homestay hosts, e-commerce logistics, e-commerce sellers, and

small-scale e-commerce producers. These will be supplemented by an army of ‘digital translators’ ... As an economy digitizes, more people are needed to help the customer and the citizen transition into the digital economy. Most of these translators work on commission and set their own hours.³⁶

On the future nature of work, they write:

It’s time we recognized the truth about the future of work in Africa: it isn’t in the growth of full-time formal sector jobs. The future of work will be people working multiple gigs with ‘somewhat formal’ entities. This is already true, and it will be for the foreseeable future. When we consider the future of work in Africa the question shouldn’t be whether jobs will be formal or informal, but how digital platforms and new technologies might make this type of work more productive and of a better quality for workers themselves.³⁷

Of course, the gig economy doesn’t only have positive effects. Generally, the impact of digitisation is to lower barriers to entry and increase competition: in Africa, this could force wages down further and increase the number of people engaged in informal and unregulated work. So, the gig economy is likely to result in more precarious or insecure work with lower job and income security, poorer working conditions and lower social protection coverage than standard employment relations. But even that is not a given. Business innovation and government intervention are sure to fill this gap.

Then again, digital technologies could make a huge contribution to formalising African economies. Chapter 9 explored this as part of a discussion about the continent’s ability to benefit from digitisation and to leapfrog into the future, thanks to the Fourth Industrial Revolution. Eventually, ‘in Africa, as elsewhere, the future of work will depend on the battle between automation and innovation’, the Mo Ibrahim Foundation argues. ‘While automation leads to a decline in employment in old sectors, innovation makes new sectors or tasks possible.’³⁸ Inevitably, much of that will occur within the informal sector.

Estimates about the impact of the Fourth Industrial Revolution, robots, the digital economy and automation differ hugely and include alarmist forecasts about the destruction of up to 30% of all jobs globally by 2030. With each successive industrial revolution, technology has created many more jobs than it has destroyed. Despite the hype about AI, robotics and automation, it is doubtful that the Fourth Industrial Revolution will change this broad trend. In fact, the rich world – Europe and North America in particular – is enjoying an unprecedented bonanza of jobs, facilitated, of course, by its shrinking labour force as a portion of the total population. And, instead of the exploitation of low-end workers, workers are being upskilled and wages are generally rising, at least in Europe. The challenge is more acute in the US, which is more unequal and follows a capitalist model of labour exploitation.³⁹

But AI, robotics and automation will have very different impacts in the developing world, largely because robotics will eventually also threaten jobs in developing countries. Their impact will very likely widen the gap between rich and poor countries by shifting more investment to advanced economies where automation is already established. Developing economies tend to specialise in sectors that rely more on unskilled labour, which could result in a permanent decline in poorer countries' terms of trade.⁴⁰ In this way, robots may still end up stealing jobs in developing countries.

The question is: Will the current crop of workers be able to upskill and reskill? For example, as South Africa transitions from coal to renewables as its dominant source of energy, thousands of coal miners in places such as Mpumalanga will lose their jobs. Many thousands more new jobs will be created across the country as distributed wind, solar and biomass energy sources come on line, but that shift is only possible if accompanied by a drastic effort to rapidly improve and transform skills.

The largest potential for robot-based automation is in states with large and well-paying manufacturing sectors like Germany, Japan, South Korea, the US and, increasingly, China. The automation of low-

wage and light manufacturing jobs, such as those generally found in Africa, seems much less likely in the foreseeable future. According to the African Development Bank:

So far, robotization has had only a small effect on most developing countries, where mechanisation continues to be the predominant form of automation. Despite the hype surrounding the potential of robot-based automation, today the use of industrial robots globally remains quite small and amounts to less than two million units. Industrial robots are concentrated in the automotive, electrical and electronics industries, and in a small number of countries.⁴¹

And according to UNCTAD:

Job displacement by robots is economically more feasible in relatively skill-intensive and well-paying manufacturing, such as the automotive and electronics sectors, than in relatively labour-intensive and low-paying sectors, such as apparel production ... Indeed, the countries currently most exposed to automation through industrial robots are those with a large manufacturing sector that is dominated by industries which offer relatively well-paying jobs, such as automotives and electronics. By contrast, robotisation has had a relatively small direct effect in most developing countries so far, and this is unlikely to change in the foreseeable future, given their lack of diversification and technological upgrading.⁴²

The current views on automation are that jobs will increase in vocations that cannot easily be replaced by robots, such as those that require non-routine cognitive and socio-behavioural skills. Care work that requires empathy and judgement (such as nurses and elderly care) is harder to automate and jobs in these fields are likely to increase as populations around the world age. So, people will have to transition from one set of skills that may be replaced by automation to another, where that threat is not as acute. This is clearly less of a challenge in Africa, where employment is less formal and structured than elsewhere.

However, the demand for routine, job-specific skills, such as those required for processing payroll, bookkeeping or assembling goods, will fall. And jobs that combine different skill sets will increase. As a result, global value chains are becoming more knowledge intensive and low-skilled labour is becoming less important than capital and technology.⁴³ The demand for labour is increasingly moving from low-skilled to semi-skilled and skilled labour; for this reason, more and better education is so important for Africa. A 2017 report by McKinsey & Company estimates that less than 5% of occupations are candidates for full automation, and that the ‘correct’ lens through which automation should be viewed is that of tasks, not occupations or jobs.⁴⁴

Technology by technology, and job by job, there will be continued progress – and it will differ hugely between countries at different levels of development. In Japan and Germany, countries that have highly paid and scarce workers, many of whom work in the automotive industry, a higher percentage of additional work could be automated. However, in many parts of Africa new jobs could be created at much lower start-up costs due to the reductions in capital costs and lower barriers to entry referred to previously, although the associated infrastructure is often poor or absent.⁴⁵ These findings underline the importance of providing the basics for empowerment, such as household electricity and low-cost global internet coverage – efforts that will unlock access to education, trade and other means of self-help and empowerment.

In view of these considerations, then, and contrary to the trepidation with which the Fourth Industrial Revolution is viewed in Europe and North America, the view from Africa is positive. Since progress comes from a low base, it offers prospects for a degree of catch-up. For one, this is because of the expectation that it would create more jobs in the formal and informal sectors. A recent study by ACET that included extensive fieldwork in 11 African countries found that less than a fifth of survey respondents thought the Fourth Industrial Revolution would have a negative impact on jobs. In fact, the vast majority were excited about its positive impact.

The sectors seen as most positively affected by 4IR [fourth industrial revolution] technologies are software development,

information and communication technology (ICT), and infrastructure — not surprising since 4IR will create demand for jobs in these sectors. But agriculture, finance, manufacturing, retailing, and tourism are also seen as benefiting from 4IR; the informal sector is seen as deriving the least benefit from 4IR.⁴⁶

In this vein, a report called *The Future of Work* prepared for the European Commission (EC) concluded as follows:

The world of work is part-and-parcel of the changing economy, heavily influenced by globalisation, international value and supply chains, more division of labour, and digital disruption. Work is no longer a static concept but an umbrella term for roles performed in a different manner and under different legal arrangements.⁴⁷

Instead of workers being replaced completely by machines, in a more likely future people work next to highly productive machines, with one augmenting the other. This is already evident in the way in which ICT is penetrating modern life through the use of smartphone applications to augment or ease the completion of everyday tasks. The impact of the digital economy in OECD countries where we see the reshoring of the provision of goods and top-end services, then, will include a trend towards short-term contracts and part-time work, although the vast majority of workers in the EU, for example, are still on full-time contracts. In addition, the EC believes that automation will reduce routine job opportunities, such as those on a typical assembly line, in the formal sector.⁴⁸

Yet in a certain sense Africans might find this an easier transition since Africans in the formal and informal sectors often already juggle a number of part-time jobs. According to *The Future of Work* report:

Work is increasingly becoming an umbrella concept for tasks performed under different legal, functional and geographic frameworks. Jobs are being broken down into projects that may

either be outsourced to independent professionals and experts, or be reconfigured into assignments that assemble physical or virtual teams, across borders and time-zones.⁴⁹

The trend toward the gig economy is the latest manifestation of this greater fragmentation of work. When many countries adopted lockdown strategies during COVID-19, forcing many employees to work remotely, it gave a huge boost to the gig economy and off-site work. In time, COVID-19 will revolutionise the services sector globally. In the gig economy, independent workers are hired for short-term tasks, often via online work platforms that pay them for each transaction or ‘gig’ they complete. At high levels of complexity and value, the gig economy is about digital technologies enabling geographically dispersed teams to be assembled around a given project.⁵⁰ Although still quite small in much of Africa (involving less than 0.3% of the labour force), it is burgeoning, especially in on-demand services ranging from the delivery of fast food to more sophisticated tasks such as accounting and editing.⁵¹

The interesting thing about the notion of the gig economy is that it is already a much wider reality in Africa, although in a different form. Many entrepreneurial Africans in countries like Kenya and Nigeria already hustle to keep bread on the table by doing any number of jobs, tasks and functions in a seamless and often informally structured work environment.

In conclusion, it is unlikely that we will witness widespread automation in sub-Saharan Africa, but work in this part of the world will still be threatened by widespread automation elsewhere that reduces production costs. The region’s large-scale informal economy and lack of digital infrastructure currently precludes such a development, since low pay means that labour will remain cheap. Cheap labour in this region may, through technology, also be able to compete with more expensive labour elsewhere – but only if Africans have the required minimum skills.

Against this background of employment prospects in Africa, the final section in this chapter turns to social grants as a means of poverty alleviation.

Poverty alleviation: Social grants and the universal basic share

What is clear from the sections above is that it is very likely that most African governments will have to rely on social grants, rather than an expanding job market, as their most effective weapon to assist the poor and alleviate extreme inequality – while also allowing the informal sector to flourish. This is demonstrated by the impact of grant programmes in countries as diverse as Brazil, South Africa and India.

In their original conceptions, income grants were conditional. Poor people were given food stamps or other means to subsidise food, education and transport if they fell below a certain income threshold. This threshold was monitored by regular means testing – that is, asking whether the beneficiary is still alive, or whether he or she still qualifies for the income grant, and so on. This process is cumbersome and costly. There is also literature arguing that, in developing countries, with weak and inefficient bureaucracies, targeted subsidies tend to result in more inequality than universal ones.⁵² This acknowledges the significant information asymmetry between the bureaucracy and the population, and that promotion of good (or effective) governance is a necessary factor for targeted subsidies to work.

Recent years have witnessed a steady move towards universal, non-means-tested grants in countries such as South Africa, where the ruling party has placed particular emphasis on redistributive policies rather than on growth. Whereas in 1994, 4 million South Africans received social grants, that figure has expanded to more than 18.2 million and is set to increase further. Today, social grants in some form or another are paid to 31% of South Africans.⁵³ In the long term, however, such high levels of transfers are likely to constrain economic growth.

Even with this hugely expensive and expansive grant system, more than half of South Africans still live in extreme poverty (using US\$5.50). With only 6.9 million taxpayers out of a total population of 60 million who contribute the largest portion of South Africa's total tax revenue, the South African system is unsustainable without much more rapid economic growth.⁵⁴ Only significantly higher economic growth can reduce extreme poverty, reduce unemployment and chip away at inequality in South Africa. In the meantime, spending on consumption

steadily squeezes out productive government investment in growth.

Another positive example of where social grants have been used as part of a poverty reduction strategy is India, with a government heavily committed to a campaign to ensure that every Indian has a bank account, is linked to the internet and can be biometrically identified.

Many African countries are doing the same, but in some, such as Kenya where corruption is truly endemic, repeated efforts to collect biometric data and establish a national ID system are treated with deep suspicion as yet another means by which politicians and officials can make an illicit profit to their advantage.⁵⁵

A second concept, more radical than social grants, is the idea of a universal basic share. This is an equal payment to all citizens, without any conditions or a means test. While this concept is also under consideration in some rich countries, the attraction of a universal basic share lies in its simplicity. Instead of having to determine whether an individual falls below a certain income level, and hence passes the means test, a payment is simply made to everyone above a certain minimum age.

The problem with a universal basic share payment may not, actually, be the availability of money, but the tax policies of African governments. Tax rates in Africa are notoriously low, largely because African governments ‘forgo revenues worth almost a third of those they actually collect’⁵⁶ through a bewildering array of tax breaks to donors, special economic zones and by offering tax holidays to big investors, often mining houses. Thus, ‘tax collection in Africa resembles an exasperating fishing expedition, in which the big fish wriggle into tax havens and the tiddlers hide in the informal sector’.⁵⁷

Conclusion: Thinking differently about the future of Africa’s labour force

On Africa’s current trajectory, the growth of its labour force will far outstrip the supply of jobs, leaving many of the continent’s citizens dependent on the informal sector for employment and survival. This will make some of them eager to migrate elsewhere in search of opportunities – including to neighbouring Europe, which seems

particularly fixated on this challenge, above all others. This re-emphasises the importance of an agricultural, trade, leapfrogging and manufacturing revolution that would increase growth and employment. In addition, it is evident that the informal sector has been the main driver of employment growth in Africa, and is likely to be where Africa's youth bulge is going to battle it out for their livelihoods.⁵⁸

Only if one views employment in Africa through the lens of self-employment (much of which occurs within the informal sector), digitisation and the Fourth Industrial Revolution does it become possible to think differently about the future of work in Africa. With large numbers of youth entering the labour market, the demand for jobs in Africa is huge and steadily increasing. However, Africa's labour force generally lacks many of the purported enablers for rapid job creation, such as adequate health and appropriate basic infrastructure (Chapter 5), and appropriate levels of education and the right skills (Chapter 6). Education and skill development systems are not aligned with Fourth Industrial Revolution innovations. This misalignment extends from quantity to quality and to the relevance of the skills being taught. There is far too little emphasis on training in science, technology, engineering and mathematics, on technical and vocational education and training, and on higher-order cognitive and analytical skills – hence a considerable skills mismatch, with most job-seekers lacking the skills that employers require. They may have good paper qualifications, but do not have Fourth Industrial Revolution skill sets.⁵⁹

A large cohort of young people with improving levels of education who are either unemployed or eking out a survival in the informal sector could be a destabilising force in Africa and in the neighbourhood. Young Africans are increasingly connected with one another and the rest of the world through the internet and social media, and will not stop seeking out the opportunities and lifestyles that their peers enjoy in the developed parts of the world. In a different context, this group coincides with the NEETS – the large group of Africans Not in Education, Employment or Training. And as Chapter 2 showed, in discussing the structural drivers of instability, the combination of youth and unemployment is one such driver.

Clearly, orienting education opportunities towards the actual opportunities or needs within the economy could help to lower a country's political temperature.

Since much of Africa's growth is going to come from commodity exports, it is equally incumbent upon governments to raise incomes through commodity value addition and to find ways of extending the value chains of capital-intensive projects, such as the gas projects in northern Mozambique, into the domestic economy. Furthermore, governments have to find ways of enhancing productivity and improving working conditions and regulations to reduce workers' vulnerability. The public sector will also play an important role by creating jobs for social development and through public works programmes, to improve livelihoods and enhance skills.

Most concerning is that the vast number of Africans who survive in the informal sector will struggle to overcome the hurdles created by the Fourth Industrial Revolution. This underlines the importance of using digitisation to open up new opportunities, such as access to finance and bringing the informal sector into the mainstream. Every effort should be made to overcome the segregation between the formal and informal sectors through productive linkages and by reforming laws and regulations.

This chapter used the example of Ghana to illustrate how modern technology can formalise economies more rapidly. By following and building on this example, African governments can harness the potential of digitisation to formalise and empower portions of the informal economy and empower ordinary citizens with access to finance, education and opportunity. Digitisation can help modernise agriculture and lift smallholder farmers out of poverty – but only if governments and leaders are aware of the opportunities it offers and develop effective digital strategies that support local innovation firms to compete and invest in household electricity (a precondition) and affordable access to the internet.

To provide sufficient meaningful work, the continent needs a shift in mindset that would allow a speedier escape from poverty than the slow progress envisioned in the Current Path forecast. This change in mindset can be captured as a change from consumption to production

and towards innovation, community self-sufficiency and independence.

Only if African governments are able to create a culture of entrepreneurship will the continent be able to reduce unemployment. Attitudes need to change, from ‘getting an education to get a job’ to ‘getting an education to create jobs and opportunities’. Even then, such entrepreneurship and self-employment will make only a small contribution to employment. Africa needs, instead, to solve its unemployment challenge – and implement interventions such as social grants and public work programmes on a truly massive scale if it is to reduce extreme poverty and provide the means for a large portion of its population to survive.

13

Governance in Africa



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Democracy, governance, development: which comes first, and what are the causal relationships between them? The debate about this, here called the sequencing debate, is intense. On one side is the history of the steady improvements in levels of prosperity and reductions in poverty among Western industrial democracies and, on the other, the more rapid recent successes of the Asian Tigers and China, with the core differences between the sides being the facilitating role that authoritarianism versus democracy plays. This is this chapter's focus – as is the question, what conclusions from this debate could we draw for Africa?

After looking at the sequencing debate, the sections below explore the evolution of democracy in Africa and its current state. It focuses next on levels of democratisation and the state of governance in Africa, moves to a look at corruption and neopatrimonialism, and models a scenario for greater inclusion before concluding.

The sequencing debate

In the eyes of many donors, policymakers and often the general public in Africa and the West, democracy, good governance and development all go together and should be pursued in that sequence. This is despite the fact that it reverses the historical developmental sequence as outlined by the seminal work of Martin Lipset and others – that democracy is mainly a product of economic development – and which has recently become evident in the Asian Tiger economies if not yet in China. The mantra is that Africa needs to adopt liberal democracy and various good governance practices as a prerequisite for development. Democracy, Africans are told, will lead to better governance, which in turn will improve development outcomes.

However, David Booth is one of many who argue that '[n]one of today's developed countries enjoyed the kinds of political democracy, rule of law, or arm's length relationships between business and the state that conventional wisdom currently recommends for Africa'.¹ Indeed, there is disagreement about the extent to which democracy contributes to improved economic and developmental outcomes and the extent to which early democratisation enhances or detracts from growth and human development outcomes.² Less controversial is the importance of a strong, active state to help initiate, accelerate and shape transformative economic growth and what is inevitably crucial is a political and bureaucratic elite that has the genuine developmental interests and capacity to pursue the associated goals.

The general view is that democracy delivers better governance, more stability and improved human development over long time horizons and that Africans should pursue these in this order – or, at least, that democracy and good governance should be pursued in tandem. As a result, definitions of good governance often share elements generally attributed to democracy, such as participation, the rule of law, equity and inclusiveness, accountability, transparency and responsiveness.³

Assessing a panel of countries between 1960 and 2010, Acemoglu and colleagues⁴ found that there is a 'robust and sizable effect of democracy on economic growth', and that 'a country that switches from non-democracy to democracy achieves about 20% higher GDP per capita in the long run'. The authors argue that the global rise of democracy over the preceding half-century has yielded an increase in global GDP of roughly 6% – and that democracy positively affects economic reform, private investment, and the size and capacity of government, and reduces social conflict. Why is this? We can summarise the reason by referring to the 'primacy of institutions'.⁵ Inclusive economic institutions typically feature 'secure private property, an unbiased system of law, and a provision of public services that provides a level playing field in which people can exchange and contract; it also must permit the entry of new businesses and allow people to choose their careers'.⁶

The evidence over shorter time horizons and at low levels of development is less compelling and somewhat contradictory. Since

democracy in low-income countries is invariably of a low, procedural type, it makes little contribution to improvements in well-being or even to the way in which the country is governed. Because the quality of democracy in Africa is poor, ‘more’ democracy has not translated into better governance – or, indeed, into more rapid development in the short to medium term.

For poor countries, the nature of the governing elite appears to be much more important for positive developmental outcomes than the institutional setting (whether the country is democratic or not). These countries typically lack the associated institutions and extensive codification in law and regulations to embed accountability in practice. Factor endowments such as ethnic fragmentation, geography and history are important, but what a country *does* is more important for its future. The problem is that African states are often weak and lack capacity, and that their elites, while no more greedy or self-serving than those elsewhere, tend to extract resources for ‘safe’ investment outside the continent. Corruption, then, does not grease the wheels of development, as it often does in Asia, but pours sand into the system, soaking up its oil and clogging it up.

The authors of a 2006 study on the relationship between democracy and human development find that the electoral democracy–human development relationship is maximised when ‘(a) elections are clean and not marred by fraud or systemic irregularities, (b) the chief executive of a country is selected (directly or indirectly) through elections, (c) suffrage is extensive, (d) political and civil society organisations operate freely, and (e) there is freedom of expression, including access to alternative information.’⁷ These five components interact, and the absence of any one of them severely mitigates democracy’s impact on development prospects – although clean elections have the strongest correlation with positive outcomes for human development.⁸ These five components lie at the heart of substantive, or liberal, democracy, but require significant effort, means and time to establish. Separating the powers of the executive, judiciary and legislature, establishing a truly competitive political environment, and allowing for the development of a free media and independent oversight mechanisms that have some teeth require adequate resources. This is an important reason for

democracy's close association with high levels of income. Governments can easily adopt the trappings of electoral democracy, such as going through the motions of regular elections, but without substantive accountability and institutions elected authorities are unable to hold their executive to account.

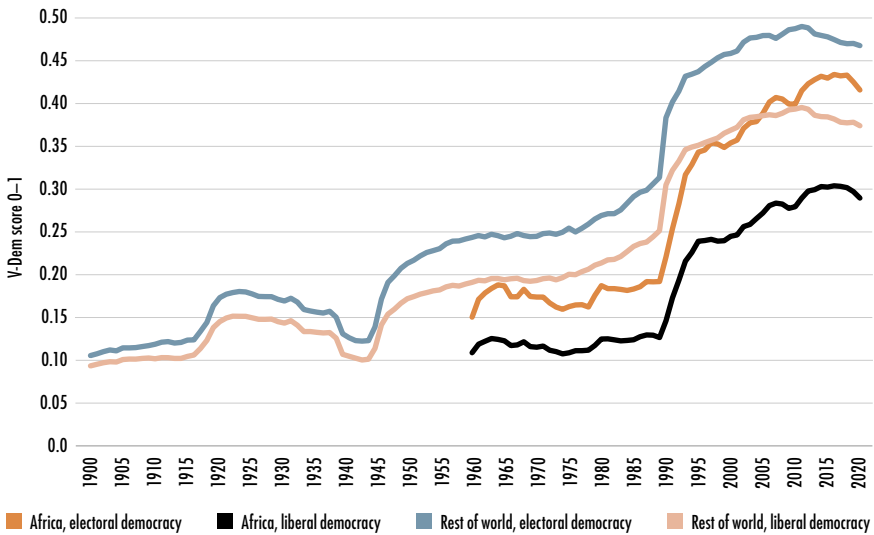
Democracy, the report's authors find, will likely only impact positively upon governance and development in Africa if it is substantive. And this may require minimum levels of economic development. Against this background, then, how has democracy evolved in Africa, and what is its current state?

The evolution of democracy in Africa

Over the past two centuries, democracy has advanced in three global waves, with much of Africa gaining independence as part of the second wave. With each wave, the quality, depth and reach of democracy have peaked and ebbed in crests and troughs that have come to define what it means to be governed. Each crest has raised the high-water mark left by its predecessor, granting momentum to the tide of democracy as it envelops increasingly larger shares of the world's population and more countries.⁹ Only China and a clutch of oil-rich Gulf states seem immune to its global allure, even as the recent trend is negative, giving rise to much analysis and commentary about the apparent rise of authoritarianism.

Chart 87 presents this broad positive trend towards democracy. Its vertical axis ranges from 0 (complete absence of democracy) to 1 (full liberal or electoral democracy in all countries), and it reflects the broad positive trend towards democratisation at the global level that has now been consistent for more than a century, proceeding in the three successive waves mentioned previously. The global averages start from 1900 and Africa's from 1960, covering the broad independence period. The graph shows this evolution for two types of democracy coded by the Varieties of Democracy (V-Dem) Project, namely electoral and liberal democracy.¹⁰ These are distinguished as follows: 'To be counted as electoral democracies, countries not only have to hold de-facto free and fair and multiparty elections, but [must] also ... achieve a sufficient

Chart 87: *V-Dem electoral and liberal democracy: Africa and world except Africa, 1900–2020*



Source: *V-dem 11.1 data*

level of institutional guarantees of democracy such as freedom of association, suffrage, clean elections, an elected executive, and freedom of expression. Liberal democracy is, in addition, characterised by its having effective legislative and judicial oversight of the executive as well as protection of individual liberties and the rule of law.¹¹

Inevitably, levels of electoral democracy are higher globally than levels of liberal democracy, a gap that has grown over time and is much larger in Africa than elsewhere. This reflects the low quality of democracy in Africa – many African countries have the essential elements of electoral democracy, but the extent of liberal democracy is quite limited.

The first wave of democracy surged in the early 19th century, particularly when the vote was granted to the white, male population of the US, and ebbed in the turbulent years leading up to World War II. At the crest of this wave, 29 states were considered democratic. At its trough at the height of the war in 1942, only 12 democracies remained.¹²

The end of World War II precipitated the second wave of democracy. As the number of independent states grew, so too did the number of

democracies, rising to 36 internationally recognised democratic regimes in 1962 before falling modestly to 30 by the mid-1970s. During this wave, the number of independent countries increased dramatically as rapid decolonisation swept first across North Africa (following the defeat of Italy and Germany during World War II), affecting Eritrea, Ethiopia and Libya. Egypt became independent in 1953 and, three years later, Sudan gained its independence from the Anglo-Egyptian Condominium, the joint British and Egyptian arrangement that administered it. Sudan's independence was followed by Tunisia's and Morocco's from France later that year. In sub-Saharan Africa, Ghana was first becoming independent in 1957, followed by numerous Anglophone, Francophone and Belgian colonies.

Burdened by its vast colonial empire, a stagnant economy and 48 years of authoritarian rule, it was perhaps no surprise that the third wave of democracy began in Portugal in 1974, with the Carnation Revolution. Its wars in Africa had exhausted Europe's last colonial power and the wars that Portugal was fighting against liberation parties in its African colonies played an important role in fomenting events that started off as a coup by a number of military officers in Lisbon. The following year all of Portugal's colonies achieved independence, a hasty and chaotic affair that swept from Cape Verde, Guinea-Bissau, Mozambique and Angola to São Tomé and Príncipe. The end of Portuguese colonial rule set off a train of events that would result in a series of liberation wars and the end of colonial rule in Rhodesia (now Zimbabwe) in 1980 and South-West Africa (now Namibia) in 1990. During the 1970s and 1980s, levels of democracy in Africa remained flat while global averages steadily improved.

Since the 1970s, Africa's Western development partners have invested in civil service reform and efforts to improve public financial management and helped to set up anti-corruption watchdogs and public audit bodies. Multiparty elections, democratic decentralisation and other methods of achieving citizen participation were equally popular. The World Bank and the International Monetary Fund (IMF) were at the forefront of efforts to ensure the state's withdrawal from productive sectors, limiting its role to policymaking and regulatory functions. This was based on its inability, in their view, to

effectively deliver public goods and limit the abuse of funds. In the process, democracy became strongly associated with liberal economic policies or so-called neoliberalism, which envisioned a small state and a dominant role for the private sector in development. Ironically, at the same time, the West was advancing unquestioned support (and large amounts of aid) to some of Africa's worst dictators (such as Sudan under Gaafar Nimeiry, Somalia under Siad Barre, Liberia under Samuel Doe, former Zaire under Mobutu Sese Seko, Chad under Hissène Habré and Egypt under Hosni Mubarak), who showed no interest in human rights and democracy. These contradictions would later come to haunt the West in its pursuit of developmental outcomes on the continent.

In Africa, as in the rest of the world, democracy received a substantial boost with the collapse of the Soviet Union in 1989. Whereas the postcolonial African states were trapped and held hostage by a bipolar world order that effectively rewarded loyalty rather than democracy or effective governance, the collapse of the Soviet Union allowed a brief post-Cold War peace dividend that saw levels of conflict decline, as Chapter 2 examined. According to the V-Dem data in Chart 87, neither average levels of electoral democracy nor liberal democracy changed significantly in Africa until 1989. Then, in the five years from 1989 to 1993, levels of electoral and liberal democracy in Africa and globally increased sharply, although the increase in electoral democracy is more pronounced than for liberal democracy.

The collapse of the Soviet Union ended a series of proxy wars in Africa where the West and the Soviet bloc had each supported or propped up their client states. The West had triumphed, or so it appeared, and with the subsequent concerns about elections, human rights and accountability (rather than ideological orientation) came the closely associated belief in liberal capitalism.

Part of the third wave was a rash of democratic transitions in Latin America in the 1980s and, shortly thereafter, in several Asia-Pacific countries. The dissolution of the Soviet Union further allowed a number of countries in eastern and central Europe to break away and establish representative systems of government. In 1990, it would also

allow the start of a negotiated settlement process that witnessed Nelson Mandela elected as president of South Africa, then Africa's largest economy and most powerful military, four years later.

Many analysts hailed the Arab Spring of 2010 as either the start of a fourth wave of democratisation – since it originated in the region with the lowest levels of political and economic inclusion globally – or proof that the third wave had not yet fully run its course. I vividly remember standing in the Addis Ababa conference centre of the UN Economic Commission for Africa watching in awe at the disciplined advance of thousands of Egyptians crossing one of the bridges over the Nile in Cairo, resolutely confronting and eventually co-opting the Egyptian military. It was a time of African euphoria.

Sadly, Libya, Egypt and a number of countries in the Middle East and North Africa have subsequently suffered devastating blows to peace and stability – and to democracy. To date, only Tunisia has emerged from this turmoil with substantially higher scores on the various measures of democracy, but that transition is becoming increasingly shaky given the lack of improvements in livelihoods.

Democracy in Africa has improved significantly, then, since the end of the Cold War in 1989, but its pre-COVID trajectory was already flat or modestly negative. Freedom House calculates that in 1989 only 16 of the 49 African countries which it reported could be classified as 'free' or 'partly free'. In 2019, the year before COVID-19 affected the quality and nature of governance in Africa, that number had grown to 29 of 51 countries and had largely remained stable since 2000.¹³

As in other regions, the process of democratisation in Africa has often been turbulent and violence has become increasingly election-related, pointing to the extent to which democracy has become the arena in which the struggle for political dominance plays itself out. Generally, results are decided at the ballot box and not through the barrel of the gun, as has often been the case previously. The vast majority of African countries now hold regular elections, even though the quality is often low and incumbents resort to various legal and illegal manoeuvres to extend their stay in power – which brings us to the current state of democracy on the continent.

The current state of democracy in Africa

The rise of terrorism, populism in the US and elsewhere, and the influence of an authoritarian China have turned the early optimism about a rising tide of democracy globally into a degree of democratic pessimism. The relative decline of the West when compared to a rising Asia has led to a commensurate weakening of the global impetus towards democratisation. Overt discord between the US and Europe during the Trump administration and the impact of Brexit has accelerated that perception, even as Russia has sought to actively engage in interference in the domestic affairs of a number of democracies, particularly in the US and a number of European countries – eventually launching its invasion of Ukraine in 2022.

In 2018 and 2019, a new wave of popular protests swept first across Ethiopia and then Sudan and Algeria, as citizens challenged long-standing parties and rulers. This indicated that democratisation in Africa was perhaps still on an upward trajectory, despite the absence of many of the supposed preconditions for democratic consolidation. Nic Cheeseman understands these preconditions as ‘a coherent national identity, strong and autonomous political institutions, a developed and autonomous civil society, the rule of law, and a strong and well-performing economy’.¹⁴ He argues that, since 1990, democratisation has taken place against the odds in a number of poor and unstable countries that have lacked these preconditions for democracy. Democratisation in Africa, therefore, is occurring prematurely, and rests on weak foundations, opening the possibility of a regression to lower or more ‘appropriate’ levels while a façade of regular elections hides the reality of no or little change in the balance of political and social power.¹⁵

Historically, the reason for this trend towards premature democratisation is likely because of the dominance, until recently, of the liberal democratic West, which has provided significant amounts of conditional development assistance to Africa. Furthermore, in an interconnected world citizens can compare their domestic conditions with those of other countries, something that has steadily led to the conviction among most Africans that democracy is the most desirable

governance model, given their lived experience of decades of brutal post-independence authoritarianism. Although electoral democracy has hardly delivered better developmental results in Africa, the process of citizens being consulted and having the power to effect changes in leadership has reshaped the dynamics of power and the perception of accountability: Africans are tired of autocrats and big men.¹⁶

Data collected by the research organisation Afrobarometer reflects broad public support for democracy in Africa. Afrobarometer has completed extensive and repeated surveys on attitudes to democracy in Africa over many years.¹⁷ Reporting on the results of a survey of 36 African countries that was conducted in 2014 and 2015, it found that ‘[o]n average across the continent, Africans support democracy as a preferred type of political regime. Large majorities also reject alternative authoritarian regimes such as presidential dictatorship, military rule, and one-party government’.¹⁸ Subsequent rounds of surveys confirm these trends, even as Africans have come to view authoritarian China more positively than the democratic US.¹⁹

There are two views about autocratic presidents in Africa. The first is that they are all relics of a bygone age, hangovers from the colonial era, unable or unwilling to change. The second is the belief, particularly propagated by China in recent years, that democracy in Africa is inappropriate – or, at best, premature. The latter is a view shared by many in Africa’s coterie of elderly, male leaders. Libya’s Muammar Gaddafi and Omar Bongo Ondimba of Gabon were Africa’s longest-serving modern rulers. Monarchs aside, Teodoro Obiang Nguema Mbasogo of Equatorial Guinea is the world’s longest-ruling head of state: he seized power in 1979. Paul Biya has presided over Cameroon since 1982, and King Mswati III of Eswatini and Yoweri Museveni of Uganda have ruled since 1986. José Eduardo dos Santos of Angola was president for 36 years, and Robert Mugabe of Zimbabwe for 35 years, before being forced to relinquish power. When he was toppled by his military in April 2019, Sudan’s Omar al-Bashir had been in power for 30 years.

Long-term incumbency often leads to the looting of the state and almost inevitably culminates in a violent uprising and turbulent transition. Mobutu Sese Seko of former Zaire, now the Democratic Republic of Congo (DR Congo), allegedly stole at least US\$4 billion while serving as president.²⁰ More recently, Obiang's son and vice president of Equatorial Guinea has been accused of embezzling more than US\$100 million. Human Rights Watch describes the situation in that country as one in which the state forgoes investment in health and education in favour of grandiose infrastructure projects that really function as 'conduits for enriching the ruling elite'.²¹

While regular elections in Africa are becoming increasingly frequent, the increase in the number of incumbents who cling to power and block executive rotation or replacement presents a worrying trend. Incumbents even change their countries' constitutions to retain the presidency if that is what it takes.²² Leaders in these countries invest significant resources in ensuring a favourable electoral outcome by constraining the democratic space. They do this by rigging the registration process, running interference (for instance, by tying opposition candidates down in spurious legal cases or barring public gatherings), misusing state resources to dispense patronage, controlling the diet of information (particularly through the abuse of public media in favour of the ruling party) and, if all else fails, directly manipulating the results or frustrating any subsequent legal challenge of them.

President Denis Sassou Nguesso of the Republic of Congo, Yoweri Museveni of Uganda and Paul Kagame of Rwanda all recently amended their constitutions to allow for unlimited presidential incumbency. In DR Congo, outgoing president Joseph Kabila and his party simply ignored the results of the December 2018 elections, which Martin Fayulu of the Lamuka coalition had clearly won. Kabila instead installed his own choice in the form of Felix Tshisekedi, who was duly inaugurated as president on 24 January 2019.²³ The rest of the continent remained silent, thankful that the transfer of power (if that is what it could be called) occurred peacefully.

In light of this, when V-Dem released its *Democracy Report 2021* (which includes data up to 2020), it noted a steep global decline in democracy since 2010, especially in the Asia-Pacific region, Central Asia,

Eastern Europe and Latin America. It concluded that ‘the level of democracy enjoyed by the average global citizen in 2020 is down to levels last found around 1990’ and that the quality of democracy had suffered a similar retreat. Liberal democracies, it noted, could now only be found in 32 countries, representing only 14% of the global population.

In a recent addition to its dataset, V-Dem makes a fourfold regime classification, which Chart 88 presents. It distinguishes between closed autocracy, electoral autocracy, electoral democracy and liberal democracy.

Applying these categories to Africa, Chart 89 summarises the continent’s current state of democracy.

As in other regions, democratisation in Africa is therefore turbulent and progress is seldom linear. From 2000 to mid-2019, there have been 25 attempted constitutional amendments to favour presidential third-term projects. Of these, only 7 failed; 18 were successfully implemented or enforced.²⁴

The island state of Cape Verde, off the west coast of Africa, on the other hand, is an example of how things can rapidly improve once leaders set an appropriate example. Cape Verde is ranked among the world’s most stable democracies, with good governance and a well-functioning multiparty system.²⁵ A single action is generally seen as

Chart 88: *V-dem regime classification*²⁶

Closed autocracy	Electoral autocracy	Electoral democracy	Liberal democracy
No <i>de facto</i> multiparty, or free and fair elections		<i>De facto</i> multiparty, or free and fair elections	
No multiparty elections for the chief executive or the legislature	<i>De jure</i> multiparty elections for the chief executive and the legislature	The rule of law, or liberal principles not satisfied	The rule of law, and liberal principles satisfied

Source: Calculated from UNDP version 21.1

official declaration of the election results. Fonseca eventually won 74% of the vote in an election considered free, transparent and fair. Requiring an incumbent to step aside in this manner requires political maturity, and goes a long way toward ensuring that incumbents cannot abuse their political office and tilt the playing field to their advantage.

Positive trends are widespread. In 2017, elections delivered peaceful power transfers in Liberia and Sierra Leone. Nigeria experienced a peaceful handover to the opposition in 2015 for the first time since the advent of democracy in that country in 1999. Ghana has also done so over the past two decades, and The Gambia's long-serving ruler was pressured into vacating his post after losing the election in 2016.

Meanwhile, the judiciary stood firm against abuses of power and executive overreach in Kenya in 2017 and Malawi in 2019, where election results were annulled due to misconduct and irregularities. An independent judiciary also prevailed in South Africa in 2021, when former president Jacob Zuma was forced to serve prison time for contempt of court.

Recent coups in Chad, Mali, Guinea and Sudan do not mean that democracy in Africa is failing, in spite of the associated internet shutdowns, muzzling of the opposition and rising third termism. The evidence suggests that, while the economic impact of COVID-19 is inevitably placing downward pressure on democracy, a robust democratic culture is in fact growing in many parts of the continent. However, while many countries in Africa are nominally democratic, the quality of their democracy is poor.

Exceptions to the rule: Rwanda and Ethiopia

In Africa, the most commonly quoted examples of successful authoritarian developmental regimes are Rwanda and Ethiopia. Both countries have made more rapid developmental progress than virtually any other African country. Rwanda comes off a higher base than Ethiopia, making the improvements in Ethiopia's average levels of income, until recently, even more impressive.

At an average rate of nearly 10% per year for a decade, Ethiopia has achieved the most robust GDP growth of any country globally, surpassing countries like China and Qatar. Average incomes in the country have nearly tripled, and the proportion of the population who have access to electricity, for example, has doubled.²⁷ But the wheels began to come off shortly after Prime Minister Meles Zenawi, the leader of the Tigray People's Liberation Front (TPLF) within the ruling Ethiopian People's Revolutionary Democratic Front (EPRDF), unexpectedly passed away in 2012 after a brief illness.

In February 2018, Prime Minister Hailemariam Desalegn, who had been appointed by the ruling coalition of parties to succeed Meles Zenawi, resigned in response to escalating unrest that followed elections and efforts to expand the city limits of Addis Ababa, encroaching on valuable agricultural land belonging to the Oromo ethnic group.

In April 2018, Abiy Ahmed Ali, the chairman of the Oromo Democratic Party, was elected as chairman of the EPRDF and as prime minister. He launched a sweeping political, economic, social and foreign policy reform programme in an effort to undercut the discontent that had led to the violence, even changing the name of the EPRDF to the Prosperity Party, now no longer an alliance of ethnically based parties but a single party. The dominant grouping, the TPLF, did not join the Prosperity Party, eventually seeking to openly defy the government in Addis Ababa and pursue greater autonomy. These events would eventually deteriorate into a regional and civil war when Abiy invited military support from neighbouring Eritrea in an effort to defeat the Tigrayan forces and eventually starve his opponents into submission.

The history of Rwanda that followed the 1994 genocide (one of many in the region) is well known. The mass killings of Hutus started after the downing of the Rwandan presidential plane with Juvénal Habyarimana onboard and resulted in a victory of the Tutsi Rwandan Patriotic Front (RPF) – and, eventually, the assumption of the presidency by Paul Kagame, who continues to govern.

Ethiopia and Rwanda are exceptions in a sea of poor-performing countries, many of which are authoritarian. In both countries,

national trauma has driven the burning desire to develop – the genocide of the Red Terror in Ethiopia under Mengistu Haile Mariam, which lasted until 1978, and the Rwandan genocide of 1994. In the wake of these traumas, governing elites in the two countries intervened decisively in the economy in favour of productivity, often causing considerable short-term pain for the sake of long-term gain – a policy choice that is much easier to implement in an autocratic setting than in a democratic one. In each of these countries, a determined pro-development governing elite was united behind a visionary leader (Meles Zenawi and Paul Kagame) intent on escaping debilitating poverty and underdevelopment.

Strong authoritarian leaders that are at the helm of a coherent party that has a firm grip on the country, politics and development, and with a clear and realistic vision of what needs to be done, are likely to deliver more rapid results in low-income countries. But most often the dependence on a single key figure more readily undoes progress once that leadership clings to power or is replaced by a flawed successor, as it has in Uganda, Angola, Zimbabwe, Egypt, Sudan, South Sudan, Equatorial Guinea, Libya and Algeria.

Sustained growth in an autocracy is more brittle and volatile than in a democracy and it seems inevitable that Rwanda will face challenges once Paul Kagame steps down unless the RPF invests substantively in succession planning.

Democratisation and levels of democracy

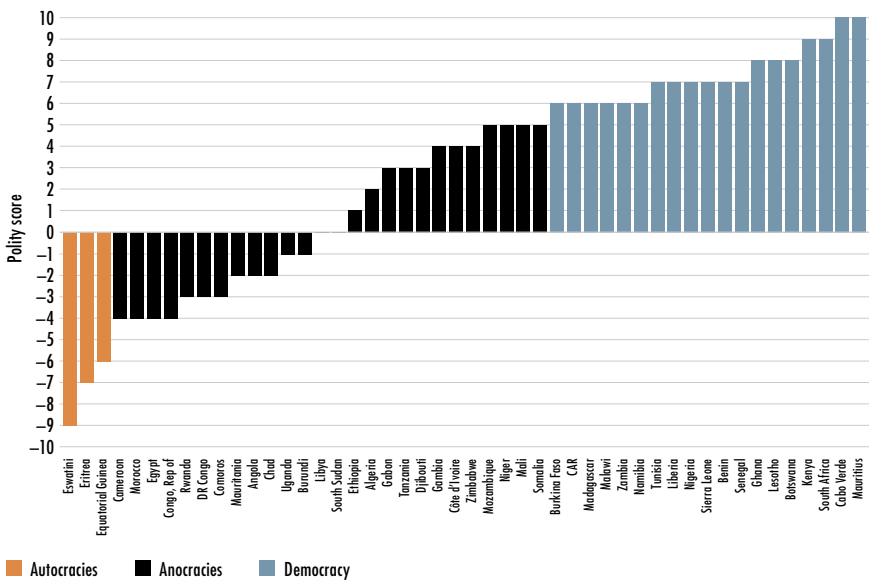
The pathway from autocracy to democracy is often rocky. The Polity IV and V composite indices from the Center for Systemic Peace categorise states according to their regime characteristics as essentially authoritarian or democratic.²⁸ The index ranks countries on a scale from –10 (hereditary monarchy) to +10 (consolidated multiparty democracy). Countries that score from –5 to +5 are considered anocratic (mixed or hybrid) regimes, which display elements of democracy (such as regular elections) but coexist with autocratic behaviour and institutions (such as limited legislative oversight).

According to Persson and Rothstein, ‘hybrid regimes are comparatively more clientelistic and corrupt than both full-fledged democracies and outright dictatorships ... and tend not only to perform worse than consolidated democracies but also than authoritarian regimes on a large variety of public goods indicators, including population health, education, access to clean water and sanitation, as well as to basic infrastructures such as roads and electricity’.²⁹

Chart 90 presents the most recent Polity data, for 2018.³⁰ It presents a crude indication of which African countries could be considered autocratically stable (such as Equatorial Guinea, Eritrea and Eswatini), countries with mixed regime types (from Cameroon to Somalia), and countries that could be considered largely democratic and stable, from Burkina Faso to Cape Verde. The group of anocracies, that are inherently more prone to regime instability, is in the centre of the chart.

Having explored the evolution of democracy and its current state in Africa, this chapter moves, now, to governance.

Chart 90: *Anocracies in Africa in 2018*



Source: Centre for Systemic Peace using Polity V data

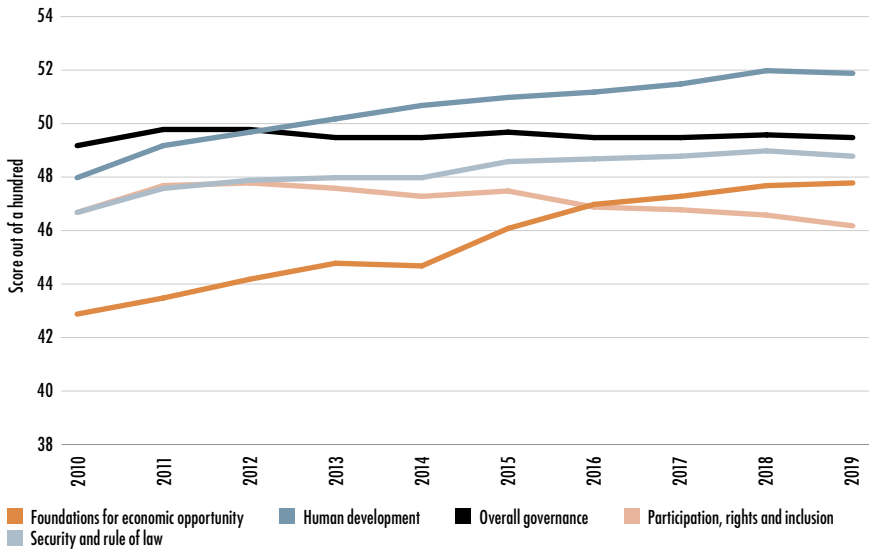
The state of governance in Africa

The focus on good governance as an apparent prerequisite for development in Africa gained traction with the debt crisis of the 1980s as international development institutions sought to respond to the challenge of slow growth, high levels of indebtedness and corruption. Initially, the focus shifted to the private sector and non-government organisations as an alternative to corrupt governments, but eventually, the evident importance of governance for development in poor countries shifted the focus back to the need to build government capacity and effectiveness – this time, framed within the context of governance reforms as a condition for international aid and debt relief. In the absence of other means to respond to Africa’s slow pace of development, the focus on good governance is essentially a technocratic response from donors and others to bad policies and, especially, bad politics in many African countries.

A number of organisations have subsequently sought to measure changes in the quality of governance over time, particularly the World Bank (which does so globally) and the Ibrahim Index of African Governance (IIAG).³¹ The IFs forecasting platform also measures governance, using its own conceptualisation. This section explores each of these approaches, beginning with the IIAG.

The Mo Ibrahim Foundation, set up in 2006 to focus on the need for good political leadership and public governance in Africa, defines governance as ‘the provision of political, social and economic public goods and services that every citizen has the right to expect from their government, and that a government has the responsibility to deliver to its citizens’.³² The IIAG tracks performance in Africa across four categories: foundations for economic opportunity; participation, rights and inclusion; security and rule of law; and human development. Progress has been slow, although more than 60% of Africans live in countries that made progress towards better governance from 2010 to 2019, the IIAG’s 2020 report noted.

Chart 91 presents the summary index for these sub-categories, as well as a category of overall governance. As far as such an aggregate measure can tell the story of Africa as a whole, the picture is mixed. On one hand, economic opportunity and human development reflect a modest

Chart 91: Ibrahim index of African Governance, 2010–2019

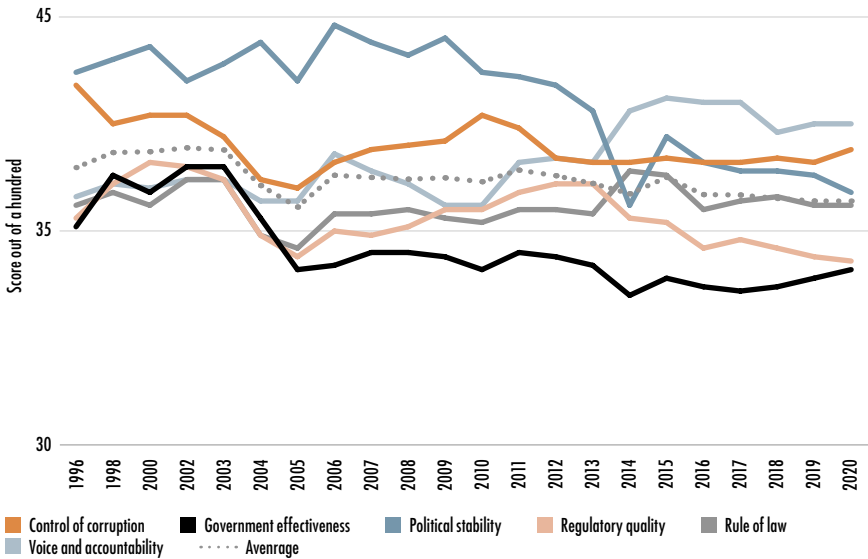
Source: Ibrahim Index of African Governance 2020 data

increase, but security and participation show a modest decline. Note, too, that the data point is for 2019, so the results do not yet reflect the impact of COVID-19.

Improvement has slowed in the past five years. In 2019, for the first time in a decade, the combined score for all African countries declined.

The second approach to examine in this section is from the World Bank which manages and publishes the Worldwide Governance Indicators (WGIs). According to the Bank ‘governance consists of the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them’.³³

An extract of data from 2010 to 2019 from the WGIs tells a similar story to the data from IIAG. The WGI reports on six broad dimensions of governance: voice and accountability; political stability and absence of violence; government effectiveness; regulatory quality; rule of law; and control of corruption.³⁴ Like the IIAG, the inclusion of voice and

Chart 92: *Worldwide Governance Indicators and subcomponents, 1996–2020*

Source: WGI 2019 data

Note: The Worldwide Governance Index scores normally range from -2.5 to $+2.5$, but have been adjusted to range from 0 to 100 for comparability with the IIAG data in Chart 91

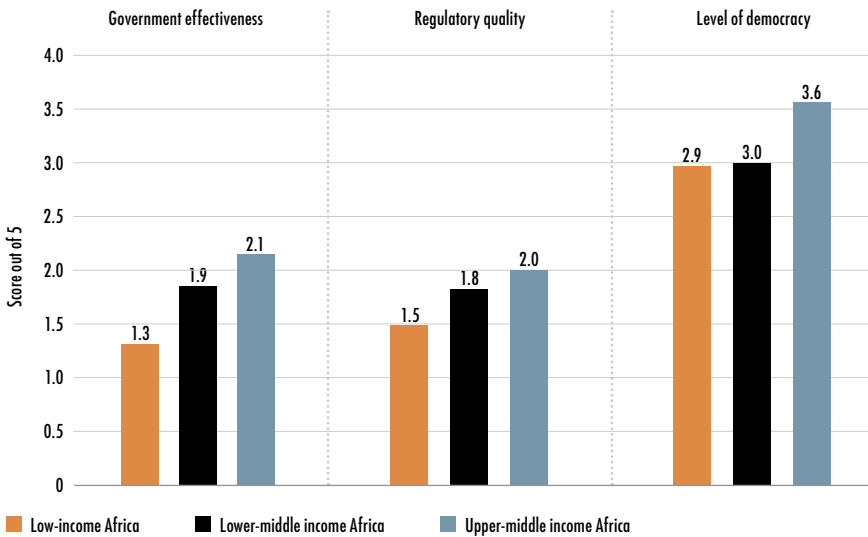
accountability reflects a belief that democratisation is an integral part of good governance and essential to the delivery of improved livelihoods.

Whereas the IIAG trend is stagnant and modestly positive until recently, the overall WGI trend is modestly negative.³⁵

The various indices of governance inevitably correlate with levels of development. Taking the two WGI sub-indices of government effectiveness and regulatory quality, for example, and comparing them with levels of democracy from the Polity dataset, Chart 93 presents the averages for these three indices for low, lower-middle and upper-middle income Africa for 2019. Inevitably, low-income countries evidence low levels of government effectiveness, poor regulatory quality and nominal democracy compared to lower-middle and upper-middle income countries.

And thirdly, a look at the IFs approach. For the purposes of modelling and measuring governance in IFs, Hughes and colleagues use modernisation theory and the notion that regimes historically develop

Chart 93: World Bank government effectiveness and regulatory quality, and Polity IV level of democracy, 2019



Source: WGI and Polity V data

through three sequential transitions: a security transition,³⁶ followed by a capacity transition,³⁷ and finally a transition towards greater inclusion.³⁸ The security transition, they argue, ‘begins with overcoming anarchy through the consolidation of territorial governing authority to establish sovereignty’.³⁹ After achieving sovereignty over a defined territorial area and a monopoly on the legitimate use of violence, governments typically shift their focus to creating and building capacity to effectively administer that territory. The third transition is one of inclusion, wherein a society develops the social contract required to sustain various dimensions of progress.⁴⁰

IFs use these transitions as a conceptual framework for comparing countries and for forecasting governance over time. To this end, it includes an index (0 to 1) for each dimension, with higher scores indicating improved outcomes. A composite governance index is composed of a simple average of the three.⁴¹

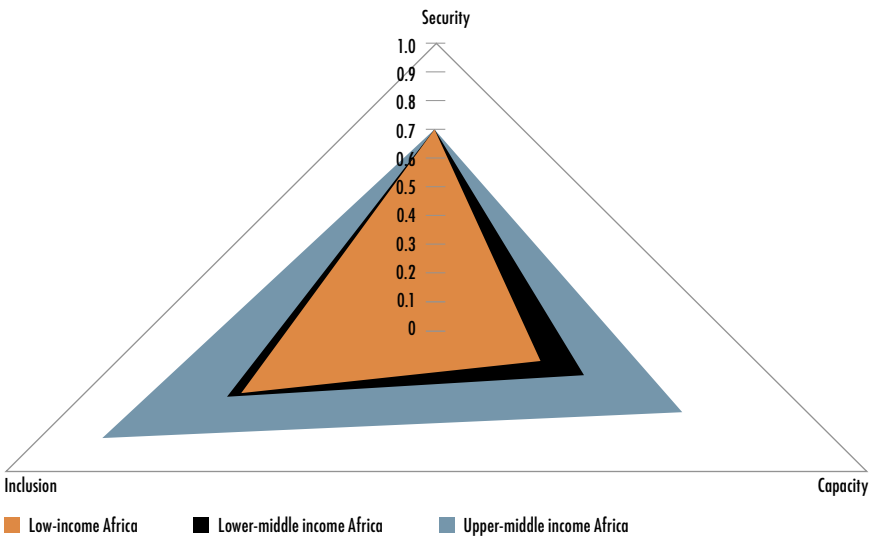
The conceptualisation of governance in terms of security, capacity and inclusion is a useful lens for comparing how countries have

progressed over time, as well as for comparing the state of governance between countries and groups of countries. While it can be helpful to think of these transitions as distinct phases, in the real world states are continually struggling to improve security, enhance capacity and become more inclusive contemporaneously.

Chart 94, then, compares the results for Africa’s low, lower-middle and upper-middle income group of countries. It confirms the analysis presented previously, namely that Africa does well on levels of inclusion and that all three African country income groups do poorly on capacity. Following the sequential approach, Africa is out of kilter: capacity is particularly low, below levels of security and inclusion, pointing to unbalanced progress. This helps to explain the poor results from governance in the continent. It is because of African governments’ capacity constraints that foreign donors support them through development assistance, as discussed in Chapter 10.

To summarise, then, various indices that separately measure governance using different methodologies come to largely the same

Chart 94: *International Futures dimensions of governance, 2020*



Source: IFs 7.63 governance indices data

conclusion: that the quality of the governance that Africans receive has essentially remained unchanged over the past two decades, likely reflecting slow economic growth and modest improvements in average incomes. This is important, for our analysis indicates that liberal democracy requires significant resources. Only in terms of levels of electoral (or nominal) democracy (or, more broadly, inclusion as used within IFs) does Africa do well – but high levels of inclusion without commensurate government capacity likely fuel corruption and patronage, the focus of the next section.

Corruption and neopatrimonialism

We saw in the previous section that the quality of governance in Africa has generally stagnated in recent years and that African governments have generally become more inclusive, but lack the capacity to translate policy into practice. In addition to slow economic growth (meaning limited additional resources available to provide services), a second reason for the lack of progress in the area of governance is the apparent resilience of neopatrimonialism that manages to offset the effect of more transparency and accountability – an essential characteristic of democracy.

Pierre Englebort and Kevin Dunn find that the degree to which authoritarian, neopatrimonial regimes have been able to adapt to the formal trappings of electoral democracy is one of the most remarkable characteristics of contemporary African politics. ‘Thus,’ they write, ‘to a large extent, neopatrimonialism has proved compatible with democracy rather than having dissolved in it. It has endured and reproduced despite a generalised change in the formal rules of politics.’⁴²

Nic Cheeseman is one of many academics who argue that patrimonialism itself is not the problem, since it is characteristic of almost all countries at low levels of development. What matters, he argues, is the *type* of patrimonialism that emerges.⁴³ One approach is to distinguish between centrally managed patrimonial relations – ‘developmental patrimonialism’⁴⁴ – and decentralised, competitive patrimonial systems. The former is evident in countries like Ethiopia

and Rwanda, examined earlier. Here, elites provide coherence and order in the political system, take a longer, developmental view on public provision, and generally provide better outcomes over the medium and long term.

David Booth's view is that centralised or developmental patrimonial states are the result of very specific conditions – and never of peaceful multiparty elections. He presents two examples of such conditions: where leadership consists of national liberation forces after war, as is still evident in many countries in Southern Africa; and in the aftermath of a severe crisis or shock to the system involving large-scale violence, such as that experienced in Rwanda and Ethiopia.⁴⁵

Cheeseman comes to these issues from a slightly different perspective, namely the extent to which democracy in Africa is inclusive or competitive. He uses the examples of Côte d'Ivoire and Kenya to argue for the need for greater inclusion, and cites Ghana and Senegal as two examples where political competition has driven progress. Inclusion comes in many forms; what Cheeseman refers to is the ethnic exclusion that is characteristic of Kenya, a country where one tribe, the Kikuyu, is largely considered dominant in politics and patronage. Yet Kenya regularly goes through the motions of elections and, to outsiders, appears more democratic than most other lower-middle income countries in Africa. Work by the ISS⁴⁶ indicates that Kenya's high level of electoral democracy, which is not supported by mature institutions, the rule of law and a system of accountability, opens the door for rampant corruption.

Cheeseman concludes that 'while elements of competition and inclusion strengthen multiparty systems, too much of either can be fatal to the process of democratisation'.⁴⁷ The most notable examples of 'excessive inclusion' are governments of national unity or where there are power-sharing arrangements. Since such governments are largely premised on the need for the political compromises associated with conflict management, they are often unable to sustain or promote economic growth.

Following instances of electoral violence in Kenya and Zimbabwe in the mid-2000s, regional actors helped craft governments of national unity – a common approach to papering over divisions within a society

that typically produces a measure of political stability, but engenders paralysis in governance and economic performance.⁴⁸ Lack of development, in turn, leads to social instability – and in these circumstances, a government of national unity sometimes unwittingly plants the seeds for the next crisis.

So, Cheeseman argues that ‘excessive inclusion is therefore just as bad for democracy and development as excessive competition’.⁴⁹ But, the point at which inclusion becomes excessive remains unclear. It depends on the context and may wax and wane over time. In decentralised or competitive neopatrimonial systems, such as Kenya and Nigeria, competition is about ethnic and personal benefit, and politics is about who governs and not about policy or improved livelihoods. Personality, affiliation and identity issues dominate. It is particularly damaging if the national constitutional dispensation is of the winner-takes-all variant, which gives the electoral victor wide discretionary powers to appoint, approve and reward.

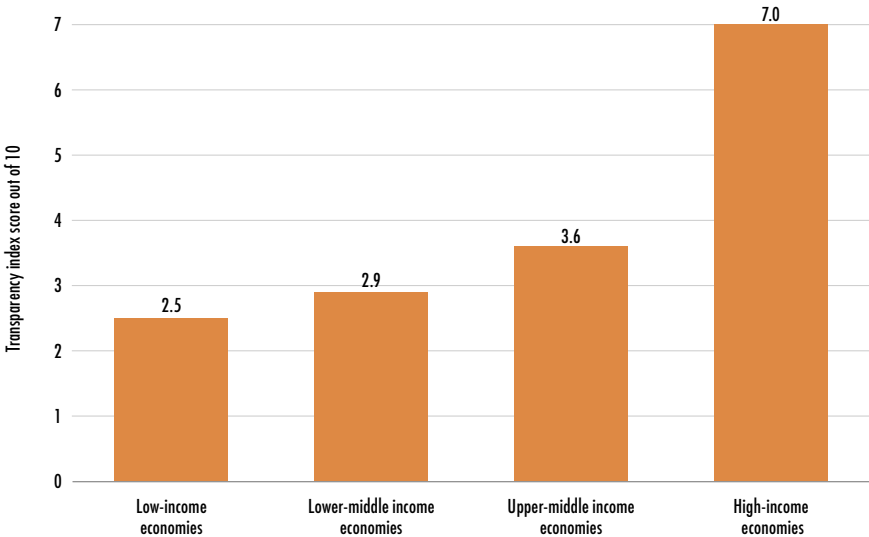
The problem with the distinction between centralised and decentralised patrimonial systems is that countries with centralised patrimonial systems do not necessarily produce better outcomes. Other factors may come into play. In fact, a number of relatively recently liberated countries in Southern Africa, such as Namibia, Angola, Zimbabwe, Mozambique and South Africa, would probably fit into the category of a centralised patrimonial system, since former liberation parties still dominate politics, albeit generally with disappointing results. In South Africa – where the governing African National Congress (ANC) did not come to power through the extensive political indoctrination and associated broad-based people’s war that took place in countries like Namibia, Mozambique and Zimbabwe – a liberal constitution, active civil society, entrenched Bill of Rights and independent judiciary have barely been able to constrain the ANC’s neopatrimonial inclinations.

Ultimately, the degree to which centralised patrimonial systems can advance development depends heavily on the quality of top leadership. A strong, visionary leader such as Paul Kagame (Rwanda), Thabo Mbeki (South Africa) or Meles Zenawi (Ethiopia) can have a significant impact on development outcomes. But there is no guarantee

that he or she will not succumb to the attractions of office – as was the case with Yoweri Museveni in Uganda. Both Museveni and Kagame have extended their terms in the belief that their leadership is indispensable for their country’s future. In South Africa, Thabo Mbeki also tried to extend his leadership of the ruling party as a way to maintain the power behind the scenes once his two-term constitutional limit as president of the country came to an end, but was defeated in that effort and succeeded by a wily successor, Jacob Zuma, who allowed the looting of the state and effective dismemberment of mechanisms of oversight and accountability during his two terms.

Transparency International’s Corruption Perception Index (CPI) is the most widely used dataset for comparing public sector corruption in countries globally. It is a composite index constructed using 13 data sources, from the World Bank and World Economic Forum to private risk and consulting companies and think tanks.⁵⁰ In Chart 95 the results are normalised to a scale of 0–100, where 0 equals the highest level of perceived corruption and 100 equals the lowest level of perceived

Chart 95: *Transparency International Corruption Perception Index, 2019 using global income groups*



Source: WGI and Polity V data

corruption. Invariably, low-income countries that have the least capable public service, institutions and systems; where education levels are low; and where incomes are barely above subsistence levels, score the worst – while rich countries with ample resources score the highest.

The comparable dataset from the WGI project on controlling corruption tells a similar story.⁵¹ The WGI ‘captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as ‘capture’ of the state by elites and private interests’. It, therefore, includes elements from neopatrimonialism.

When comparing the data from these two indices, only Seychelles, Cape Verde, Botswana, Rwanda, Namibia and Mauritius do better than the averages for the rest of the world on both indices. All other African countries do worse.

The picture that emerges from the Transparency International CPI and the WGI project is concerning. Poor countries score badly because they don’t have the mature systems and institutions characteristic of rich countries – yet, if one were able to calculate where most corrupt money changes hands, it is inevitably in richer countries since the pool of money is much larger. In effect, Transparency International largely reflects perceptions of petty corruption and does not adequately reflect on the ‘brains’ behind large-scale corruption, which almost inevitably requires collusion from external banks, brokers and large businesses – many of which are in the West and increasingly in Asia.

Closely linked to Africa’s ability to erode corruption and neopatrimonialism is the trend on the continent towards decentralisation. Citizens and experts in African states are advocating for the transfer of power, responsibilities, capacities and resources from national to subnational and local levels of government as a means to improve accountability and hence counter neopatrimonialism and corruption. Ultimately, though, the potential of devolution to advance accountability requires bold steps; moves to strengthen institutions such as the judiciary to make decentralisation work; and a commitment to the budgetary and spending autonomy of subnational entities. We do not yet have firm evidence of whether decentralised systems advance accountability or merely increase the opportunity for corruption – although recent findings

from Ethiopia are promising⁵² – but what is clear is that much greater community activism is required to translate devolution into better accountability. That said, federal systems are notoriously rigid and come with their own set of challenges.

Modelling the impact of greater inclusion on development: The Governance in Africa scenario

By itself, democratisation in Africa has clearly not altered the conditions of most Africans, many of whom still endure high poverty levels, low incomes, poor services and corruption. Previous sections have reflected on the nature and evolution of democracy on the continent and used different indices to review levels of corruption and governance. Clearly, nominal democratisation has not resolved deep-seated divisions based on ethnicity, regionalism and class. These divisions will only be bridged with progress towards substantive democracy, which in turn is only likely to accompany or follow more rapid economic growth. Fortunately, regular elections and the growing depth of civil society in Africa mean that progress towards liberal democracy is more probable than movement away from it.

But democratisation is associated with more protests and violence as expectations steadily rise, as Chapter 2 explored. The likely development is that the next global waves of democratisation will be less pronounced than the previous three waves, although a regional wave in the Middle East, which is clearly headed for massive governance changes, seems inevitable. National and regional dynamics play an important role, as do the rise of China and the extent to which Africans trade increasingly with that country instead of with the West.

This section, then, models the continuation of a positive trend towards more inclusion within the IFs forecasting platform, using the measure of regime type originally developed by the Polity IV Project on regime types. The Polity measure roughly equates to the concept of electoral democracy that V-Dem uses.⁵³

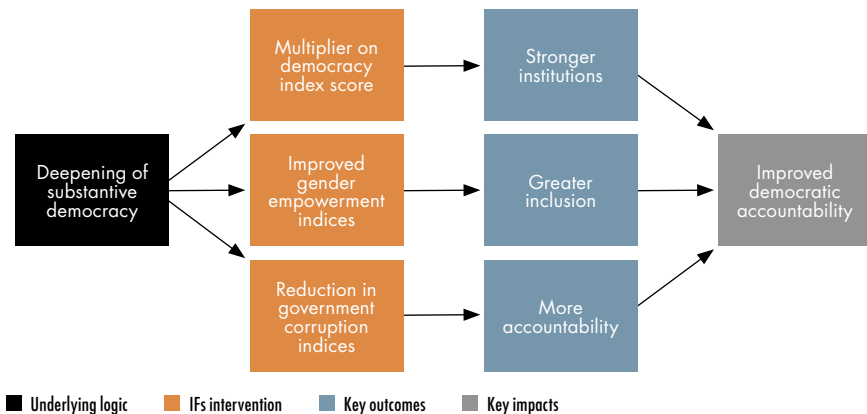
The origins of the Governance in Africa scenario lie in the start of the Arab Spring, which eventually led to liberalisation in Tunisia, Ethiopia and Sudan. The rise of China and the relative decline of Western

democracies (trends accelerated by COVID-19), on top of Africa’s 2020 COVID-induced economic contraction, are likely to dampen the scenario’s initial impact, but it is unlikely that the trend towards democratisation will be halted as income, urbanisation and education levels all improve. Chart 96 presents the logic that underpins the Governance in Africa scenario using data from the Polity IV Project and Transparency International, and gender empowerment data from the UN Development Program, in line with the IFs conceptualisation of inclusion.⁵⁴

Since this chapter’s conceptualisation pushes improved inclusion in governance, the Governance in Africa scenario’s interventions raises Africa’s general levels of inclusion by 25% above the Current Path forecast by 2043, to slightly higher than the average for the world except Africa. Improvements are more significant for low-income countries (31%) than for lower-middle income countries (22%) or upper-middle income countries (4%). At the level of individual countries, inclusion increases most in Eritrea (by 31%), followed by Togo and South Sudan. Seychelles, South Africa and Cape Verde benefit the least.

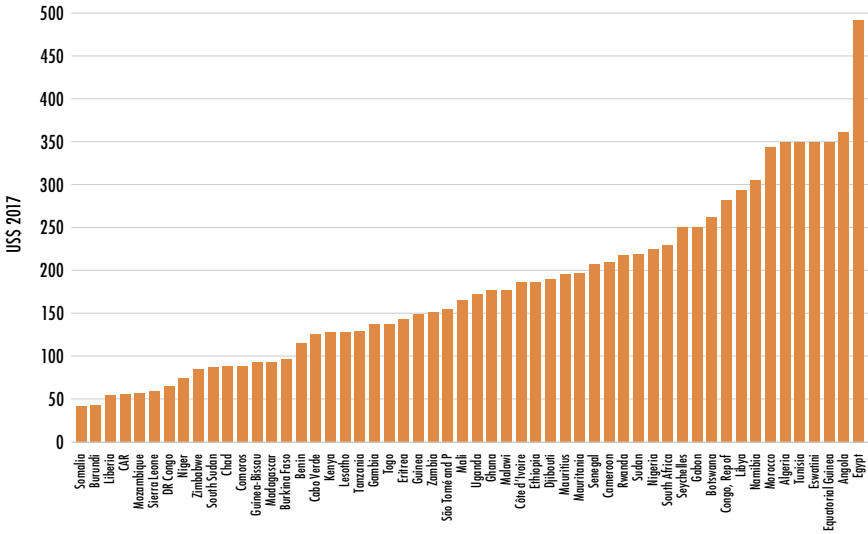
Chart 97 presents the impact of the Governance in Africa scenario on GDP per capita for each African country compared to the Current Path forecast in 2043. It shows a range of improvements from US\$43 in

Chart 96: *Modelling greater inclusion within IFs: The Governance in Africa scenario*



Source: Author

Chart 97: Increase in GDP per capita in Governance in Africa scenario compared to Current Path forecast, 2043



Source: IFs 7.63 initialising from UNPD World Population Prospects medium variant life expectancy and WDI data

Somalia to US\$491 in Egypt. In addition to Egypt, six lower-middle income countries do particularly well: Morocco, Tunisia, Algeria, Eswatini and Angola.

Turning to the impact on extreme poverty, the Governance in Africa scenario reduces the number of extremely poor Africans by 20.2 million in 2043, a one percentage point difference. DR Congo gains the most, followed by Nigeria.

Conclusion: What governance in Africa needs

If better governance is indeed a prerequisite for growth, Africa seems to be in trouble. But on the other hand, if better governance (like democracy) largely follows development, the prospects may be more positive. In fact, there is an influential school of thought that argues that ‘the development agenda should not be overloaded with governance reform’.⁵⁵ The implication of this approach is that slow improvements in

government effectiveness in Africa have tracked mediocre economic trends and that rapid economic growth will translate into better governance. A major challenge in this regard would be for Africa to find ways of dealing with neopatrimonialism – through decentralisation, as one example.

It is easy to underestimate the challenges of governance in Africa and the time horizon required to improve development outcomes. Whereas determined leadership can change things much more rapidly, the Governance in Africa scenario investigates and models changes in the institutional characteristics of governance. At low levels of development, these changes are more easily achievable within an autocratic than a democratic context, but achieving them is critically dependent upon appropriate leadership.

Despite their failure to generate growth, Africa's postcolonial patrimonial development models based on personal networks and exploitation of the state for profit have proved to be remarkably robust since independence. And many authoritarian African countries are, at least on the surface, more stable than democracies.

Yet the steady improvements in the levels of electoral democracy in Africa since 1989 mean that democracy is now the dominant form of government on the continent, although much of it is of a low, procedural type. The big outlier in the future evolution of democracy globally is clearly China – and the question is, will it succumb to greater political liberalisation to match the substantive economic liberalisation of the last four decades? A competitive economic system ultimately requires a more competitive political system, particularly once a country gets to upper-middle income status; it is unlikely that China will be able to defy gravity and escape its large democratic deficit forever. In the meantime, China exerts downward pressure on increased democracy in Africa – a trend resisted by Africa's increasingly connected and young populations.

In the long term – that is, over several successive decades – democracy improves the quality of governance and, ultimately, livelihoods. It contributes to growth by increasing investment, encouraging economic reforms, improving schooling and healthcare, and reducing social unrest. Democracies invest more in broad-based

public goods and are more likely to enact economic reforms that would otherwise be resisted by politically powerful actors. Through credible elections, democracy provides a mechanism for holding the power of the elite or special interest groups in check, it ensures the separation of state powers into discrete branches of government, and it protects human rights and the rule of law. In turn, democracies engender confidence in the pursuit of long-term investments. Non-democracies are less likely to do so.⁵⁶

Technically, what poor African countries need, then, is not necessarily a democratic state (although this is highly desirable for many reasons), but a developmental state – where the ‘political and bureaucratic elite has the genuine developmental determination and autonomous capacity to define, pursue and implement developmental goals’.⁵⁷ The challenge is that this requires either a development-oriented governing elite or a liberal democracy where accountability translates into impact at the ballot box – and, ideally, both. While the latter is a more desirable path than the former, it takes longer to achieve and is fragile at low levels of development.

Ultimately, there is no escaping the fact that democracy is the only regime type that allows for greater self- and collective fulfilment for citizens, irrespective of geography, religion or culture.

14

Climate Change, Energy and Carbon Emissions in Anthropocene Africa



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Climate change is no longer a distant threat. It is here, now, in heatwaves and floods, among other disasters. It is, without a doubt, the single most important challenge facing humanity, in Africa and in all regions of the world. In fact, many scientists believe that the world is in the midst of its sixth mass extinction event, known as the Anthropocene – the current unpredictable and dangerous geological age during which human activity has become the dominant influence on climate and the environment.

The epoch of the Anthropocene stands in contrast to the Holocene – the past 12 000 years of relative climatic stability. It reflects an approaching environmental tipping point beyond which conditions on Earth change fundamentally and irreversibly due to human impact. In the Anthropocene, the violence that humans inflict upon nature is violence upon themselves. It is an era in which the boundaries between humanity and its environment, between domestic and international concerns, and between different academic or theoretical areas of investigation become increasingly illusory. Everything is entangled with everything else, in ‘a fragile and interconnected universe that now binds human and non-human worlds together in complex and unpredictable ways’.¹

This chapter’s approach is to begin with a brief look at our current climate and emissions situation, and what the science is saying about it. From there, the chapter presents the Current Path forecast for the world and Africa on carbon emissions and energy, making a distinction, in the latter dimension, between oil, gas, coal, hydro, nuclear and other renewables. The global and African energy transition is the next area of focus, followed by an exploration of the impact of climate change. Thereafter, the chapter compares the effect of 11 sectoral growth

scenarios modelled in previous chapters with the Current Path of carbon emissions. And finally, I examine the most important aspect of this critical topic: the response to climate change, and the need for Africa to develop sustainably within its confines.

The current picture

The scientific consensus is that human activity, primarily the release of CO₂ and other greenhouse gases, has caused all global warming since 1970.² At the root of climate change are the resource requirements associated with global population growth, particularly those of energy and food production. The fossil-fuel-driven model of human development that has provided unprecedented levels of wealth and comfort to millions of people is now eroding the ecological basis of humanity. This message was set out starkly in a statement released in November 2017 titled *World Scientists' Warning to Humanity: A Second Notice* by several thousand scientists from 184 countries, who warned that '... we have unleashed a mass extinction event, the sixth in roughly 540 million years, wherein many current life forms could be annihilated or at least committed to extinction by the end of this century'.³

The statement went on to include 12 'examples of diverse and effective steps humanity can take to transition to sustainability', none of which have been implemented.

Some months later, in May 2019, the UN released its summary findings in a sweeping 1 500-page assessment compiled by hundreds of international experts that provides the most exhaustive look yet at the decline in biodiversity on earth. Among various depressing findings was that the average abundance of native plant and animal life has fallen by 20% or more over the past century, and that many species are being pushed closer to extinction.⁴ On 13 October 2020, International Day for Disaster Risk Reduction, the UN soberly noted that the number of disasters caused by extreme weather nearly doubled from 1980 to 1999, mostly worsening floods and storms. 'It is baffling,' the authors noted, 'that we willingly and knowingly continue to sow the seeds of our own destruction, despite the science and evidence that we are turning our only home into an uninhabitable hell for millions of people.'⁵

Meanwhile, a 2018 special report from the Intergovernmental Panel on Climate Change (IPCC) found that an increase of 1.5 °C is essentially inevitable and may be reached as early as 2030 – and that their previous risk assessments likely understated the likelihood of a 1.5 °C to 2 °C temperature increase. In addition, extreme weather events and increased threats to biodiversity all become more acute and pervasive with warmer temperatures.⁶ In the short term, these impacts pose grave threats to ‘health, livelihoods, food security, water supply, human security, and economic growth’.⁷ According to the report, limiting warming to 1.5 °C as reflected in the Paris Agreement would require the entire world to cut greenhouse gas emissions by nearly half of 2010 levels by 2030 *and* make an aggressive push to reach net-zero emissions by 2050. Net-zero means that any additional carbon emissions are offset by absorbing an equivalent amount from the atmosphere.

In referring to the 2021 IPCC report, *Climate Change 2021: The Physical Science Basis – Summary for Policymakers*, UN Secretary-General Guterres called it a ‘Code Red for Humanity’. He went on to add that ‘the alarm bells are deafening and the evidence irrefutable’.⁸ That report tells us that humanity may be on the precipice of a climate change disaster. Global temperature is already 1.2 °C above pre-industrial levels; at the current rate of emissions increases, we will in all likelihood reach the 1.5 °C threshold before 2040.

A few months earlier, the International Monetary Fund’s (IMF’s) 2020 Regional Economic Outlook for sub-Saharan Africa highlighted the lasting damage in the region from climate events. Over the medium term, the report found, annual per capita economic growth can decline an additional one percentage point with each drought. That impact is eight times worse than for an emerging market or developing economy in other parts of the world.

In October 2021 the World Meteorological Organization (WMO), in a report⁹ on the state of Africa’s climate, warned that Africa’s three remaining eastern glaciers (Tanzania’s Kilimanjaro, Kenya’s Mount Kenya, and Uganda’s Rwenzori), will have vanished within two decades, that 118 million poor people face drought, floods or extreme heat, and that climate change could shrink the continent’s economy by 3% by mid-century. And 2020, the WMO warned, was Africa’s third-warmest year on record, 0.86 °C above the average of the three decades leading to 2010. The

report estimated that sub-Saharan Africa would need to spend 2–3% of GDP each year on adaptation to avert even worse consequences of drought, floods and extreme heat.

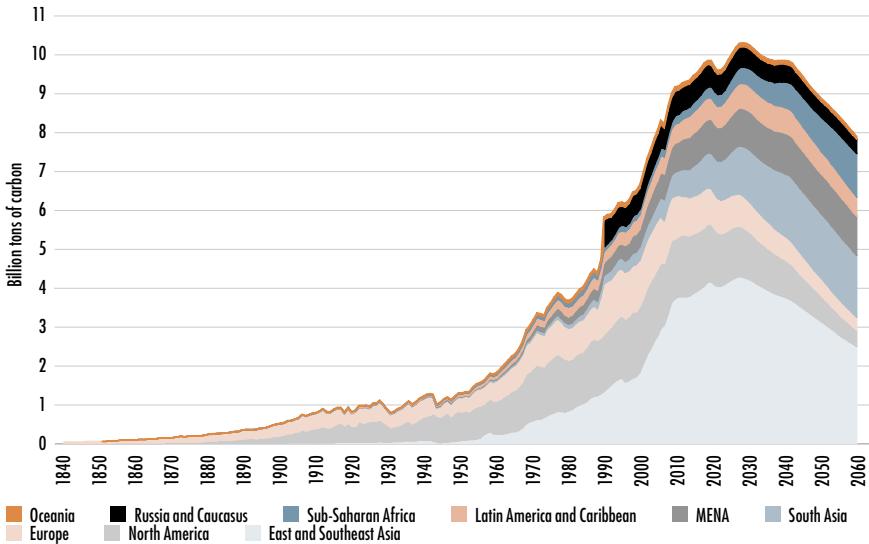
The impact, then, is individual, communal, national, regional and global.

Extreme weather events, in particular droughts and floods, have created climate change refugees as farmers literally seek greener pastures, with many abandoning the agricultural sector to seek livelihoods in the already crowded, poorly serviced peri-urban fringe of Africa cities. In a 2021 update to an earlier report, the World Bank warns that sub-Saharan Africa could make up 86 million of the world's 216 million climate migrants by 2050, with North Africa making up the largest share of internal climate migrants to total population. Without immediate and concerted action, hotspots of internal climate migration could emerge as early as 2030 and continue to spread and intensify by 2050.¹⁰

Biodiversity loss has further exacerbated this challenge as the options for food security and options to stave off hunger become more limited. Low levels of storage and limited infrastructure increase water vulnerability exponentially. Water availability for basic needs and as an important building block for any economy becomes scarcer in terms of both quantity and quality. These challenges lay fertile ground for potential conflict and insecurity, as mentioned in Chapter 2.

Carbon emissions: Their history and the Current Path forecast for their future

Having established the causes and gravity of the world's current climate situation, we now take a historical view of carbon emissions, then look forward at their levels as predicted by the Current Path forecast. Chart 98 presents an estimate of the amount of carbon released into the atmosphere since the end of the Industrial Revolution (1840), and forecasts continued emissions to 2063. It shows that, on the Current Path forecast, annual global emissions of carbon (note not CO₂ equivalent¹¹) will *increase* from 9.6 billion tons in 2019 to 10.3 billion in 2031 before starting to slowly decline. By 2043, annual emissions will amount to 9.8 billion tons, and then decline to 7.9 billion tons by 2063. Even though developed countries are

Chart 98: Carbon emissions globally, 1840–2063

Source: IFs 7.63 initialising from historical Carbon Dioxide Information Analysis Centre data

weaning themselves off fossil fuels and moving towards renewable energy – albeit with varying degrees of urgency – the stock of carbon in the atmosphere will inevitably increase, with the digital world requiring increased amounts of electricity to power its electric cars, artificial intelligence and higher levels of automation.

Drawing on data provided by the Carbon Dioxide Information Analysis Center, the Current Path forecast is that, at peak emissions in 2031, levels of carbon dioxide in the atmosphere will already have increased to 454 parts per million and will continue to rise, getting to 550 parts per million in 2063 and 597 parts per million by the end of the century – translating to a 3 °C average global warming from 1990 levels by 2100.

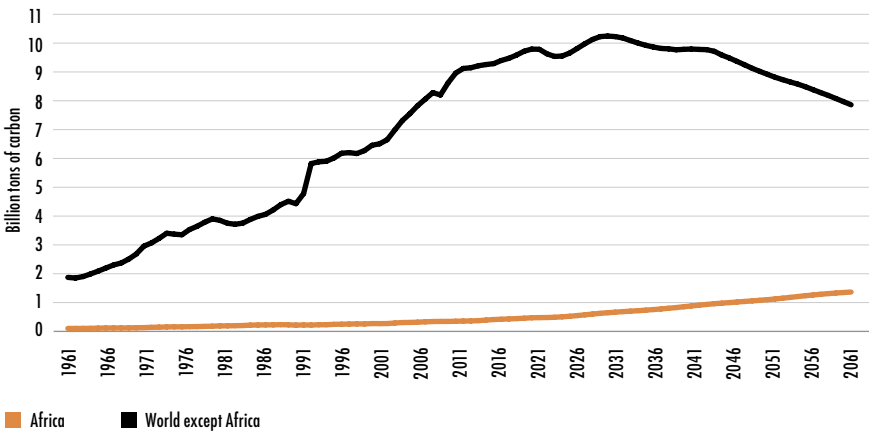
Within the Current Path forecast, emissions from Africa follow a very different trajectory. Emissions only start to plateau in 2080, then peak in 2090 at 1.7 billion tons per annum, before starting to decline. According to the forecast Africa will be at 2.8 °C above 1990 levels by 2100.

Climate change might be taking place at a slow pace, but it has lots of momentum, although exactly how much is a matter of intense debate among experts. The dominant view is that, if we were magically to cease

adding more greenhouse gases to the atmosphere today, the climate would still warm for a few hundred years before slowly returning to pre-industrial levels of atmospheric carbon concentrations.¹² This is because the greenhouse gases that human activities have already released into the atmosphere have locked the world into a temperature increase of at least 1.2 °C above pre-industrial levels.¹³ Some research, such as that published in *Nature Climate Change* magazine in January 2021 (before the most recent IPCC report), is more optimistic, accounting for the dynamism of the Earth's natural systems – essentially the huge carbon absorption capacity of oceans, wetlands and forests. That research argues that surface temperatures may be more responsive to carbon emissions and that, if the world gets to net-zero emissions by 2050, surface temperatures may stop warming and could stabilise within a couple of decades.¹⁴

What is Africa's place in the world's carbon emissions rankings? To date, the contribution of Africa's carbon emissions to the global total has been minuscule (with the noted exception of South Africa, which is the 14th largest emitter globally), but is set to increase in tandem with Africa's growing population, poor management of emissions and improved living standards. As Chart 99 shows, the contribution that Africa makes to global carbon emissions on the Current Path forecast is

Chart 99: *History and Current Path forecast of carbon emissions from Africa and world except Africa: 1960–2063*



Source: WGI and Polity V data

set to double from less than 5% in 2019 to 10% in 2043, and then to reach 18% in 2063 – in part because emissions in the rest of the world start to decline while Africa's continue to increase.

This is a cataclysmic forecast.

A world that sees temperatures rise by 1.5 °C above pre-industrial levels (the Paris Agreement target) is one in which the natural environment and resources upon which all life depends become highly unpredictable and severely degraded. Extended droughts, heat waves and other extreme weather events will become more frequent and intense; the sea will continue to rise and acidify, killing off vast swathes of marine species; and biodiversity is increasingly threatened, to the point of extinction. Research done by the University of Melbourne has found that extreme winds in the Southern Ocean have already increased by 1.5 metres per second over the past 30 years and extreme waves have increased by 30 centimetres.¹⁵

A document released in early May 2021 by Climate Action Tracker warns that the newest pledges and targets set by countries (after the climate change summit held in April) still place the world on a 2.4 °C trajectory.¹⁶ This assumes that these targets and pledges will be acted upon and implemented. And other forecasts are significantly more pessimistic: the United Nations Environment Programme (UNEP) warns that, on the current trajectory, it is realistic to prepare for a 3 °C increase. However, should greenhouse gas emissions continue unmitigated, warming of 3.4 °C above pre-industrial levels will occur by the end of the century.¹⁷ In this scenario, 'the limits for human adaptation are likely to be exceeded in many parts of the world, while the limits for adaptation for natural systems would largely be exceeded throughout the world'.¹⁸ As a result, large portions of the Sahel and West Africa are likely to become unsuitable for human habitation. Increased temperatures in large cities across Africa are also of particular concern, since the urban heat island (UHI) will amplify projected temperatures in urban spaces. People living in informal dwellings, buildings without proper insulation and older population groups will be very vulnerable to heatstroke, heat exhaustion and death.

The COVID-19 pandemic has reinvigorated the quest for global leadership on climate change among the main polluters, China, the US

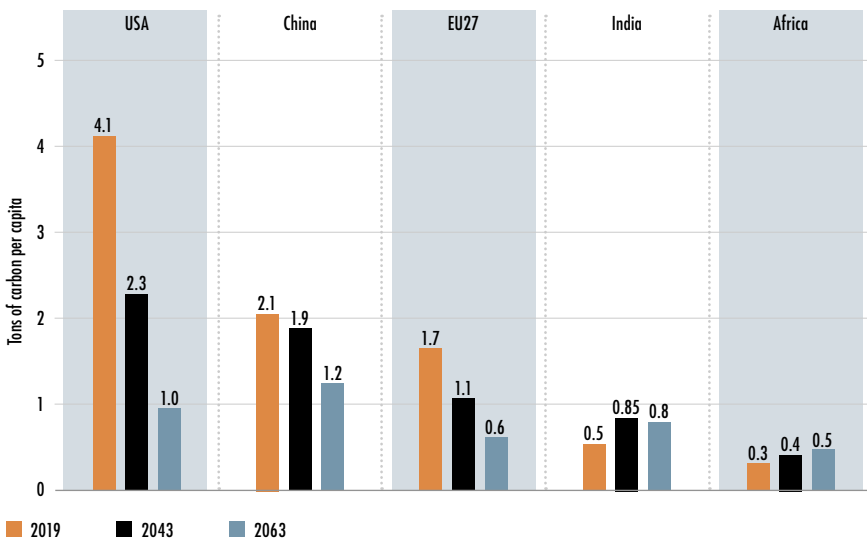
and the EU27 – and the climate summit held in April 2021 by 40 world leaders has renewed hopes that we will not see the worst-case scenario play out. However, by 2030 India will likely have emerged as the country with the second-largest emissions after China. What is alarming in this forecast is that the African trajectory of emissions overtakes the EU27 in 2030, the US in 2042, India in 2058 and, by 2063, approaches China’s annual emissions.

An important marker in this process is China’s 2020 commitment to improve on its climate pledge for 2030 – its nationally determined contribution under the Paris Agreement – to achieve peak carbon dioxide emissions by 2030 and carbon neutrality by 2060. And the US under President Biden, a member once again of the Paris Agreement and the second-largest greenhouse gas emitter globally after China, has sought to reassert a degree of leadership and committed to halve greenhouse gas emissions by 2030.

Compared to China and the US, the EU has the most comprehensive approach that includes efforts to spur the consumer changes needed to cut emissions drastically. These efforts will set car emission targets and requirements for building renovations, and will embrace carbon pricing through the expansion of the market-driven Emissions Trading Scheme (ETS)¹⁹ that sits at the heart of Europe’s decarbonisation plan. The result, the European Green Deal, embeds emission targets within the EU27 industrial policy. In the process, the EU has legally enshrined its commitment to reduce emissions by at least 55% by 2030 when compared to 1990 levels, and to achieve net-zero emissions by 2050.²⁰

A more appropriate measure than carbon emissions per country is to calculate carbon emissions per person, which is summarised for the US, China, the EU27, India and Africa in Chart 100 and presented for 2019, 2043 and 2063. It indicates the very rapid reductions in carbon emissions in the IFs Current Path expected in the US and the EU, and to a lesser extent in China, and the expected increases in India before reductions peak and start to decline. From a very low

Chart 100: Average carbon emissions per person for the USA, China, EU27, India and Africa, 2019, 2043 and 2063



Source: IFs 7.63 initialising from Carbon Dioxide Information Analyst Center

base, average carbon emissions per person in Africa remain below the averages in the US, China and India in 2063 but it is the only region that will experience a steady increase across the forecast horizon.

But to what can we ascribe the world's emissions? Most are essentially locked into expensive energy infrastructure. The energy sector (for electricity, heat production and other energy use) is responsible for just more than a third of global emissions, followed by the agriculture, land and forestry sector, which is responsible for about a quarter of global emissions. Industry is responsible for about 20%, and the remainder is from transport and buildings. Most methane (CH₄) comes from agriculture and energy production, and most nitrous oxide (N₂O) emissions are from agriculture.²¹ The challenge is that a warming globe demands more electricity use, particularly for cooling. A 2021 IMF staff working paper on the relationship between electricity use and climate change has found that much of Africa is above the so-called sweet spot of comfort, and that Africans will use more air conditioning when affordable: a one degree

Celsius increase in temperature will raise sub-Saharan Africa's electricity consumption by about 7%.²²

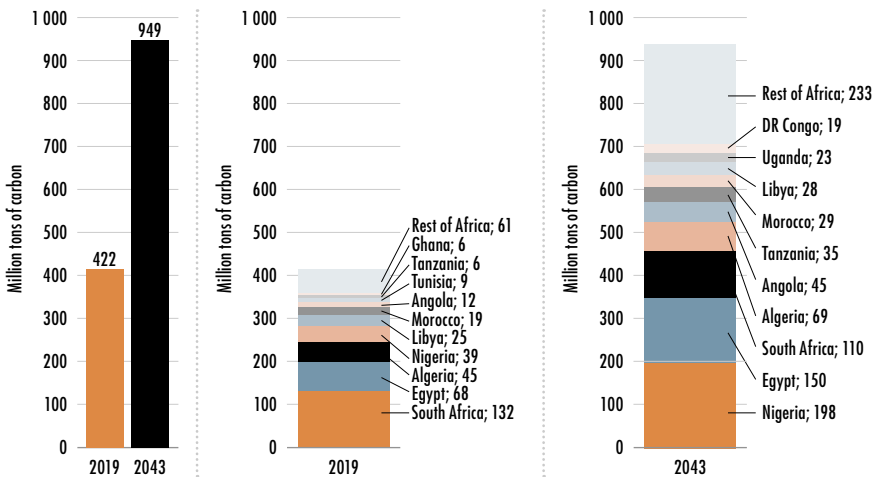
China's installed base of more than 1 000 GW of coal-fired generating capacity is responsible for 70% of the country's total emissions, and is far and away the largest of any country, more than four times the installed capacity in the US and India (the second- and third-largest installed capacity). Most of China's plants are quite new, with decades left of their operational life, similar to the situation in India.²³ Coal plants in the US and Europe, meanwhile, are roughly 40 years old, on average.²⁴ To that end, Chinese President Xi Jinping has committed his country to 'strictly control coal-fired power generation projects, and strictly limit the increase in coal consumption over the 14th Five-Year Plan period [2021–2025] and phase it down in the 15th Five-Year Plan period [2026–2030]'.²⁵ China has also committed not to fund the building of additional coal-fired electricity plans. India, too, would have to be willing to decommission a large number of recently built coal plants prematurely for the world to make progress towards global sustainability.

Even then, all regions – including Africa – will have to contribute to the necessary shift towards renewable energy to the best of their ability, although the largest contributions inevitably have to come from the biggest polluters.

Nigeria and, to a lesser extent, Egypt face huge challenges. Approximately 40% of CO₂ emissions in Egypt originate from the electricity generation sector, which is predominantly dependent on oil and gas (90%), leading to the construction of the El Dabaa nuclear power plant due for completion in 2030.²⁶

In 2018 the flaring of gas accounted for nearly a quarter of Nigeria's total carbon emissions, although it is only the seventh-largest flaring nation and emissions have come down substantially over time.²⁷ At the time of its peak emissions in 2090, Nigeria is forecast to have a population of close to 750 million people and will be responsible for 43% of Africa's carbon emissions.

Chart 101 presents the top ten African carbon emitters in 2019 and the Current Path forecast of the top ten in 2043 from which it is evident that South Africa loses its current ranking as largest carbon emitter,

Chart 101: African carbon emissions in 2019 and 2043 including top ten

Source: IFs 7.63 initialised from Carbon Dioxide Information Analyser Center

dropping to third spot by 2043 and is overtaken by Nigeria and Egypt – not unsurprising so since the economies of these countries will be substantially larger then, whilst South Africa is likely to see a significant reduction in emissions as it retires some of its ageing coal-fired generators and shifts to renewables. Tunisia and Sudan, currently the eighth and ninth largest emitters, are not in the top ten by 2043, and replaced by Uganda and the DR Congo, who will both experience rapid growth in the size of their economies due to their expanding populations.

Energy and land use produce three-quarters of global emissions. Without an energy transition, the global goal of keeping warming to well below 2 °C will not be possible. For that reason, the next section in this chapter deals with the global and African energy transition.

The global and African energy transition

For the foreseeable future, an expanding global economy will require more energy every year, even as economic growth becomes less energy-intensive over time. The source of that energy is steadily shifting away from fossil fuels and towards renewables – but in the Current Path

forecast, energy production from renewables only surpasses energy production from fossil fuels beyond mid-century, globally and in Africa. This will have to change if the world is to avoid a climate change catastrophe.

Like fossil fuels have shaped the geopolitical map over the past two centuries, so ‘the energy transformation will alter the global distribution of power, relations between states, the risk of conflict, and the social, economic and environmental drivers of geopolitical instability’.²⁸

Whereas fossil fuels are concentrated in specific geographic locations and are vulnerable to disruption, renewable energy resources are distributed in one form or another in most countries. This makes renewables better suited to decentralised forms of energy production and consumption; so, the influence (and wealth) of oil and gas producers will steadily decline. The possible exception to this broad statement is nuclear power, since the potential development of small-scale nuclear plants – small modular reactors (SMRs) with the capacity of 100 MW – have the potential to be ratcheted up or down to help balance the grid alongside surging renewable output within a decade or so. Larger units providing 1 GW would provide substantial additional base-load capacity. Unlike the manifold challenges that have faced large nuclear power stations, particularly cost overruns, SMRs could be produced in a factory assembly line. This, in theory, would make them more reliable, and mean that they have predictable construction and maintenance costs.²⁹ The impact will be to provide sustained baseload capacity, particularly for large energy users such as smelters – the one area where current energy storage and renewable energy production cannot yet compete with fossil fuels. Countries like Ghana and Egypt are among those that have long considered nuclear power.³⁰

The US is already close to being self-sufficient in terms of energy, largely due to its shale oil and gas revolution, discussed in Chapter 9. In fact, America’s oil output has more than doubled over the past decade and its gas production has increased by more than 50%. It is now the world’s top gas and oil producer – and a country with very high carbon emissions. The energy transition in the US is gaining significant momentum, however. In September 2020, California, the state with the largest economy in the US, where two million new cars are sold

annually and which accounts for almost 10% of US oil demand, announced that it would ban the sale of fossil-fuel-powered cars from 2035. The decision has implications far beyond California's borders, including for US car makers, who are being pushed to move away from internal combustion engines.³¹

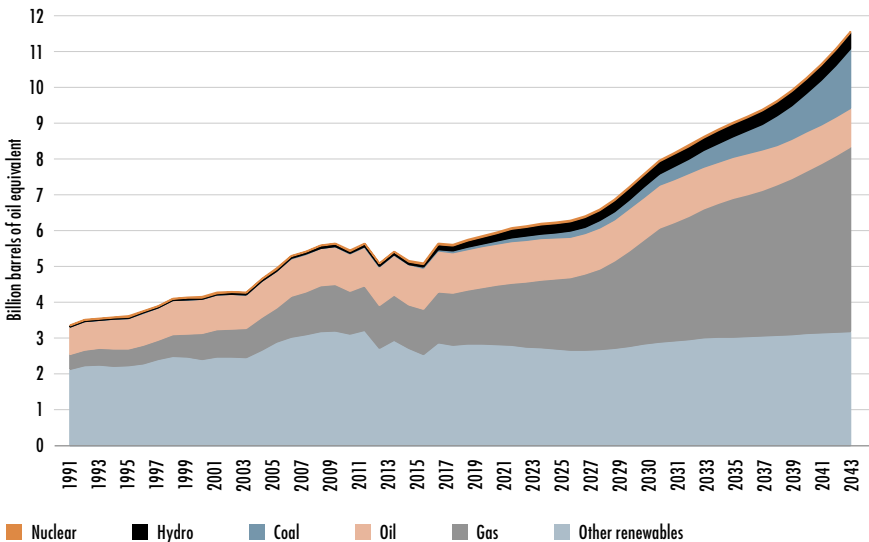
The US's energy self-sufficiency is accelerating its international withdrawal and isolation, while China's determined investment in connecting Asia through the Belt and Road Initiative, its leadership in research and development, and its investments in renewables are likely to improve its geopolitical standing.³² China's demand for oil imports, already the largest in the world, continues to grow. Militarily, it has invested in securing its supply by safeguarding chokepoints such as the straits of Hormuz and Malacca and by diversifying its sources of supply, including from Africa to now include Russia and others. In a world of fossil-fuel abundance, power has shifted away from producers such as the Organization of the Petroleum Exporting Countries (OPEC) to large consumers such as China, but supply still matters. Russia's invasion of Ukraine will initially shift producer–consumer patterns away from Russia/EU to Russia/China and to other markets; it will also accelerate the transition away from fossil fuels given the demonstration of the dangers of European dependence on imported fossil fuels, although fossil fuels will remain an important part of the energy mix for several decades.

Africa is a net exporter of energy, generally exporting unprocessed oil and natural gas and then importing refined products. Looking to the future, the next big thing will not, however, be these traditional energy sources, where Africa is an important – but relatively minor – player. Rather, Africa is set to play a vital and strategic role in the energy transition: countries like the Democratic Republic of Congo (DR Congo) have many of the global reserves of critical and rare earth minerals such as copper, nickel, cobalt and lithium that will be required to integrate greater amounts of wind and solar into electricity supplies, and to make the batteries that can store that energy. This is an important reason for China's interest in DR Congo, where it has invested in all 12 of DR Congo's cobalt mines (the country is home to about 60% of the world's cobalt). In January 2021, the Chinese Ministry

of Industry also published proposals intended to tighten export controls on rare earth, a vital mineral used to manufacture electronics. China is already the globally dominant producer and controls 60% of the global market.³³ In this world, influence may shift in favour of those countries that control the ingredients such as copper that allow the production of renewable energy (through wind, solar and other means) and the means to build storage capacity (battery and related requirements), such as DR Congo.

The IFs Current Path forecast for energy production by type for Africa is presented in Chart 102. The data is presented in billion barrels of oil equivalent. In the Current Path forecast, the production of coal, oil and gas dominates until 2050, although renewables start growing strongly beyond 2030 – at which point renewables contribute less than 10% to overall energy production.³⁴ But it is forecast that the contribution made by renewables will be larger than that from coal in 2038 and larger than that from oil in 2040 – and that it will surpass natural gas in 2046.³⁵ Clearly, this Current Path forecast is nowhere

Chart 102: *Current Path forecast of Africa energy production by type, 1990–2043*



Source: WGI and Polity V data

near the target of keeping global warming to 1.5°C or even 2°C by the end of the century. Oil is currently the largest source of energy produced in Africa and is likely to remain central to the economies of Nigeria, Angola, Algeria, Libya, Egypt, the Republic of Congo, Equatorial Guinea, Gabon, Chad, Ghana and Cameroon. Most of that oil is exported rather than refined and then the refined product is imported again, although various plans are afoot to build refineries.

Libya and Nigeria have globally significant, proven oil reserves, while Nigeria and Algeria hold Africa's largest proven gas reserves. In general, Africa remains quite unexplored compared to most other regions and the potential for additional oil and gas finds is therefore large – but may eventually not be exploited.

Although gas features prominently in Chart 102, it is important to note that this is a graph of *production* by type, often for export. Nigeria, Algeria, Mozambique, Egypt, Tanzania and Libya have big proven natural gas reserves, but there is very little installed gas infrastructure that would allow for domestic use. Instead, since the demand for gas is expanding particularly rapidly in Asia it is very likely that the vast majority of Africa's natural gas production (like its oil) will end up as exports to feed demand in China, India and elsewhere – whereas renewables are more likely to be used to improve household electricity access, which is part of the Leapfrogging scenario (Chapter 9).

Countries and populations across Africa will benefit greatly from the dispersed nature of renewables, particularly through reduced fossil fuel imports and the absence of expensive national distribution networks. Actually, most African countries have a unique opportunity to leapfrog some stages of the fossil-fuel-centred development model and move directly to renewables. Some, such as Libya, the Republic of Congo, Angola, Equatorial Guinea, South Sudan and Gabon, will suffer since they are extraordinarily dependent on the foreign exchange earnings from their fossil fuel exports. Others with large fossil fuel import bills, such as Tanzania, Côte d'Ivoire, Guinea and Senegal, will benefit.

High energy bills transfer large amounts of wealth abroad and make countries vulnerable to price swings. Renewables have none of these risks. Some countries, such as Ethiopia and Lesotho, could obtain all or most of their electricity from hydro. Others, like Kenya, could achieve

similar results using a mix of renewables, such as hydro, geothermal, wind, biomass and solar power.

Africa is well positioned, then, for a much earlier transition to renewables than other regions – but its leaders would need to make conscious decisions to pursue such a growth pathway and to benefit from some of the most valuable solar, geothermal, hydro and wind real estate on the planet. Wind and solar are both becoming increasingly price competitive, and electricity storage and efficiency are also improving. Indeed, as this chapter has shown, should Africa and the world not make this urgent transition, populations everywhere will suffer greatly under the impact of climate change, explored in more detail next.

The impact of climate change

The 2017/18 water crisis in Cape Town is a textbook example of the dangerous confluence of long-term anthropogenic climate change, natural variations in weather and poor planning. Cape Town has long been a water-stressed area, but has always been able to cope – that is, until temperatures got a little higher, El Niño got a little worse and the government failed to upgrade and maintain water infrastructure and invest in alternative water purifying and treatment systems.

A three-year drought started in the Cape metropole in 2015 and peaked from mid-2017 to mid-2018 when dam water levels hovered between 15 and 30% of total capacity. By late 2017, authorities were talking about ‘Day Zero’, when municipal water supplies would largely be switched off and residents would have to queue for a daily ration of water – much of which would have to be trucked in. Ultimately, the City of Cape Town was able to implement significant water restrictions and, after good rains in June 2018, water restrictions were eased.³⁶

The line between barely getting by and a national emergency can be very thin indeed.

Cape Town managed to forestall a water crisis by the skin of its teeth, but going forward this ‘new normal’ will leave the city and surrounding area increasingly vulnerable, particularly because it serves as a destination for many poor South Africans who migrate there from

the Eastern Cape – and because it is a global tourist destination. The result is extremely rapid urbanisation and intense pressure on infrastructure. Yet, within a few years, the Nelson Mandela bay area in South Africa's Eastern Cape province faced a similar challenge and, by July 2022, as this book went to print, was set to completely run out of water. Lack of maintenance, poor management and corruption have exacerbated a seven year drought with no lessons learnt from events in Cape Town.

Droughts and floods are likely to become more frequent and more difficult to predict, and could exacerbate food security issues and migratory push factors. In 2006, three major flood events (which normally occur once every 10 to 20 years) occurred within the space of two months in East Africa, displacing almost 200 000 people in Ethiopia, Somalia and Kenya and destroying thousands of hectares of cropland.³⁷

In March 2019 Cyclone Idai smashed into Mozambique, unleashing hurricane-force winds and rain that flooded swathes of this poor country before battering eastern Zimbabwe. More than 700 people died in the two countries, and some 1.85 million people were left in need of assistance in a catastrophe that UN Secretary-General Antonio Guterres said rang 'yet another alarm bell about the dangers of climate change'.³⁸ As if to emphasise the point, Cyclone Kenneth arrived a few days later, first tearing across the Comoros islands before making landfall in northern Mozambique. Kenneth was reportedly the strongest cyclone ever to hit Africa. Three years later more than 400 people died when extreme rainfall destroyed infrastructure and livelihoods in the South African province of KwaZulu Natal.

West Africa has recently also been exposed to massive flooding, and the frequency and intensity of extreme weather events are mounting. In 2017, weeks of heavy rain led to catastrophic mudslides in Sierra Leone, killing more than 600 people outside Freetown.³⁹ In 2018, extreme flooding in Niger killed more than 80 people, displaced 50 000 more and wiped out 400 hectares of farmland and 26 000 head of livestock. That same year, in Nigeria, nearly 200 people lost their lives and more than 150 000 were displaced in floods, which also led to a spike in cholera cases.⁴⁰ These countries have some of the fastest-growing

populations in the world and very low levels of basic infrastructure, making their populations very vulnerable to the effects of storms, floods and drought.⁴¹

Africa is particularly vulnerable to the effects of climate variability, in part due to the increased intensity and frequency of weather-related disasters, the high socio-economic vulnerability of communities, growing urban and rural populations, a high dependency on natural resources and limited infrastructure.⁴² Since 1990, Africa has experienced 1 499 weather-related disasters, with a clear increase in their frequency. They affect countries' economies, erode developmental gains, and weaken and reduce livelihoods.

Africa has already experienced some of the most severe effects of climate change to date. Maize and wheat production have already been affected in many countries, as have fisheries in the Great Lakes Region and fruit trees in the Sahel.⁴³

Owing to Sahel's and West Africa's existing hot and dry climate, high rates of poverty and profound dependence on rain-fed agriculture, the IPCC has identified these regions as climate change hotspots that are projected to experience unprecedented effects of climate change before anywhere else in the world. For example, the IPCC notes that, in the 1970s and 1980s, the Sahel region 'experienced the most substantial and sustained decline in rainfall recorded anywhere in the world within the period of instrumental measurements'.⁴⁴ It was initially thought that this drought was caused mainly by human modification of the surrounding landscape – desertification. However, it has subsequently become clear that rising sea temperatures were the primary driver, reflecting the extent to which climate change is a truly global problem.⁴⁵

While vulnerable populations are most susceptible to the direct effects of climate change like flooding and drought, there are also other impacts, such as the incidence and distribution of infectious diseases like malaria. Increased temperatures will enable malaria to develop in regions where it was previously absent, such as in the African highlands of Ethiopia, Uganda and Kenya.⁴⁶ Heavy rainfall in parts of Central Africa, particularly in areas with limited access to improved sanitation and proper waste management, is likely to drive an increase in the transmission of water- and vector-borne diseases.⁴⁷

The increased desiccation of arid climates like the Sahel and parts of Southern Africa will also affect groundwater recharge rates. Combined with cyclical weather phenomena, like droughts and El Niño, this will further exacerbate water security issues. In more affluent communities, this could mean higher prices or even restrictions on the use of basic services, but in poor communities this could lead to an inability to access these fundamental rights, with dire consequences. These trends threaten to negate the progress Africa has made in reducing the burden of communicable diseases and the associated maladies of undernutrition and chronic hunger.

Climate change makes things worse in areas that are already struggling with high levels of poverty and poor governance. In the first half of 2018 in Nigeria, farmer–herder conflict resulted in more than six times as many fatalities that have been attributed to the terrorist group Boko Haram.⁴⁸ As climate changes, grazing lands have shifted, which has forced herders to move south. This has led to competition and violence between farmers and herders. In Mali, the situation has escalated to the point where ‘[m]ass repression based on faulty generalisations, and ethnic tensions between farmers and pastoralists are at the core of the ongoing insecurity’.⁴⁹

West Africa is home to diverse climates that range from rainforests to hyper-arid deserts and is, in a sense, a microcosm of the continent. Its arid regions are likely to get significantly warmer and drier, with droughts becoming more severe and frequent. This will harm agricultural production and could in turn drive large internal and international displacement.

Rising temperatures are likely to have the greatest negative effect on agricultural production, with many crops already at their tolerance limits. This problem will be exacerbated by the increasing variability of rainfall that is expected to be most pronounced in East and Southern Africa. These regions experience year-to-year variations exceeding 30% of the mean, a rate much greater than that of the temperate climates in Europe and North America. High seasonal variability compounds these effects, causing droughts and floods.⁵⁰ High inter- and intra-annual rainfall variability explains the unpredictable and relatively low seasonal and annual flows in many African rivers.

The IFs forecast of changes to rainfall and temperature initialise from data generated by the IPCC and others, and needs to be treated with care as our knowledge about the impact of climate change is evolving. This caveat aside, IFs forecasts that Kenya is most likely to experience the largest increase in average rainfall (an increase of 11% in 2043, compared to 1990 averages) – and Kenya is one of 31 African countries that will experience an increase. The remaining 23 countries will, within IFs, experience precipitation declines, of which the decline of 17% in Morocco (followed by Egypt) is the most severe. Needless to say, these arid countries already come off a very low base.

The IPCC expects that agricultural production could decline by more than 20% across sub-Saharan Africa by 2050, with South Africa and Zimbabwe experiencing reductions of 30% or more.⁵¹ As Chapter 4 explained, agricultural yields in Africa are low by comparative regional standards, but production can be improved considerably by increasing the amount of land under irrigation, using organic (and more) fertilisers and genetically modified seeds, and improving farming practices. Climate change will constrain the scope of improvements, particularly in North and West Africa as higher temperatures and shifting rainfall take their toll.

Among the products affected will be coffee. About 10 million farmers plant coffee across 25 African nations. Ethiopia, where the habit of drinking coffee first developed, along with Uganda, Tanzania and Kenya, produce 80% of Africa's total coffee exports. But without appropriate measures, climate change will reduce the size of coffee growing areas by about 50% worldwide by 2050, across emission scenarios, with the highest impacts to be felt at low latitudes and low altitudes. The world's dominant production regions in Brazil and Vietnam may experience substantial reductions in the area available for coffee. Some regions in East Africa and Asia may become more suitable, but these are partially in forested areas, which could pose a challenge to mitigation efforts.⁵²

Regardless of which of the analyses explored in this section ends up being more accurate, these negative effects are likely to be most severe in semi-arid regions, many of which are in North and West Africa. In the Current Path forecast, all African countries will suffer negative

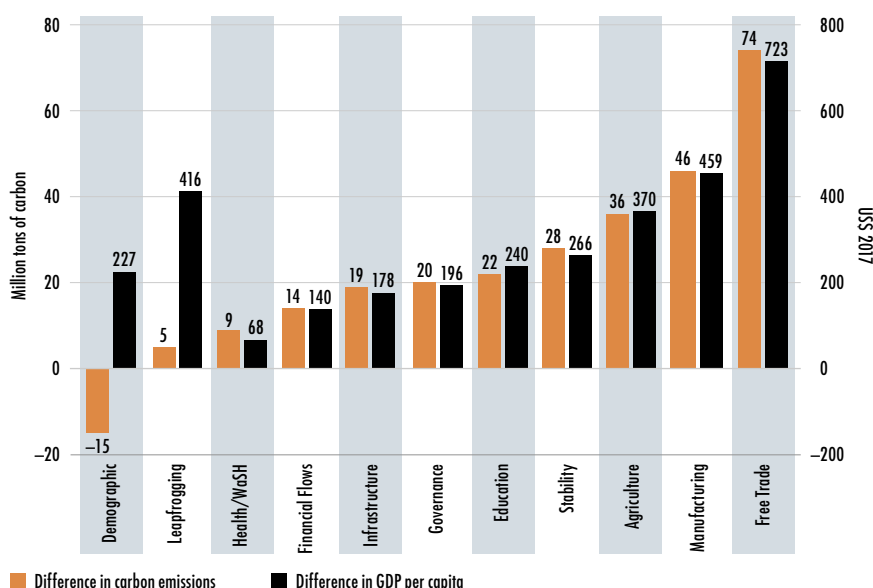
yield changes by 2043, from Lesotho (the least affected, with a 2.5% reduction in yields compared to 2015) to Mauritania (a 9% reduction). Other African countries with a loss of more than 7% in agricultural yields compared to 2015 are Egypt, Djibouti, Burkina Faso, Senegal, South Sudan, Sudan, Eritrea and Mali.

Comparing carbon emissions in different scenarios

This section reaches back to the groundwork laid so far in this book, and compares the results of carbon emissions on the Current Path forecast with each of the 11 scenarios modelled in the preceding chapters.

The departure point for doing so is the snapshot in Chart 103, which presents the difference in carbon emissions for Africa ranked by scenario. Just as development elsewhere in the world has increased carbon emissions, Africa, with its burgeoning population and huge demand for

Chart 103: *Additional carbon emissions and GDP per capita for Africa under different scenarios in 2043, compared to the Current Path forecast*



Source: IFs 7.63 initialising from Carbon Dioxide Information Analyst Center, World Bank and WDI

improved livelihoods, will also increase its carbon contribution. Initially, that increase will be small compared with other regions, but the continent's contribution increases rapidly over time even as emissions in the rest of the world start to decline from 2030. Consequently, even the Current Path forecast of solid but unspectacular economic growth would see Africa's annual carbon emissions increase from the 2019 level of roughly 422 million tons per year (4.4% of the global total) to 939 million by 2043 (10.2% of the global total). Generally, one would expect carbon emissions to follow improvements in GDP per capita – that, in countries where GDP per capita is highest, emissions would be the worst. However, Africa's carbon emissions actually decline in Chapter 3's Demographic Dividend scenario and are highest in Chapter 8's African Free Trade scenario, since the African economy grows the most under the African Continental Free Trade Area.

The reason for the lower 2043 emissions in the Demographic Dividend scenario (about 15 million tons lower than in the Current Path forecast for that year) is that Africa will have 93 million fewer people in the Demographic Dividend scenario than in the Current Path forecast. Africa has roughly the same population size in 2043 (about 2.24 billion people) in all the other scenarios.

Yet, because of the relative growth in the ratio of the working-age population to dependants in the Demographic Dividend scenario, GDP per capita increases by US\$227 compared to the Current Path forecast for 2043. From a climate change and economic productivity point of view, the Demographic Dividend scenario results in the lowest increase in carbon emissions and largest increase in GDP per capita, followed by Chapter 9's Leapfrogging and Chapter 6's Education scenarios.

Next to the Demographic Dividend scenario, the Leapfrogging scenario provides the most carbon-efficient growth path. In the Leapfrogging scenario, growth rates increase – but with the growing adoption of less resource-intensive digital technologies, and the more rapid transition to renewable energy, increases in carbon emissions are modest. Yet GDP per capita improves by a substantive margin.

The African Free Trade (Chapter 8), Manufacturing (Chapter 7) and African Agriculture Revolution (Chapter 4) scenarios have the largest growth effects, but are all associated with higher carbon

emissions. In effect, they are less efficient from a carbon emissions perspective, particularly when compared to the Demographic Dividend and Leapfrogging scenarios. The carbon contribution from the African Agriculture Revolution scenario is particularly large over the next two decades, an increase that occurs largely in low-income countries.

What, then, can we make of the analysis in this section? Perhaps that the development trajectory that has brought prosperity to regions such as Europe, North America and South East Asia – an agricultural revolution followed by industrialisation – may not be open to an Africa that is concerned about the real challenge for arrested development by mid-century as the impact of climate change hits home. Whichever decisions Africa's leadership takes, the continent's carbon emissions will increase for several decades on the back of the continent's rapidly growing population and improvements in standards of living. At the same time, Africa will need to make a maximum effort to reduce its carbon emissions. Chapter 15, therefore, explores the impact of a carbon tax on Africa's development prospects. But first, a look at responding to climate change – and Africa's options for a sustainable growth path in a world with a rapidly changing climate.

Responding to climate change

In responding to the huge challenge that the Anthropocene presents, all countries – indeed, all citizens – need to contribute by adapting and mitigating. Mitigative efforts focus on reducing emissions and stabilising the levels of greenhouse gases in the atmosphere. In this way, mitigation is a long-term climate change response as its benefits will only emerge during the second half of the century.

The Paris Agreement represents the best global effort to mitigate the future impacts of climate change to date, by trying to reduce greenhouse gas emissions now. Already, under the Kigali Amendment to the Montreal Protocol (the 1987 agreement to protect the stratospheric ozone layer) that came into force in January 2019, all countries will gradually phase down production and consumption of hydrofluorocarbons (HFCs) and replace these with more environmentally friendly alternatives. Indeed, the global regime to

protect the ozone layer remains one of the most successful coordinated international environmental efforts to date.

It is unlikely that Africa will be able to fully protect itself against the impact of a changing climate. In fact, associated efforts are costly, literally akin to trying to dam the sea. Yet that is what Africa has to do. For example, in June 2018 Tanzania completed 2.4 kilometres of sea walls at a cost of US\$8.34 million to protect Dar es Salaam and surrounding areas from rising sea levels. According to USAID, the country is estimated to suffer about US\$200 million per year in lost land and infrastructure damage due to sea-level rise.⁵³

On the other side of the continent, Lagos is one of the largest and fastest-growing cities in the world, but much of the city is less than one metre above sea level.⁵⁴ Lagos is actually expanding into the Atlantic – through expensive developments on newly reclaimed land, on one hand, and pressure from overpopulation in slum settlements on the other. Many slum communities are literally at sea level, so vulnerable communities are already highly exposed to rising sea levels and more severe storm activity caused by climate change. In fact, 70% of Lagos's population (estimated at 24 million) lives in slums and, with a population density 10 times that of New York City, a powerful storm would affect millions. Furthermore, average sea-level rise is projected to reach approximately 30 cm by 2050 and 30 cm to 1.8 m by 2100; it then rises by an additional 30 cm or more each decade.⁵⁵ Already, much of the Makoko slum neighbourhood, for example, is not built on land, but sits on stilts above the waterline and is navigated by canoe. It has little access to electricity or sanitation.

Against this backdrop, the 'Great Wall of Lagos' promises to offer protection from climate change, but only for those Nigerians who can afford to live in Eko Atlantic – a massive Dubai-style city under construction. The 8.4 km seawall, made up of 100 000 concrete blocks weighing five tons each, will 'protect the shoreline of Victoria Island, the financial heart of Lagos and historically one of the city's more affluent areas, and early phases of Lekki [a city on a peninsula to the east of Lagos] from coastal erosion'.⁵⁶ What will happen to the people of Makoko and other slum areas is, of course, an entirely different matter. In the meantime, the Lagos city authority is combining technology with

water transport (using Uber Boat) as one way in which to escape the city's notoriously congested traffic.⁵⁷

And then there is the Great Green Wall. For more than a decade, affected countries in the Sahel and others have advanced and promoted the Great Green Wall of the Sahara and the Sahel Initiative (Grande Muraille Verte pour le Sahara et le Sahel), which aims to halt the southward spread of the Sahara Desert and to constrain the impact of climate change. The original concept, which dates from colonial times, is for a frontline of trees 50 km deep (now reduced to 15 km).

The project has subsequently evolved into an integrated rural development effort to respond to the detrimental social, economic and environmental impacts of land degradation and desertification straddling 11 countries and 8 000 km, from Senegal in the west to Djibouti in the east.⁵⁸ In 2017 it was adopted as a flagship project by the UN Conference on Sustainable Development, and 20 countries have pledged support. But according to the UN, the initiative has only reached 15% of its targets in a decade.

Apart from a minimum effort in Burkina Faso and Senegal, little progress has been made. On 30 July 2019, Ethiopia claimed to have planted more than 353 million trees as part of a wider reforestation campaign that is being spearheaded by Prime Minister Abiy Ahmed as part of a 'Green Legacy' – an example of what is possible – although the subsequent civil war is sure to have undone much of this progress.⁵⁹ Whatever the exact number of trees actually planted, this is the kind of effort that will be required of all citizens and countries that form part of the Great Green Wall. And progress may now speed up: at the time of writing, the Green Climate Fund and the International Fund for Agricultural Development (IFAD) had set up the Great Green Wall Umbrella Programme, which collectively aimed to leverage up to US\$1 billion in multipartner resources for the Wall in 2021 and 2022.⁶⁰

Africa's forests could make a large contribution to tackling climate change. The continent needs to halt its current rate of deforestation, in fact, and each country needs to commit to a legally binding carbon sink target, as the EU is doing. Approximately 2.6 billion tonnes of carbon dioxide, one-third of the CO₂ released from burning fossil fuels, are absorbed by forests each year. 'Halting the loss and degradation of forest

ecosystems and promoting their restoration,’ according to the International Union for Conservation of Nature in 2016, ‘have the potential to contribute over one-third of the total climate change required by 2030 to meet the objectives of the Paris Agreement.’⁶¹ According to the Global Forest Watch, tree-cover loss peaked in 2016 but the overall trend is still negative, particularly in Africa where, according to the *State of the World’s Forests 2020*,⁶² it is accelerating. In summary:

Since 1990, it is estimated that some 420 million hectares of forest have been lost through conversion to other land uses, although the rate of deforestation has decreased over the past three decades. Between 2015 and 2020, the rate of deforestation was estimated at 10 million hectares per year, down from 16 million hectares per year in the 1990s. The area of primary forest worldwide has decreased by over 80 million hectares since 1990.

The Congo Basin contains the world’s second-largest primary rainforest (at 314 million hectares) and it is crucial for regulating the global climate since it soaks up some 1.2 billion tons of carbon dioxide each year. It is steadily losing its ability to absorb carbon, as its growth is being stifled by extreme weather. DR Congo is home to the largest part of the Basin, which extends to Cameroon, the Central African Republic, the Republic of Congo, Gabon and Equatorial Guinea. According to Global Forest Watch, DR Congo lost 590 000 hectares of forest in 2019 alone, mostly due to small-scale charcoal production and slash-and-burn agriculture. Other countries, such as Madagascar, Ghana and Côte d’Ivoire, also recorded some of the highest rises (in percentage terms) in losses of primary forest, typically driven by expanding palm oil plantations, logging and mining. In Ghana, losses are likely due to small-scale gold mining. There has also been an expansion of cocoa farming that has led to forest loss, but generally, it’s due to population growth and the impact of small-scale subsistence agriculture across the continent.⁶³

Africa needs large-scale forest restoration as its most effective nature-based solution to climate change. It also needs to play a key

role in the United Nations Decade on Ecosystem Restoration 2021–2030. Community forestry, where people effectively manage the forests as their own, is emerging as a large contributor to sustainability. DR Congo published its National Strategy for Community Forestry in June 2018, which sets out future guiding principles. In addition to a legally binding target on protecting its carbon sink, each country must commit to better protection of forests and wildlands, which have shrunk due to logging, demand for biomass energy and threats worsened by climate change such as wildfires and pests.

Africa does have some ability to mitigate climate change – massive tree planting and protection of its carbon sink are just two examples – but it needs to direct significant effort towards adaptation. The African Union (AU) has acknowledged as much in the Agenda 2063 planning document, which states that ‘Africa shall address the global challenge of climate change by prioritising adaptation in all our actions ... for the survival of the most vulnerable populations ... and for sustainable development and shared prosperity’.⁶⁴ Also, in 2015, 10 African countries signed the African Forest Landscape Restoration Initiative, which calls for the restoration of 100 million hectares of land by 2030.

In October 2020, the Bill & Melinda Gates Foundation launched Allonnia LLC with US\$40 million to engineer microbes to get rid of ‘forever chemical’ pollutants in wastewater and soil. Allonnia is the name of a now-extinct sea sponge that filtered the oceans in the Cambrian era. The term ‘forever chemicals’ refers to the class of thousands of chemicals used to produce substances that do not break down over time. Some are starting to show up in drinking water and human blood, and have been linked to various cancers and weakened immune responses.⁶⁵ And in 2021 the IEA published its road map for the global energy sector to reach net-zero emissions by 2050 and to put emissions on a path in line with a 1.5 °C warming scenario. In announcing its intention in this regard, IEA executive director Fatih Birol soberly noted that ‘almost half the emissions cuts required to move us on to a path to net-zero by 2050 may need to come from technologies that are not on the market yet’.⁶⁶

Conclusion: Africa's search for a sustainable growth path

Against the background provided in this chapter, it is clear that, on its current development trajectory, the world is heading for serious climate change trouble. Increases in carbon in the atmosphere are driving more intense weather patterns that lead to more and greater threats from famines, droughts and plagues. More carbon emissions will affect all of humanity – and, with its low adaptation capacity, arid climates and rainfall-dependent agriculture, Africa is particularly at risk. Disruptive climate and weather conditions will change migration patterns, with possibly significant impacts.

What needs to happen to circumvent this? Africa needs faster demographic change, higher productivity at lower levels of emissions, better education, functioning health systems, and investment in basic infrastructure such as potable water. It needs to extend agricultural land under irrigation, and foster good governance to drive development and improve living conditions and security.

But the continent will need to weigh all these development gains up against the long-term goal of mitigating and adapting to climate change. The good governance and long-term planning in Africa that the preceding chapters have called for are now more important than ever. Mitigation and adaptation to climate change should be an intrinsic part of the African development agenda, such as the purposeful choice to transition to renewable energies and away from fossil fuels.

Africa's development trajectory will be severely affected by climate change and, as a minimum, the continent should commit to achieving net-zero emissions by 2050. The African Agriculture Revolution scenario is forecast to be the largest contributor to carbon emissions over the next decade. Agricultural expansion is also the main driver of deforestation and forest fragmentation, and the associated loss of forest biodiversity. Most of that, UNEP and the FAO find, is from large-scale commercial agriculture (40% of tropical deforestation) and local subsistence agriculture (another 33%).

Much more is required: improving efficiency by using less energy to produce a given output; less land, fertiliser and other inputs for food production; reducing food waste; shifting to renewables and possibly

even nuclear for energy; and substituting carbon-intensive products (such as meat) for those with a lower carbon footprint. Africa needs a decisive low-carbon transition that includes removing fossil fuel subsidies, introducing a sufficiently high carbon price and cease the construction of fossil fuel electricity generation systems.

Many of today's children will be alive by 2100. Theirs may be a world of technological wonders, but it could also be one of environmental disasters.

Africa may be a small player in this unfolding drama, but it can still play an important role in combating deforestation and forest degradation. The impact of climate change on the continent will be huge, and Africa's leaders should seize every opportunity to prepare and make their voices heard. With its large, vulnerable population, it has more to lose than almost any other world region. Climate change is also a potential long-term accelerator of violent resource competition. Shifts in precipitation patterns are likely to have negative effects on regions that are already water stressed. Decreases in agricultural yields may affect both human development and governmental legitimacy.

All of this is becoming a lethal combination.

Africa's leadership is fully aware of the climate change challenges that the continent faces, but action remains limited. If Africa is to embark upon a sustainable development pathway, it needs a purposeful response. This includes insisting that its development projects and those of its partners – China, in particular – have a development pathway that is environmentally sustainable.

Bringing it All Together: The Combined Agenda 2063 Scenario



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So far, this book has set out Africa's current development trajectory – or Current Path – and compared that with the impact of various sectoral transformations that countries on the continent require if they are to achieve much more rapid national development. The horizon has been to 2043, the end of the third 10-year implementation plan of Agenda 2063.

Chapter 1 presented the background and the Current Path forecast for Africa's development – how the continent is likely to develop. It showed that, while things are improving in Africa, it is more slowly than elsewhere. So, Africa continues to fall further behind the global averages of measures such as GDP per capita – a measure that is a useful, if imperfect, indicator of progress. Chapters 2 to 11 and 13 then modelled the impact of ambitious interventions across different sectors. The interventions are ambitious but realistic. And Chapters 12 and 14 discussed the likely implications of the scenarios for the future of work and the threat of climate change.

But as we've seen, development is a messy affair, and seldom follows smooth forecasts. Rather, it is characterised by 'persistent failure, wastage, exploitation and misery'.¹ Africa is hugely diverse, and the future will reflect large variations in the development trajectories of its constituent countries – as has the past. It is also very unlikely that all of Africa will simultaneously advance on all 11 of the transitions modelled here. Some countries may progress in some areas, while others may stagnate or regress.

Numerous factors not considered in this book are also important, the most important surely being the impact of determined visionary leadership (or the lack of it). There is also evidence that a number of Africa's small island countries – Mauritius, Cape Verde and

Seychelles – have done particularly well because they have a high trade or tourism income relative to their population size and a small agricultural sector, and experienced an early demographic transition. As a result, they typically reach health, education and income milestones before more populous states; are more likely, with a youthful population, to progress to liberal democracy and maintain it; are less vulnerable to revolutions, despite having youthful populations, and become virtually immune to revolution as their populations age; and very rarely engage in inter-state conflicts.²

Africa is diverse, young and rapidly urbanising, and its population and economy will grow quite quickly – but will this growth be sufficient to improve well-being? At first glance, the levels of energy on the continent remind one of China some decades ago, but with important differences. Technology, for one, can allow Africa to leapfrog faster, even, than China, but the quality and nature of governance in Africa is likely to inhibit this potential. By comparative African standards, China has an extraordinarily effective – if brutal – ruling party that has pursued collective development with single-minded determination, but at the cost of individual self-actualisation. Unlike Asia, where industrialisation and democratisation generally occurred *sequentially*, Africa has to balance the *simultaneous* challenges of democratisation and development, on top of many others. This requires consummate political leadership. Democracy in Africa rests on shaky foundations and may actually constrain development, given how it has come to coexist with corruption and patronage. Africa needs to find ways to make democratic accountability on the continent real.

While China is a single country with a centralised, authoritarian government, the African continent consists of 55 countries, each jealously guarding its sovereignty, and with large disparities in governance systems and traditions. Past efforts at regional integration have made little headway and continental ambitions such as the African Continental Free Trade Area (AfCFTA) are likely to progress slowly. Sub-regions such as Southern, West and East Africa should therefore simultaneously move ahead with trade integration in their neighbourhood to ensure progress should the continental scheme falter.

Africa clearly needs to take a leaf out of the Chinese book on empowering small-scale farming, the sector that still has the most development potential for most countries. Indeed, development is about empowering communities to become self-sufficient and independent from the helping hand of government and foreign donors alike, and agriculture can play a very important role in this regard.

While China's fast development was hugely aided by its very rapid (and politically driven) demographic transition, including its high peak demographic dividend, growth in Africa will be constrained by the slow pace of its demographic transition and the low levels of its peak demographic dividend. More rapid progress in reducing fertility rates will also contribute to reductions in carbon emissions. An important step would be to invest in improving the education levels of Africa's expanding labour pool, as well as to close the gender gap in education. And some African countries, such as Tunisia, Mauritius and Libya, actually have to take care to maintain their total fertility rate above the replacement level of 2.1 children per woman if they want to extend the time they will spend lingering in the demographic sweet spot – or they will need to allow for inward migration. This is a challenge with which China is currently grappling.

China succeeded in poverty alleviation because of the dedicated pursuit of what it calls the five Ds: Determined Leadership, Detailed Blueprint, Development Oriented, Data-based Governance, and Decentralised Delivery. Whereas China is a central autocracy and a capable state, Africa is a mosaic of communities, governments are often poorly resourced and incapable, often because they do not maximise raising domestic revenues. So, emulating China in Africa may not be possible in all respects – but there is much for the continent to learn and take from China, most important of which is moving from handouts to empowerment and the dedicated effort to understand, document and help each poverty-stricken household. Thus:

the key to getting out of poverty lies in people's mindsets. China has adopted measures that combine poverty alleviation with efforts to improve people's 'will and wisdom' to stimulate the internal motivation of the disadvantaged, so that they can take

actions more spontaneously, forming the overall anti-poverty pattern underpinned by ‘social mobilisation + individual progress.’³

In this manner, China has prevented many of its poor people from falling into a welfare trap – one in which individuals remain economically inactive and dependent upon grants.

That single-minded focus allowed Chinese President Xi Jinping to announce on 25 February 2021 that ‘China has secured a “complete victory” in its fight against poverty’,⁴ with the final 99 million impoverished rural residents living under the current poverty line having all been lifted out of poverty, and all 832 impoverished counties and 128 000 villages having been removed from the poverty list.

Africa’s future will inevitably unfold quite differently from the remarkable development experience of China. So-called Black Swans – unexpected, high-impact events, such as the COVID-19 pandemic and the impact of Russia’s invasion of Ukraine – could derail trends. These caveats aside, this chapter introduces a scenario that brings all 11 scenarios together in a single, integrated, positive scenario: the Combined Agenda 2063 scenario, named after the comprehensive 50-year blueprint that aims to transform Africa into an integrated, prosperous and peaceful continent, ‘driven by its citizens, representing a dynamic force in the international arena’.⁵ In this scenario improvements in education, for example, would positively affect social capital (and hence economic growth) and therefore improve productivity contributions from the Manufacturing and Leapfrogging scenarios. This holds true across various dimensions. It means that some improvements could have a larger impact, although it is equally true that some interventions compete with one another. For example, while more large social grant programmes reduce poverty, they eventually start to detract from economic growth prospects when they reach high levels, such as in South Africa, although this relationship is complex.⁶

After assessing the impact of the Combined Agenda 2063 scenario, I then compare the impact of individual scenarios (representing different priorities) with one another on key parameters such as poverty

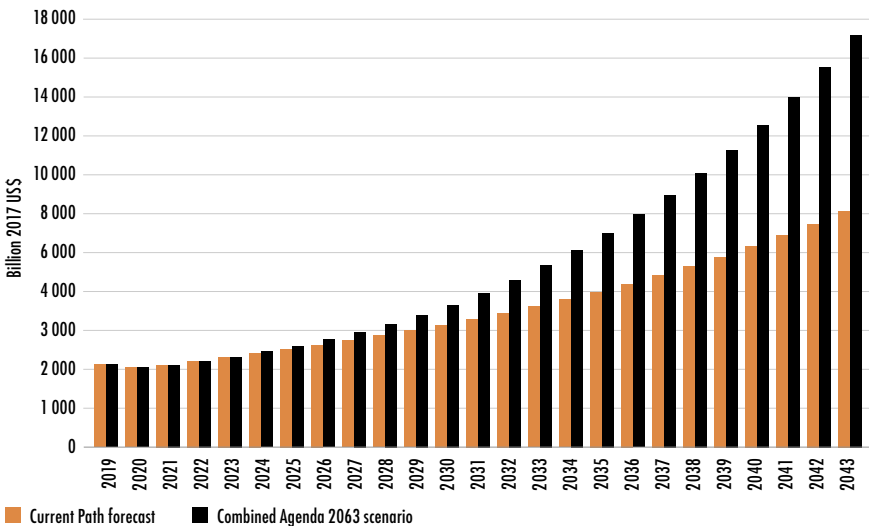
alleviation and then explore a scenario that models the impact of a carbon tax on Africa’s growth prospects, before pausing to consider the continent’s need for growth that is led by human capital.

How the Combined Agenda 2063 scenario affects the size of Africa’s economy

Chart 104 shows how the scenario gives a massive boost to the economic heft of Africa as a whole. In the Current Path forecast, Africa’s total GDP is likely to be approximately US\$8.7 trillion in 2043, compared to US\$3.1 trillion in 2019. But the Combined Agenda 2063 scenario forecasts an economy that is 75% larger than the Current Path forecast for that year, at US\$15.2 trillion. Instead of accounting for 5% of the global economy by 2043, Africa’s combined economy would account for almost 9%.

Unsurprisingly, countries coming off a lower base, and thus endowed with more untapped potential than wealthier countries, see the largest proportional increases in the size of their economies. Africa’s

Chart 104: Size of African economy 2019 to 2043: Current Path forecast vs Combined Agenda 2063 scenario

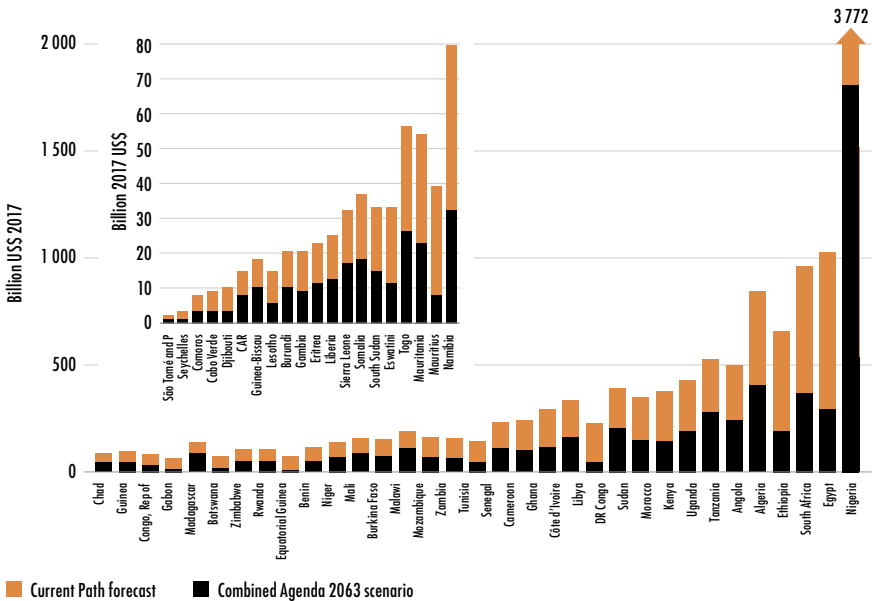


Source: IFs 7.63 initialising from IMF World Economic Outlook database

23 low-income countries would have a combined GDP in 2043 that is almost double that of the Current Path forecast for that year. The increase for Africa's 23 lower-middle income countries is 76%, 37% for Africa's 7 upper-middle income countries and 33% for its single high-income island state.

We can see this at the country level as well. Chart 105 presents the economic size for each African country in 2043 in the Current Path forecast and the increase as a result of the Combined Agenda 2063 scenario, arranged as a stacked bar to illustrate the additional growth associated with the scenario. Absolute numbers tell one story. For example, by fully implementing the Combined Agenda 2063 scenario interventions, Nigeria would become a continental superpower, with an economy significantly larger than the combined size of the three next largest economies in 2043 (Egypt, South Africa and Ethiopia). But looking at the increase in the size of the economies in percentage terms

Chart 105: *Size of African economies in 2043: Current Path forecast and increase from Combined Agenda 2063 scenario*



Source: IFs 7.63 initialising from IMF and World Economic Outlook database

tells a slightly different story: namely, that poorer countries perform best, with the size of the economies of Madagascar and Malawi increasing by more than 166% and 145% respectively, while upper-middle income countries such as Libya, Mauritius and Equatorial Guinea see increases of below 30% in 2043 compared to the Current Path forecast for that year.

And looking regionally, in 2019 North Africa had the largest regional economy given its relatively high levels of development compared to other regions. In the Current Path forecast, West Africa overtakes it in size by 2029. From a much lower base, the size of the East African economy also increases rapidly. The increase in size of West and East Africa's economies is largely a function of those regions' larger and more rapidly growing populations. In the Combined Agenda 2063 scenario, East Africa becomes the second-largest economic region by 2043, overtaking North Africa in that year. Central Africa, which has a relatively small economy when taking its population numbers into consideration, experiences a modest increase in size in the Current Path forecast – but grows much more rapidly in the Combined Agenda 2063 scenario.

The comparative impact of the scenarios on GDP per capita

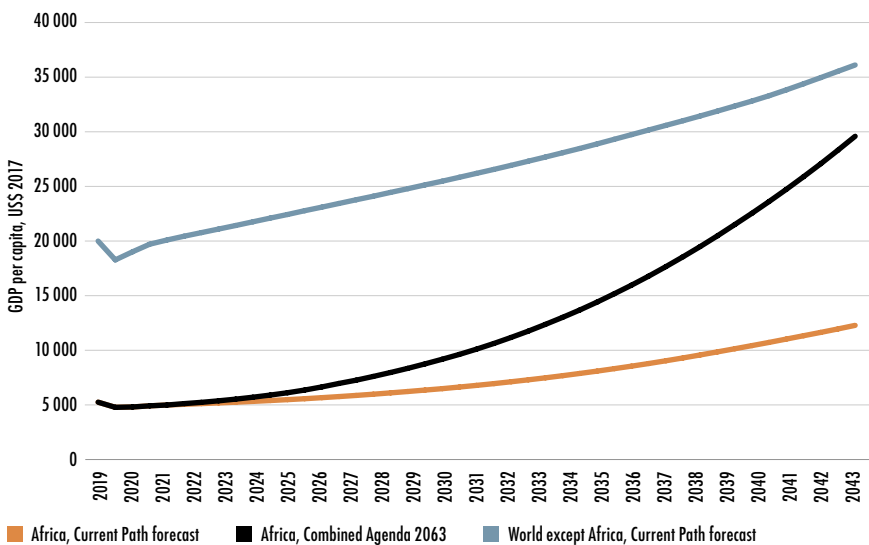
Measuring aggregate GDP alone naturally gives us an incomplete story. But when we measure GDP per capita, we consider not just the productivity of an economy, but also the number of people among whom that product is divided. An important dynamic to consider in this regard is the way in which the Demographic Dividend scenario combines with the Education scenario (and, to a lesser extent, with the Health/WaSH scenario) to reduce total fertility rates quite rapidly. Whereas, in the Current Path forecast, the average fertility rate in sub-Saharan Africa could have declined from 4.7 children in 2019 to 3.3 by 2043, in the Combined Agenda 2063 scenario the decline is to 2.4. As a result, sub-Saharan Africa would, in 2043, have 113 million fewer people.

This impact accelerates over time. In 2063, in the Combined Agenda 2063 scenario, Africa would have 383 million *fewer* people, but its economy would be 2.5 times *larger* than in the Current Path forecast for that year.

Chart 106 shows this increase, presenting GDP per capita for the Current Path forecast, for the Combined Agenda 2063 scenario and for the Current Path forecast for the rest of the world. It shows, in a single graph, the dramatic change in fortunes that could follow from the combined effect of the scenarios modelled in this book. Such long-range forecasts are inevitably highly speculative, but illustrate that Africa could actually start to catch up with the rest of the world – only towards the end of the forecast period, however. And because of technology, climate change and future shocks, that catch-up will occur in a different world from the one we currently know.

Regionally, Central Africa performs the worst and North Africa the best, with West Africa showing a particularly positive momentum. The most important reason for this divergence is the very rapid population growth in Central Africa compared to North Africa, which also comes off a much higher income, education and health base. The Current Path forecast of economic growth will simply be insufficient to substantially improve the incomes of the rapidly growing populations in

Chart 106: *GDP per capita: Africa vs world except Africa, 2019–2063*



Source: IFs 7.6.3 initialising from UNPD World Population medium variant life expectancy and WDI

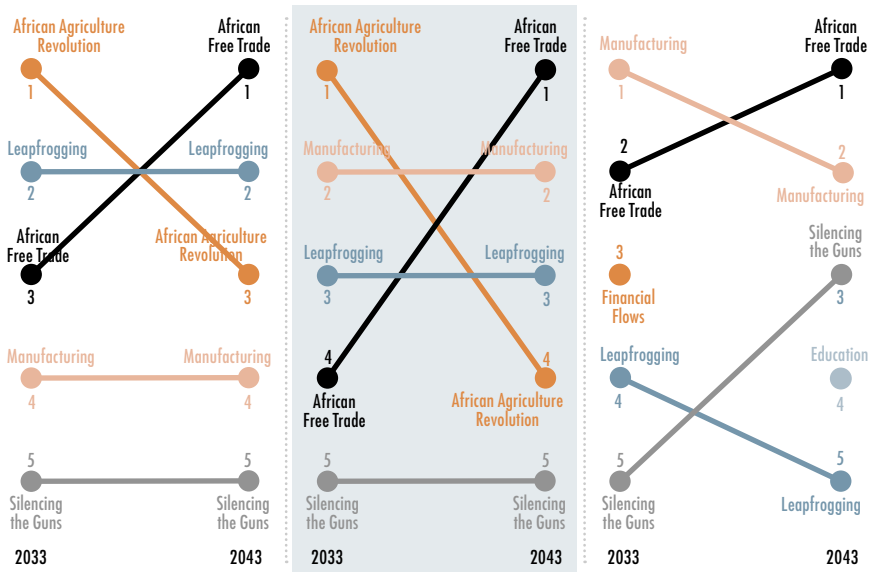
the Central African countries. Central Africa also differs from other regions in that it does not have a locomotive state (such as Nigeria in West Africa and South Africa in Southern Africa): a state with a national economy that is big enough to provide a sufficiently large market to boost the region as a whole. The full implementation of the African Continental Free Trade Area (AfCFTA) is intended to deal with exactly this.

In the Combined Agenda 2063 scenario, the average GDP per capita in 2043 in low-income Africa would be US\$6 500 instead of US\$3 790. In lower-middle income Africa, it would be US\$14 170 instead of US\$9 142, and in upper-middle income countries it would be US\$21 985 instead of US\$17 734. In Africa's high-income island, Seychelles, GDP per capita could increase from US\$33 4091 to US\$40 330. Again, the percentage increase in GDP per capita among low-income countries compared to the Current Path forecast is 72%, whereas it is only 24% for upper-middle income countries.

The 10 countries that would gain the greatest absolute increases in average income levels through the Combined Agenda 2063 scenario by 2043 are Namibia, Eswatini, Seychelles, Angola, Libya, Egypt, Nigeria, Equatorial Guinea, Botswana and Malawi. Equatorial Guinea is nominally classified as an upper-middle income country by the World Bank despite its corruption and poverty, and the results for that country are subsequently boosted within the IFs forecasting platform because of the algorithms associated with its income classification. The same holds for Gabon. Both are oil-rich autocracies – each essentially run as a family business – so the associated forecasts are likely unreliable. And the 10 countries that show the fewest improvements are Sierra Leone, Liberia, Chad, Mozambique, Niger, Democratic Republic of Congo (DR Congo), South Sudan, Central African Republic (CAR), Somalia and Burundi. All are classified as low-income countries by the World Bank.

Breaking things down to a more granular level, Chart 107 ranks the five scenarios that provide the largest change in GDP per capita in PPP for Africa's 23 low, 23 lower-middle and 7 upper-middle income country groupings. We ignore Africa's single high-income island state in this analysis, and note that this analysis should not imply that policymakers should choose one set of interventions above another.

Chart 107: Top five scenarios ranked by impact on increase in GDP per capita for low, lower-middle and upper-middle Africa, 2033 vs 2043



Source: IFs 7.63

Development is organic; ultimately, a simultaneous and coordinated effort across dimensions produces much better progress than pushing any single dimension to the exclusion of another.

From 2024 to 2033, the scenario that results in the largest increase for Africa – especially low-income and lower-middle income Africa – is the African Agriculture Revolution scenario. The other scenarios with high impact are the Leapfrogging, African Free Trade and Manufacturing scenarios. By 2043, the African Free Trade scenario generally outpaces all other scenarios across all country income categories. It is for this reason that the African Development Bank, the UN Economic Commission for Africa, the World Bank and development economists are so excited about the progress being achieved with implementing the AfCFTA and the potential that it holds for the future, despite events such as COVID-19 having delayed initial progress. That said, *talking* about the importance of agriculture in Africa has been serious business for several decades – but actually *doing*

something about it has been taken much less seriously. Today, yields of important crops such as rice and wheat in the US and parts of Asia have plateaued as the world enters a new agriculture revolution, that of intensive farming – currently spearheaded by the tiny Netherlands.

The future of farming is increasingly akin to manufacturing, with innovations such as vertical farming in urban areas and, soon, the production of meat and other foodstuffs in large-scale laboratories rather than on the farm. Africa is far away from this, but it can catch up.

Staying with income groupings but adjusting the focus to fertility and education, because of the fertility characteristics of low-income versus lower-middle and upper-middle income countries, the contribution of the Demographic Dividend scenario declines with each income grouping. Even then, its impact is underplayed. Similar to better governance, more stability and education, the Demographic Dividend scenario acts as a kind of force multiplier on all other scenarios, particularly in low-income and lower-middle income Africa. As Chapter 3 mentioned, it reduces the number of children who need to be educated (and increases the money available for those children already in school), and reduces the demand for basic infrastructure such as water and sanitation, for example. The impact of the Education scenario has a similar accelerating effect. Its impact increases with each income grouping, and steadily increases to 2063. But it also takes a very long time, reflecting the inertia in improving education systems and the fact that the payoffs typically take up to a generation to be realised. The IMF notes that ‘it takes more than 15 years before net national income, the private capital stock, real wages for the poor, and formal sector employment surpass their counterparts in a program that invests mainly in infrastructure’.⁷

As with education, improvements in general indices of health and the provision of WaSH infrastructure are more important (and impactful) for upper-middle income groupings where the older labour force is better nourished and healthier, and therefore more productive.

Large-scale infrastructure project development does not appear to be a major driver of economic growth in our scenarios, given its role as a facilitator of better trade and general economic activity, some of which is captured in the synergistic effect. While infrastructure is certainly essential for development, it should not be constructed at the expense of other, often less glamorous, line items – and here it is important to note that water and sanitation infrastructure is included in the WaSH/Health scenario, and ICT infrastructure in the Leapfrogging scenario. This means that this book’s separate African Infrastructure scenario only captures a portion of total infrastructure – essentially, general investments in roads, rail and ports.

In general, then, the analysis in this book concurs with the findings from the IMF that investment in human capital is much more effective than investment in infrastructure in promoting long-run economic development when investments earn their average estimated returns. The decision about how much to invest in human capital versus infrastructure involves, however, an acute intertemporal trade-off.⁸

Having looked, now, at the scenarios’ effect on economy size and GDP per capita, we can now examine how the Combined Agenda 2063 scenario affects rates of extreme poverty.

The Combined Agenda 2063 scenario and extreme poverty

The Combined Agenda 2063 scenario has an even more impressive effect on poverty than on economy size and GDP per capita. Using US\$1.90 as a measure of extreme poverty, 35% of Africa’s total population was considered to be extremely poor in 2019, a ratio that will decline to 31% by 2030 and to 21% by 2043 in the Current Path forecast. Due to rapid population growth, relatively slow economic growth and, often, high levels of inequality, by 2043, 468 million Africans would therefore still live in extreme poverty in the Current Path forecast. This means that the absolute number of extremely poor Africans will have increased from the 455 million living in these circumstances in 2019, although the rate will decline modestly.

The impact of the Combined Agenda 2063 scenario is for extreme poverty to decline to 25% in 2030 and 6% in 2043, equivalent to 468

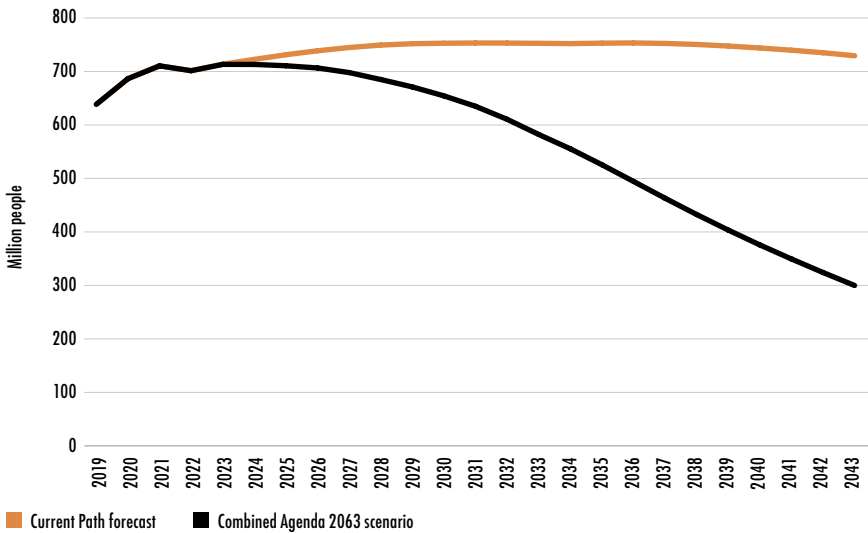
million and 136 million people. This is, most likely, an extreme underestimation given the reliance upon a US\$1.90 income line.

Using the four poverty lines – discussed in Chapter 1⁹ and defined by the World Bank as being US\$1.90 for low-income countries, US\$3.20 for lower-middle income countries, US\$5.50 for upper-middle income countries and US\$22.70 for high-income countries – one finds that, whereas the extreme poverty rate in Africa in 2019 was 35% using US\$1.90, a more reasonable rate is 49%. This rate combines the 256 million extremely poor in Africa's 23 low-income countries with the 349 million in Africa's 23 lower-middle income countries, and adds the 34 million in Africa's 7 upper-middle income countries and the 97 000 poor people in the Seychelles, Africa's only high-income country. Rates of extreme poverty in Africa are, therefore, much higher than the average numbers that most analysts use. Using this data, the Current Path forecast indicates that the extreme poverty rate in Africa will, by 2043, have declined from 49% in 2019 (640 million people) to 32%. In the Combined Agenda 2063 scenario, extreme poverty declines to 13.6% in 2043.

Chart 108 compares the Current Path forecast and the Combined Agenda 2063 scenario using the four poverty lines mentioned above. In the Current Path forecast, Africa would have 717 million extremely poor people by 2043. But in the Combined Agenda 2063 scenario, the number will be 287 million.

It is clear that, even in the Combined Agenda 2063 scenario, Africa will miss the Sustainable Development Goal (SDG) target of eliminating extreme poverty by 2030 by a very large margin, no matter which income line is used to forecast poverty rates. COVID-19 and the shock of Russia's invasion of Ukraine has contributed to these depressing forecasts, but the key reason for them is that Africa's economies are not growing rapidly enough given the continent's population growth. Although Africa also has relatively high levels of inequality, in Southern Africa in particular, the continent simply has to find ways of growing its economies much more rapidly if it intends to increase incomes, provide jobs and more rapidly reduce poverty. Nevertheless, the Combined Agenda 2063 scenario represents a potential seismic shift in Africa's fortunes, as poverty is perhaps the single most important measure of improved well-being.

Chart 108: *Extreme poverty in Africa using the four poverty lines, Current Path forecast and Combined Agenda 2063 scenario*



Source: IFs 7.63 initialising from World Bank and PovCalNet data

The effect of the sectoral scenarios on extreme poverty

The African Agriculture Revolution scenario has the largest impact on poverty in low and lower-middle income countries in 2033 and 2043 (in part because agriculture constitutes a third of GDP by value in low-income countries, about a quarter in lower-middle income countries and only about 8% in upper-middle income countries). But by 2043, the African Free Trade scenario starts catching up, followed by the Manufacturing and Leapfrogging scenarios.

Because governments spend significantly more money on basic infrastructure in the Health/WaSH scenario and the payback on these investments takes time, poverty initially increases in upper-middle income countries in this scenario. Also remember, from Chapter 7, that the Manufacturing scenario includes a cash transfer component that partly offsets what would otherwise be a much steeper initial increase in extreme poverty. The reason, you will recall, is that a manufacturing development pathway implies the allocation of scarce capital for that

purpose, and detracts from the availability of resources for consumption. Providing social grants is a more impactful strategy for upper-middle income countries that cannot lever off a large agricultural sector as a means towards poverty reduction but is also often a function of the general approach to development from the governing elite. The general tendency in many North African countries, for example, has been to try to subsidise fuel and foodstuffs that lock governments into expensive programmes from which they later find it impossible to retreat. It is for this reason, and also because of the market distortions such subsidies can create, that the World Bank and the IMF generally target the reduction of fuel and food subsidies as a key component in their assistance strategies and have grudgingly come around to support cash grant systems. The result is that poverty and inequality initially increase in the Manufacturing scenario, before quicker economic growth starts reducing both. Even then, the Manufacturing scenario does better, on average, in lower-middle and upper-middle income countries than in low-income countries. Similarly, infrastructure led growth, dealt with in Chapter 11, is one of the least impactful scenarios for poverty reduction, reducing poverty by less than one percentage point by 2043 on average.¹⁰

If not very carefully calibrated, large, costly infrastructure projects tend to divert limited resources away from more direct poverty alleviation interventions. The associated expenditure will often not benefit citizens evenly: a major port or hydroelectric power plant may bring jobs to a local area and stimulate the economy, for example, but is unlikely to have much immediate impact on rural communities. Consider, in contrast, the number of rural schools that could be built – and that renewable power systems may be more equitable, but remain expensive, presenting many opportunity costs. Large-scale infrastructure projects, then, must happen alongside, rather than at the expense of, more basic developmental goals and should be based on a careful cost–benefit analysis.

Poor countries generally have limited financial means to effect substantive transfers to the poor through social grant programmes. Doing so nonetheless remains a strategy that is particularly well suited to countries that discover new mineral resources, such as the gas

potential of Tanzania and Mozambique. In these countries, the idea of ring fencing natural resource income for distribution as cash grants rather than through subsidies on fuel and food – that are more prone to wastage and cause inefficient distortions in the market – would have a salutary impact on levels of extreme poverty.

Because of the dire impact of climate change – but also because of the enabling dynamic of digital and other technology – Africa needs to look at modern manufacturing and seek competitive advantages in areas such as ICT, food processing and industries without smokestacks that can play a role analogous to manufacturing in East Asia.¹¹ As countries climb the manufacturing value chain, the spillovers from manufacturing facilitate and incentivise a more productive agricultural sector and the development of higher-end services like finance until, in some instances, services or agriculture (as in the Netherlands) become the main engine of growth. Typically, large-scale commercial agricultural development and exports depend on progress in industrialisation. Thus, according to Erik Reinert, ‘no country without an industrial sector ... has ever managed to raise the wage level of its farmers’.¹²

It is likely that the point at which services begin to play a larger role in economic development has been significantly advanced as a result of the impact of COVID-19. In fact, COVID-19 may have unlocked productivity improvements in mid- to high-end services to an extent similar to the communications and IT revolution that allowed the creation of complex global value chains in the manufacturing sector some decades previously. The service sector will dominate Africa’s future, too.

In a widely acclaimed 2020 study called *African Economic Development*, Christopher Cramer, John Sender and Arkebe Oqubay identify the share of investment as crucial, indicating that governments ‘should proactively direct such investment towards activities that have the highest potential for increasing returns of scale and scope, for raising demand for labour, and for earning foreign exchange’.¹³ Elsewhere, the authors argue in favour of rapid export growth, a modestly undervalued exchange rate and an ambitious global trade strategy. They argue that a country’s prospects ‘are not determined by what that country has and is ... instead, a country’s prospects are

determined by what a country *does ...*.¹⁴ For them, as in this book's analysis, leadership, capable government and expanding wage employment (more and better jobs in the formal economy) lie at the heart of improved prospects.

How economies change structurally in the Combined Agenda 2063 scenario

As mentioned in earlier chapters, the scenarios modelled in this book are intended to emulate a developmental path that reverses Africa's growing commodities dependency and allows it to proceed towards inclusive and rapid development by building human capital and diversifying economically. As Erik Reinert sums it up: 'Rich countries specialise in man-made comparative advantages, while poor countries specialise in nature-made comparative advantages.'¹⁵ In this vein, the African Growth Initiative at the Brookings Institution popularised the potential of 'industries without smokestacks', pointing to the potential of cut flowers and other high-value agriculture; tourism; business services; and other tradable services, ranging from transport, mobile money, telecommunications and finance to post-crop harvest processing and mining services as having the same productivity improvement effects in a modernising economy as traditional industrialisation.¹⁶

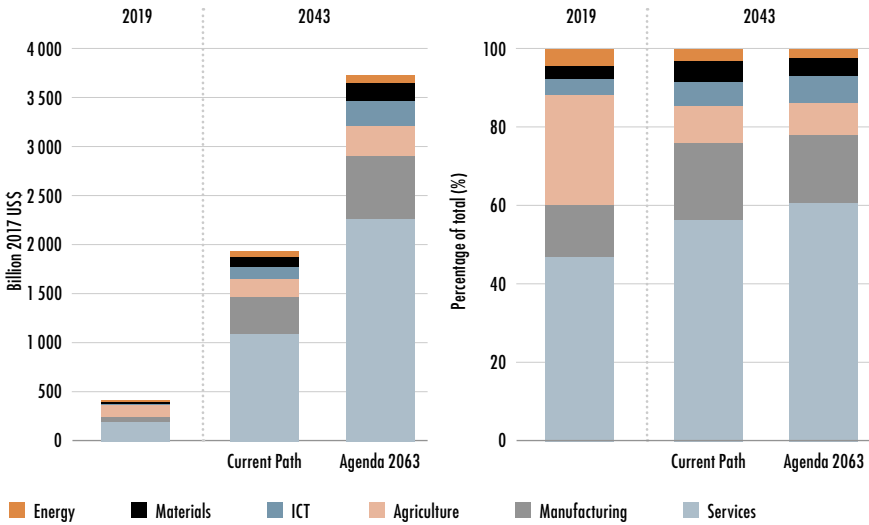
Chart 109 presents the composition of GDP and the absolute size of each of the economic sectors modelled in IFs for Africa's 23 low-income countries, namely agriculture, energy, materials, manufacturing, services and ICT.

Chart 110 presents the composition of GDP and the absolute size of each economic sector for lower-middle income Africa.

The changes in the sectoral composition for upper-middle income Africa, presented in Chart 111, are quite different, however, with manufacturing growing more rapidly initially until services growth overtakes it.¹⁷

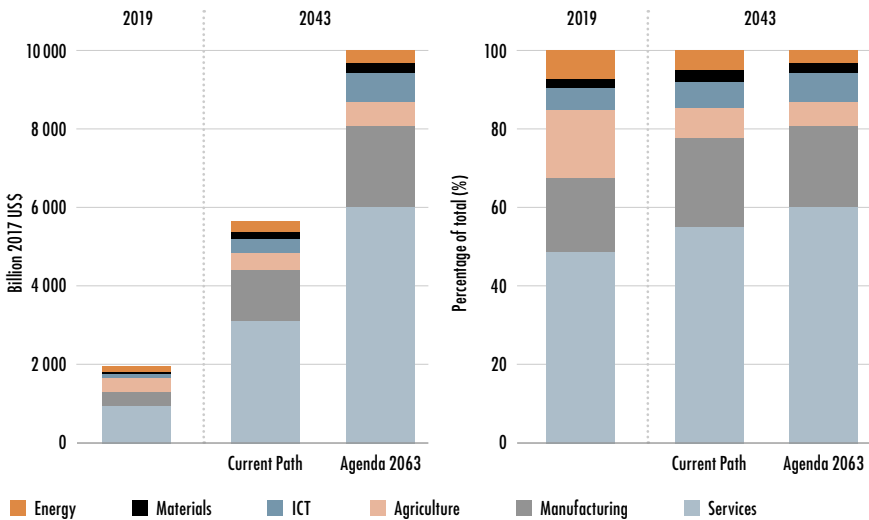
At continental level – that is, taking into account the average of Africa's 54 countries – the Combined Agenda 2063 scenario initially constrains the growth of the services sector modestly in favour of growth in the agricultural sector. But from 2027, the services sector will

Chart 109: Size of economic sectors and sectoral composition of low-income Africa in 2019 and 2043, Current Path forecast vs Combined Agenda 2063 scenario



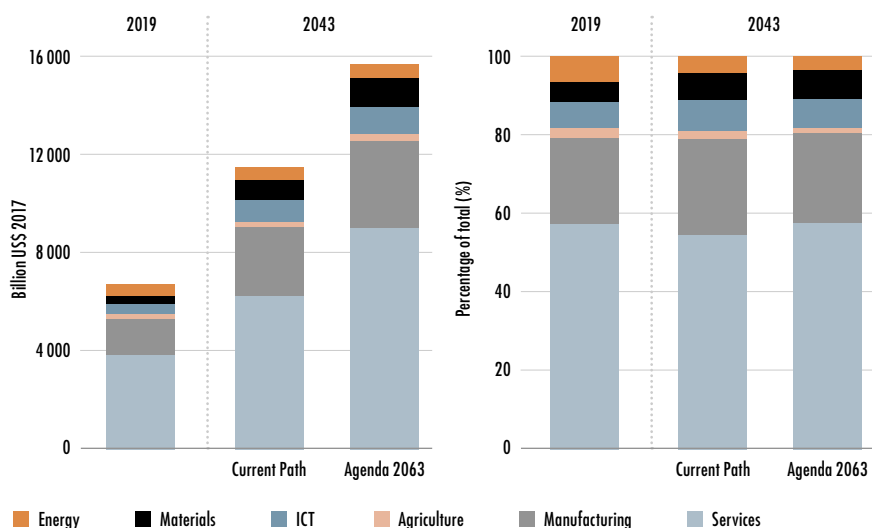
Source: IFs 7.63 initialising from World Economic Outlook 2017 and IMF

Chart 110: Size of economic sectors and sectoral composition of lower-middle income Africa in 2019 and 2043, Current Path forecast vs Combined Agenda 2063 scenario



Source: IFs 7.63 initialising from World Economic Outlook 2017 and IMF

Chart 111: Size of economic sectors and sectoral composition of upper-middle income Africa in 2019 and 2043, Current Path forecast vs Combined Agenda 2063 scenario



Source: IFs 7.63 initialised from World Economic Outlook 2017 and IMF

grow more rapidly than any other. The Combined Agenda 2063 scenario would see an end to Africa's premature deindustrialisation, with the contribution of the manufacturing sector to Africa's GDP increasing by more than a percentage point by 2043. Overall, Africa will have a growth trajectory dominated by services, which traditionally has lower productivity transformative potential than a manufacturing growth trajectory – unless technology and COVID-19 unlock greater productivity, that is. Whereas the services sector currently constitutes about half of the African economy, by 2043 it would be 60%, closer to the average in the rest of the world – which would then be about 58%. The contribution of the agricultural sector to GDP in the rest of the world slowly declines from its current 4% to 3% by 2043. In Africa, in 2019, it was marginally below 16%, declining to 7% in the Current Path forecast and to 6% in the Combined Agenda 2063 scenario.

In summary, then, in the Combined Agenda 2063 scenario African economies undergo a structural transition in which they become more productive. In line with global trends, the services sector grows

exponentially; it already constitutes the largest share of the African economy.

But none of this will happen by itself. It requires appropriate policies that support local industry (or at least the transfer of knowledge to local industry), determined implementation and productive investment.

The impact of a carbon tax

Chapter 14 presented the carbon emissions associated with each of the 11 scenarios modelled in this book. It also set out the extent to which Africa will suffer from the impact of climate change. In fact, there is a real chance that Africa's development will be severely constrained by climate change, since scenarios with significant growth potential – such as the implementation of the AfCFTA in the African Free Trade scenario, and the Manufacturing scenario – all result in significant carbon emissions. Put differently, Africa needs to get on top of its demographic dividend and pursue the transition presented in the Leapfrogging scenario if it is to grow sustainably.

The improvements in Africa's development prospects in the Combined Agenda 2063 scenario come at a substantial carbon cost, even as the carbon intensity of GDP growth in Africa is declining in line with global trends. In the Combined Agenda 2063 scenario, Africa would release about 270 million tons more carbon into the atmosphere by 2043 than in the Current Path forecast, with emissions growing rapidly thereafter as growth (and population size) accelerates. This may sound like a lot, but by 2043 emissions from the rest of the world would be about 9 billion tons, meaning that the additional emissions from Africa are quite modest for a continent that would then be home to almost a quarter of humanity.

On the Combined Agenda 2063 scenario trajectory, Africa's contribution to global carbon emissions will increase threefold, from 4% of global emissions in 2019 to more than 12% in 2043 and more than 18% by 2063. As expected, the scenario with the highest growth result, the African Free Trade scenario, will also contribute the most to additional carbon emissions in Africa.

Note, too, that were it not for the reduction in Africa's total population as it progresses more swiftly through its demographic transition, the increase in annual carbon emissions would be larger.

As this book has shown, most African countries have a unique opportunity to leapfrog the fossil-fuel-based development model towards renewables. Africa's development trajectory will be severely affected by climate change and, as a minimum, the continent should commit to achieving net-zero emissions by 2063 – meaning that it will need to work hard to emit no more carbon than is removed from the atmosphere by, for example, restoring forests, adopting the least carbon-intensive growth path and transitioning to renewable sources for its energy requirements. Yet there are prospects for rapid improvements. For example, a 2019 report by the International Energy Agency (IEA) calculates that Africa could, using renewables, meet the 2040 energy demands of an economy four times larger than today's using only 50% more energy than it uses today.¹⁸ In its *World Energy Outlook 2021* report, the IEA estimates that the amount of energy needed per unit of GDP improves by 2.8% a year.¹⁹ However, when it comes to minerals, Africa is also the most unexplored continent globally, with massive stocks of potential coal, gas and oil – upon which a number of countries are heavily dependent, including South Africa, Angola, Equatorial Guinea, Gabon, Nigeria, Algeria, Libya and others.

Much more is possible, demonstrated by the extent to which Morocco²⁰ has presented a model for others to follow. In 2009, Morocco announced a target to produce 42% of its electricity needs from renewable sources by 2030. It increased that target to 52% in 2015, and seems on target to achieve 65%, thanks to steady investment and consistent policies – including an investment-friendly regulatory framework allowing tendering and auctions for large-scale solar and wind projects, encouraging private investment in the sector.

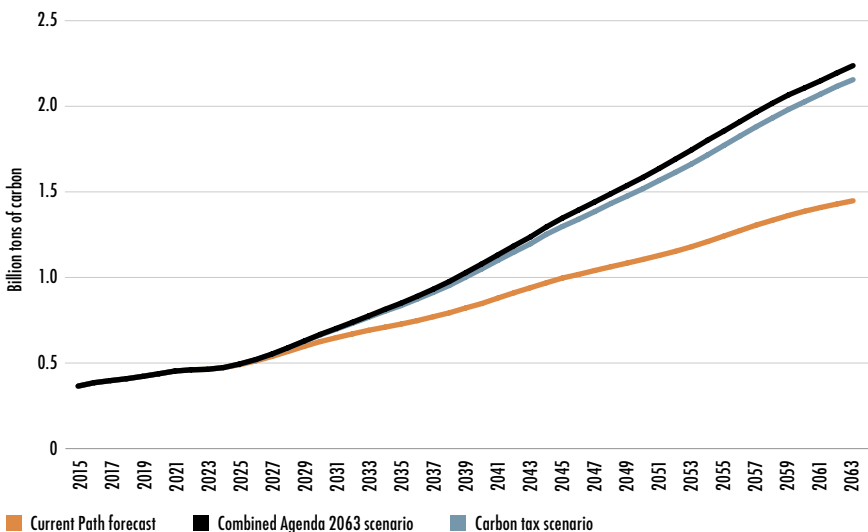
At the April 2021 Leaders' Summit on Climate, Kristalina Georgieva of the International Monetary Fund (IMF) called for a 'robust price on carbon' among large emitters, such as the G20 countries. She noted that 'the average global price is currently US\$2 a ton, and needs to rise to US\$75 a ton by 2030 to curb emissions in line with the goals of the Paris Agreement'.²¹

To this end, this section puts forward a scenario in which, by 2033, low-income countries in Africa institute a carbon tax of US\$25 per ton of carbon, lower-middle income countries US\$50 per ton, upper-middle income countries US\$75 per ton, and high-income countries US\$100 per ton. The taxes are maintained at that level after 2033. Granted, a carbon tax is something of a blunt instrument that has fallen out of favour with others, such as the EU, having been replaced with a carbon pricing system. The latter reduces the amount of regulation required for energy efficiency, for example, but the scenario here serves a sufficiently illustrative purpose.

A carbon tax would see Africa releasing 38 million fewer tons (13%) of carbon in 2043 than in the Combined Agenda 2063 scenario, reflected in Chart 112. The total African economy would be US\$27 billion smaller in 2043 than in the Combined Agenda 2063 scenario. GDP per capita would be US\$18 less in 2043.

Beyond the threat to livelihoods on the continent that carbon emissions pose, Africa will have to get its carbon house in order. The contribution of the carbon tax modelled in this scenario is clearly

Chart 112: *Africa's carbon emissions: Current Path forecast vs Combined Agenda 2063 scenario, with and without a carbon tax*



Source: IFs 7.63 initialising from Carbon Dioxide Information Analysis Center data

insufficient, reflecting a reduction in emissions of about one percentage point. The EU's carbon border adjustment mechanism will also slap levies on imports from countries that do not have equivalent carbon price mechanisms, meaning that African exports to the EU will become more expensive.

The extent of the challenge was underlined when, in May 2021, the IEA released *Net Zero by 2050: A Roadmap for the Global Energy Sector* that set out, in stark terms, the clean energy revolution that needs, now, to occur at breakneck speed and involve unprecedented global cooperation.²² The forecasts imply no new oil and gas fields, a collapse in demand for oil, the abandonment of many liquefied natural gas projects and the closing of refineries. The report calls for solar and wind power capacity additions of 1 020 GW per year by 2030 (four times the 2020 amount); that electrical vehicle sales account for 60% of all sales (compared to 4.6% currently); massive increases in annual battery production; the rollout of carbon capture technology; significant ramping up of nuclear energy capacity; and more.²³

Clearly, the modelling of a carbon tax in this section is insufficient.

Africa's need for growth led by human capital

As we've seen, on a structural level, many of Africa's challenges are rooted in the process of imposed state formation that started with imperialism and lasted through the colonial period. Decades later, the end of the Cold War released Africa into an international state-based system, when its own constituent states had not yet been able to benefit from the legitimacy, order and authority that most other nations had established from past nationalisms.

Africa and its amalgamation of unconsolidated 'states in name' has since been poorly served by elites, who often appear to place their family, tribe or ethnic group – and not evidence-based policy – ahead of the continent's development. Ultimately, it will not be Western donors or China or India that will develop Africa. Only Africans can. To do so, we need to understand where we come from – but also, then, accept responsibility for shaping our future. Like all households Africa needs to get its financial house in order through aggressive measures to

eradicate leakages, mobilise domestic resources, and efficiently allocate funds and curb capital flight, among other things.²⁴ What is needed is what some refer to as ‘radical transparency’, for example to ensure that all debt is recorded on the World Bank’s Debtor Reporting System (DRS) – even going beyond the need to record sovereign debt, to include debt directly or indirectly guaranteed by African governments such as that held by special financial vehicles.

Africa needs strong, developmentally minded governments and associated leadership structures that regulate, empower and support small and medium-sized businesses in the private sector, the 21st century’s primary wealth and employment creator. In the field of poverty alleviation, governments need to offer an enabling hand that shapes the market in a pro-poor manner. This means precisely allocating poverty alleviation resources to stimulate social investment and promote the transfer of asset returns. In fact, experience from around the world highlights the need for growth policy to place particular emphasis on institutions and policies that promote strategic collaboration between the government and the private sector²⁵ – knowing that that the market will not resolve poverty.

The private sector in Africa is showing steady growth, from the smallest informal trader to large multinationals. A recent study by McKinsey & Company²⁶ reveals that some 400 companies in Africa earn revenues of US\$1 billion or more, and that nearly 700 companies have revenues greater than US\$500 million. Most have grown faster than their peers in the rest of the world in local currency terms, and are more profitable than their global peers. Just over half are owned by Africa-based private shareholders, 27% are foreign-based multinationals and 17% are state-owned enterprises.

The continent needs governments that consistently invest in knowledge creation.

In his epic study of economic history, Erik Reinert captures what lies at the heart of development. ‘The global economy,’ he writes, ‘can in many ways be seen as a pyramid scheme of sorts – a hierarchy of knowledge – where those who continually invest in innovation remain at the apex of welfare.’²⁷ Reinert points to the importance of ‘going up the productivity and technology curve’, generally a function of investments

in research, development and expansion of the manufacturing sector. The associated response could take many forms, like developing modern industrial policies, but only deliberate efforts to unlock the promise of digitisation and the Fourth Industrial Revolution will achieve this in the 21st century.

In the aftermath of the great global recession of 2008/09, globalisation briefly deepened until COVID-19 and competition between the US and China changed things. Russia's invasion of Ukraine has accelerated these trends. Today, growth and trade within regional trading blocs (as opposed to between these blocs) has become particularly important.²⁸ Global value chains now appear to be shortening as production moves closer to consumers. This seems to be partly the result of efforts to improve the speed of getting goods to market, but is also a reaction to global tensions caused by a growing sense of nationalism – like the very visible efforts by Europe and the US to constrain technology transfer and competition from China. Previously, the costs of labour were a deciding factor in the location of manufacturing, but in the past two to three decades non-labour costs – including the costs of managing complex global value chains – have increased in importance.

Regional value chains and localised production that is closer to the end market have become more attractive in advanced and emerging economies alike, with some even talking about manufacturing on demand based on technologies such as 3D printing.²⁹ This is the emergence of a decentralised, cottage-industry model of industrialisation discussed in Chapter 7.

Africa needs to integrate itself regionally, and into the global economy, to facilitate knowledge transfer, as China has done so successfully. It can do so by embarking on a digital and urban transition that has the combined potential to unlock other transitions in, for instance, education and the provision of basic infrastructure. Africans need to actively encourage foreign companies to invest and locate on the continent, and to attract skilled foreigners. Technological knowledge transfer is crucial, in addition to steadily expanding local content requirements to make sure that these companies are embedded in city and national value chains. Areas of specialisation that are too advanced

or intense often mean that knowledge transfers do not occur. Over time, local value chains will allow African companies to participate in and become part of international value chains too.

In short, Africa needs to subscribe to a ‘designed in Africa, grown in Africa, made in Africa’ approach.

Instead, many African countries – Nigeria, Kenya and Zambia are three examples – have come to specialise in the ‘foreign ambush’. Their primary orientation is not to attract and nurture foreign business, but to entice and trap it. Once a foreign company has been attracted by a liberal legal framework and fiscal incentives to invest, the rules change in an effort to extract greater profits – and possibly even to benefit particular nationals or families. Nothing scares private investment more than uncertainty, and the threat of changes to investors’ legal or tax status is often a very large disincentive. The result is that the companies that do invest eventually capitulate and leave, as many South African (and other) companies have done in these three countries. And to compound its general shoot-itself-in-the-foot policies, South Africa has been working hard since the end of apartheid to keep skilled foreigners at bay, making it as difficult as possible for them to obtain work permits and invest, loading one compliance burden on top of the other.

Many of Africa’s post-independence efforts at industrialisation have failed because of countries’ efforts to create islands of technological sophistication and prestige projects in a sea of low-technology, informal economies. Without forward and backward linkages to domestic economies, these projects depend on government subsidies and handouts in terms of access to foreign markets. Some recent investments in heavy-duty infrastructure (as opposed to basic infrastructure) on the continent have threatened to replicate these mistakes. When agreements like these come to an end, investments prove unsustainable and companies inevitably fold or leave. It is for the same reason that highly capital-intensive projects like gas and petroleum extraction projects provide little spillover effect to the wider economy in northern Mozambique, Angola, Nigeria, Equatorial Guinea and Gabon: all provide a stream of money to state coffers, and the fight for control of that money often determines who governs. But

oil or gas income, on its own, does not develop a country, and its importance is set to decline given the threat of climate change. Above all, appropriate government policy, ethical leadership and oversight unlocks the one thing Africa has in abundance: human capital.

Ultimately, Africa's transformation is less about grand schemes and ambitions (of which there have been many) and more about the mundane functions of improving food security through land reform and support for small-scale farming; ensuring a hassle-free and facilitative investment environment; holding one another to account; and facilitating foreign investment in clear terms. It requires a technical and bureaucratic process, one in which governments meticulously go through every single impediment that deters or inhibits innovation, entrepreneurship and doing business. It is about governments getting behind success, offering support and helping to facilitate a potential growth sector that is already showing potential – and not merely shovelling money in that direction.

Conclusion: Taking Africa into tomorrow

How, then, will Africa step into its future? Development is about countries empowering their citizens and learning how to help themselves. It is not about handouts, and there is no magic wand, no copying 'best practices' from others.

In the development context, it is perhaps best to view societies as living organisms.³⁰ We can't just ask, Which nutrient helps the organism grow fastest: protein, carbs or vitamins? The answer is that you need all nutrients, properly balanced – and that, when any one of them is out of balance, the returns diminish rapidly or even become negative. Societies become productive by linking many different inputs – and, ultimately, by doing more with those inputs.

That said, in Africa's skeleton there lurks, still, an important bone-strength deficiency: the absence of a sense of nationhood. It is a sad reality that many nations that have done well in recent times (Ethiopia, Rwanda, South Korea, Taiwan and China, for example) started to thrive only after suffering a national trauma, like war or genocide, which galvanised leadership and allowed for the short-term pain that is

often required to unlock longer-term growth. In democracies, rapid growth at low levels of development is messy and difficult. Each African country needs to develop organic practices that are tailored to that country's domestic conditions. 'Countries become successful,' argues Lant Pritchett, 'by means of an ugly, messy, contested hard slog that takes decades. And then, after they become successful, they create myths about how wonderful it was and the reasons why they did it, when the reality was just that it was a hard slog.'³¹

This book has presented a host of policy recommendations that seek to explain and explore Africa's development. What has generally emerged from its analysis is Africa's need to work from the bottom up, and to recognise the interrelationships between the various sectors. On one hand, governments need to fix the basics. They need to invest in traditional infrastructure such as electricity, sanitation, water and roads, and literacy and primary education, and to invest in empowering and helping small-scale farmers and businesses to improve productivity to ensure sufficient nutrition and food security. Leapfrogging should be seen in this context – how Africa could benefit from new technologies to do things more rapidly and cheaply, such as using digital identification systems and electronic payment systems to improve governments' capacity to deliver more effective programmes, and to provide electricity to their citizens through decentralised mini-grids using renewables. Access to electricity and the global village (through access to the internet) offers huge digitisation potential, and could be a key enabler.³² Large infrastructure projects are important, but the trade-off is really to make sure that there are enough paved roads, for example, before investing in hugely expensive railway lines – unless these are required for heavy-duty exports such as iron ore. And development won't happen unless a capable government and a country's people really want it to happen.

Resource extraction can provide an opportunity to invest in the efforts required to transform Africa's economies and education systems for greater productivity. However, this will only be possible if Africa uses that income and opportunity as a foundation and opportunity for structural economic transformation – going up the productivity value chain, using renewables to power that pathway.

Africa must embark upon a direct pathway to a distributed, renewables-based energy solution that provides a sufficient baseload to drive its burgeoning manufacturing industry and unlock productivity from its services sector.

Since investments in human capital provide the most enduring contribution to sustainable economic growth over long time-horizons, the continent needs to invest in the associated enablers. First of these is that a productive African future requires a dependable supply of electricity. Without sufficient household electricity Africa cannot aspire to the second enabler – internet access that could, in turn, enable more rapid educational and technological progress.

Once citizens have access to household electricity and the internet, and are able to engage with the rest of the world, the right policies and support can unlock additional opportunities. According to the World Bank, achieving universal, affordable and good-quality internet access by 2030 will require an investment of US\$100 billion, pointing to another requirement for Africa's growth: massive capital investment. The potential of trade within the AfCFTA and the attraction of a larger market could unlock Africa as an attractive investment destination for the future; so, trade integration could serve as a general multiplier. Much more is required, of course, including the mobilisation of domestic revenues and halting the flow of illicit financial flows from the continent, but foreign direct investment (FDI) will be crucial.

But aside from everything else, what African countries need most is modern leadership and capable governments that can connect with the aspirations of their youthful populations – unlike the leaders I mentioned in Chapter 3, whom I encountered in the Sheraton Hotel in Addis Ababa. Leaders who are prepared to move on after a set term and to look to the future – who are not fixated on yesterday, and who rely on evidence-based policymaking, not ideology. Africa does not need excellent governance, or superb education or top hospitals; what transforms a country is more typically governance that is 'good enough'; strong, local, low-tech health programmes that include support and encouragement for family planning; and decent education (through secondary school) and jobs for women.

This is the essence of the call by Nelson Mandela³³ to no longer ‘seek to place blame for our condition elsewhere or to look to others to take responsibility for our development’, but for Africans to become the masters of their own fate.

These, then, are the challenges and opportunities that confront Africa today, as it aims to close the gap between itself and the rest of the world and achieve its Combined Agenda 2063 ambitions.

Endnotes

1: Africa's Current Path

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3: Getting to Africa's Demographic Dividend

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4: Agriculture in Africa

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10: Africa’s Financial Flows: Aid, Foreign Direct Investment, Illicit Financial Flows and Remittances

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and delves deeply into the associated characteristics of each. Practically, Polity is closest to the V-Dem conceptualisation of electoral democracy or polyarchy, but there are important methodological and conceptual differences between the two.

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35. The reason for the slight divergence between the two indices is likely statistical. The WGIs rank country scores annually and any improvements in trends in governance in Africa are outpaced by larger improvements in the rest of the world. As a result, the gap tends to increase. However, when dimensions of governance are measured year on year independently of global trends (essentially what the IIAG does), modest improvements are visible.
36. Within IFs, security is driven by a performance and risk index, and state failure from internal event occurrence. Each in turn is driven by a variety of other indicators. For example, state failure from internal event occurrence depends on levels of development (poor countries evidence more conflict), infant mortality (often used as a proxy for government capacity), size of the youth bulge (a larger youth bulge indicates greater propensity for turbulence), nature of the governance system (mixed regime types are more prone to instability), and levels of education and integration into the global system (relationship of exports to GDP).
37. The IFs capacity index combines data on tax collection from the Organisation for Economic Co-operation and Development (OECD) and the World Bank's

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38. Once governments achieve a minimum degree of security and have developed appropriate capacity, pressure mounts for greater inclusion in political and economic structures and processes as part of an emerging social contract between government and its citizens. The IFs model forecasts its inclusion index based on regime type (using Polity V data) and a measure for gender empowerment as a proxy for horizontal inclusion.
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15: Bringing it All Together: The Combined Agenda 2063 Scenario

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Africa Tomorrow presents the impact of positive scenarios in 11 separate sectors, ranging from health to infrastructure, from leapfrogging to better governance on Africa's long-term future. This book and the accompanying website futures.issafrica.org provide insights into likely future trends and enable a first cut in understanding Africa's development challenges and the enormous potential inherent in establishing a continental free trade area, more aid and foreign direct investment, and better education and health. At the website launch on 22 June 2022, South Africa's President Cyril Ramaphosa commended the Institute for Security Studies (ISS) for 'lending its weight to the pan-African drive for unity, self-determination, freedom, progress and collective prosperity'. The African Futures website presents detailed forecasts for all African countries and seeks to understand why the continent is trailing behind the rest of the world's improvements in livelihoods. It then presents forecasts and scenarios for two decades into the future on what would be required to reverse these trends.

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Jakkie Cilliers is the founder and former Executive Director of the ISS. He currently serves as chair of the ISS Board of Trustees and head of the African Futures and Innovation Programme at the Institute, which undertakes long-term forecasts on the future of Africa. His 2017 best-seller, *Fate of the Nation*, addresses South Africa's future from political, economic and social perspectives. His two most recent books, *Africa First! Igniting a Growth Revolution* (March 2020) and *The future of Africa: Challenges and Opportunities* (April 2021) take a rigorous look at the continent as a whole.



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