



A division of FirstRand Bank Limited

Traditional values. Innovative ideas.

WHERE TO INVEST IN AFRICA

2019

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RESOURCEFUL THINKING: THE CATALYST BEHIND AFRICAN INNOVATION

Lacking across much of the continent of Africa are a number of much-needed roads, rails, ports, airports, power grids and IT systems.

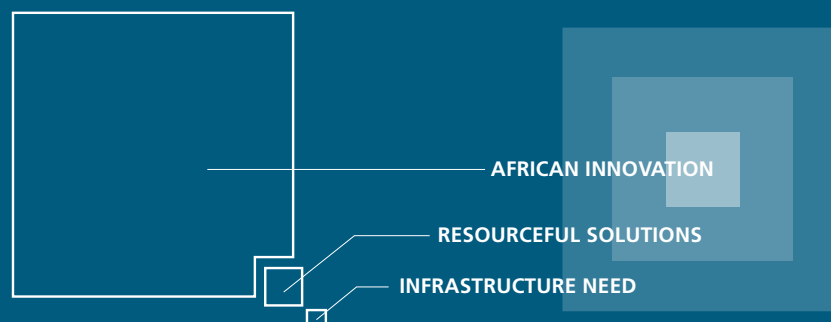
Together, these represent the infrastructural backbone needed to support the economies of Africa.

And yet, it is infrastructural constraints such as these that serve as catalysts. They are the drivers of African innovation. Because it has been said that the way to get out of a precarious predicament is to innovate your way out of it.

Innovation requires resourceful solutions.

At RMB, we are Solutionist Thinkers. As such, you will see that the design approach to our publication acknowledges some of the innovations impacting the African continent. Whether it's a pay-as-you go tractor service empowering Nigerian farmers to harvest efficiently or an off-grid power solution that energises homes in Kenya, Tanzania and Uganda; whether a mobile money service to the unbanked or an app bringing specialist healthcare to rural clinics, these solutions are what we celebrate.

Because Africa thinking resourcefully is
Solutionist Thinking.



FOREWORD

RMB is proud to present its eighth edition of *Where to Invest in Africa*.

Our focus for this year is that of infrastructure. We have learnt through our clients' experiences, as well as through our own travels across the continent, that the lack of efficient infrastructure is one of the major challenges to doing business on the continent. The anecdotal evidence is supported by the results of well-respected global surveys.

Indeed, significant strides have been made in African infrastructure development since the 2000s. But the shortage is still stark, obstructing African economies from diversifying, and preventing them from realising their potential growth.

This comes at a cost. According to the World Bank, the lack of sufficiently developed infrastructure shaves up to 2.6% off Africa's average per-capita growth rate and places significant strain on human development overall. But here's the good news: this shortfall represents an overwhelming opportunity for those businesses involved in the development or financing of infrastructure projects.

The African Development Bank's (AfDB) most recent estimation of infrastructure needs is between US\$130bn and US\$170bn annually, but the continent's available capital is insufficient to achieve this. Currently, just a fraction of the AfDB's estimate is being spent – US\$45bn. This chasm gives scope for private capital to accelerate the building of critical infrastructure. AfDB President Akinwumi Adesina instructs that "we must work smart to attract greater levels of investment financing for infrastructure development in Africa."

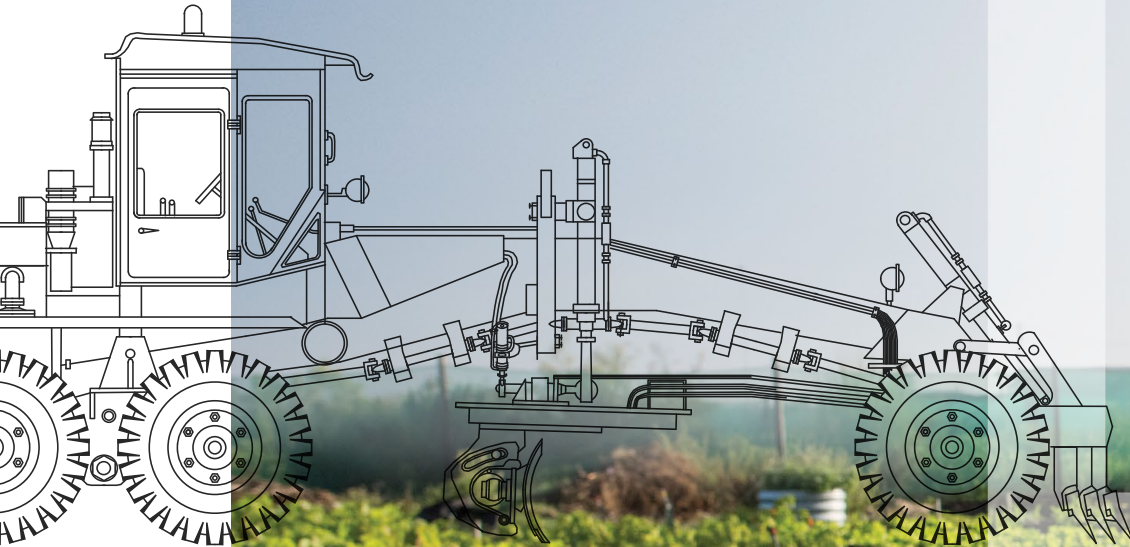
Unlocking Africa's infrastructure development potential is a key focus of Rand Merchant Bank. With our passion for possibilities and our can-do mindset, we uncover these opportunities and deliver innovative solutions to you, our client. This solutions-driven agenda is what sets us apart. At RMB, your business is our business, and we use our knowledge gleaned from RMB's growing presence on the continent – along with your experience as client – to highlight the possibilities and the potential that infrastructure development in Africa represents.

We trust that this year's edition will shed light on the continent's countless prospects, while we at RMB work alongside you to overcome its many challenges.

The RMB Africa Research team

Celeste Fauconnier and Neville Mandimika

NEW WAYS OF THINKING = NEW SOLUTIONS



1.0
OVERVIEW

2.0
INFRASTRUCTURE
IN AFRICA

3.0
COUNTRY
SNAPSHOTS

4.0
APPENDICES



OVERVIEW

The purpose of *Where to Invest in Africa* is to provide easily digestible data and analysis to firms considering investing in Africa, and to point out new opportunities to those already vested in the continent. We begin by assessing each African economy's investment potential. RMB's Investment Attractiveness Index does this by overlaying macroeconomic fundamentals with the practicalities of doing business on the continent.

HELLO TRACTOR — AN UBER FOR TRACTORS

A social enterprise that impacts food quality and income security by equipping Nigerian farmers with the right tools to efficiently harvest their land, Hello Tractor promotes collaborative consumption. It offers a network of "smart tractor" owners, enabling small-scale farmers to request and pay for tractor services via SMS and mobile money as and when they need them.

RMB'S INVESTMENT ATTRACTIVENESS RANKINGS

Our methodology is straightforward, but it encapsulates what we perceive to be the most important conditions for viable investment in Africa. These are:

- **Economic activity**, expressed as a weighted average of market size and forecasted levels of GDP growth.
- **The operating environment**, depicted as a weighted average of four international surveys measuring the ease of doing business.

The full workings of the methodology are explained in the Appendices, in Chapter 4.2, and the results can be seen in Table 1.0.1.

Table 1.0.1: RMB's Investment Attractiveness Index

	RANK			SCORE	
	2018	2017	Change in ranking between 2017 and 2018	2018	2017
Egypt	1	1	— 0	6.41	6.35
South Africa	2	2	— 0	6.25	6.33
Morocco	3	3	— 0	6.11	6.12
Ethiopia	4	4	— 0	5.78	5.72
Kenya	5	6	↑ 1	5.75	5.68
Rwanda	6	8	↑ 2	5.70	5.53
Tanzania	7	7	— 0	5.57	5.59
Nigeria	8	13	↑ 5	5.52	5.32
Ghana	9	5	↓ 4	5.50	5.69
Côte d'Ivoire	10	10	— 0	5.48	5.51
Tunisia	11	9	↓ 2	5.39	5.52
Mauritius	12	14	↑ 2	5.38	5.24
Botswana	13	12	↓ 1	5.34	5.39
Uganda	14	11	↓ 3	5.33	5.40
Algeria	15	15	— 0	5.10	5.20
Senegal	16	16	— 0	5.08	5.00
Zambia	17	17	— 0	5.07	4.97
Cameroon	18	21	↑ 3	4.65	4.52
Burkina Faso	19	18	↓ 1	4.57	4.61
Angola	20	27	↑ 7	4.53	4.12
Mali	21	22	↑ 1	4.42	4.47
Namibia	22	20	↓ 2	4.30	4.55
Benin	23	25	↑ 2	4.27	4.25
Madagascar	24	26	↑ 2	4.25	4.16
Sudan	25	24	↓ 1	4.17	4.27
Gabon	26	28	↑ 2	4.09	4.08
Malawi	27	30	↑ 3	4.04	3.94
DRC	28	29	↑ 1	4.04	4.07
Seychelles	29	33	↑ 4	3.87	3.89
Mozambique	30	19	↓ 11	3.86	4.59
Cabo Verde	31	34	↑ 3	3.84	3.81
Niger	32	32	— 0	3.83	3.90
Guinea	33	41	↑ 8	3.78	3.19
Zimbabwe	34	45	↑ 11	3.73	2.97
Sierra Leone	35	31	↓ 4	3.70	3.91
Libya	36	23	↓ 13	3.65	4.42
Mauritania	37	38	↑ 1	3.64	3.37
Chad	38	40	↑ 2	3.48	3.20
Lesotho	39	35	↓ 4	3.45	3.68
Togo	40	36	↓ 4	3.42	3.55
Swaziland	41	37	↓ 4	3.41	3.50
Gambia	42	44	↑ 2	3.29	3.08
Liberia	43	39	↓ 4	3.22	3.32
Djibouti	44	42	↓ 2	3.20	3.13
São Tomé and Príncipe	45	43	↓ 2	3.04	3.12
Eritrea	46	46	— 0	2.98	2.95
Guinea-Bissau	47	48	↑ 1	2.72	2.71
Comoros	48	49	↑ 1	2.47	2.68
CAR	49	50	↑ 1	2.41	2.68
Burundi	50	51	↑ 1	2.38	2.48
Congo	51	47	↓ 4	2.36	2.93
Equatorial Guinea	52	52	— 0	2.28	2.44
South Sudan	53	53	— 0	1.08	1.72

Note:

The score of each country is out of 10, where 10 is the most attractive, and 0 the least attractive.

Source: RMB Global Markets

Before we unpack our findings, we take a brief look at the key indicators of the methodology, and see how they have been performing since the publication of our previous edition.

ECONOMIC ACTIVITY

1. GROWTH MOMENTUM SLOWING

Global economic activity remains strong but less balanced than we anticipated. This is due to a desynchronisation of growth rates across the developed world. The US is expected to continue its growth path that diverges from its compatriot countries, providing a stimulus to global growth, which is forecast at 3.8% in 2018. The 2019 outlook is less assured, as concerns of overheating in the US, reflected in the brisk flattening of its yield curve, and fears of a full-blown trade war, weigh on consensus estimates.

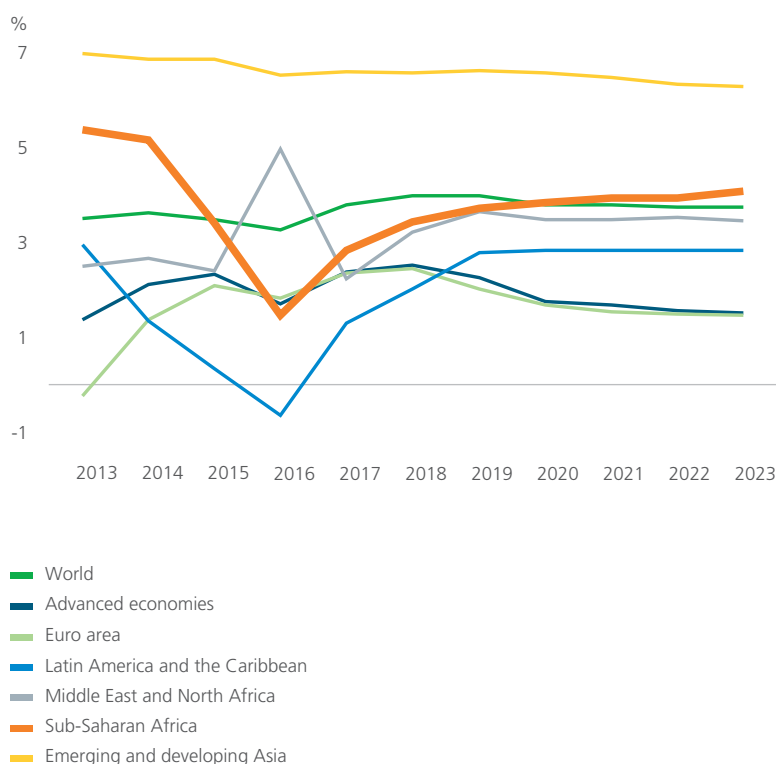
Commodity prices are likely to be rangebound over the forecast period, with the balance of risks tilted to the downside. The global backdrop is neutral to negative, with mounting protectionism, overarching supply concerns, a generally strong US dollar and diminishing demand from China imposing firm ceilings on prices.

Headwinds are mounting for many EMs. Escalating trade tensions, fairly lacklustre commodities price growth and continued policy normalisation across the developed world aggravate domestic woes – particularly in countries plagued by high levels of political risk.

WHERE IS AFRICA IN ALL OF THIS?

Africa's growth rate recovered moderately in 2016 and 2017, backed by stronger commodity prices and offshore appetite for higher yields. But the commodity-price recovery is running out of steam, while investors are pulling back from EMs. We therefore expect Africa's growth momentum to slow – with only a modest pickup from 3.9% in 2018 to 4.1% in 2019. Sub-Saharan Africa (SSA), more specifically, is set to grow by 3.4% and 3.7% over the same period. The International Monetary Fund (IMF) says that if SSA's current challenges (discussed in the section to follow) persist, average growth could plateau at below 4% over the medium term. This is only slightly above the world average.

Figure 1.0.1: Regional GDP growth profile



Source: IMF

THE ISSUE OF DEBT AND CREDIT EXTENSION IN AFRICA

In addition to the aforementioned challenges, high debt levels and a slowdown in credit growth pose significant risks to Africa's medium-term growth outlook.

- **Rising debt:** Concerns about higher debt levels in Africa are escalating. Take, for example, investor reactions – severe but understandable – to news of Mozambique's US\$2.2bn debt scandal. Or when Ghana started overspending and then compensated by over-borrowing. And when confusion over Zambia's true debt profile emerged recently. The IMF highlights that 15 low-income countries in Africa are at high risk of – or are in – debt distress already, the situation exacerbated by more costly debt than ever before.

Some countries have used eurobond funds as a safety net for paying off debt – a strategy that cannot be relied on, considering waning investor appetite for riskier assets due to global economic conditions. What is needed is prudent fiscal policy to rein in public debt. At the same time, monetary policy must be geared towards ensuring low inflation.

- **Weak credit growth:** A slowdown in private-sector credit growth in SSA, on the back of tighter bank lending criteria, has had a ripple effect. Some key economies are battling with this: Kenya, for instance, capped commercial lending rates in 2016 at 4ppt above the central bank's benchmark rate to limit the cost of borrowing for businesses and individuals. Unfortunately, the cap has had the opposite effect, discouraging banks from lending at lower rates.

In Ghana, non-performing loans increased significantly in 2017/18, causing the Bank of Ghana to increase minimum capital requirements, liquidate two banks and consolidate five. Consequently, commercial banks are extra vigilant when considering loans. It is vital that both the government and market players strengthen credit channels and unlock new financing mechanisms such as equity, crowdfunding and venture capital, which will support small to medium enterprises in particular.

LONG-TERM GROWTH PROSPECTS – SO MUCH MORE CAN BE DONE

Africa remains a continent with abundant opportunities for investment. Resources will continue to play a leading role when it comes to attracting funds – particularly in the hydrocarbon, base and precious metals spheres. We also believe that the agricultural sector will become a more enticing investment target as agro-processing increases and global food demand spikes. And, don't forget the all-important demographic dividend – especially the strong growth in population, urbanisation and GDP per capita. Furthermore, we are seeing a slow but steady improvement in business conditions across the continent.

Other growth opportunities await. From a fiscal perspective, Africa has low levels of revenue collection – the IMF estimates that SSA could potentially collect an extra 3% to 5% of GDP in tax revenues by improving collection systems and broadening the tax net. Furthermore, private-sector investment has been lacking. This could change through more business-environment reforms, increased infrastructure and financial-market development and trade openness.

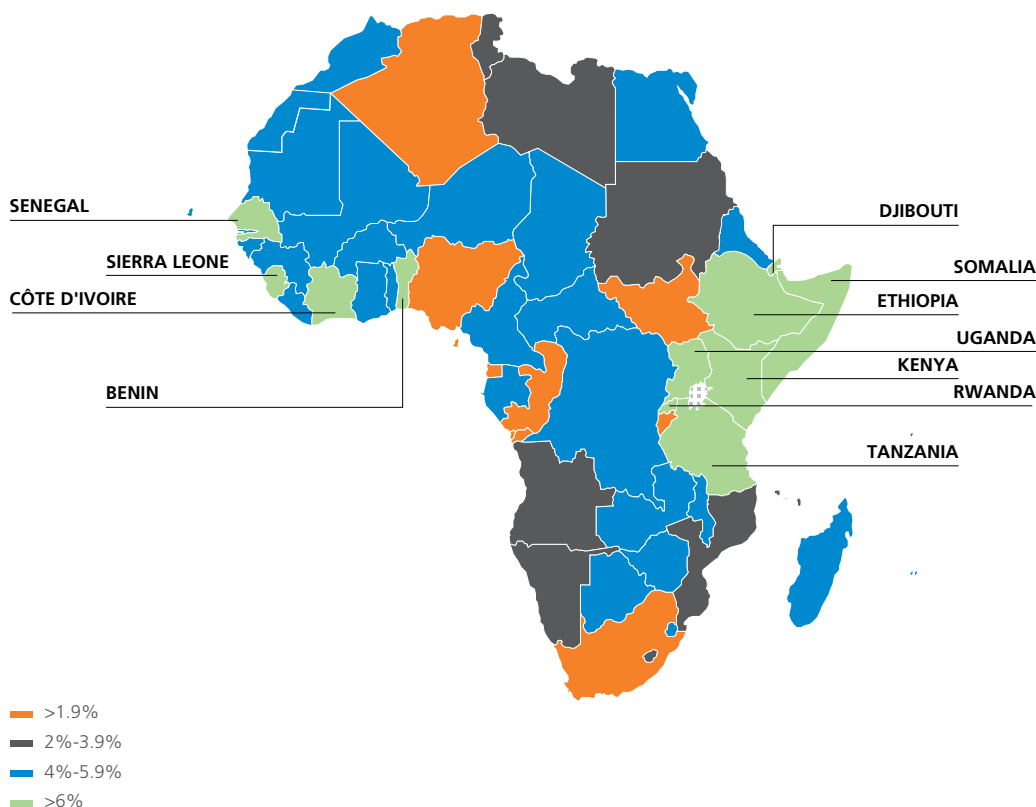
Resources will continue to play a leading role when it comes to attracting funds – hydrocarbon, base and precious metals, in particular.

INDIVIDUAL GROWTH PERFORMANCES

The key take-outs of Figure 1.0.2 are that the majority of African countries are forecasted to grow above the region's average between 2018 and 2023. And 11 of those will grow above 6%. Ethiopia is set to be the fastest-growing economy in Africa over that period, averaging 8.2% for the next six years – a slight normalisation from the 10% average experienced over the past decade. The robust momentum is supported by improved macroeconomic policies and higher government investment in local industries and human capital. Private investment continues to increase after the resolution of the long-standing conflict with Eritrea. Other outperformers – and for similar reasons to those of Ethiopia – are Rwanda and Côte d'Ivoire.

A country that has experienced a significant shift in its growth outlook is Mozambique. In 2016, it was forecast to be one of Africa's fastest-growing economies over the next decade. However, the tide turned abruptly that same year when a large amount of undisclosed debt came to light, prompting the IMF and donors to cut funding. Now, the economy is expected to grow below 3% over the forecast period, until the oil and gas production windfall, expected in 2023/24, kicks in.

Figure 1.0.2: Forecasted growth rates for individual African economies

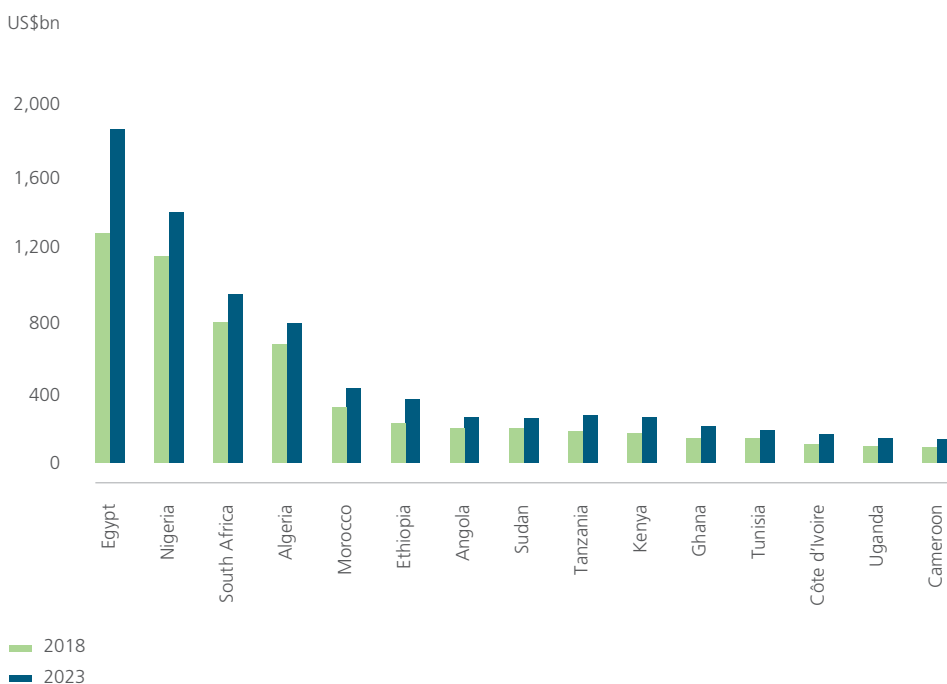


2. MARKET SIZE: THE TOP THREE REMAIN AS IS

Egypt, Nigeria and South Africa – in that order – remain the three largest markets in Africa in 2018. They are also expected to maintain these coveted positions for many years to come. While Egypt and South Africa have historically been Africa's largest economies due to their diversified natures, it is only in recent years that Nigeria started rising through the ranks. This is on the back of its oil wealth and the rebasing of its GDP. Together, these three markets make up almost 50% of Africa's almost US\$7trn market size. On a regional basis, North Africa's five markets dominate, contributing 37% to Africa's overall GDP.

Supported by strong growth rates, Ethiopia has overtaken Angola as the sixth largest economy on the continent in 2018, while Tanzania has passed Kenya as the ninth largest.

Figure 1.0.3: Africa's market size in 2018 and 2023 (US\$ PPP¹)



Note:

¹ Purchasing Power Parity (PPP) is the rate at which the currency of one country would have to be converted into that of another to buy the same volume of goods and services in each country.

Source: IMF

THE OPERATING ENVIRONMENT: NO REAL IMPROVEMENTS

As analysts who travel extensively across the continent, we have observed that Africa's operating environments continue to lag those of other parts of the world. Our clients' first-hand experiences and the findings of well-respected global surveys confirm this trend. Therefore, to understand the intricacies of the African operating environment and to assess which economies on the continent have business environments that promote growth, we produce a composite operating environment index by combining four key independent global assessments:

1. The World Bank's *Doing Business Report*
2. Transparency International's Corruption Perceptions Index
3. The Heritage Foundation's Index of Economic Freedom
4. The World Economic Forum's (WEF) *Global Competitiveness Report*

Our latest findings do not surprise. A few outliers aside, Africa's overall operating environment has improved only marginally since our last assessment. Furthermore, access to financing, corruption, inadequate infrastructure and weak governance remain the most problematic factors for doing business in Africa.

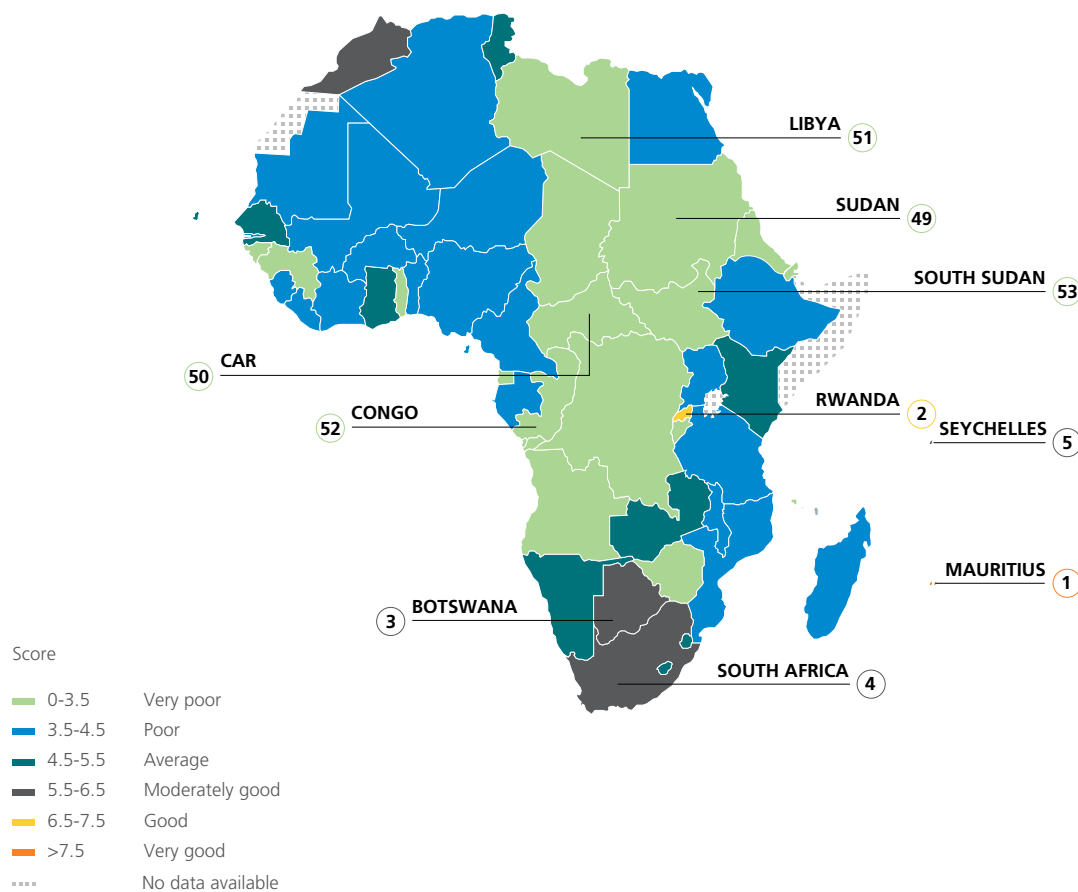
The top five performers are: Mauritius, Rwanda, Botswana, South Africa and the Seychelles. Mauritius is now in its 11th year of being the easiest business environment in Africa, which is not surprising as it boasts well-developed infrastructure, the continent's healthiest and well-educated workforce, the most efficient goods market and strong institutions. And it keeps on improving; in fact, it is one of the best performers since our previous edition.

Access to financing, corruption, inadequate infrastructure and weak governance remain the most problematic factors for doing business in Africa.

In general, only 31 countries have improved their operating environments. This is less than the 38 in 2017. The biggest reformer since 2017 is Nigeria, due mainly to the improvement in FX liquidity conditions. There is no more waiting in queues for dollars as Nigeria's FX reserve position has improved significantly on the back of rising oil prices.

At the other end of the spectrum, South Sudan has deteriorated the most, as the civil war prevents the economy from developing. Opposing parties have signed a peace deal granting rebels key positions in a transitional government in the latest bid to end the almost-five-year-long conflict. If this deal is successful, we expect an improvement in its rankings.

Figure 1.0.4: African operating environments (top and bottom five highlighted)



Source: RMB Global Markets, WEF, World Bank, Transparency International, Heritage Foundation

South Africa did not win back its coveted top spot from Egypt in our latest rankings – for the very same reasons the southern African giant lost its number one position for the first time in 2017. Egypt’s economic activity scoring continues to dominate that of South Africa’s.

As growth momentum in Africa slows, improving individual operating environments is key to attracting foreign interest. And investors being even more discerning about which emerging and developing markets to invest in exposes the urgent need for governments to prioritise competitiveness-enhancing business-environment reforms.

MAGNIFYING THE RANKINGS: THE TOP 10, AND NOTABLE CHANGES

South Africa did not win back its coveted top spot from Egypt in our latest rankings – for the very same reasons the southern African giant lost its number one position for the first time in 2017. Egypt’s economic activity scoring continues to dominate that of South Africa’s. Both its growth forecasts and the size of its economy are inferior to Egypt’s; this has weighed down its investment scoring. On the flip side, South Africa’s operating environment remains leagues ahead of Egypt’s, and the recent stability in the political environment has set investor minds at ease. It is no wonder that South Africa is still one of the largest recipients of foreign direct investment (FDI) on the continent and continues to be considered the investor gateway into the rest of Africa. Watch this space as South Africa could reclaim its pole position in next year’s rankings.

To highlight the rest of the Top 10, we explain the reasoning behind these economies being some of the most attractive investment destinations in Africa in Table 1.0.2, as well as the risks to their positioning.

Table 1.0.2: The Top 10 and the risks

RANK	COUNTRY	WHY	RISKS
1	Egypt	<ul style="list-style-type: none"> • Largest African market in GDP terms and largest consumer market in the Middle East and North Africa • Recipient of large amounts of FDI • One of the most diversified African economies • Forecast growth above 4% • Strong improvements in business environment (investment-related legal reforms) • Increasing availability of hard currency and greater exchange-rate stability 	<ul style="list-style-type: none"> • Depreciation of the Egyptian pound since its 2016 flotation, rendering hard-currency debt-servicing more difficult • However, convertibility and rollover risks expected to ease in 2018/19
2	South Africa	<ul style="list-style-type: none"> • Africa's hotspot for FDI: President Ramaphosa's efforts to build a US\$100bn book of foreign and domestic investment projects on track, large investments from Saudi Arabia, the UAE and China already in play • Currency and capital markets a cut above the rest of the continent's 	<ul style="list-style-type: none"> • Subdued economic growth has hindered its overall scoring • Upcoming 2019 elections – ruling party divisions hampering policymaking
3	Morocco	<ul style="list-style-type: none"> • Africa's fifth-largest market, with an expected growth rate of 4% over the medium term • A greatly enhanced operating environment since the "Arab Spring" • Enhanced investment appeal through reintegration into the AU and accession to the Economic Community of West African States (ECOWAS) 	<ul style="list-style-type: none"> • Heavily dependent on European tourism, FDI and remittance inflows • However, no immediate threats to its position in our rankings
4	Ethiopia	<ul style="list-style-type: none"> • Africa's fastest-growing economy and one of its six largest • Successful in nurturing comparative advantage, especially in agriculture and manufacturing • With almost 100 million people, the demand for goods and services rising significantly 	<ul style="list-style-type: none"> • Moderate debt-distress rating from the IMF has deteriorated to high risk • Could be the tipping point for the Ethiopian government to open its doors to more FDI by relaxing some of its stringent regulations (especially hard-currency repatriation)
5	Kenya	<ul style="list-style-type: none"> • Expected GDP growth of above 5%, helped by favourable weather and political reconciliation after 2017's disputed elections • Diverse economy compared to rest of SSA • Sustained expansion in consumer demand, urbanisation, EAC integration, structural reforms and infrastructure investment (including an oil pipeline, railways, ports and power generation) 	<ul style="list-style-type: none"> • Structural constraints, such as infrastructure deficiencies, continue to weigh on the economy. • No significant risks to Top 10 position
6	Rwanda	<ul style="list-style-type: none"> • One of Africa's five fastest-growing economies • Second-best business environment on the continent – more than doubled the efficiency of its business environment in less than a decade • Government investing heavily into its domestic industries, while FDI has increased significantly over the past decade 	<ul style="list-style-type: none"> • Market remains very small. With only ten million people, there are fewer opportunities for business expansion than in larger markets • Biggest risk is external – vulnerable to a spill-over in political instability from neighbouring Burundi and the DRC

RANK	COUNTRY	WHY	RISKS
7	Tanzania	<ul style="list-style-type: none"> Expected growth of above 6.5% over the next five years, supported by public-infrastructure investment and the services sector Resource-based manufacturing to register steady growth, buoyed by tax breaks and the development of special economic zones Economy's size now overtaking Kenya's 	<ul style="list-style-type: none"> Low income per head and a poor business environment Economic-policy agenda remains inconsistent, continuing to lean towards economic nationalism Recent and abrupt tax increases, erratic regulatory changes and lack of transparency deterring current and potential investment
8	Nigeria	<ul style="list-style-type: none"> Jumps back into the Top 10 due to improved macroeconomics, supported by recovering oil prices and production Second-largest market in Africa Resources and favourable demographics attracting strong flow of FDI Liquidity crunch has subsided since 2017 on the back of a recovery in commodity prices and changes in FX regulations With the largest population in Africa, domestic demand continues to rise 	<ul style="list-style-type: none"> Growth constrained by weak policy environment and dire infrastructure Medium-term prospects stronger, with elections over and oil prices strengthening Oil to remain largest export earner due to the government's failure to undertake structural reform Exposed to global oil-price falls and disruptions to output resulting from instability in oil-producing regions
9	Ghana	<ul style="list-style-type: none"> Strong growth outlook concentrated around the oil and gas sector Non-oil growth to pick up, supported by pro-business reforms and steady improvement in power supply Political stability underpinned by strong democracy Remains one of the easier business environments in Africa 	<ul style="list-style-type: none"> Large public-debt burden (and public arrears in the local power sector) requires considerable fiscal consolidation Commodity dependency leaves Ghana heavily exposed to international price trends. Its main exports are oil, gold and cocoa
10	Côte d'Ivoire	<ul style="list-style-type: none"> One of Francophone Africa's more diversified economies Strong growth rates supported by government's pro-business reforms, and a relatively stable political context Large infrastructure projects – particularly in transport and energy (financed by FDI, aid inflows and the government) 	<ul style="list-style-type: none"> Challenging business environment Export base narrow, while rising debt stocks and simmering political tensions weigh However, set to remain in our top 15 most attractive investment destinations for the foreseeable future

Source: RMB Global Markets

The notable changes in our rankings include:

- **Libya** deteriorates to 36th from 23rd. The country's main revenue earner, the oil sector, remains unpredictable and defenceless to Libya's complex political environment. Clashes at oil terminals in the past year and the consequent political dispute that led to the blocking of oil exports highlight Libya's vulnerabilities.
- **Mozambique** deteriorates to 30th from 19th. The debt scandal caused key avenues of revenue to dry up, making Mozambique highly dependent on commodity prices and dampening investor confidence. Consequently, the currency experienced significant volatility, with corporate access to dollars becoming problematic. The economy is expected to grow below 3% over the next five years, until the oil and gas production windfall, expected in 2023/2024, kicks in.
- **Ghana** deteriorates to ninth from fifth. Although Ghana is still – rightfully – one of our most attractive investment destinations, it came close to falling from the Top 10. The main reason is that its competing economies have shown greater improvements in both the economic and operating environment indices, while Ghana's growth score slipped as the IMF overestimated oil-production levels in 2018.
- **Zimbabwe** improves to 34th from 45th. Zimbabwe's growth score improved markedly since 2017, due mainly to the IMF's upwards adjustment of its GDP forecast after former President Robert Mugabe stepped down, ushering in a new political dispensation.
- **Guinea** improves to 33rd from 41st. Growth has settled firmly above 5.5%, driven by agriculture and new mines coming on-stream. FDI has picked up – especially in the mining sector and particularly in bauxite and gold. Although Guinea still has a difficult business environment, its authorities have managed to implement some operating-environment reforms.
- **Angola** improves to 20th from 27th. Oil makes up around 90% of Angola's export revenues – prior to the uptick in prices, businesses had to wait for months to access dollars. Therefore FX liquidity has eased since oil prices started rising again in 2017. Economic growth has also recovered on the back of stronger oil revenues.

ALTERNATIVE RANKINGS

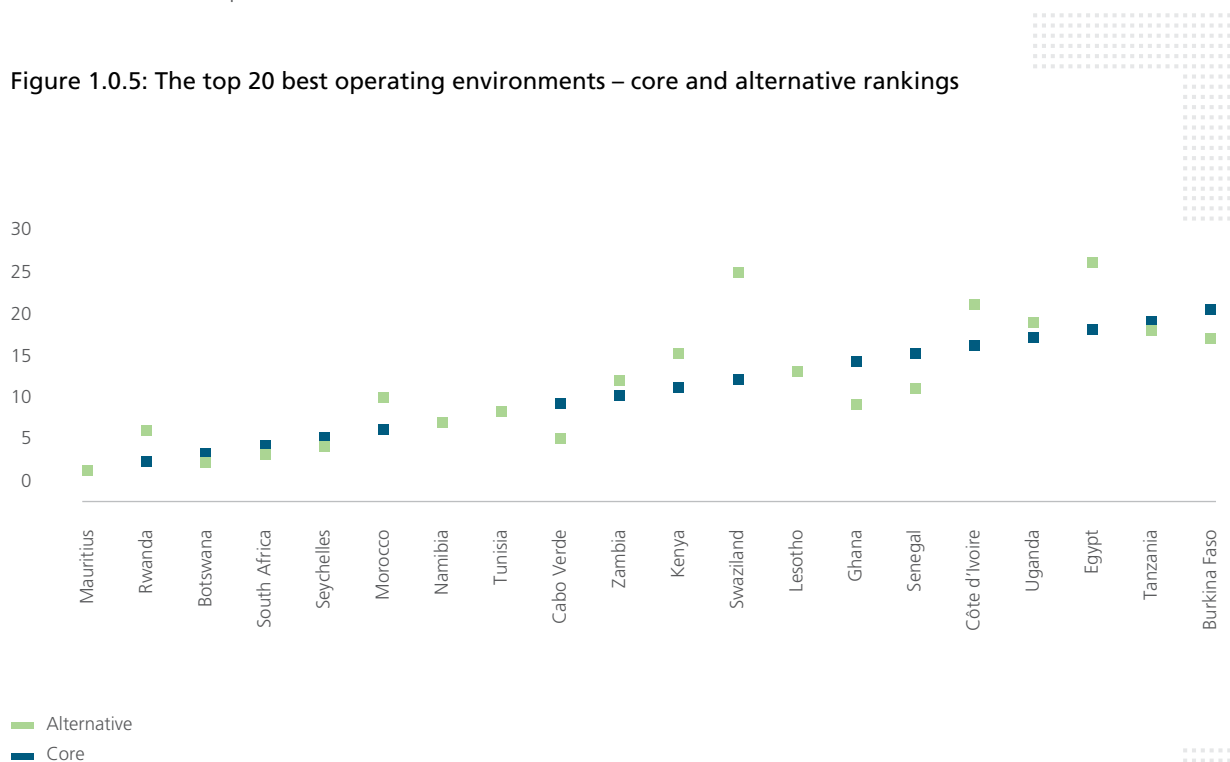
Creators of indices understand their limitations. It is not always possible to include all aspects of the targeted subject matter due to the idiosyncrasies of when, how or even if that data is released. In some cases, the weightings of the various indicators do not align to investors' (or even our) objectives. We have consequently constructed alternative rankings (based on our core methodology) to offer an array of views.

POLITICS PLAYING ITS PART

Our methodology, though sound, is based on static datasets. This means that the operating-environment scores would not necessarily account for events or risks that arise after the surveyed data has been published. South Africa's number two standing is a case in point: the assumed inputs do not capture fully the extent of the heightened political risk at the end of 2017. Nor do they encapsulate the ensuing euphoria that proliferated the nation after the appointment of President Cyril Ramaphosa in February 2018. Though just one consideration when assessing the ease of doing business, a country's prevailing socio-political environment is often a determining factor in investment decisions. While various measures of risk and governance are incorporated into the Global Competitiveness and Doing Business rankings – two of the four primary inputs into RMB's Operating Environment Index – their significance can easily be lost among the other scorings.

To emphasise the importance of political rights and civil liberties, we have incorporated the scorings of Freedom House's Freedom in the World Index to our Operating Environment Index by weighting them equally against the standardised scores of the existing surveys. The index looks at the rights and freedoms of individual citizens rather than the track records of their governments. The alternative ranking is quite instructive, with Mauritius, Botswana, South Africa, Seychelles and Cabo Verde ranked in the Top 5. Cabo Verde jumps four places to number five, nudging Rwanda to sixth spot. Interestingly, the small West African island state shares a similar freedom profile to France when we compare the subsets of the index.

Figure 1.0.5: The top 20 best operating environments – core and alternative rankings



Source: WEF, World Bank, Transparency International, Heritage Foundation, Freedom House

When aggregating the operating environment index with the economic growth scores, we observe that the composition of our Top 10 shifts. South Africa assumes the number one spot and Ghana leaps to number four, while Ethiopia slips to tenth position. Tunisia and Mauritius are notable inclusions at numbers eight and nine respectively, each gaining three spots (Table 1.0.3).

Table 1.0.3: Alternative investment ranking using an augmented operating environment index

	RANKING			SCORING	
	Alternative	Core	Change	Alternative	Core
South Africa	1	2	↑ 1	6.4	6.2
Egypt	2	1	↓ 1	6.3	6.4
Morocco	3	3	— 0	6.0	6.1
Ghana	4	9	↑ 5	5.8	5.5
Kenya	5	5	— 0	5.8	5.7
Tanzania	6	7	↑ 1	5.7	5.6
Nigeria	7	8	↑ 1	5.6	5.5
Tunisia	8	11	↑ 3	5.6	5.4
Mauritius	9	12	↑ 3	5.5	5.4
Ethiopia	10	4	↓ 6	5.5	5.8
Botswana	11	13	↑ 2	5.4	5.3
Senegal	12	16	↑ 4	5.4	5.1
Côte d'Ivoire	13	10	↓ 3	5.3	5.5
Uganda	14	14	— 0	5.3	5.3
Rwanda	15	6	↓ 9	5.3	5.7
Zambia	16	17	↑ 1	5.1	5.1
Algeria	17	15	↓ 2	5.1	5.1
Burkina Faso	18	19	↑ 1	4.7	4.6
Benin	19	23	↑ 4	4.7	4.3
Namibia	20	22	↑ 2	4.5	4.3
Cameroon	21	18	↓ 3	4.5	4.7
Angola	22	20	↓ 2	4.5	4.5
Madagascar	23	24	↑ 1	4.4	4.3
Mali	24	21	↓ 3	4.4	4.4
Malawi	25	27	↑ 2	4.3	4.0
Cabo Verde	26	31	↑ 5	4.2	3.8
Seychelles	27	29	↑ 2	4.0	3.9
Guinea	28	33	↑ 5	4.0	3.8
Sierra Leone	29	35	↑ 6	4.0	3.7
Mozambique	30	30	— 0	4.0	3.9
DRC	31	28	↓ 3	3.9	4.0
Sudan	32	25	↓ 7	3.9	4.2
Zimbabwe	33	34	↑ 1	3.7	3.7
Mauritania	34	37	↑ 3	3.6	3.6
Lesotho	35	39	↑ 4	3.6	3.4
Libya	36	36	— 0	3.5	3.6
Liberia	37	43	↑ 6	3.4	3.2
Gambia	38	42	↑ 4	3.4	3.3
Chad	39	38	↓ 1	3.4	3.5
Gabon	40	26	↓ 14	3.4	4.1
Niger	41	32	↓ 9	3.4	3.8
Togo	42	40	↓ 2	3.0	3.4
Swaziland	43	41	↓ 2	3.0	3.4
Djibouti	44	44	— 0	2.8	3.2
São Tomé and Príncipe	45	45	— 0	2.6	3.0
Eritrea	46	46	— 0	2.5	3.0
Guinea-Bissau	47	47	— 0	2.5	2.7
Burundi	48	50	↑ 2	2.3	2.4
CAR	49	49	— 0	2.1	2.4
Congo	50	51	↑ 1	2.1	2.4
Comoros	51	48	↓ 3	2.1	2.5
Equatorial Guinea	52	52	— 0	1.9	2.3
South Sudan	53	53	— 0	1.1	1.1

APPLYING DIFFERENT WEIGHTINGS

We have been asked whether the weightings of the indicators used in the RMB Investment Attractiveness Index can be adjusted to accommodate what our clients feel the most vital considerations when investing in Africa are. The answer is yes.

1. ECONOMIC ACTIVITY

To assess the importance of economic activity in a country's overall investment attractiveness, we amended our principal formula by assigning a larger weighting to the market size and growth variables.

One of the most notable shifts is Uganda's moving up four spots – and into the Top 10 (Table 1.0.4). By contrast, a smaller economy like Rwanda falls out of the Top 10 due to the small size of its market. Egypt retains its number one spot as its medium-term growth outlook is close to 6%, compared to the 2% of its closest competition, South Africa. Another positive – and large – shift is Libya's. Higher oil-export revenue has significantly narrowed its budget deficit and boosted growth, helping to push the country up by seven spots to 29th place.

The countries that dropped drastically are the island economies of Cabo Verde and Seychelles. Although they have stable operating environments, their growth expectations are not necessarily remarkable, while their markets remain very small.

Table 1.0.4: Alternative investment ranking, prioritising economic activity

	RANKING		
	Alternative	Core	Change
Egypt	1	1	— 0
South Africa	2	2	— 0
Morocco	3	3	— 0
Ethiopia	4	4	— 0
Kenya	5	5	— 0
Nigeria	6	8	↑ 2
Tanzania	7	7	— 0
Côte d'Ivoire	8	10	↑ 2
Ghana	9	9	— 0
Uganda	10	14	↑ 4
Rwanda	11	6	↓ 5
Tunisia	12	11	↓ 1
Algeria	13	15	↑ 2
Senegal	14	16	↑ 2
Botswana	15	13	↓ 2
Zambia	16	17	↑ 1
Mauritius	17	12	↓ 5
Cameroon	18	18	— 0
Angola	19	20	↑ 1
Burkina Faso	20	19	↓ 1
Sudan	21	25	↑ 4
Mali	22	21	↓ 1
Madagascar	23	24	↑ 1
Benin	24	23	↓ 1
DRC	25	28	↑ 3
Gabon	26	26	— 0
Namibia	27	22	↓ 5
Malawi	28	27	↓ 1
Libya	29	36	↑ 7
Mozambique	30	30	— 0
Guinea	31	33	↑ 2
Niger	32	32	— 0
Zimbabwe	33	34	↑ 1
Sierra Leone	34	35	↑ 1
Mauritania	35	37	↑ 2
Chad	36	38	↑ 2
Cabo Verde	37	31	↓ 6
Seychelles	38	29	↓ 9
Togo	39	40	↑ 1
Djibouti	40	44	↑ 4
Gambia	41	42	↑ 1
Lesotho	42	39	↓ 3
Liberia	43	43	— 0
Swaziland	44	41	↓ 3
Eritrea	45	46	↑ 1
São Tomé and Príncipe	46	45	↓ 1
Guinea-Bissau	47	47	— 0
CAR	48	49	↑ 1
Congo	49	51	↑ 2
Comoros	50	48	↓ 2
Equatorial Guinea	51	52	↑ 1
Burundi	52	50	↓ 2
South Sudan	53	53	— 0

Source: RMB Global Markets

2. OPERATING ENVIRONMENT

The same goes for the operating environment. When we assign a larger weighting to the business environment component, the island economies feature again – particularly Mauritius, Seychelles and Cabo Verde. Mauritius jumps seven places into the top five most attractive investment destinations due to it having the friendliest business environment on the continent. Seychelles and Cabo Verde's high operating environment scorings also support their upward moves (Table 1.0.5).

For similar reasons, the southern African region also performed better in these rankings. Botswana, which has the third best business environment in Africa, moved from 13th in our core rankings to sixth in the alternative. Lesotho and Swaziland have also benefitted from being in the 15 best operating environments on the continent.

Nigeria and Tanzania's troublesome operating environments drag them down – each by four spots – and completely out of the Top 10. Poor power supply, an insufficient transport network and the lack of basic social amenities and infrastructural facilities that aid business development are the major reasons for Nigeria's move. Regarding Tanzania, recent government actions have had a mixed impact on the business climate and on investor confidence. More specifically, the private sector has cited delays in VAT and other refunds and payments, as well as the proliferation of regulatory authorities, licences, taxes and charges as areas of concerns.

Nigeria and Tanzania's troublesome operating environments drag them down – each by four spots – and completely out of the alternative operating environment ranking's Top 10.

Table 1.0.5: Alternative investment ranking, prioritising the operating environment

	RANKING		
	Alternative	Core	Change
South Africa	1	2	↑ 1
Morocco	2	3	↑ 1
Egypt	3	1	↓ 2
Rwanda	4	6	↑ 2
Mauritius	5	12	↑ 7
Kenya	6	5	↓ 1
Botswana	7	13	↑ 6
Ethiopia	8	4	↓ 4
Tunisia	9	11	↑ 2
Ghana	10	9	↓ 1
Tanzania	11	7	↓ 4
Côte d'Ivoire	12	10	↓ 2
Nigeria	13	8	↓ 5
Uganda	14	14	— 0
Zambia	15	17	↑ 2
Senegal	16	16	— 0
Algeria	17	15	↓ 2
Burkina Faso	18	19	↑ 1
Namibia	19	22	↑ 3
Cameroon	20	18	↓ 2
Mali	21	21	— 0
Benin	22	23	↑ 1
Seychelles	23	29	↑ 6
Angola	24	20	↓ 4
Madagascar	25	24	↓ 1
Cabo Verde	26	31	↑ 5
Malawi	27	27	— 0
Gabon	28	26	↓ 2
DRC	29	28	↓ 1
Zimbabwe	30	34	↑ 4
Mozambique	31	30	↓ 1
Niger	32	32	— 0
Lesotho	33	39	↑ 6
Swaziland	34	41	↑ 7
Guinea	35	33	↓ 2
Sierra Leone	36	35	↓ 1
Zimbabwe	37	34	↓ 3
Mauritania	38	37	↓ 1
Togo	39	40	↑ 1
Gambia	40	42	↑ 2
Chad	41	38	↓ 3
Libya	42	36	↓ 6
Liberia	43	43	— 0
Djibouti	44	44	— 0
São Tomé and Príncipe	45	45	— 0
Eritrea	46	46	— 0
Guinea-Bissau	47	47	— 0
Comoros	48	48	— 0
Burundi	49	50	↑ 1
CAR	50	49	↓ 1
Equatorial Guinea	51	52	↑ 1
Congo	52	51	↓ 1
South Sudan	53	53	— 0

Source: RMB Global Markets

The lack of efficient infrastructure is one of the major challenges to doing business on the continent. But, its development is the key to unlocking Africa's growth potential.

FOCUSING ON INFRASTRUCTURE – THIS YEAR'S THEME

In last year's edition of *Where to Invest in Africa*, we focused on Africa's main sources of hard-currency revenues, which ultimately describe each country's liquidity situation. Our theme, Money Talks, highlighted one of the continent's highest business hurdles – accessing hard currency.

To some extent, the dire liquidity situation experienced over the past few years has eased due to the improvement in commodity prices. This recovery, however, is cyclical, and the truth is that very little has been done to remedy the situation by way of structural changes – essentially, the only hope for sustainable growth in Africa. Therefore, our focus for this year is infrastructure. The lack of efficient infrastructure is one of the major challenges to doing business on the continent. But, its development is the key to unlocking Africa's growth potential.

INFRASTRUCTURE IN AFRICA

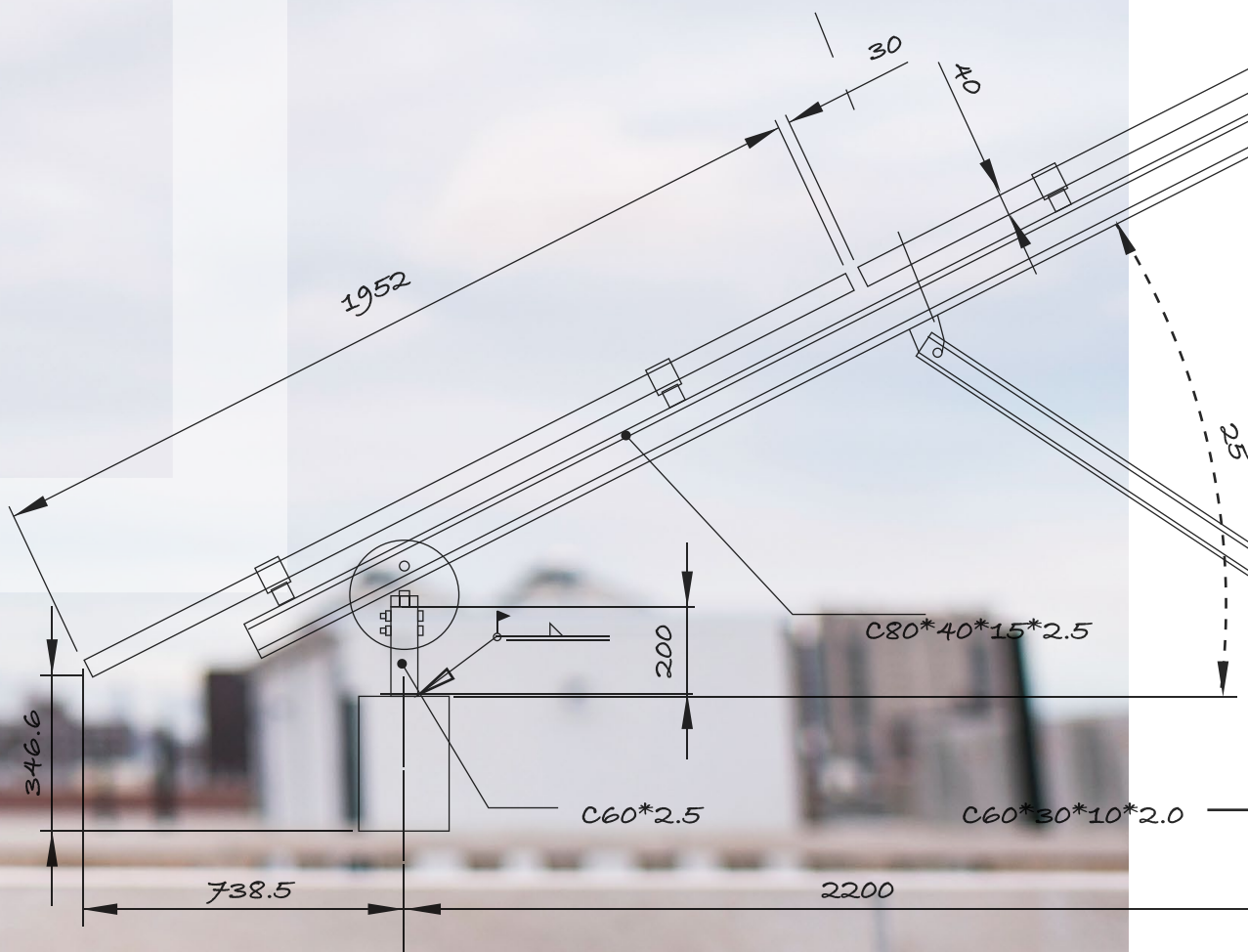
If Africa's gaping infrastructure chasm is to be bridged, serious investment is needed. The African Development Bank's (AfDB) most recent estimation of infrastructure needs is between US\$130bn and US\$170bn annually, but the continent's available capital is insufficient to achieve this.

M-KOPA — TECHNOLOGY ENERGISING OFF-GRID POWER SOLUTIONS

Kenya's M-KOPA Solar brings high-quality solar energy to homes in Kenya, Tanzania and Uganda using a pay-per-use instalment plan. Envisaging a ready solution to inconsistent power supplies due to the lack of infrastructure, M-KOPA founder Nick Hughes designed a system that has now become the leading pay-as-you-go energy provider in Africa.



WHEN CRAFTING
SOLUTIONS,
WE CREATE
OPPORTUNITIES



THE AFRICAN INFRASTRUCTURE LANDSCAPE

Currently, just a fraction of the AfDB's US\$130bn-US\$170bn infrastructure needs estimate – a mere US\$45bn – is spent, two thirds of which is domestically financed from taxes. Africa must attract private capital to accelerate the building of critical infrastructure needed to unleash its potential (Table 2.0.1).

Table 2.0.1: Africa's investment needs

INFRASTRUCTURE SUBSECTOR	TARGET BY 2025	ANNUAL COST (US\$BN) ¹	NOTES
Power	<ul style="list-style-type: none"> 100% urban electrification 95% rural electrification 	30-50	<ul style="list-style-type: none"> New Deal on Energy target by 2025
Water supply and sanitation	<ul style="list-style-type: none"> 100% access in urban areas 100% access in rural areas 	56-66	<ul style="list-style-type: none"> Water access includes: piped water, public tap/standpost, safe wells/boreholes Sanitation access includes: improved latrines, safe pit latrines, septic tank, sewer
Information and communication technology	<ul style="list-style-type: none"> Universal mobile coverage 50% of population within 25km of a fibre backbone Fibre to home/premises Internet penetration rate (10%) 	4-7	
Road and other transport sectors (air, rail and port)	<ul style="list-style-type: none"> 80% preservation 20% development 	35-47	<ul style="list-style-type: none"> Preservation: maintenance and rehabilitation Development: upgrading and new construction
Total		130-170	

Note:
1. Preliminary figures.

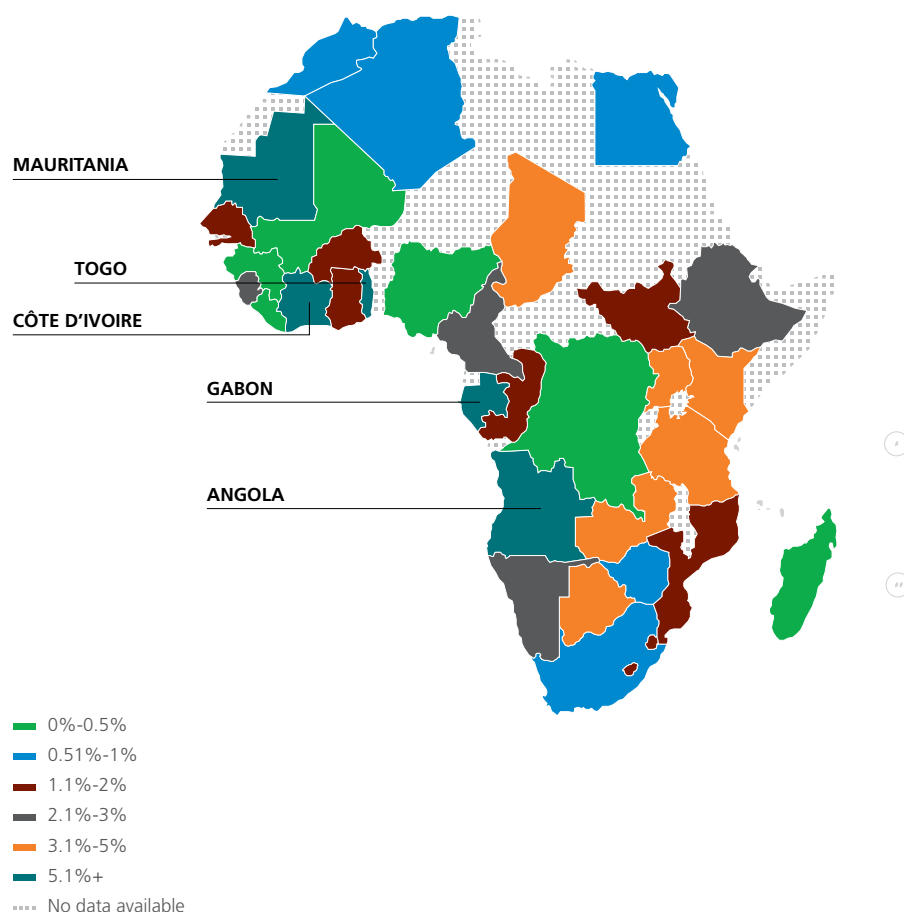
Source: AfDB

CHALLENGES TO INFRASTRUCTURE DEVELOPMENT

Many challenges obstruct infrastructure development in Africa. They include: weak legal, regulatory and institutional frameworks; weak infrastructure planning and project preparation; ineffective governance; and corruption. Consequently, private-sector involvement is limited.

The key to building well-targeted infrastructure that can connect African economies to global value chains is governments dedicated to the task. The Brookings Institution notes that to sustain economic growth rates of 3%-3.5% in Africa, spending on infrastructure as a proportion of GDP needs to be between 5% and 6% annually. It is currently at a 2% average. Only a few countries in Africa have managed this allocation, but the execution of these funds has not necessarily been effective. Over the medium term, Africa's fiscal imbalances will be a hindrance to increased spending.

Figure 2.0.1: Percentage of GDP allocated to infrastructure in national budgets



Note:
Countries for which data was unavailable were not surveyed.

Source: ICA

BRIDGING THE GAP: GOING SOUTH-SOUTH

Financing infrastructure is a key concept – and chapter – in this year's edition (see Chapter 2.3). This section explores options for funding the infrastructure gap. Worth mentioning here is the fact that South-South partnerships – or the relationships between developing countries involving the exchange of knowledge, resources and technology – are going strong. This is particularly so in the case of Africa, China and India.



China is Africa's biggest partner when it comes to trade and infrastructure development. And we expect it to remain that way. The alliance was cemented at the 2015 Forum on China-Africa Cooperation (FOCAC), where the Chinese pledged US\$60bn in project support to Africa. And although Africa is not officially part of China's Belt and Road Initiative (BRI), it stands to benefit by being one of the links on the roadmap. Kenya is best positioned – and best-developed – to be the point of entry for the BRI to connect Asia and Europe via Africa. So, expect an increase in infrastructure investment to the East Africa region.



According to the Infrastructure Consortium for Africa (ICA), India's commitment to African infrastructure development projects more than doubled to US\$1.2bn in 2016, from US\$524m in 2015. The largest contributions were channelled to transport (US\$513m) and energy (US\$422m). The Export-Import Bank of India has been a key player in enhancing the partnership between India and Africa's infrastructure sector.

RANKING INFRASTRUCTURE QUALITY IN AFRICA

In order for you to compare the quality of each country's infrastructure landscape, we have incorporated a ranking that encompasses both the hard- and soft-infrastructure qualities for 53 African countries (Table 2.0.2).

This is how we have done it: first, our proxy for hard-infrastructure development is the AfDB's Africa Infrastructure Development Index (AIDI), which looks at the quality of electricity, ICT and water and sanitation infrastructure. Second, we use the Human Development Index (HDI) as a measurement of the quality of soft-infrastructure development (see the respective indices' ranking in Chapters 2.1 and 2.2). Then we compose the ranking by a simple weighted average of the HDI and AIDI. We use equal weightings to avoid judgment error in the methodology. Given that the two major components of the ranking use a scale from 0 to 100, we have rebased our ranking to 0 to 10 – a score of 10 representing the best quality of infrastructure, and 0, the worst.

The Top 10 best-performing economies on the continent are a mix between the island economies, southern Africa and North Africa. The chapters that follow highlight this pattern, and go into more detail on the quality of infrastructure indicators used in the ranking.

Table 2.0.2: Quality of infrastructure rankings

RANK	COUNTRY NAME	SCORE OUT OF 10 ¹
1	Seychelles	8.6
2	Egypt	7.7
3	Mauritius	7.7
4	Libya	7.7
5	South Africa	7.3
6	Tunisia	7.1
7	Algeria	6.5
8	Morocco	6.5
9	Cabo Verde	5.6
10	Botswana	5.3
11	Gabon	5.0
12	Namibia	4.6
13	Ghana	4.3
14	São Tomé and Príncipe	4.2
15	Kenya	4.1
16	Zambia	4.0
17	Swaziland	4.0
18	Equatorial Guinea	3.9
19	Congo	3.8
20	Zimbabwe	3.8
21	Senegal	3.8
22	Nigeria	3.8
23	Gambia	3.7
24	Comoros	3.7
25	Angola	3.6
26	Djibouti	3.6
27	Cameroon	3.6
28	Rwanda	3.5
29	Uganda	3.5
30	Côte d'Ivoire	3.5
31	Malawi	3.4
32	Mauritania	3.4
33	Guinea	3.3
34	Lesotho	3.3
35	Tanzania	3.3
36	Benin	3.2
37	Sudan	3.2
38	Madagascar	3.1
39	Togo	3.1
40	Mali	3.0
41	Burkina Faso	2.9
42	Liberia	2.9
43	Guinea-Bissau	2.8
44	Burundi	2.8
45	Ethiopia	2.7
46	Mozambique	2.7
47	Sierra Leone	2.6
48	DRC	2.6
49	Eritrea	2.5
50	CAR	2.4
51	Chad	2.3
52	South Sudan	2.3
53	Niger	2.0

Note:

¹ Where 10 is best quality of infrastructure, and 0 is the worst.

Source: RMB Global Markets

DIGGING DEEPER: WITH DEMAND, COMES OPPORTUNITY

The recent upturn in commodity prices has plateaued. Regrettably, this is too soon for Africa. After two decades of overspending in the good years and trying to save in the lean years, African countries are finding themselves in a precarious position, barring a few outliers. And their continued integration into the global economy has accentuated the continent's deep economic imbalances. We expect governments over the next decade to start placing more emphasis on implementing structural changes to their economies – more so than ever before. And what better way to do this than by developing infrastructure?

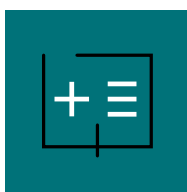
It is vital that both public and private players have the mechanisms to ensure that their investments yield positive results and provide the best returns. With this in mind, this year's edition will focus on the need for infrastructure development and the opportunity that this represents for investors.

The structure of *Where to Invest in Africa* is as follows:



2.1 HARD INFRASTRUCTURE

This chapter will focus on the main areas of tangible infrastructure – specifically transport, energy and ICT. It will hone in on deficits and current and future projects aimed at boosting development.



2.2 SOFT INFRASTRUCTURE

Here, we concentrate on intangible infrastructure – essentially the delivery of services like education and health, as well as the policy environment to enhance infrastructure development.



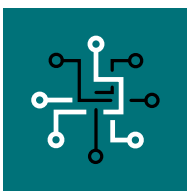
2.3 FINANCING INFRASTRUCTURE

In this chapter, we focus on answering three critical questions: who is financing Africa's infrastructure gap, what are they investing in, and how are these projects being funded?



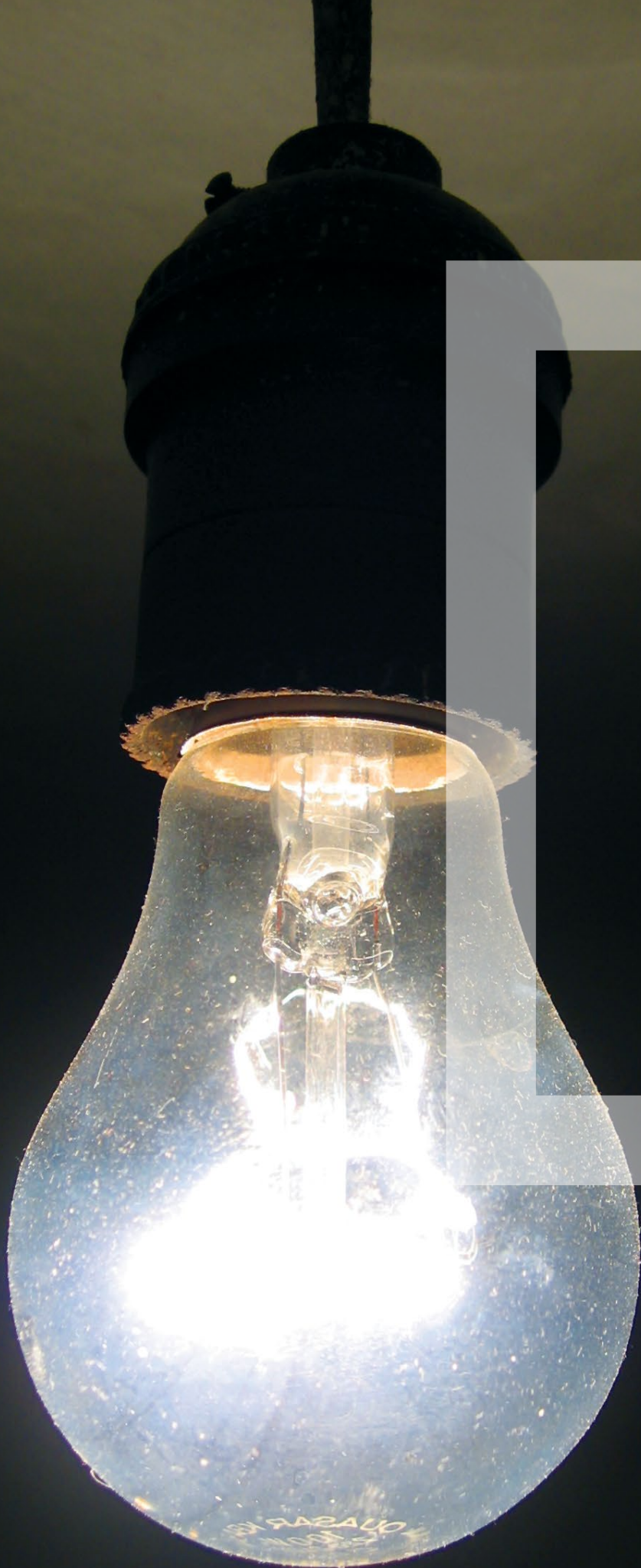
2.4 REGIONAL INFRASTRUCTURE

This section unpacks the potential benefits of regional infrastructure programmes and highlights some of the more viable projects currently underway.



2.5 THE RISE OF NEW TECHNOLOGIES

The focus here is on tech infrastructure and how digitisation is affecting the economic landscape of Africa. Specifically, we look at which economies are susceptible to the rapid change in technologies by considering the skills and economic structures of various countries.

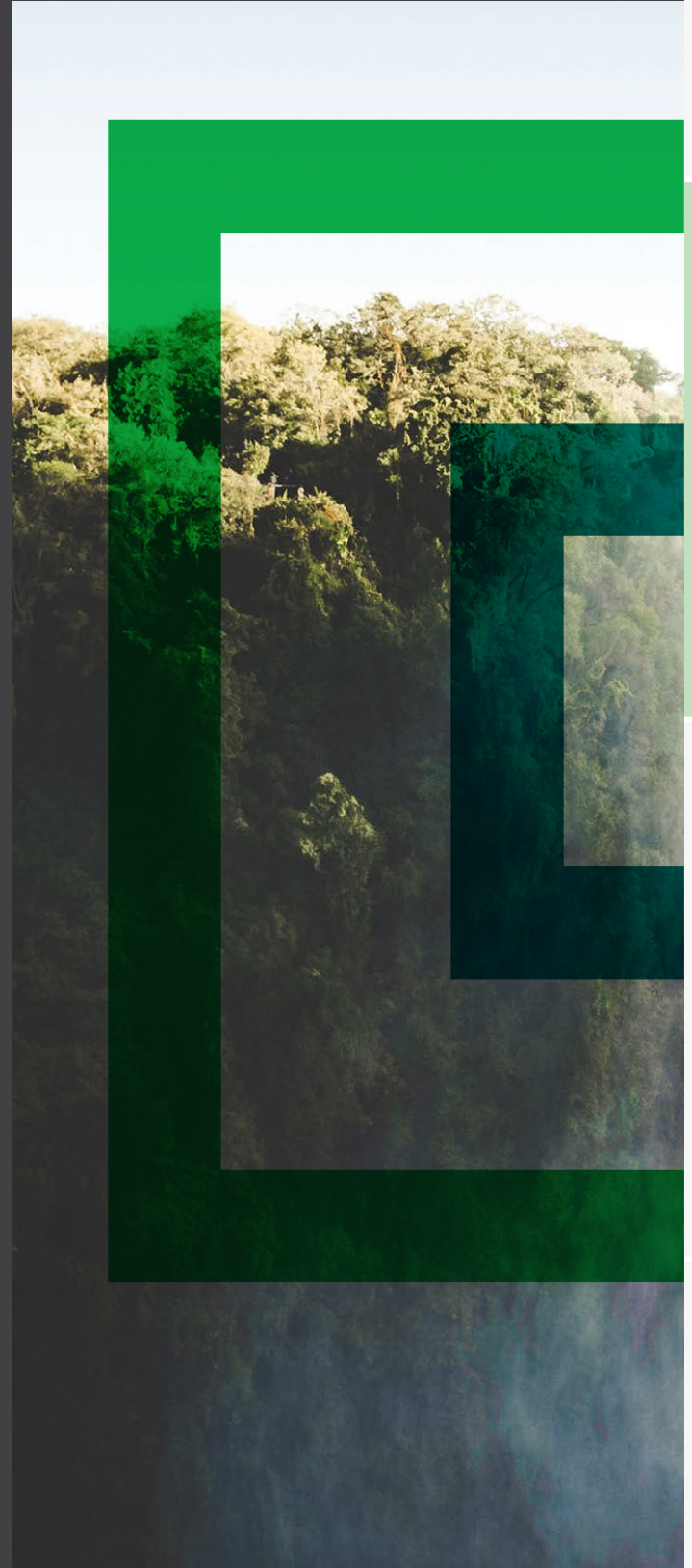


HARD INFRASTRUCTURE

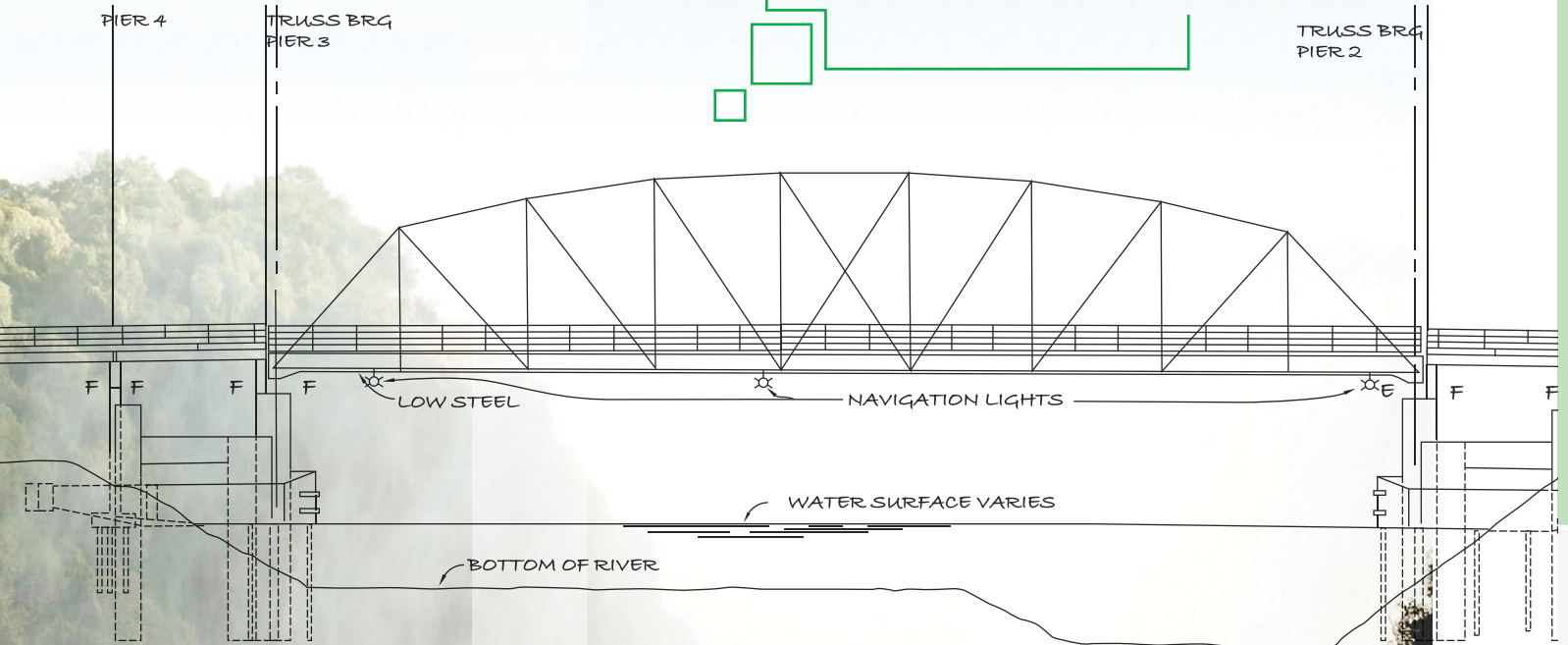
Tangible – or hard – infrastructure relates to the physical structures that connect people, places and businesses to the economy.

BRIDGINGMZAMBA — CONNECTING A RURAL COMMUNITY TO INFRASTRUCTURE

BridgingMZAMBA originated from the urgent need of and request by surrounding inhabitants for a safe crossing of the Mzamba River in South Africa. It included the design and construction of a 140m long suspension bridge in a collaborative manner. Tribal and political approval was given, and the community (with additional manpower from students and volunteers) has been involved with every stage of the construction.



WHEN BUILDING SOLUTIONS, WE BUILD BRIDGES



AFRICA'S HARD INFRASTRUCTURE: THE TANGIBLES

In this chapter, we focus on three key areas across the continent: transport, power (energy) and information and communication technology (ICT). More specifically, we examine them in relation to their deficits, challenges and projects – both current and future.

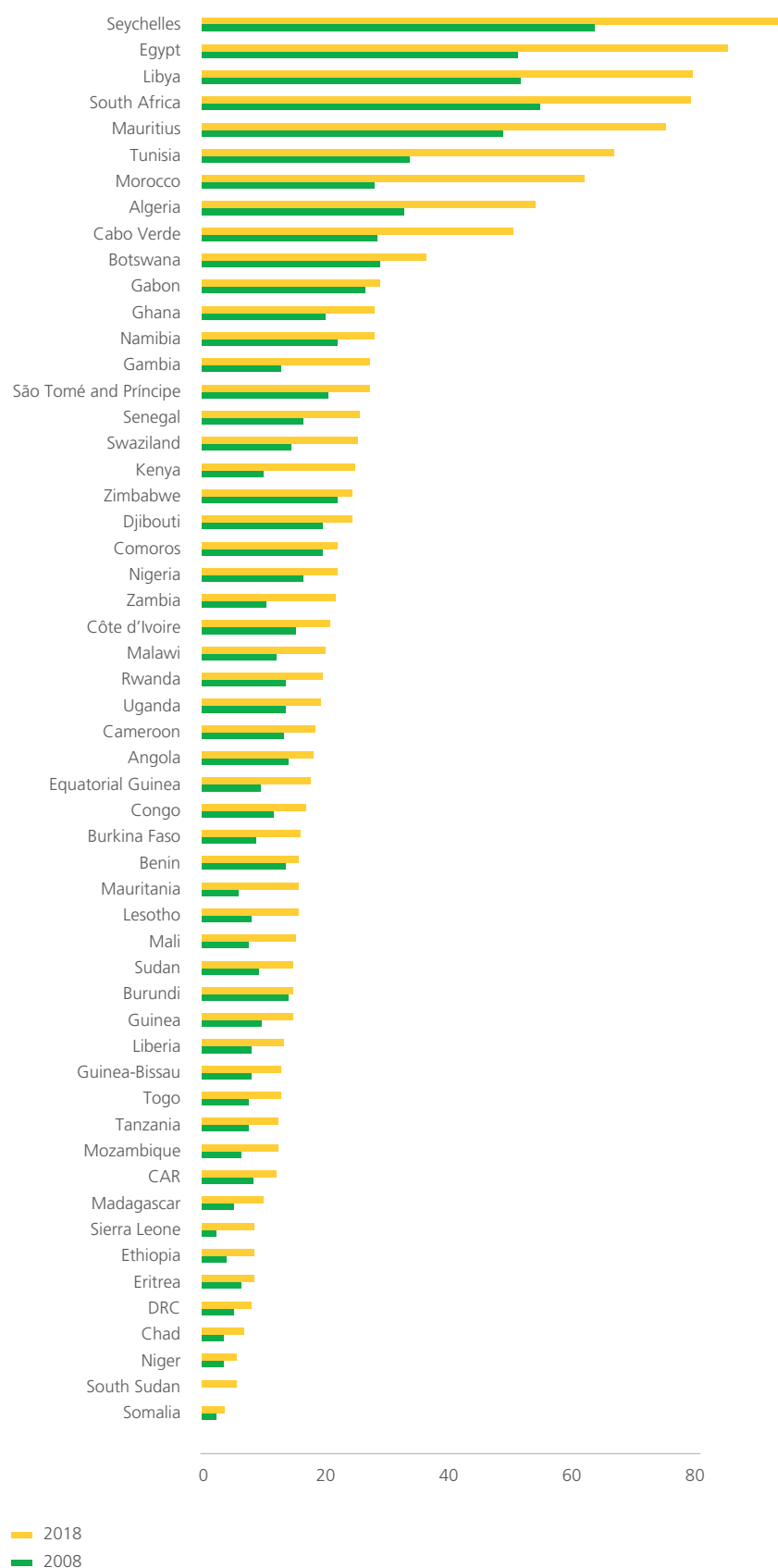
Over the last decade, we have seen the emphasis on infrastructure development shifting from ICT projects to electricity generation and improvements in road infrastructure. This trend will continue over the medium term, as badly built – or poorly maintained – roads and the unavailability or irregular supply of electricity prove exceedingly costly to operating in Africa.

MEASURING INFRASTRUCTURE QUALITY IN AFRICA

The African Development Bank's (AfDB) Africa Infrastructure Development Index (AIDI) evaluates the quality of infrastructure as well as the progress of development across the continent. The AIDI is helpful for an understanding of resource allocation within the framework of the AfDB, and its findings contribute to policy dialogue. The four main components of the index are: transport, electricity, ICT, and water and sanitation. The AIDI tracks how these factors impact productivity and economic growth.

Seychelles dominates the rankings with its high-quality tourism infrastructure and strong ICT capabilities (Figure 2.1.1). In fact, the island economy is placed second in Africa on the International Telecommunication Union's (ITU) ICT Development Index and 90th on its scale of 176 countries worldwide. North and southern Africa also feature high in the AIDI. This is not surprising since these regions are home to some of Africa's biggest and most diversified economies. A common characteristic of the ten lowest-ranked countries is that they are mostly fragile states, recently involved in some form of conflict.

Figure 2.1.1: Africa Infrastructure Development Index 2018



Source: AfDB

IS THE PROGRESS VISIBLE?

Although Africa's significant infrastructure deficit is undeniable, there has been a notable improvement in the quality of infrastructure. Egypt has improved the most over the past decade, followed by its North African counterparts, Morocco and Tunisia. The island economies of Seychelles, Mauritius and Cabo Verde have also been strong reformers since 2008, the tourism sector being a key revenue-earner for these economies; they have therefore focused on upgrading infrastructure to attract visitors. Libya used to be one of the top-ranked African countries for its infrastructure, but since the 2011 political crisis and ensuing civil conflict, the country's infrastructure stock has eroded. However, it is worth keeping Libya in the indices to highlight its potential.

We have used two of the four sub-indices of the AfDB's AIDI (namely, the Transport and Electricity Composite indices) to assess the best- and worst-performing countries in each segment that follows.



TRANSPORT

Africa's geography – its vastness and the fact that nearly a third of its countries are land-locked – demands the development of high-capacity and efficient transport corridors. The estimated cost of transportation in Africa is around 50%-175% higher on average than that of other parts of the world due to its poor infrastructure.

We focus on ports, roads and railways and how the improvement of financing and governance could significantly reduce costs.

THE IMPORTANCE OF PORTS

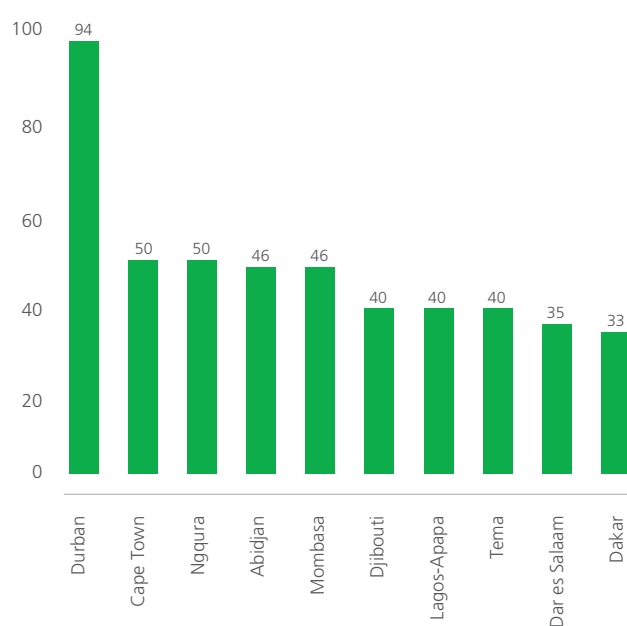
Most of Africa's trade is seaborne. Ports are therefore critical to Africa's trade make-up. Generally speaking, sub-Saharan Africa's (SSA) port infrastructure has limited capacity when it comes to terminal storage, operation and maintenance – some countries without even the ability to handle large vessels. The lack of adequate investment, inefficient land-based logistics and stringent government policies and regulations are the key challenges facing African ports.

The World Economic Forum's (WEF) analysis on infrastructure development shows that a 25% improvement in ports' performances could reduce the price of imported goods in SSA by as much as US\$3.2bn annually. And that as much as US\$2.6bn could be added to the value of exports. It could also add 2% to the region's GDP. Further to this, PwC estimates that a massive US\$2.2bn in logistics costs could be saved annually if the average quantity of goods coming in and going out of ports doubled.

AFRICA'S MOST EFFICIENT PORTS

Container trade in Africa is dominated by southern African ports – South Africa's in particular. PwC uses the degree of port centrality (shipping-liner connectivity), the amount of trade passing through a port, and the size of remote areas to gauge the major regional port hubs¹ in SSA. They are: Durban (South Africa), Abidjan (Côte d'Ivoire) and Mombasa (Kenya) (Figure 2.1.2).

Figure 2.1.2: Top ten ports in Africa – PwC Hub attractiveness score



Note:
By comparison, the Port of Rotterdam achieves a hub attractiveness score of 421.

Source: PwC

PwC has also developed a Port Performance Rating (PPR) by combining the ratings of infrastructure quality, port-operations effectiveness and logistics efficiency (customs, logistics quality, track-and-trace and timeliness). PwC uses Rotterdam as the international benchmark. Durban achieves only 75% of the efficiency expected from a major global hub. Other hub port contenders achieve 50% or less than the benchmark.

¹ Hub ports are large regional container ports with high volumes (>2m 20-ft equivalent units (TEUs) per annum) and direct shipments carried by very large vessels.

Table 2.1.1: Port Performance Rating

COUNTRY	PORT	PPR
Benchmark	Rotterdam	129
South Africa	Durban	98
South Africa	Cape Town	90
South Africa	Ngqura-Coega-PE	90
South Africa	East London	77
Kenya	Mombasa	74
Namibia	Walvis Bay	67
Ghana	Tema	64
Nigeria	Lagos-Apapa	64
Mauritius	Port Louis	62
Côte d'Ivoire	Abidjan	60
Gabon	Libreville	59
Benin	Cotonou	59
Senegal	Dakar	58
Mozambique	Maputo	58
South Africa	Saldanha	56
South Africa	Richards Bay	56
Tanzania	Dar es Salaam	53
Djibouti	Djibouti	53
Sierra Leone	Freetown	52
Côte d'Ivoire	San Pedro	52
Namibia	Lüderitz	52
Liberia	Monrovia	48
Kenya	Lamu	48
Ghana	Takoradi	47
Gambia	Banjul	42
Mozambique	Pemba	41
Tanzania	Mtwara	41
Mozambique	Nacala	40
Mozambique	Beira	40
Guinea	Conakry	39
Congo	Pointe-Noire	38
Mauritania	Nouakchott	37
Cameroon	Kribi	37
Madagascar	Toamasina	36
Mauritania	Nouadhibou	36
Guinea-Bissau	Kamsar	35
Angola	Cabinda	33
Seychelles	Victoria	32
Angola	Lobito	30
Cameroon	Douala	28
Angola	Luanda	26
DRC	Matadi	24
Comoros	Mutsamudu	20
Nigeria	Onne	18
Angola	Soyo	17
Togo	Lomé	0
Equatorial Guinea	Malabo	0
Equatorial Guinea	Bata	0
Somalia	Berbera	0
Cabo Verde	Praia	0
Somalia	Mogadishu	0

Source: PwC

If we consider planned port investments, Côte d'Ivoire is clearly serious about becoming a regional hub (Table 2.1.2).

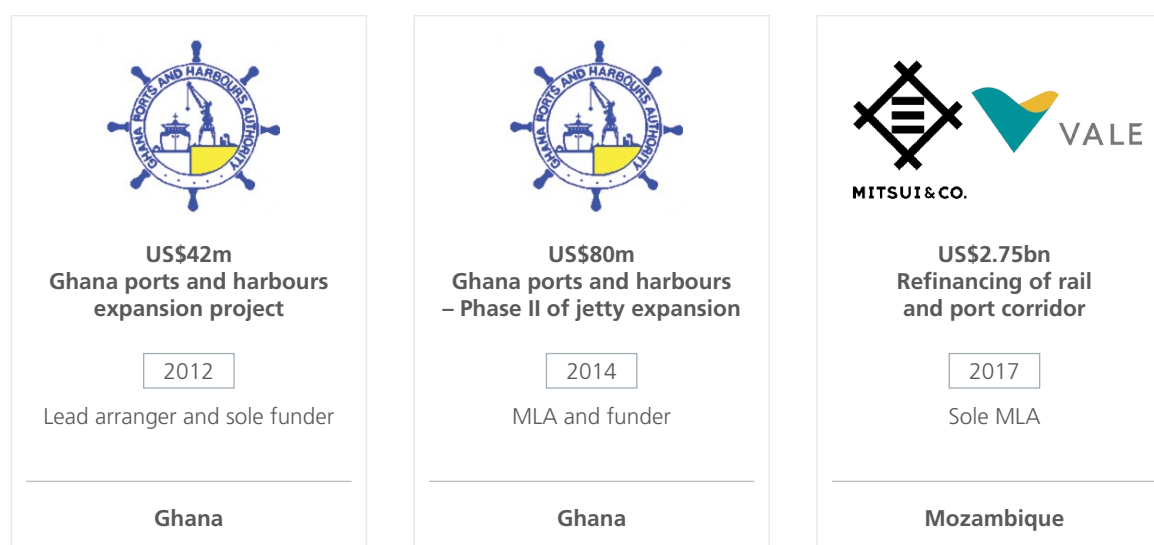
Table 2.1.2: Planned port investments

COUNTRY LOCATION AND VALUE/LEVEL OF FUNDING	NAME OF PROJECT	STAGE IN PROJECT CYCLE
Côte d'Ivoire (US\$50m)	Abidjan Logistics Hub	Pre-feasibility
Côte d'Ivoire (US\$70m)	Abidjan Port Grain Terminal	Pre-feasibility
Côte d'Ivoire (US\$150m)	Abidjan Port Wharf	Pre-feasibility
Côte d'Ivoire (US\$606m)	Ferkessédougou Dry Port	Pre-feasibility
Côte d'Ivoire (US\$520m)	San Pedro Port Container Terminal Relocation and Expansion Programme	Planning
Côte d'Ivoire (US\$10m)	San Pedro Port Mixed-Use Commercial Terminal	Pre-feasibility
Côte d'Ivoire (US\$40m)	San Pedro Port Mixed-Use Industrial Terminal	Pre-feasibility
Côte d'Ivoire (US\$240m)	Vridi Lagoon Bay Backfilling and Development Programme, and Vridi Biétry Bridge	Early implementation
Kenya (not stated)	Lamu Port Development	Early implementation
Mozambique (US\$869m)	Beira Port Terminal 11	Planning
Mozambique (US\$500m)	Essar Beira Port Coal Terminal	Planning
Nigeria (not stated)	Ibom Deep Sea Port (IDSP)	Planning
Tanzania (not stated)	Bagamoyo Special Economic Zone	Planning

Source: PwC

Rand Merchant Bank has been a lead arranger in projects relating to several ports and bulk water projects. It arranged and funded the design and turnkey construction of a bulk unloading jetty at Tema Port (Ghana). The jetty will facilitate increased throughput of shipping vessels and enhance Tema Port's position as the gateway to Ghana. Other projects are included in Figure 2.1.3.

Figure 2.1.3: RMB's track record in financing ports projects



Source: RMB Infrastructure Finance

It is not only investment into ports that will help improve Africa's position in global trade. In SSA, there is a major imbalance between goods that are imported and those that are exported: PwC highlights the fact that imports are dominated by containerised cargo, while exports are mainly raw materials and agricultural products, most of which are handled as bulk freight. That means that the vessels arriving with containers leave the ports empty – an important opportunity lost. The continent will benefit greatly from increasing the level of processed goods that can be containerised and exported.

ROADS AND RAILWAYS

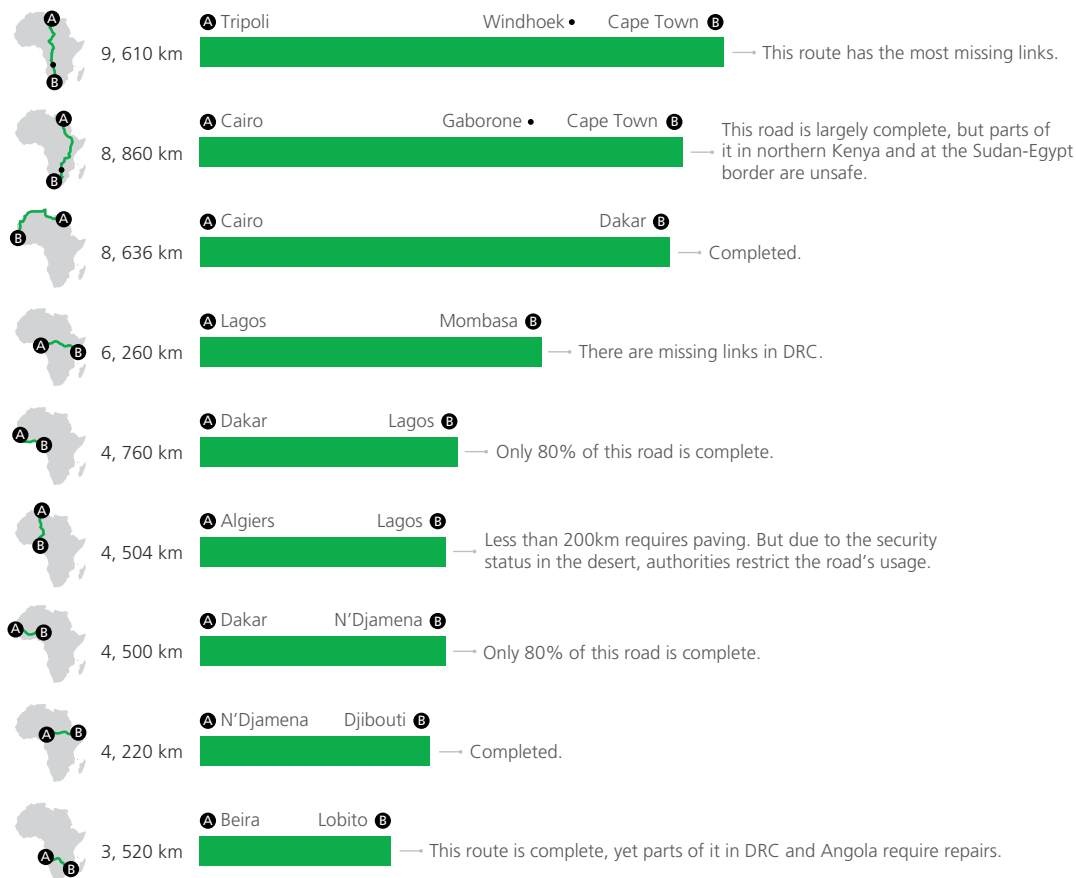
According to The Programme for Infrastructure Development in Africa's (PIDA) Priority Action Plan, US\$75bn is needed for transport projects between 2012 and 2020: US\$16.5bn is to be spent on rail projects and US\$11bn on roads, highlighting the deficiency in road and rail links.

ROADS: THE MAIN ROUTE FOR TRADE

Eighty to ninety percent of passenger and freight traffic in Africa is by road. The World Bank estimates that US\$200bn of trade in Africa is carried by road networks. But, regardless of its importance, the road network density is much lower in Africa than that of other regions.

The infamous Trans-African Highway (TAH) might be rejuvenated if initiatives like the Continental Free Trade Area (CFTA) are introduced. The TAH is the largest road network connecting major African cities. The project was launched in 1971, and the African Union (AU), the AfDB and the United Nations Economic Commission for Africa (UNECA) are the major donors to the 60,000km road network project. Figure 2.1.4 highlights the network's nine highways.

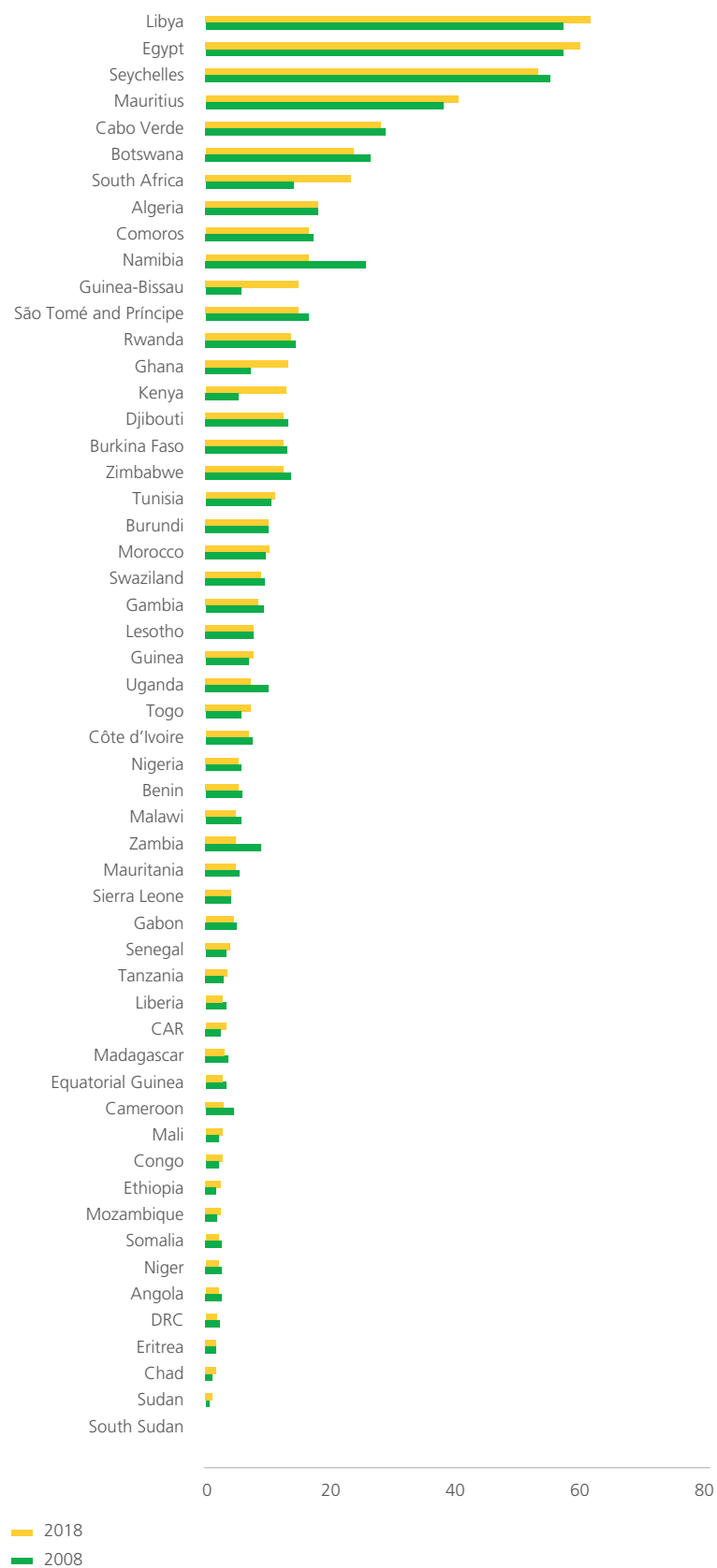
Figure 2.1.4: Trans-African Highway network routes



Source: UNECA

In combining total paved roads per 10,000 inhabitants (as a proxy for access to the paved road network), as well as the total road network in kilometres, the AfDB's Transport Composite Index shows that Egypt and Seychelles are almost on par as having the most extensive road networks in Africa.

Figure 2.1.5: Transport Composite Index



RAILWAYS

Only 84% of Africa's 82,000km rail network is operational. And most of the rail lines are low-speed, small-scale, and undercapitalised networks that carry minimal volumes. The biggest challenge to the development of the railway industry is that some firms struggle to transform themselves from subsidy-dependent legacy companies into more efficient commercial undertakings. Poor economic, technological and institutional conditions have further aggravated the situation in Africa. These have ensured that railway infrastructure is at the bottom of the infrastructure-financing list.

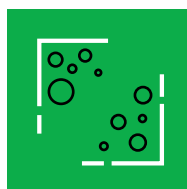
Interest in investing in railways has, however, re-emerged, underpinned by the sector's capacity to move large volumes of freight or passengers in an energy-efficient way. Railways could also help curb congestion costs: the rapid pace of urbanisation on a continent without effective mass-transit systems (such as railways), means significant congestion costs.

Investor interest over the past decade is evident in four major project groupings:



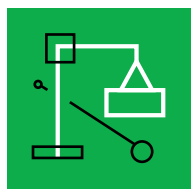
MAJOR AFRICAN METROPOLITAN AREAS

Urban and suburban passenger railways



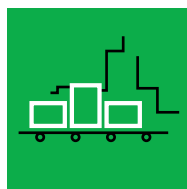
DENSELY POPULATED AREAS AND CORRIDORS

High volumes for freight or passengers possible



CORRIDORS – FROM PORTS TO INLAND MARKETS

Freight trains moving containerised or bulk materials to/from ports over long distances



MAJOR MINING BASINS

Freight trains moving minerals and other raw materials to ports

Recent railway developments

One exciting development is the introduction of Africa's first cross-border and longest electrified railway service, which connects Ethiopia and Djibouti. Commercial operations began in 2018, with each train able to carry a load equivalent to 200 trucks – and able to cover the 750km route in 12 hours, compared to three days by road. Freight capacity is expected to reach 24.9m tonnes by 2025.

Another big project is the US\$14bn East African Rail Master Plan – to connect the cities of Mombasa, Nairobi, Kigali, Kampala and Juba. Kenya has finished the first phase of the Mombasa-Nairobi Standard Gauge Railway (SGR) that will reach Uganda, with construction works for Phase II connecting Nairobi to Kisumu already underway.

Figure 2.1.6: Current railway connections in Africa



Note:
Map prepared using available data.

Source: PwC

PwC has highlighted several rail- and road-related development activities across SSA. This infrastructure is key to connecting regions – specifically landlocked economies to port hubs.

Table 2.1.3: New rail- and road-related developments











COUNTRY LOCATION AND VALUE/LEVEL OF FUNDING	NAME OF PROJECT	STAGE IN PROJECT CYCLE
Côte d'Ivoire (US\$1.2bn)	Dabou-San Pedro Highway Rehabilitation Programme	Conceptual
Lesotho (US\$18.3m)	Lesotho Transport Planning Infrastructure and Connectivity Project	Planning
Regional – Burkina Faso, Côte d'Ivoire (US\$700m)	Burkina Faso-Côte d'Ivoire Railway Rehabilitation Programme	Planning
Regional – Lesotho, South Africa (US\$9.36m)	Maluti Transshipment Hub	Bankable feasibility
Regional – Mozambique, South Africa (US\$321.4m)	Ressano Garcia Railway Line Rehabilitation Programme	Planning
Regional – Rwanda, Tanzania (US\$900m)	Isaka-Kigali Standard Gauge Railway	Bankable feasibility
Regional – Tanzania, Uganda (US\$1.2m)	Masaka-Kumunasi Road	Planning
Zambia (not stated)	Kafue-Mazabuka Road Rehabilitation Project	Pre-feasibility

Source: PwC

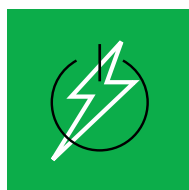
Rand Merchant Bank provides funding for rail and road assets and concessions across Africa. In partnership with the Export Credit Insurance Corporation of South Africa Limited (ECIC), RMB was a funder to the Nacala Corridor, a 912km railway line that provides a secure, dependable logistics corridor from the Moatize Mine in the north-west region of Mozambique to the port of Nacala in the east. This strategic single railway line enables the export of coal, general cargo and passengers to previously inaccessible areas. It's a testament to Solutionist Thinking and what can be achieved when Africans and global partners work together to build the continent's future. Figure 2.1.7 highlights a few other projects.

Rail- and road-related infrastructure is key to connecting regions – specifically landlocked economies to port hubs.

Figure 2.1.7: RMB's track record in financing road and rail projects

 <p>Refurbishment of five GE locomotives by African Rail and Traction Services</p> <p>2005</p> <p>Funder</p> <p>South Africa</p>	 <p>R200m First private-sector acquisition of ten GE locomotives from Brazil</p> <p>2006</p> <p>Funder</p> <p>South Africa</p>	 <p>R2.4bn Design, construction, operation and maintenance of high-speed rail link</p> <p>2007</p> <p>Lead arranger and funder</p> <p>South Africa</p>	 <p>R3.5m Purchase of 110 locomotives from Mitsui by Transnet</p> <p>2007</p> <p>South Africa</p>	 <p>R750m Preference share regearing facility</p> <p>2008</p> <p>Sole lead arranger</p> <p>South Africa</p>
 <p>US\$350m First PPP toll road in Nigeria</p> <p>2008</p> <p>Joint advisor</p> <p>Nigeria</p>	 <p>Xitimela Leasing Ltd, Mauritius entity jointly owned with CFM</p> <p>2009</p> <p>Shareholder</p> <p>Mozambique</p>	 <p>R400m 12-year preference share facility for SA Toll Road Company</p> <p>2012</p> <p>Lead arranger and funder</p> <p>South Africa</p>	 <p>US\$50m Acquisition of 533 locomotives from GE and Bombardier</p> <p>2014</p> <p>Participant</p> <p>Zimbabwe</p>	 <p>African and South African LeaseCo set up by Grindrod and Pembani</p> <p>2016</p> <p>MLA and lender</p> <p>South Africa</p>

Source: RMB Infrastructure Finance



ENERGY

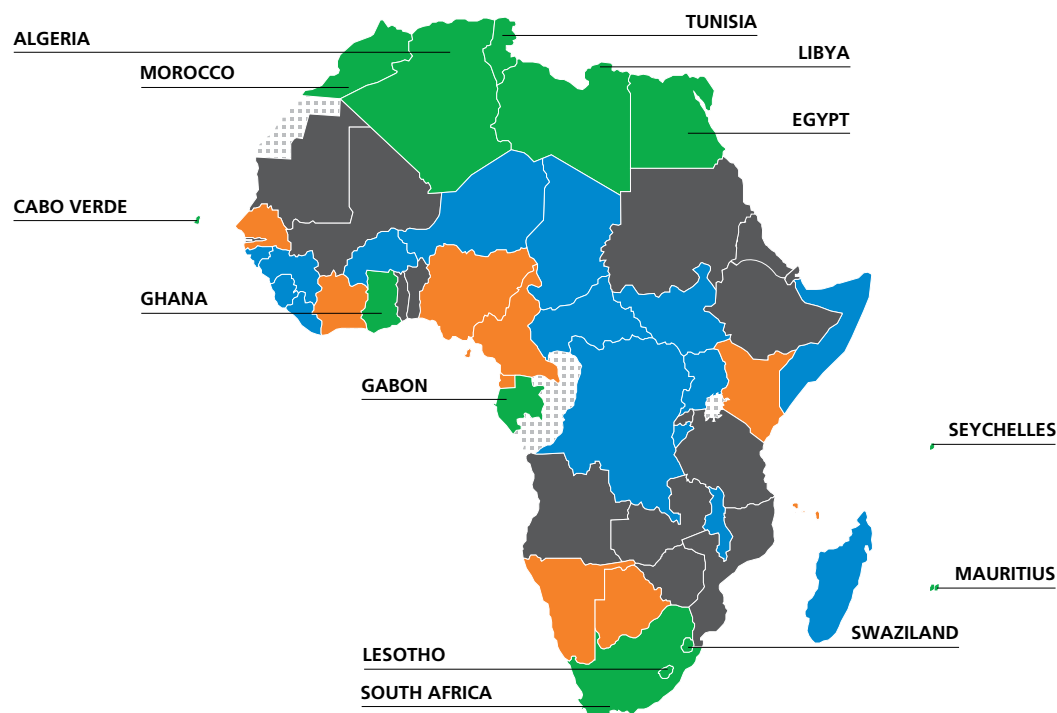
According to the Energy Information Administration (EIA), over 600 million Africans have no access to electricity. Per-capita power consumption in SSA (excluding South Africa) is 180kWh, compared to 6,500kWh in Europe or 13,000kWh in countries like the US. Furthermore, Africa's urban population has better access to power than the rural consumer. The latest data shows that average electricity access is about 77% in urban areas – more than double rural Africa's 32% (Table 2.1.4).

Table 2.1.4: Regional electrification rates

	RATE OF ACCESS (%)				POPULATION WITHOUT ACCESS (millions)		
	NATIONAL				URBAN	RURAL	
	2000	2005	2010	2016	2016	2016	2016
World	73	76	82	86	96	73	1,060
Africa	34	39	43	52	77	32	588
North Africa	90	96	99	100	100	99	<1
Sub-Saharan Africa	23	27	32	43	71	23	588
Developing Asia	67	74	83	89	97	81	439
China	99	99	99	100	100	100	-
India	43	58	66	82	97	74	239
Indonesia	53	56	67	91	99	82	23
Other Southeast Asia	67	76	83	89	97	82	42
Other Developing Asia	32	39	53	73	87	65	135
Central and South America	87	91	94	97	98	86	17
Middle East	91	80	91	93	98	79	17

Source: EIA

Figure 2.1.8: Electrification rate per African country



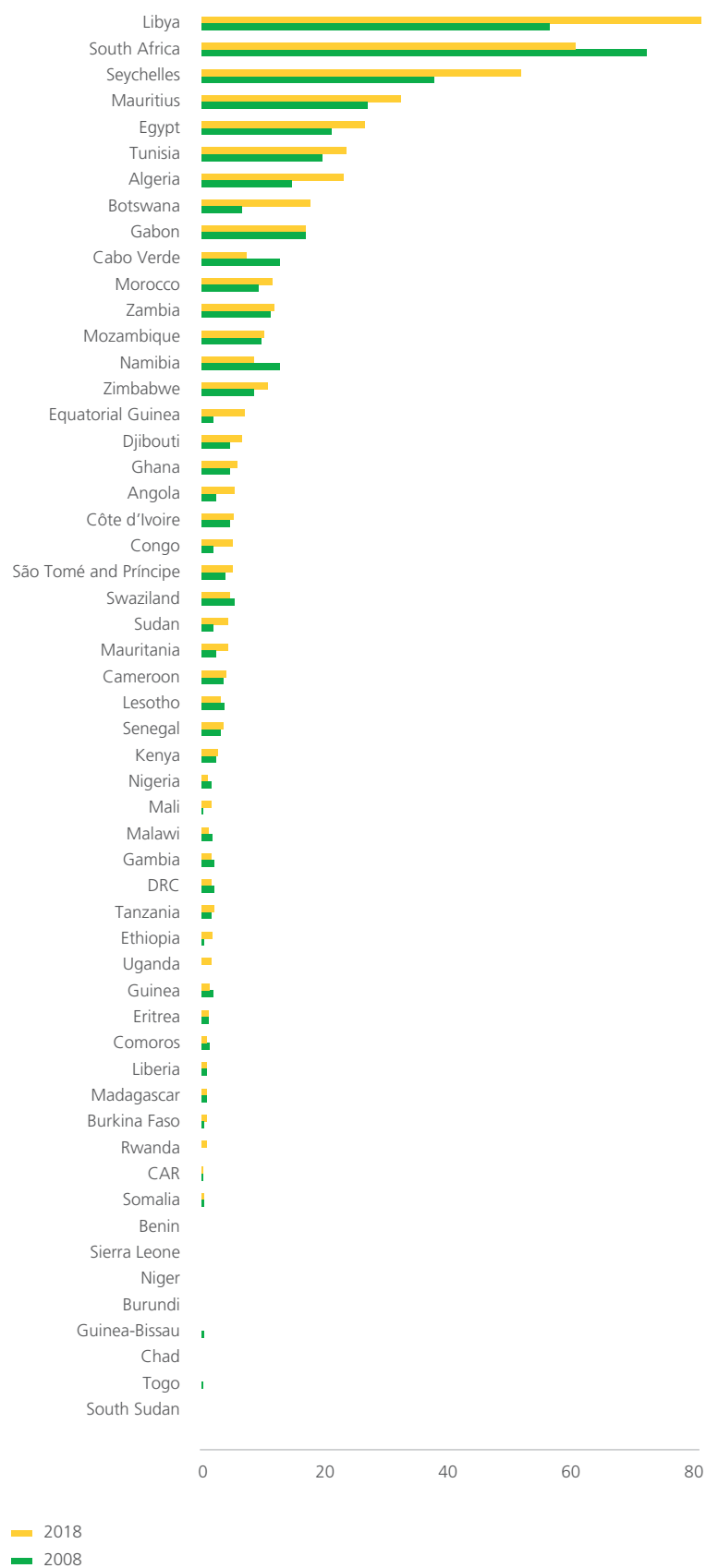
- 0%-25% Very low electrification rate
- 25%-50% Low electrification rate
- 50%-75% Moderate electrification rate
- 75%-100% High electrification rate
- No data available

Note:
Rate of access referenced as percentage of population.

Source: EIA

The AfDB's Electricity Composite Index looks at the total electricity production of a given country, including the energy imported from abroad – both privately and publicly generated. The indicator is measured in millions of kilowatt-hours produced per hour and per inhabitant. The index shows that Libya has outperformed. This comes as a surprise, since centralised power grids have been the target of attacks over recent years, and blackouts in the North African country are relatively common. But, if one looks at the AfDB's measurement, the electricity generation of Libya and other North African countries is the strongest on the continent. Although South Africa's capacity is the second highest in Africa, its performance on the index has deteriorated over the past decade: demand for electricity dropped significantly after the Global Financial Crisis and has not returned to pre-crisis levels.

Figure 2.1.9: Electricity Composite Index

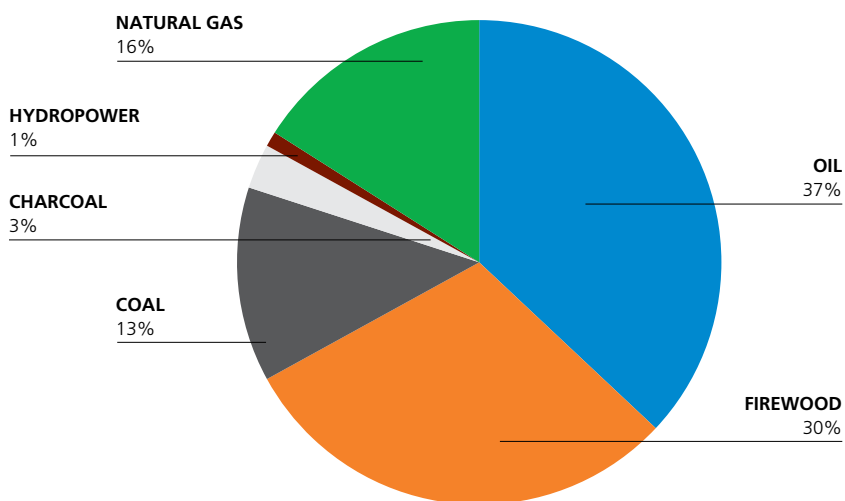


Source: AfDB

DIFFERENT SOURCES OF ENERGY RISING

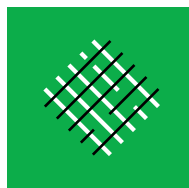
Biomass and fossil fuels remain the two largest sources of primary-energy supply in Africa. Biomass accounts for approximately 50% of usage, while fossil fuels (dominated by oil, then coal and natural gas) account for 42%, with hydropower adding about 1% to the total primary-energy-supply mix.

Figure 2.1.10: Shares of total primary-energy supply in Africa



Source: UN, AfDB, ICA

Fossil-based fuels are one of the most expensive sources of energy globally, their costs a contributory factor to the chasm between the demand and supply of electricity. Also, for commercial and institutional investors, the return on investment in conventional energy source projects in Africa is questionable – and validly so. Access to electricity supply, the reliability of the off-taker, access to financing and the inefficient grid infrastructure are all factors contributing to the concerns. With this in mind, it becomes vital to consider alternative ways of sourcing and accessing energy.

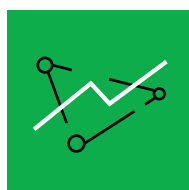


ENERGY DISTRIBUTION SOLUTIONS: MICROGRIDS

Africa's use of microgrids – or small, locally sourced electricity networks able to function off the national grid – is rising at a significant pace, supporting rural areas in particular. This avenue of distribution circumvents centralised grids, reducing the risk of grid-infrastructure bottlenecks and moving capacity closer to the consumer.

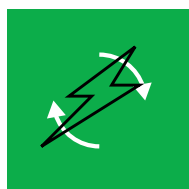
Sustainable Energy for All (former UN Secretary-General Ban Ki-moon's initiative to realise universal energy access, enhance energy efficiency and extend the use of renewable energy) predicts that Africa will be home to 35,000 microgrids by 2021. Recent policy changes and funding programmes have increased investor interest in the market. Governments in East and West Africa have created policies for issues such as tariff-setting, and others have put in place subsidy schemes to get microgrid projects off the ground. Kenya seems to be at the forefront of microgrid development. A report by TFE Consulting estimates that the Kenyan microgrid market could reach 2,000-3,000 microgrids by 2021 – up from the 65 microgrids that are currently producing between 5kW and 100kW.

Indeed, microgrids are expected to play a main role in supporting Africa's electrification drive and adoption of energy storage across the continent in the future. The challenge is its economic viability: the decentralised nature of African communities means that scale is not necessarily achievable. But the AfDB suggests that governments and their utilities subsidise these off-grid connections as this is cheaper than extending the national grid.



RISING REGIONAL INTERCONNECTIVITY

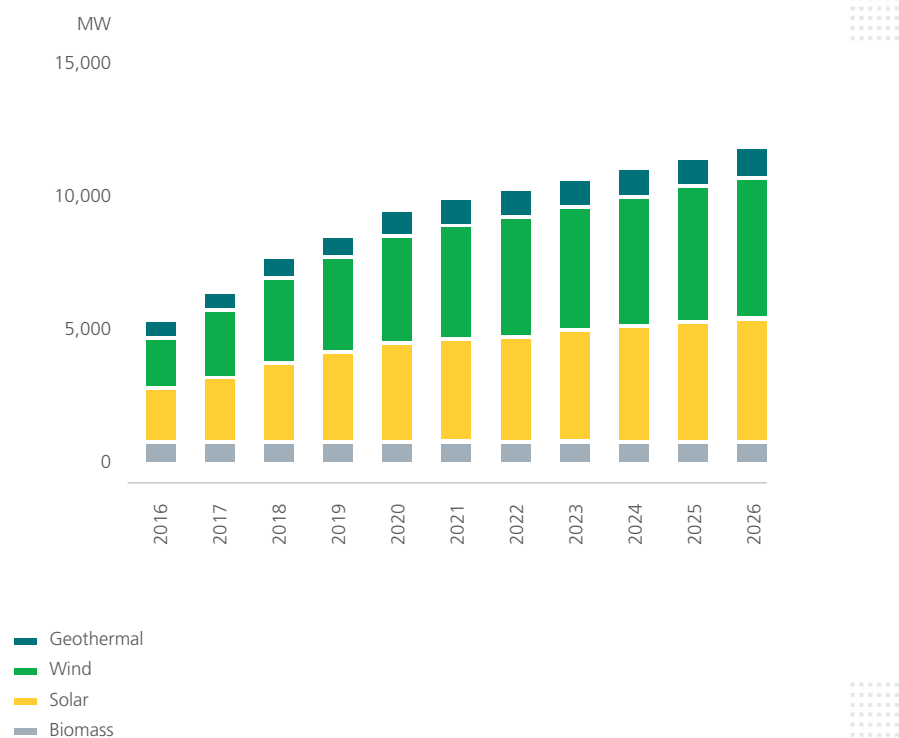
Governments are looking to increase energy efficiency and security, and reduce electricity costs. They are therefore looking to connect and collaborate with neighbouring countries. We have seen a number of initiatives in this regard, but the West Africa Power Pool (WAPP) is worth a mention. It is a co-operation of 14 countries (including Côte d'Ivoire, Ghana, Nigeria and Senegal) with 27 national electricity utilities working towards an integrated regional power market. The World Bank, which has already committed US\$750m in funding to the WAPP initiative, estimates that power trade in the region could lead to annual cost savings of US\$5bn-US\$8bn. The challenges to this alternative route of power sourcing are logistical and bureaucratic in nature. What is needed are improvements in a country's creditworthiness; the strengthening of contracts; the provision of guarantees and the involvement of regional institutions.



RENEWABLE ENERGY

Renewable energy is no longer a new concept for Africa. Currently, solar and wind energy are the two largest contributors to alternative energy sources (Figure 2.1.11).

Figure 2.1.11: SSA renewables capacity by technology



While South Africa is leading the rapid growth in solar power, Morocco has the largest installed wind capacity in Africa. Hydropower is one of the most viable – and cheap – renewable power-generation options available. The Congo River, Africa's second-longest and the world's deepest river, has the largest discharge of African rivers, followed by the Zambezi, the Niger and the Nile – and the second-largest discharge in the world after the Amazon, with hydropower opportunities being enormous. A significant share of electricity generated by the DRC's Grand Inga Dam is destined for exports, which will go as far as South Africa.

Taking hydropower out of the equation, the BMI expects SSA's renewables capacity to total 12GW by 2026. Meanwhile, geothermal energy is a valuable source for Africa's electricity grid. The recent US\$4bn geothermal plant project in Ethiopia is setting the standard for projects in the East African region. However, exploratory costs are very high, making it an expensive alternative-energy source (See this chapter's appendix for per-country renewable-energy capacity data – Table A2.1.2).

In recent years, governments have started adopting regulatory frameworks to encourage investment into the renewables industries. The South African Renewable Energy Independent Power Producer Procurement Programme (REIPPPPP) and Zambia's Scaling Solar and REFiT initiatives are good examples:

- **South Africa's REIPPPPP:** This programme involves a competitive tender process designed to facilitate private-sector investment into grid-connected renewable-energy generation in South Africa. Of the planned generation until 2030, 17,800MW must be generated from renewable energy sources – 5,000MW must be operational by 2019, and an extra 2,000MW by 2020.
- **Zambia's Scaling Solar:** This is a World Bank initiative aimed at creating viable markets for solar power. In 2017, Zambia's Industrial Development Corporation signed an agreement with the International Finance Corporation (IFC) to develop up to 500MW of clean, renewable energy through two to four projects. This is Zambia's second mandate after the successful first engagement in 2016 that attracted top global developers and yielded some of the lowest tariffs in the world.
- **Zambia's REFiT:** The government launched the 20MW Renewable Energy Feed-in Tariff (REFiT) strategy aimed at accelerating private investments in small- and medium-sized renewable-energy projects in Zambia – aimed especially at rural areas.

And innovation in the renewable power space has brought simple solutions to the poor. As highlighted by the Design Indaba in 2018, Kenya's M-KOPA Solar brings high-quality solar energy to homes in East Africa by using a pay-per-use instalment plan. For a small deposit, the company sells solar systems to consumers who can then purchase daily credits for less than the price of traditional kerosene lighting. After one year of payments, customers own their solar systems outright and can upgrade to more power. As of January 2018, M-KOPA had connected over 600,000 homes to affordable solar power.

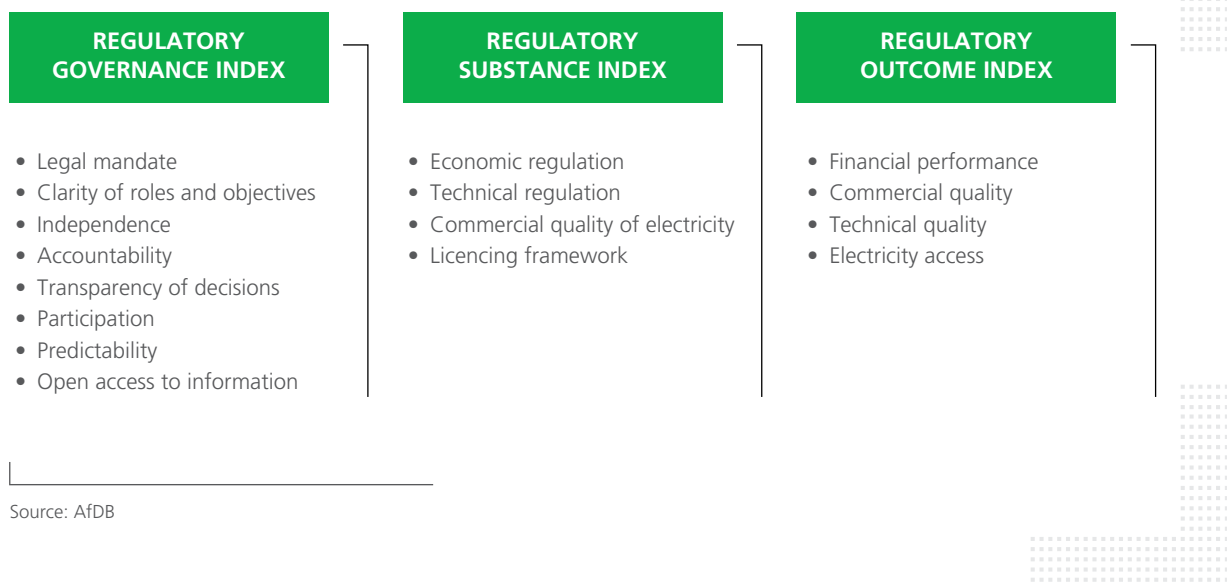
In recent years,
governments have started
adopting regulatory
frameworks to encourage
investment into the
renewables industries.

BIGGEST CHALLENGE TO IMPROVING POWER SUPPLY

Giving the citizens of Africa access to sustainable, affordable sources of electricity is one of the greatest challenges governments face. And at the core of this challenge is the effectiveness of governments regulating the sector. There have been significant improvements across the continent to establish national regulatory institutions for improving transparency and governance to essentially attract private investment.

To assess the level of development of the power regulatory framework in Africa, the AfDB introduced the Electricity Regulatory Index (ERI) in 2018. It is based on three sub-indices and their underlying indicators (Figure 2.1.12). Unfortunately, only 15 countries are assessed, but we believe that the inaugural index is the stepping stone to covering more sample economies in the future.

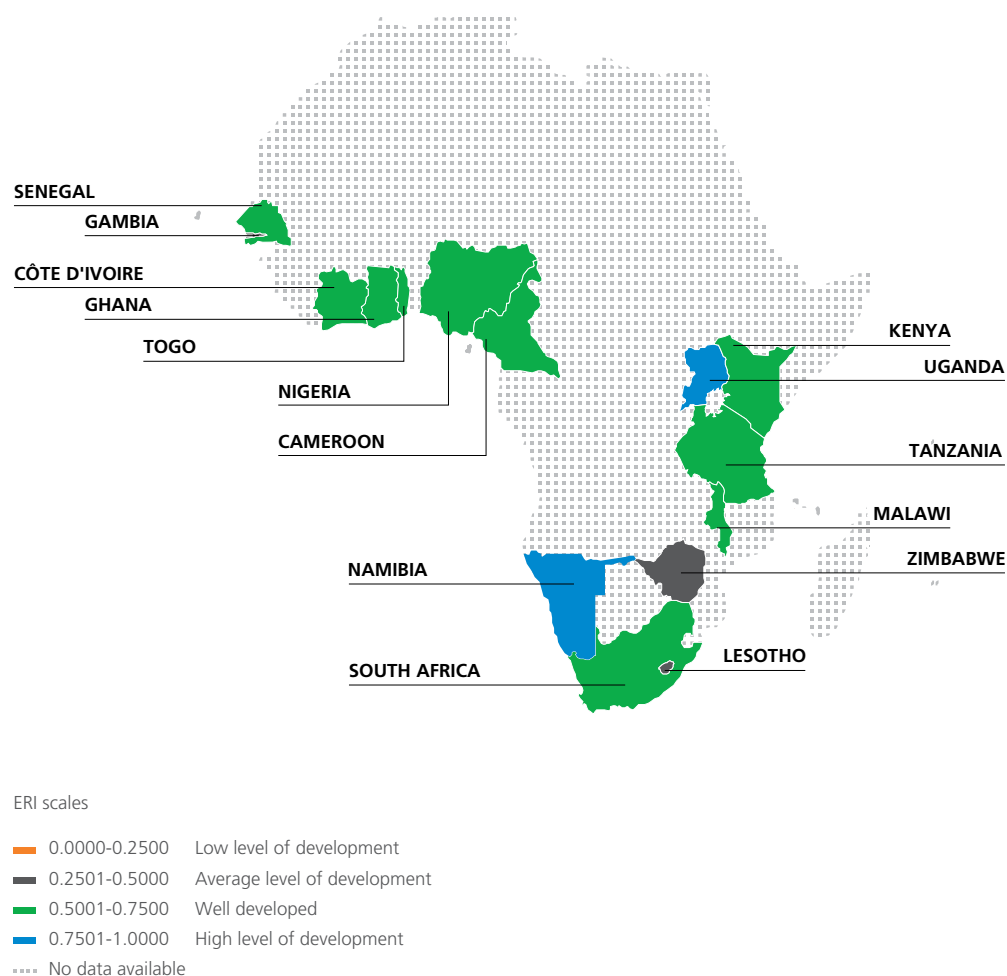
Figure 2.1.12: Sub-indices of the Electricity Regulatory Index and main underlying indicators



The results show that Uganda and Namibia's regulatory institutions are at a high level of development, i.e. the actions and decisions of their regulators have had a positive influence on the utilities' performance. And Zimbabwe, Lesotho and The Gambia have average levels of development: progress is needed in tariff-setting, technical and commercial regulations, and licencing frameworks.

At the core of the power-supply challenge is the effectiveness of governments regulating the sector.

Figure 2.1.13: Electricity Regulatory Index 2018



To narrow it down further, the following countries' levels of development were highest in the three sub-indices:

- **Regulatory Governance Index:** Kenya, Uganda, South Africa, Namibia and Tanzania
- **Regulatory Substance Index:** Namibia, Nigeria and Uganda
- **Regulatorily Outcome Index:** Ghana, Uganda, Namibia, Malawi and Tanzania

To overcome the regulatory challenges, the AfDB has launched the New Deal on Energy for Africa, where a key component is to support African governments to strengthen their energy policy, regulation and sector governance.

FUTURE ENERGY PLANS: NEW DEAL ON ENERGY FOR AFRICA

The AfDB launched a New Deal on Energy for Africa, which is aimed at achieving universal electricity access by 2025 by 1) solving Africa's energy challenges; 2) establishing energy-transformative partnerships; 3) mobilising domestic and international capital for innovative financing; 4) supporting governments in strengthening energy policy, regulation and sector governance; and 5) increasing AfDB's investments in energy financing.

The plan includes providing 160GW of new capacity, 130 million new on-grid connections, 75 million new off-grid connections and affording 150 million households access to clean cooking solutions. The estimated investment needs range between US\$60bn and US\$90bn annually. The AfDB is set to invest US\$12bn of its own resources over the next five years.

Figure 2.1.14: New Deal on Energy for Africa requirements for universal access by 2025










	FROM CURRENT ENERGY SITUATION IN AFRICA		TO UNIVERSAL ACCESS IN 2025	
Population (m)	1,174	x1.3	1,499	
GDP (US\$bn)	2,175	x1.7	3,742	
Electrification rate (%)	43	x2.3	97	
Households connected (m)	87	x3.63	292	
On-grid	83	x2.6	213	+130m new on-grid connections
Off-grid	4	x20	79	+75m new off-grid connections
Grid capacity (GW)	170	x1.9	332	+160GW of new capacity
Consumption (kWh/capita)	613	x1.5	941	
Households using clean cooking (m)	70	x3.1	220	+150m with clean cooking solutions

Note:
This assumes 100% urban electrification and 95% rural electrification.
Numbers are out of 234m households in 2015 and 300m households in 2025.

Source: AfDB

Rand Merchant Bank acted as lead arranger for the financing of three independent power producers in West Africa. The new power stations will add much-needed power capacity to Nigeria and Ghana's electricity sectors. RMB's lead role in the financing of the 200MW Amandi plant and the 350MW Cenpower plant in Ghana, together with the 459MW gas-fired Azura-Edo electricity project in Nigeria, firmly cements our position as the leading financier in West Africa. Other RMB projects are included in Figure 2.1.15.

Figure 2.1.15: RMB's track record in energy projects

 <p>R309m Project finance facility</p> <p>2008</p> <p>Lead arranger</p> <p>Mozambique</p>	 <p>€705m Kusile Power Station Euler Hermes-backed export credit facility</p> <p>2009</p> <p>Joint lead arranger</p> <p>South Africa</p>	 <p>US\$23.5m ECIC-backed facility</p> <p>2011</p> <p>Lead arranger</p> <p>Ghana</p>
 <p>R2.1bn 2x75MW Solar PV power projects</p> <p>2012</p> <p>Sole MLA and preference shareholder</p> <p>South Africa</p>	 <p>R1.2bn 67MW Hopefield wind farm</p> <p>2012</p> <p>Sole MLA</p> <p>South Africa</p>	 <p>R7.7bn 100MW Concentrated solar-power trough project</p> <p>2012</p> <p>Sole coordination bank and joint MLA</p> <p>South Africa</p>
 <p>R6.2bn 685MW Avon and R3.5bn 342MW Dedisa gas-fired peaking power plant</p> <p>2013</p> <p>MLA</p> <p>South Africa</p>	 <p>R2.3bn Solar PV power plant</p> <p>2013</p> <p>Sole MLA and preference shareholder</p> <p>South Africa</p>	 <p>R240m 2x10MW solar PV power projects</p> <p>2013</p> <p>Sole lead arranger, bookrunner and preference shareholder</p> <p>South Africa</p>



**R200m
4.4MW Stortemelk
hydropower project**

2014

Sole MLA

South Africa



**US\$900m
350MW gas-fired combined
cycle power station**

2014

Sole coordination bank
and joint MLA

Ghana



**R5.1bn
50MW Concentrated solar
power trough project**

2014

Lender

South Africa



**US\$900m
450MW OCGT IPP**

2015

Joint MLA and hedging bank

Nigeria



**R11bn
XiNa CSP trough
power project**

2015

Sole coordination bank,
underwriter and MLA

South Africa



**US\$552m
200MW gas-fired power plant**

2016

Joint MLA

Ghana



**R12bn
100MW Concentrated solar
power project**

2016

Sole coordination bank
and joint MLA

South Africa



**NS\$131m
5MW Solar PV plant**

2017

Arranger and underwriter

Namibia



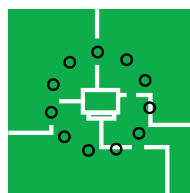
**R4.42bn
147MW Wind farm**

2018

Sole MLA, senior lender,
preference shareholder,
facility provider: debt service
reserve, Eskom guarantee

South Africa

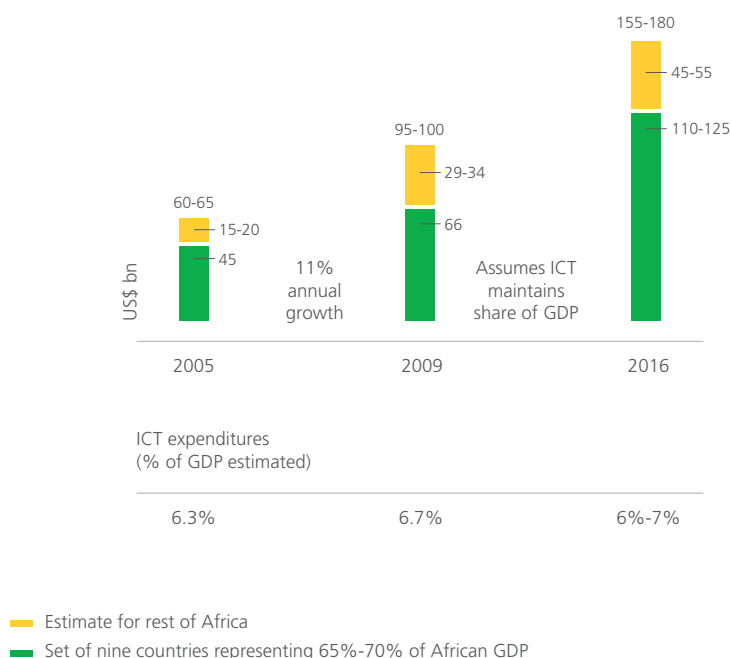
Source: RMB Infrastructure Finance



INFORMATION AND COMMUNICATION TECHNOLOGY

Africa's economic performance between 1990 and 2005 was driven largely by improvements in ICT and mobile penetration. For a change, the expenditure on ICT is largely in line with the global average. It is, however, still focused on the larger economies of the continent (Figure 2.1.16).

Figure 2.1.16: ICT expenditure in Africa to 2016



Note:

Countries in sample set are: Algeria, Cameroon, Egypt, Kenya, Morocco, Nigeria, Senegal, South Africa and Tunisia.

Source: World Bank, ITU

The demand for and investment in ICT could significantly improve economic growth over the next decade. For example, McKinsey Global Institute says that the Internet could drive 10% of Africa's GDP by 2025. The group also expects Africa's penetration of smartphones to reach 50% by 2020, from just 18%. The use of smartphones on the continent has already transformed several sectors – mostly finance and retail and, more recently, power, healthcare and education.

Table 2.1.5 highlights the current penetration rates of key ICT indicators and that Africa is still behind the curve. Unfortunately, the region has made slower-than-expected progress in providing greater access to ICT. This is due mainly to the high costs of the services – broadband costs, to be more specific.

Table 2.1.5: Key ICT indicators

FIXED-TELEPHONE SUBSCRIPTIONS (millions)			HOUSEHOLDS WITH A COMPUTER (%)		
	2010	2017		2010	2017
Africa	12.1	9.7	Africa	5.4	10.3
Arab States	34.7	29.8	Arab States	29.0	44.4
Asia and Pacific	553.1	387.4	Asia and Pacific	26.8	39.1
CIS ¹	73.7	55.5	CIS ¹	42.8	69.4
Europe	263.5	234.7	Europe	71.9	80.3
The Americas	273.7	239.4	The Americas	51.7	65.7

MOBILE-CELLULAR TELEPHONE SUBSCRIPTIONS (millions)			HOUSEHOLDS WITH INTERNET ACCESS AT HOME (%)		
	2010	2017		2010	2017
Africa	365.8	758.7	Africa	3.9	18.0
Arab States	309.6	420.5	Arab States	23.2	47.2
Asia and Pacific	2,614.0	4,230.3	Asia and Pacific	20.2	48.1
CIS ¹	376.8	397.5	CIS ¹	34.2	70.4
Europe	708.7	745.2	Europe	67.7	84.2
The Americas	880.8	1145.4	The Americas	45.1	65.3

ACTIVE MOBILE-BROADBAND SUBSCRIPTIONS (millions)			INDIVIDUALS USING THE INTERNET (%)		
	2010	2017		2010	2017
Africa	1.8	26.0	Africa	6.7	21.8
Arab States	5.1	47.2	Arab States	24.4	43.7
Asia and Pacific	7.4	52.2	Asia and Pacific	22.5	43.9
CIS ¹	22.0	64.2	CIS ¹	33.5	67.7
Europe	30.5	85.2	Europe	66.6	79.6
The Americas	24.6	86.3	The Americas	48.6	65.9

FIXED BROADBAND SUBSCRIPTIONS (millions)					
	2010	2017			
Africa	1.3	4.1			
Arab States	6.7	20.8			
Asia and Pacific	213.7	509.1			
CIS ¹	22.4	46.5			
Europe	145.3	194.9			
The Americas	130.9	197.3			

Note:

¹ CIS: Commonwealth of Independent States.

Source: ITU

Each country has its own challenges to developing ICT infrastructure and access. Nigeria, for example, battles to enable citizens with enterprise-scale development skills and literacy in ICT. Other challenges are included in Table 2.1.6.

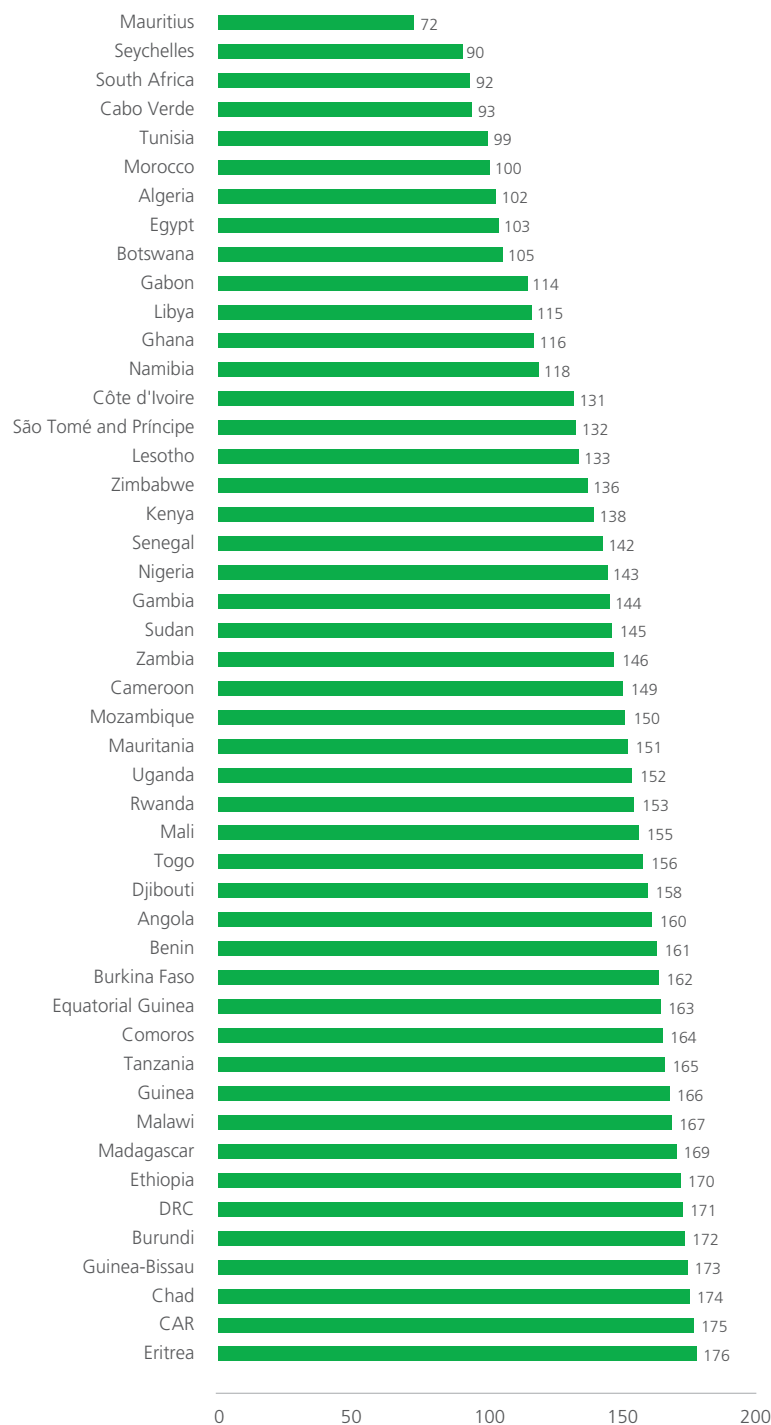
Table 2.1.6: Nigeria's challenges and opportunities in ICT development

CHALLENGE	OPPORTUNITY
Low digital literacy: Constrained ICT adoption and innovation at consumer and commercial levels	Mobile phones as digital gateway: Enables increased access to smart phones, mobile-enabled web pages, mobile as information portal, mobile application monetisation ICT education: Allows for increased access to ICT in schools, dedicated training for students and business owners
Lack of exposure to external markets, few domestic forums: Reduced visibility into new technology and scale of business	International leadership enabler: Allows for a mix of domestic and foreign managers, advisors and directors Exposure as a two-way street: Offers expert exchange and learning trips, in-country forums and incubators Online tech community portal: Extends development and networking tools for African tech stakeholders
High barriers to business development: Little early-stage capital, high cost of operation, high cost of failure	Investment rather than aid: Gives low returns to early-stage venture in Nigeria, but necessary for growth Operating cost parity: Gives support for high cost of power, connectivity and facilities
Limited access to virtual payments: High non-banked population (80%) and limited means for online payment limit ability to automate for domestic needs	Mobile-money adoption: Supports regulation and encouragement of mobile money movement and interaction across banking and alternative systems
Rampant fraud and mistrust: High levels of distrust within businesses and among partners, strong reliance on relationships rather than capabilities, international perception of risk	Technology as a fraud-reduction tool: Builds business automation to enable scale and increases intra-business accountability via transparency Certification promotion: Promotes objective certifications of ability and reliability among individuals and businesses to enable non-relationship-based counterparty verification

Source: eTransform Africa

The International Telecommunications Union (ITU) ranks countries according to their progress in ICT access, use and skills in its annual ICT Development Index (IDI). The 2017 findings show that Mauritius leads the pack in Africa (ranked 72nd out of 176 countries worldwide), followed by the Seychelles, South Africa, Cabo Verde and Tunisia. Gabon and Namibia achieved the most dynamic improvements in their IDI value since 2016. Namibia's improvement was driven by a significant increase in the proportion of Internet-users' mobile-broadband subscriptions, while Gabon had a strong improvement in overall access to services. Of the bottom 20 countries worldwide, 17 are African.

Figure 2.1.17: ICT Development Index rankings











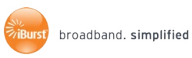


Note:
Ranking is out of 176 countries worldwide.

Source: ITU

Rand Merchant Bank has been a key provider of financing and advice on network expansion across Africa. Some of the projects are included in Figure 2.1.18.

Figure 2.1.18: RMB's track record in financing ICT projects

 <p>US\$8bn Zain Africa acquisition</p> <p>2010</p> <p>Participant</p> <p>Pan-Africa</p>	 <p>US\$150m Syndicated loan for capital expansion</p> <p>2010</p> <p>Participant</p> <p>Tanzania</p>	 <p>US\$240m Expansion of GSM network</p> <p>2011</p> <p>Participant</p> <p>Ghana</p>	 <p>R2.5bn Fibre-optic roll-out</p> <p>2012</p> <p>Joint MLA</p> <p>South Africa</p>	 <p>US\$65m Expansion of MTN network</p> <p>2012</p> <p>Sole MLA</p> <p>Zambia</p>
 <p>R3.4bn Fibre-optic roll-out</p> <p>2013</p> <p>MLA</p> <p>South Africa</p>	 <p>US\$3bn Funding for network expansion</p> <p>2013</p> <p>MLA (Facility E)</p> <p>Nigeria</p>	 <p>US\$800m Capex facility</p> <p>2014</p> <p>MLA, underwriter and bookrunner</p> <p>Nigeria</p>	 <p>R3.5bn Refinancing to include capital markets</p> <p>2014</p> <p>Co-arranger and funder</p> <p>South Africa</p>	 <p>US\$300m Funding for acquisition of Neotel and general capex</p> <p>2016</p> <p>Funder</p> <p>South Africa</p>
 <p>R650m Securitisation, R200m additional revolving and subordinated facilities (capex)</p> <p>2017</p> <p>Sole MLA and funder</p> <p>South Africa</p>				

Source: RMB Infrastructure Finance

APPENDIX: ADDITIONAL INFRASTRUCTURE DATA PER COUNTRY

Table A2.1.1: Access to electricity

	RATE OF ACCESS (% of population)				URBAN 2016	RURAL 2016	POPULATION WITHOUT ACCESS (million) 2016	ELECTRI- CITY OUTAGES (hours/month) 2016
	2000	2005	2010	2016				
Africa	34	39	43	51	77	31	600	-
North Africa	90	96	99	100	100	99	<1	63.45
Sub-Saharan Africa	23	27	32	42	71	22	600	103.6
Algeria	98	98	99	100	100	97	<1	11.07
Angola	12	17	40	35	69	6	17	32.34
Benin	22	23	27	32	56	11	8	79.68
Botswana	22	40	45	55	69	32	1	66.12
Burkina Faso	13	9	15	20	58	2	15	29.44
Burundi	4	5	5	10	35	7	10	234.9
Cameroon	20	47	49	63	94	21	9	38.25
Cabo Verde	59	65	70	97	100	89	<1	-
CAR	1	2	2	3	5	1	5	737.45
Chad	2	3	4	9	32	1	13	19.25
Comoros	30	35	40	71	89	62	<1	2.56
Congo	21	23	37	43	56	16	3	68.88
Côte d'Ivoire	50	50	59	63	88	32	9	2.34
Djibouti	46	48	50	42	54	1	<1	-
DRC	7	7	15	15	35	0	68	1.4
Egypt	94	98	100	100	100	100	-	47.56
Equatorial Guinea	22	25	27	68	93	48	<1	24.84
Eritrea	17	23	32	33	86	17	4	144.9
Ethiopia	5	15	23	40	85	29	61	65.52
Gabon	31	46	60	90	97	38	<1	14.4
Gambia	18	27	35	48	66	13	1	93.08
Ghana	45	52	61	84	95	71	5	35.28
Guinea	16	18	20	20	46	1	10	14.52
Guinea-Bissau	10	11	12	13	23	1	2	37.35
Kenya	8	14	18	65	78	60	17	-
Lesotho	5	12	17	34	63	24	1	12.73
Liberia	0	1	2	12	16	3	4	28.81
Libya	100	100	100	100	100	99	<1	21.42
Madagascar	8	16	17	23	52	7	19	13.78
Malawi	5	7	9	11	49	3	16	3.84
Mali	12	14	17	41	83	6	11	1.02
Mauritania	15	17	19	31	47	2	3	6.88
Mauritius	100	95	99	100	100	100	-	0.72
Morocco	71	88	99	99	100	97	<1	27.75
Mozambique	7	7	15	29	57	15	21	262.4
Namibia	34	34	44	56	78	34	1	10.8
Niger	7	8	9	11	54	0	18	-
Nigeria	40	47	50	61	86	34	74	6.6
Rwanda	6	8	10	30	72	12	8	-
São Tomé and Príncipe	53	55	57	59	70	40	<1	120.56
Senegal	30	35	54	64	90	44	6	-
Seychelles	50	54	58	99	99	99	<1	1.8
Sierra Leone	9	11	12	9	12	6	6	0.75
Somalia	5	9	14	16	35	4	9	7.82
South Africa	66	81	83	86	87	83	8	2.7
South Sudan	0	0	0	1	4	0	13	45.39
Sudan	30	31	36	46	71	31	22	30.96
Swaziland	25	30	35	84	90	71	<1	0.18
Tanzania	11	12	15	33	65	17	37	42.84
Togo	9	18	28	35	74	5	5	-
Tunisia	95	99	100	100	100	100	<1	-
Uganda	4	9	9	19	23	19	33	-
Zambia	12	19	19	34	67	7	11	-
Zimbabwe	40	36	37	34	81	11	11	-

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Table A2.1.2: Renewable energy capacity in Africa

TOTAL RENEWABLE ENERGY CAPACITY (MW)			SOLAR ENERGY (MW)		
	2008	2017		2008	2017
World	1,057,962	2,179,099	World	15,165	390,625
Africa	23,381	42,139	Africa	89	3,585
Algeria	231	663	Algeria	-	425
Angola	776	2,800	Angola	5	13
Benin	1	6	Benin	-	5
Botswana	-	3	Botswana	-	3
Burkina Faso	34	76	Burkina Faso	2	44
Burundi	48	50	Burundi	-	3
Cabo Verde	3	39	Cabo Verde	-	14
Cameroon	719	741	Cameroon	-	9
CAR	19	19	CAR	-	-
Chad	-	1	Congo	-	-
Comoros	1	1	Djibouti	-	-
Congo	74	214	Egypt	1	116
Côte d'Ivoire	604	879	Equatorial Guinea	-	5
Djibouti	-	-	Ethiopia	-	14
DRC	2,514	2,687	Ghana	-	28
Egypt	3,242	3,717	Guinea	-	2
Equatorial Guinea	6	131	Guinea Bissau	-	-
Eritrea	1	1	Kenya	9	28
Ethiopia	705	4,301	Lesotho	-	-
Gabon	170	330	Libya	3	5
Ghana	1,180	1,611	Madagascar	1	13
Guinea	128	370	Malawi	-	11
Guinea-Bissau	-	-	Mali	2	6
Kenya	907	1,642	Mauritania	-	85
Lesotho	73	75	Mauritius	-	29
Liberia	4	92	Morocco	13	205
Libya	3	5	Mozambique	-	15
Madagascar	122	177	Namibia	3	37
Malawi	299	374	Niger	1	9
Mali	158	190	Nigeria	-	19
Mauritania	30	167	Reunion	10	189
Mauritius	130	191	Rwanda	-	13
Morocco	1,412	2,566	São Tomé and Príncipe	-	-
Mozambique	2,198	2,233	Senegal	2	85
Namibia	252	391	Seychelles	-	2
Niger	1	9	Sierra Leone	-	-
Nigeria	1,943	2,064	Somalia	-	2
Reunion	189	386	South Africa	18	2,014
Rwanda	41	112	South Sudan	-	-
São Tomé and Príncipe	2	2	Sudan	1	13
Senegal	72	185	Swaziland	-	1
Seychelles	-	8	Tanzania	3	11
Sierra Leone	29	92	Togo	-	2
Somalia	-	6	Tunisia	-	37
South Africa	838	4,959	Uganda	12	46
South Sudan	-	-	Zambia	1	4
Sudan	431	2,131	Zimbabwe	1	7
Swaziland	124	186			
Tanzania	607	659			
Togo	68	70			
Tunisia	85	347			
Uganda	359	841			
Zambia	1,715	2,435			
Zimbabwe	835	888			

HYDROPOWER CAPACITY (MW)

	2008	2017
World	960,584	1,270,496
Africa	23,768	35,195
Algeria	231	228
Angola	772	2,736
Benin	1	1
Burkina Faso	32	32
Burundi	47	47
Cameroon	719	732
CAR	19	19
Comoros	1	1
DRC	2,514	2,687
Congo	74	214
Côte d'Ivoire	604	879
Egypt	2,851	2,851
Equatorial Guinea	6	126
Ethiopia	676	3,814
Gabon	170	330
Ghana	1,180	1,580
Guinea	128	368
Kenya	737	828
Lesotho	73	75
Liberia	4	92
Madagascar	121	164
Malawi	287	351
Mali	157	184
Mauritania	30	48
Mauritius	59	61
Morocco	1,729	1,770
Mozambique	2,184	2,204
Namibia	249	347
Nigeria	1,941	2,042
Reunion	121	134
Rwanda	40	99
São Tomé and Príncipe	2	2
Senegal	60	75
Sierra Leone	29	60
South Africa	2,078	3,434
Sudan	343	1,928
Swaziland	62	62
Tanzania	566	577
Togo	67	67
Tunisia	66	66
Uganda	315	714
Zambia	1,671	2,388
Zimbabwe	752	781

WIND ENERGY (MW)

	2008	2017
World	114,799	513,939
Africa	573	4,611
Algeria	-	10
Cabo Verde	3	26
Chad	-	1
Egypt	390	750
Eritrea	1	1
Ethiopia	-	324
Kenya	-	26
Madagascar	-	-
Mauritania	-	34
Mauritius	-	11
Morocco	134	1,053
Namibia	-	6
Nigeria	2	3
Reunion	15	17
Seychelles	-	6
Somalia	-	4
South Africa	8	2,094
Tunisia	19	245

Source: IRENA

Table A2.1.3: General ICT statistics

	NUMBER OF MOBILE-CELLULAR TELEPHONE SUBSCRIPTIONS	MOBILE-CELLULAR TELEPHONE SUBSCRIPTIONS PER 100 INHABITANTS	NUMBER OF FIXED-BROADBAND SUBSCRIPTIONS	INDIVIDUALS USING THE INTERNET (% OF POPULATION)
Algeria	47,041,321	116	2,859,567	43
Angola	13,001,124	45	123,135	13
Benin	8,892,490	82	22,285	12
Botswana	3,288,986	146	59,057	39
Burkina Faso	15,404,040	83	8,650	14
Burundi	5,357,816	51	3,945	5
Cameroon	18,717,503	80	45,974	25
Cabo Verde	601,956	112	15,541	50
CAR	1,248,346	27	-	4
Chad	6,231,009	43	10,470	5
Comoros	454,389	57	2,838	8
Congo	5,424,000	106	-	8
Côte d'Ivoire	27,451,250	116	136,380	27
Djibouti	345,246	37	27,000	13
DRC	28,889,317	37	1,000	6
Egypt	97,791,441	102	4,469,164	41
Equatorial Guinea	575,650	47	3,382	24
Eritrea	506,000	10	600	1
Ethiopia	51,224,000	50	559,000	15
Gabon	2,962,486	150	15,018	48
Gambia	2,838,127	139	3,750	19
Ghana	38,305,078	136	86,596	35
Guinea	10,800,000	87	1,100	10
Guinea-Bissau	1,285,835	71	721	4
Kenya	38,982,188	80	157,878	26
Lesotho	2,282,917	104	2,230	27
Liberia	3,117,002	68	8,000	7
Libya	7,660,068	122	168,920	20
Madagascar	7,998,253	32	26,385	5
Malawi	7,178,384	40	8,692	10
Mali	20,217,697	112	21,444	11
Mauritania	3,614,172	84	10,641	18
Mauritius	1,814,000	144	212,600	52
Morocco	41,513,933	118	1,255,428	58
Mozambique	15,025,598	52	46,599	18
Namibia	2,659,951	107	64,343	31
Niger	8,719,981	42	27,708	4
Nigeria	154,342,168	83	107,931	26
Rwanda	8,921,533	75	21,721	20
São Tomé and Príncipe	178,047	89	1,425	28
Senegal	15,186,485	99	98,353	26
Seychelles	151,857	161	14,035	57
Sierra Leone	6,279,270	85	-	12
Somalia	6,653,040	46	92,000	2
South Africa	82,412,880	147	1,150,770	54
South Sudan	2,700,000	22	150	7
Sudan	27,807,293	70	25,982	28
Swaziland	995,000	74	7,000	29
Tanzania	40,044,186	72	1,848,167	13
Togo	5,505,424	72	44,857	11
Tunisia	14,282,078	125	641,113	50
Uganda	22,838,486	55	108,259	22
Zambia	12,017,034	72	31,784	26
Zimbabwe	12,878,926	80	170,838	23



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WHEN THINKING SOLUTIONS, WE THINK WIDE OPEN





SOFT INFRASTRUCTURE

An often-overlooked segment of economic development is that of soft infrastructure. And yet it is integral to the bigger infrastructure picture in Africa.

BUTARO DISTRICT HOSPITAL —
ARCHITECTURE THAT SERVES
THE COMMUNITY

MASS Design Group helped plan and design a first-rate healthcare facility in the Burera District of Rwanda. The group believes that every architectural project should have a transcendent idea: how can a hospital's building better heal its patients? The architects hire locally, source materials regionally, train and upskill wherever they can, and invest in dignity – in architecture that serves the people and aims to deliver basic human rights.

THE SOFTER SIDE OF INFRASTRUCTURE DEVELOPMENT

Hard infrastructure, a core component of African growth over the last few decades, is essential for boosting economic growth levels. But it is soft infrastructure that is partly responsible for the quality of economic growth – or inclusive growth – and therefore essential to overall growth. Unfortunately, infrastructure build has not catered sufficiently for the development of soft infrastructure, and therefore the benefits of economic growth have not filtered through to most Africans.

To add to this, the development of soft infrastructure on the African continent – and in most frontier markets – is highly politicised. It is inherently a public good and it falls to state-owned enterprises (SOEs) and local governments to provide services to citizens, with soft infrastructure incorporating aspects such as land, regulation and the appropriate public-sector policies.

The promise to improve soft infrastructure such as healthcare and education is used widely in election campaigning. But election promises don't always translate into the practicalities of implementation. The political nature of soft infrastructure and the lack of sufficient financing are the major challenges that this sector faces.

In an ideal world – one in which soft infrastructure receives the same attention as hard – the opportunities for private-sector participation are manifold.

THE HUMAN DEVELOPMENT INDEX: PROXY FOR SOFT-INFRASTRUCTURE QUALITY

Africa remains leagues behind developed countries with regards to accessing high-quality services. And there is a visible difference between the quality of public and private services. Private services are generally known for their high levels of quality (albeit reserved for the wealthier population), while public services, often late or lacking entirely, seem to fall short of even the most basic of human expectations.

In Africa, the quality of services is very difficult to measure. But taking specific human-development data into consideration, one can, at least, see where they are lacking. We use the Human Development Index (HDI) to give us some insights into where the soft-infrastructure gaps – and opportunities – in Africa are. The HDI considers three dimensions of human development. These relate to life expectancy, education and income.



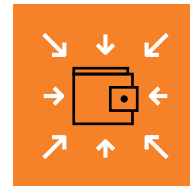
LIFE EXPECTANCY AT BIRTH

Serves as an indicator of the length and health of a person's life



MEAN AND EXPECTED YEARS OF SCHOOLING

Reflect the ability to acquire knowledge

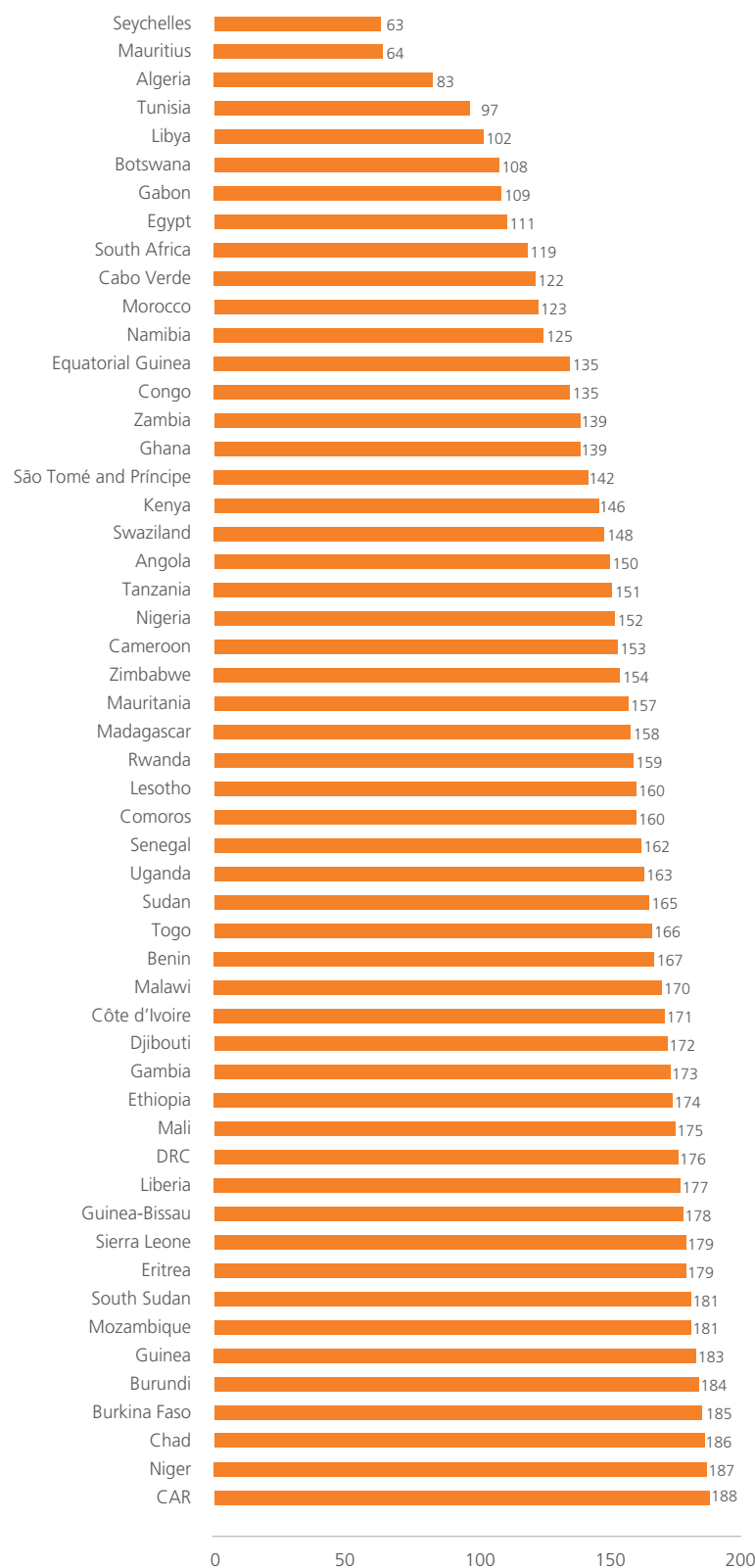


GROSS NATIONAL INCOME PER CAPITA

Echoes the standard of living

As was shown in Chapter 2.1, the North African, southern African and island economies dominate the higher rankings (Figure 2.2.1), as these are the most developed, with stronger institutions and policies in place than that of the rest of the continent.

Figure 2.2.1: Human Development Index 2016



Note:
Rank out of 188 countries worldwide (the lower the rank, the better the quality of living).

Source: HDI

SOFT SERVICES: SAME TOP PRIORITY

The priorities for a better standard of living differ between countries with low human development and those with very high human development (Figure 2.2.2). However, the top priority for all these countries is the same – a good education. This is followed, in countries with low and medium human development, by better healthcare.

Figure 2.2.2: Priorities for countries across a range of human-development levels



Source: UN

In this chapter, we focus on education, health and water supply and sanitation for some perspective on the quality – or rather, lack thereof – of Africa's social and institutional (or soft) infrastructure.

EDUCATION: ECONOMICALLY VIABLE PROJECTS ARE KEY

Skilled teachers, educational materials and infrastructure development have not kept pace with the demand for quality education. This is not surprising, considering Africa's high annual average population growth rate of 2%.



AFRICA HAS THE HIGHEST RATES OF EDUCATIONAL EXCLUSION IN THE WORLD



THE RATE OF MASS ENROLMENT IN TERTIARY EDUCATION IN SSA IS THE LOWEST IN THE WORLD – 8%



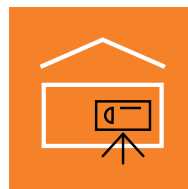
OVER ONE FIFTH OF CHILDREN BETWEEN THE AGES OF SIX AND 11 AND ONE THIRD BETWEEN AGES 12 AND 14 ARE NOT IN SCHOOL



ALMOST 60% OF CHILDREN BETWEEN THE AGES OF 15 AND 17 IN SSA ARE NOT IN SCHOOL



IN SSA, ONLY ABOUT ONE QUARTER OF PRE-PRIMARY TEACHERS ARE TRAINED



UPPER-SECONDARY SCHOOL TEACHERS HAVE A SLIGHTLY BETTER RATIO: ABOUT 50% HAVE TRAINING

Usually, the biggest obstacle to infrastructure development is low or ineffective government spending. However, things are different in the case of education: African countries allocate their largest share of government expenditure – just below 20% – to education (Table 2.2.1). Yet this is still not enough to meet education targets. There is no doubt that strengthening public-private partnerships (PPPs) will assist in complementing public-sector funds in financing public education in Africa.

Table 2.2.1: Government spending on education

	PRIMARY EDUCATION	SECONDARY EDUCATION	TERTIARY EDUCATION	EDUCATION, TOTAL	EDUCATION, TOTAL
	(% of government expenditure on education)	(% of government expenditure on education)	(% of government expenditure on education)	(% of GDP)	(% of government expenditure)
Algeria	-	-	-	-	-
Angola	-	-	-	-	-
Benin	50	24	22	4	17
Botswana	-	-	-	-	-
Burkina Faso	58	22	14	4	18
Burundi	-	-	-	-	-
Cameroon	-	-	-	-	-
Cabo Verde	39	40	18	5	17
CAR	-	-	-	-	-
Chad	-	-	-	-	-
Comoros	55	28	10	4	15
Congo	-	-	-	-	-
Côte d'Ivoire	41	34	21	5	21
Djibouti	-	-	-	-	-
DRC	-	-	24	2	12
Egypt	-	-	-	-	-
Equatorial Guinea	-	-	-	-	-
Eritrea	-	-	-	-	-
Ethiopia	-	-	-	-	-
Gabon	-	-	-	-	11
Gambia	-	-	-	-	-
Ghana	-	-	-	-	21
Guinea	-	-	-	-	12
Guinea-Bissau	-	-	-	-	-
Kenya	36	42	13	5	17
Lesotho	-	-	-	-	-
Liberia	-	-	-	-	-
Libya	-	-	-	-	-
Madagascar	-	-	-	-	-
Malawi	44	28	24	6	22
Mali	45	33	21	4	18
Mauritania	-	-	-	-	9
Mauritius	21	64	7	5	19
Morocco	-	-	-	-	-
Mozambique	-	-	-	-	-
Namibia	-	-	-	-	-
Niger	46	32	14	6	19
Nigeria	-	-	-	-	-
Rwanda	-	-	-	-	12
São Tomé and Príncipe	-	-	-	-	12
Senegal	34	29	32	7	24
Seychelles	-	-	-	-	-
Sierra Leone	-	-	-	-	12
Somalia	-	-	-	-	-
South Africa	-	-	-	-	18
South Sudan	54	18	28	2	3
Sudan	-	-	-	-	-
Swaziland	-	-	-	-	25
Tanzania	-	-	-	-	17
Togo	64	16	17	5	17
Tunisia	-	72	24	7	23
Uganda	-	-	-	-	11
Zambia	-	-	-	-	-
Zimbabwe	-	-	-	-	30

Note:
Latest available data (data range: 2013-2015).

HAS THERE BEEN PROGRESS?

It is undeniable that significant progress has been made in sub-Saharan Africa's (SSA) education sector, with more students than ever enrolled in schools. Take primary education for example: the school-enrolment rate rose from 52% in 1990 to 80% in 2015 (latest available data). From a private-investment perspective, education and training projects increased by 138% in 2015 when one looks at global business activity, according to FDI Intelligence. There were 19 active projects ongoing in 2015, with a total of US\$400m invested that year.

But more progress is needed. The Africa-America Institute's 2015 *State of Education in Africa Outcomes Report* is essentially a high-level report card of Africa's progress – grading everything from primary education to the quality of education overall.

Figure 2.2.3: Scorecard for Africa's progress in education

PRIMARY EDUCATION	B+	Increased student enrolments in schools across Africa have enabled more students to get into the classroom. However, most African countries are not able to keep up with the fast pace of enrolments. As a result, learning outcomes have suffered tremendously. Governments must invest in educational innovations to improve the quality of the education in primary schools.
SECONDARY EDUCATION	C	A rapid increase of students entering secondary education was due primarily to a rise in graduates completing primary school. By and large, adolescents still lack access to a secondary education. Many are forced to travel long distances to school or to go to work to help support their families. More schools need to be constructed and safeguards put in place to address why adolescents are dropping out of school to work.
VOCATIONAL AND TECHNICAL TRAINING	C-	A majority of African governments are not making technical and vocational education and training (TVET) a top priority. Budgetary constraints in the 1980s prompted governments to cut TVET programmes in their education sector. Given Africa's need for more infrastructure development, increased investments in TVET will assist countries in employing a skilled workforce to build and maintain new infrastructure projects.
TERTIARY EDUCATION	B-	University enrolment rates in SSA are among the lowest in the world. While governments are investing in their universities, efforts must focus on expanding access and improving the quality of education to meet the needs of today's workforce.
QUALITY OF EDUCATION	C	Despite more students being enrolled in schools, governments must focus on the quality of education by investing in trained teachers, instructional materials and infrastructure development.
PUBLIC SPENDING ON EDUCATION	C	Public spending on education has increased in most countries. African governments must assess their country's priorities and needs and invest in areas that will foster innovations and help to build a skilled and educated workforce. PPPs will bolster public-education budgets to garner improvements in the overall education system.
BUILDING A SKILLED WORKFORCE	C	Africa is facing a severe shortage of highly-skilled talent for the 21st century. Governments must make a concerted effort to correct a serious mismatch between the skills of graduates and the demands of a local and global workforce.

Source: The Africa-America Institute

WE CAN DO MORE

Regardless of the progress made, the statistics still tell the story of a significant lack of quality education in Africa. Clearly, there is more to be done. So, what action could be taken?



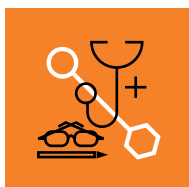
TARGET ECONOMICALLY VIABLE PROJECTS

The biggest challenge the sector faces is the discrepancy between what students are learning and the skills that a country's employers are looking for. The African Development Bank (AfDB) rightly suggests that education and labour-market reforms should target economically viable activities, programmes and projects. This can only be done if governments co-operate with both the private sector and the academic community to identify and prioritise their particular country's comparative advantage (like agriculture, tourism, manufacturing, etc.), moulding programmes targeted at specific skills that serve these spaces.



RESTRUCTURE STATE BUDGETS

Education expenditure should not be the responsibility of the education ministries alone, but should be a subcomponent of other ministries in the form of project spending. Agricultural ministries, for example, could have their own specialised education projects focused on training, technical development and special-education funds for agricultural workers and their children. Other avenues of funding could also help fill the gap: Côte d'Ivoire, for instance, has issued sovereign bonds that are focused on public investment – especially education and healthcare.



HARNESS THE POWER OF VOCATIONAL AND TECHNICAL TRAINING

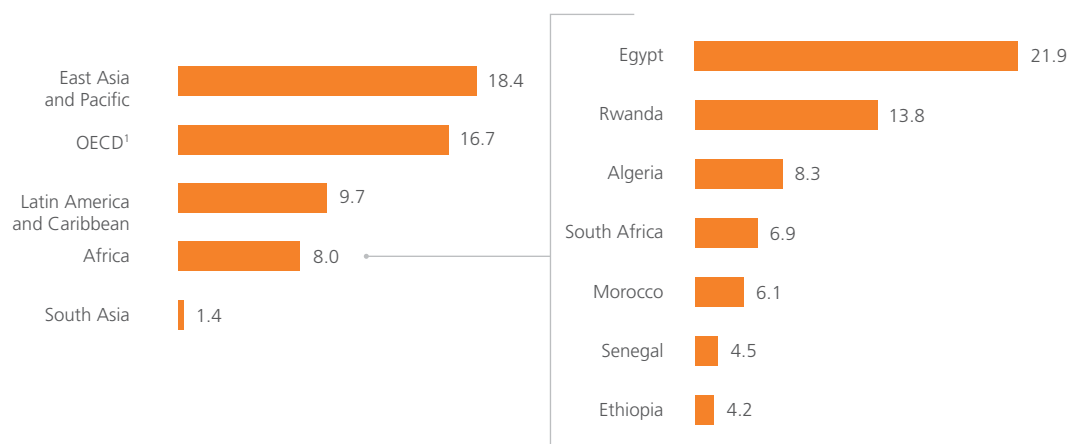
According to the World Bank, more than ten million youths enter the African labour market annually. Skills development – both technical and vocational – plays an important part in strengthening the local workforce in emerging economies. Unfortunately, on average, only about 2%-6% of educational budgets are devoted to this specific development of skills. If governments are committed to this particular cause, they could build better-skilled workforces to increase the production of goods and services.



ADOPT TECHNOLOGY AT A FASTER PACE

The impact that technology has had on education is remarkable. Faster penetration of the Internet and uptake of mobile phones offer Africa a huge opportunity to enhance access to education. And there are many success stories to tell. UNICEF, for instance, partnered with the LEGO Foundation to establish an online training platform that reached 150,000 teachers in South Africa in 2016 alone. Another example is that of the African Leadership University. Launched in Mauritius in 2015, this tertiary institution uses technology to cut teaching costs and deliver innovative e-learning modules to students. It hopes to build 25 campuses across major African cities over the next 50 years.

Figure 2.2.4: Percentage of secondary-education students enrolled in vocational programmes



Note:

¹The Organisation for Economic Co-operation and Development.

Source: McKinsey Global Institute, World Bank

HEALTHCARE: LONGER LIVES, BUT NOT HEALTHIER

From 2000 to 2015, the increase in life expectancy at birth was greatest in SSA – 8.8 years – compared to the rest of the world. This does not mean though that these added years are healthy years. This is due to the generally underdeveloped healthcare systems in Africa. A recent – and very real – example of Africa's failing health systems was evident in the form of the Ebola epidemic that tore through West Africa in 2014. Ebola claimed almost 12,000 lives. The low level of government spending on healthcare is the crux of the matter.

The crux of the
healthcare matter?
The low level of
government spending.

Table 2.2.2: Africa's expenditure on healthcare

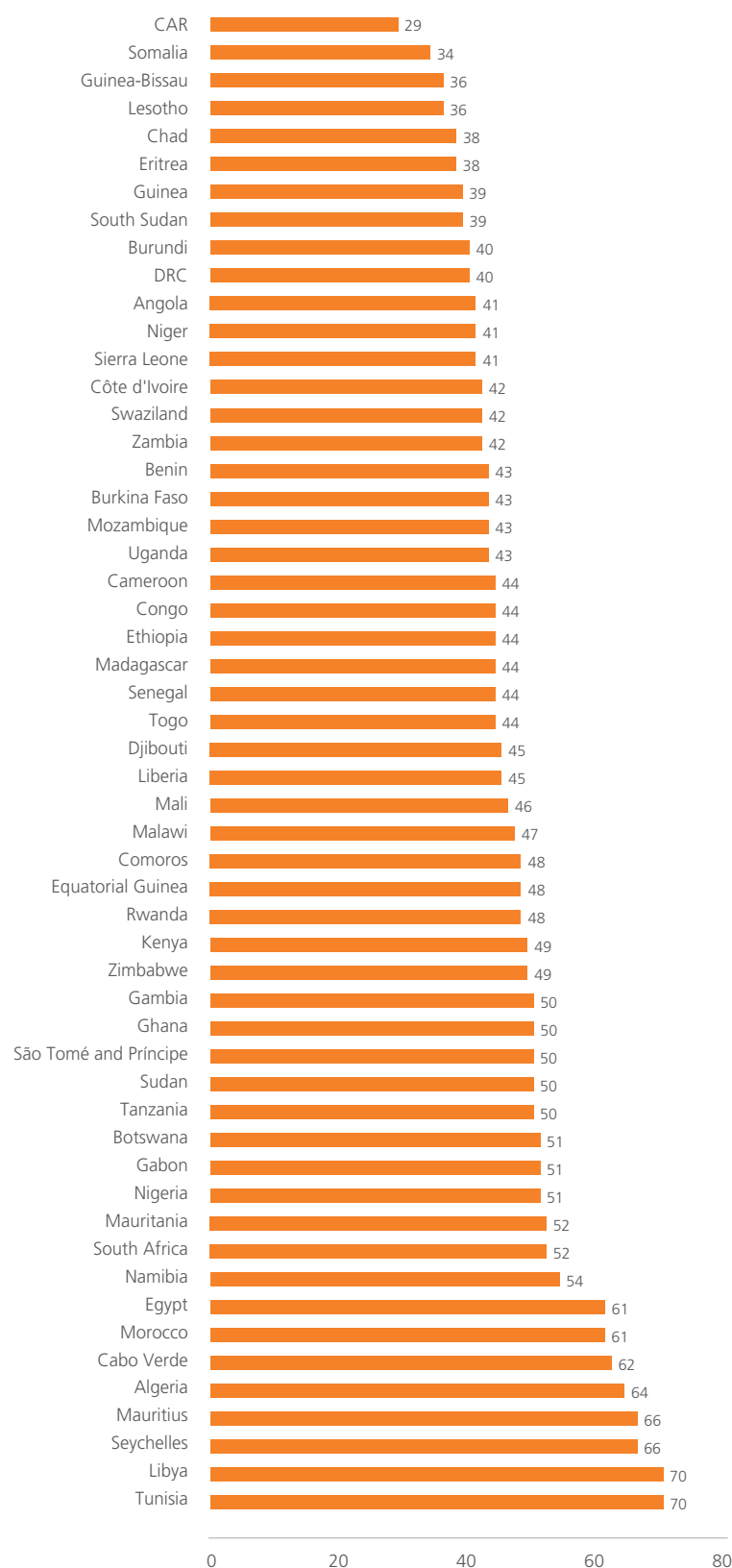
	CURRENT HEALTH EXPENDITURE (% of GDP)	DOMESTIC GENERAL GOVERNMENT HEALTH EXPENDITURE (% of general government expenditure)	CURRENT HEALTH EXPENDITURE PER CAPITA (US\$)
Algeria	7	11	292
Angola	3	4	109
Benin	4	3	31
Botswana	6	9	389
Burkina Faso	5	7	33
Burundi	8	12	24
Cameroon	5	3	64
Cabo Verde	5	11	146
CAR	5	4	17
Chad	5	6	36
Comoros	8	4	59
Congo	3	3	59
Côte d'Ivoire	5	5	75
Djibouti	4	4	82
DRC	4	5	20
Egypt	4	4	157
Equatorial Guinea	3	1	280
Eritrea	3	2	31
Ethiopia	4	6	24
Gabon	3	7	198
Gambia	7	11	32
Ghana	6	7	80
Guinea	5	3	25
Guinea-Bissau	7	10	39
Kenya	5	6	70
Lesotho	8	9	91
Liberia	15	3	69
Libya	-	-	-
Madagascar	5	16	21
Malawi	9	11	34
Mali	6	4	42
Mauritania	5	6	54
Mauritius	6	10	506
Morocco	6	8	160
Mozambique	5	1	28
Namibia	9	13	423
Niger	7	5	26
Nigeria	4	5	97
Rwanda	8	6	57
São Tomé and Príncipe	10	11	160
Senegal	4	4	36
Seychelles	3	10	492
Sierra Leone	18	8	107
Somalia	-	-	-
South Africa	8	14	471
South Sudan	3	2	28
Sudan	6	18	152
Swaziland	7	15	233
Tanzania	6	7	32
Togo	7	6	37
Tunisia	7	14	258
Uganda	7	6	46
Zambia	5	7	69
Zimbabwe	10	8	94

QUALITY OF AFRICA'S HEALTHCARE SYSTEM

Lancet's Healthcare Quality and Access (HAQ) Index shows that regional progress between 1990 and 2016 varied globally, with distinctly faster improvements occurring between 2000 and 2016 for many countries in SSA.

But in truth, this is due mainly to the low base: Africa's healthcare system is just not evolving at the same rate as the population's health needs. The ranking looks at – among other things – healthcare expenditure per capita; hospital beds capacity; the number of physicians, nurses and midwives per 1,000 people; as well as the proportion of populations with formal health cover (Figure 2.2.5).

Figure 2.2.5: Healthcare Quality and Access Index 2015



Note:
The higher the index score, the better the quality of healthcare.

Source: Lancet

LET TECHNOLOGY PICK UP THE PACE

Technology can bring fast and effective solutions to the continent, connecting rural healthcare to the more specialised healthcare systems of urban Africa. The 2018 Design Indaba showcased South African doctor William Mapham's Vula app, which links primary-healthcare workers directly and almost immediately to on-call specialists who can offer advice on patient cases.

Another example is that of Cameroonian entrepreneur, Alain Nteff. He, in trying to address the issue of high maternity and infant mortality rates in Africa, developed the Gifted Mom app. This text-message service targets expectant and new mothers, who can register to receive advice about their maternal health (including breastfeeding information), and receive reminders for antenatal and postnatal check-ups. The app also offers services such as a vaccination-tracker, an innovation such as this having the potential to directly impact the health and life expectancy of young children in the region. GE Healthcare Africa, for instance, sells portable flip-phone-style ultrasound scanners in Nigeria, for example. Rural villages now see trained carers equipped to detect the biggest pregnancy-complication risks.

OPPORTUNITY FOR INVESTORS

Private investment is clearly the catalyst to improving soft-infrastructure standards. It is therefore beholden on governments to develop partnerships with the private sector to raise funding and tap into skills. These partnerships could range from the planning or managing of soft projects to their actual construction, operating and monitoring.

In terms of healthcare, investment opportunities are abundant. It is no secret that the private healthcare system is almost non-existent on the continent, barring countries like South Africa. As countries urbanise, and the African population becomes wealthier – although unequally so – the demand for private healthcare will increase. The disease pattern is, to an extent, also changing: there are more “affluent” diseases now that need attention – diabetes, heart disease and cancer, for instance.

A few years back, the International Finance Corporation (IFC) identified the healthcare sector as an excellent opportunity for investors. In its view, in the next few years, around US\$25bn-US\$30bn will be needed in Africa for physical healthcare assets alone. Just one of these is the need for hospital beds – over 500,000 additional ones! Then there are other necessities: primary care (the sector is short about 90,000 physicians, 500,000 nurses and 300,000 community-health workers), medical insurance, production facilities as well as distribution and retail systems for pharmaceuticals and medical supplies.

Private investment
is the catalyst
to improving
standards of soft
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such, governments
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private-sector
partnerships.

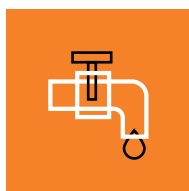
AFRICA'S WORST-PERFORMING INFRASTRUCTURE SECTOR: WATER AND SANITATION

More than half of Africa has less than

35%

access to improved sanitation facilities.

Less than **76%** of Africans have access to improved water sources.



The rate of investment in water and sanitation is only just ahead of that of population growth.

Urbanisation increases the stress on water availability.



There is improved access to water and sanitation in rural settings, but **urban progress has stagnated**.



Slow progress in sanitation contributes to **outbreaks of diseases** like cholera and diarrhoea.

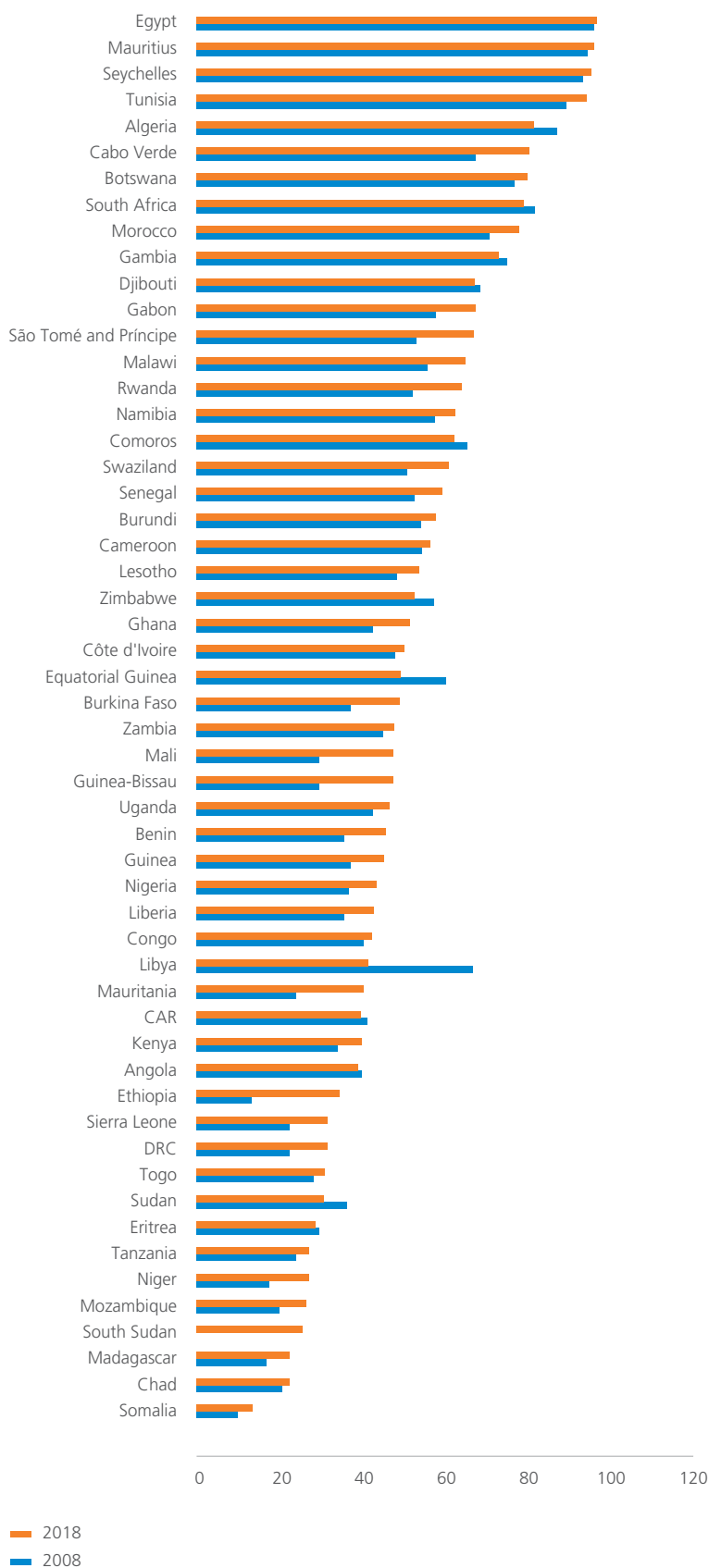
Factors hindering improved access to safe drinking water include **political instability, increased refugee numbers and growing populations**.

Africa generally **lacks the technologies** for water and sanitation improvements.

The effects of climate change have become a reality, but Africa is lagging other nations in investing into the sustainable development of its vast water resources. One of the key challenges this sector faces is that of distribution losses: there is a significant amount of wastage due to old infrastructure, as well as the under-collection of utilities payments.

To assess the performance of each African country's access to water and sanitation, we use the AfDB's Africa Infrastructure Development Index – more specifically, its sub-index, the Water and Sanitation Composite Index (Figure 2.2.6). The inputs include population data (current, growth, and urbanisation levels), access to water and sanitation by technology and location, and water unit costs per capita of each water-supply technology at various densities.

Figure 2.2.6: Water and Sanitation Composite Index



When compared to transport and electricity, water and sanitation is the worst-performing of the infrastructure sectors covered by the AfDB. Even countries that are ranked highly continue to lack improved sanitation facilities – particularly in rural areas.

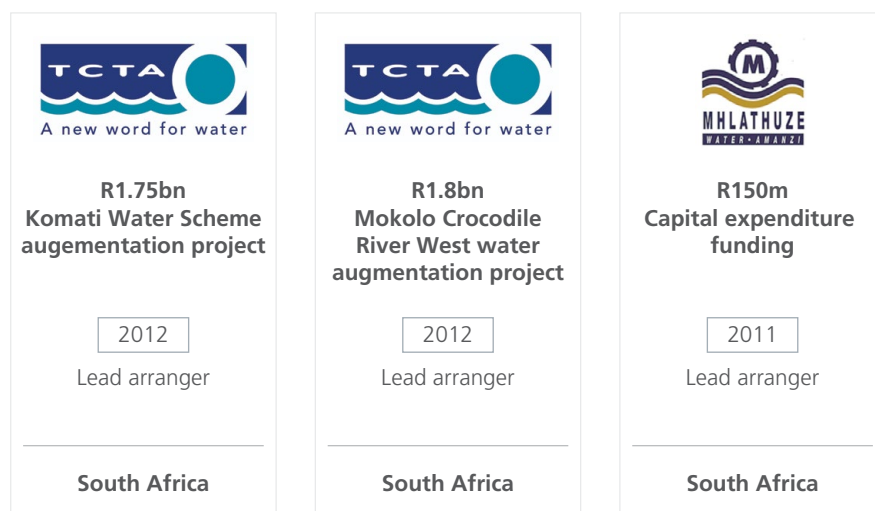
Libya's water and sanitation quality has deteriorated the most, with these facilities having been damaged during the civil war. The World Bank is examining Libya's need for the restoration of services in the water, energy and transport sectors. Ethiopia has improved the most: it achieved its Millennium Development Goal target of 57% access to safe drinking water, halving the number of people without access to safe water since 1990. Regardless of ample water resources, its rapid population growth is placing significant stress on this infrastructure.

SUCCESSFUL(-ISH) STORIES

- **Senegal River Basin Development Organisation (OMVS):** The OMVS is a regional co-operative management body of the Senegal River that currently includes Guinea, Mali, Mauritania and Senegal. It is a very successful river-management entity, promoting equitable sharing among members in terms of ownership of infrastructure constructed in the river basin. One example of this is that 60% of drinking water in Dakar (Senegal) comes from OMVS-implemented infrastructure, and 100% in Nouakchott (Mauritania) and Saint Louis (Senegal). The infrastructure provides 800GW of clean affordable energy per year, and 375,000ha of potentially irrigable land.
- **Nile Basin Initiative (NBI):** Its goals are: water security, energy security, food security, environmental sustainability, climate-change adaptation and transboundary water governance. The NBI is an intergovernmental partnership of ten Nile Basin countries ranging from Tanzania to Egypt. It is a forum for consultation and co-ordination among the NBI member states for the sustainable management and development of the shared Nile Basin water. It has been more successful in its implementation than not. However, it faces the same struggles that many multi-country initiatives across Africa do – the lack of agreement to all the criteria by all member states. More specifically, the NBI's biggest sticking point is the Ethiopian Renaissance Dam, which downstream states fear could fundamentally interfere with the flow of the Nile.

Rand Merchant Bank acted as lead arranger for the financing of a number of water scheme projects in Africa. These projects are included in Figure 2.2.7.

Figure 2.2.7: RMB's track record in financing bulk water projects



Source: RMB Infrastructure Finance

Essentially, soft infrastructure (like education and health) to the whole population, including the rural areas, can only be effective when a country's hard infrastructure is in place. Building more roads improves access to schools and healthcare clinics and in general, helps citizens – especially those in the rural areas – enter the greater economy.

EASING TRADE BY ENHANCING SOFT INFRASTRUCTURE

Soft infrastructure also incorporates government regulation and policies. African intra-regional trade is the lowest globally – at only 15% – compared to 54% in the North America Free Trade Area, 70% in the European Union and 60% in Asia. Facilitating more trade in Africa does not only imply improvements in hard infrastructure for the purposes of transporting goods, but the easing of stringent trade policies and regulations. Apart from import duties, intra-Africa trade barriers are mostly regulatory in nature. These are ongoing challenges to doing business in Africa and to date, success in addressing these issues has been limited.

Essentially, there is a need to simplify and standardise traditional barriers like high tariffs. But along with this are the increasing numbers of non-tariff barriers (including embargoes, quotas, sanctions, taxes and administrative procedures such as licensing, permits etc.). As the traditional tariff barriers are continuously reduced through the implementation of multilateral and regional trade liberalisation, countries are making increased use of non-tariff barriers to protect their domestic industries against import competition.

Table 2.2.3's first column looks at each country's logistics-"friendliness": the World Bank's Logistics Performance Index combines companies' knowledge of the countries with which they trade by focusing on their experience of those countries' logistics supply chains as well as core logistics processes, institutions and performance time and cost data. The worst performers are Somalia, Mauritania and Equatorial Guinea, with the best performers including South Africa, Kenya and Egypt. The other indicators in the table highlight the fact that Africa's trade environment continues to be burdened by high costs, bureaucracy and prolonged periods of time for transporting goods to and from countries.

Facilitating more trade in Africa does not only imply improvements in hard infrastructure for the purposes of transporting goods, but the easing of stringent trade policies and regulations.

Table 2.2.3: Logistics processes

	LOGISTICS PERFORMANCE INDEX	BURDEN OF CUSTOMS PROCEDURES	AVERAGE TIME TO CLEAR EXPORTS THROUGH CUSTOMS	DOCUMENTS	
	Scores 1-5 (worst to best)	Scores 1-7 (worst to best)	(Days)	To export (number)	To import (number)
Algeria	2.8	3.2	14.1	9	9
Angola	2.2	1.8	6.7	9	8
Benin	2.4	3.3	17.9	8	9
Botswana	3.1	4.2	6.2	6	7
Burkina Faso	2.7	3.6	7.4	10	12
Burundi	2.5	2.9	20.6	9	10
Cameroon	2.2	3.4	6.7	11	12
Cabo Verde	-	3.5	-	7	7
CAR	2.4	-	9.5	9	17
Chad	2.2	2.4	11.9	7	10
Comoros	2.6	-	-	9	8
Congo	2.4	-	-	11	10
Côte d'Ivoire	2.6	4.1	19.6	9	13
Djibouti	2.3	-	10.4	5	5
DRC	2.4	3.1	6.3	7	10
Egypt	3.2	3.8	7.5	8	10
Equatorial Guinea	1.9	-	-	7	6
Eritrea	2.2	-	9.6	10	12
Ethiopia	2.4	3.2	7.7	8	11
Gabon	2.2	3.5	3.8	6	8
Gambia	2.3	4.5	5.0	6	6
Ghana	2.7	3.6	7.8	6	7
Guinea	2.4	3.3	4.3	7	8
Guinea-Bissau	2.4	-	5.6	6	6
Kenya	3.3	3.6	10.3	8	9
Lesotho	2.0	3.4	4.0	8	8
Liberia	2.2	3.6	10.0	10	12
Libya	2.3	2.6	-	-	9
Madagascar	2.2	3.0	8.6	5	9
Malawi	2.8	3.8	11.4	10	11
Mali	2.5	3.2	16.5	6	11
Mauritania	1.9	3.1	26.0	8	8
Mauritius	2.5	4.7	10.3	4	5
Morocco	2.7	4.2	3.5	5	6
Mozambique	2.7	3.5	10.1	7	9
Namibia	2.7	4.1	8.2	8	7
Niger	2.6	-	2.6	8	10
Nigeria	2.6	2.8	6.0	7	10
Rwanda	3.0	5.3	10.2	7	9
São Tomé and Príncipe	2.3	-	-	8	6
Senegal	2.3	4.1	7.1	6	6
Seychelles	-	3.8	-	5	5
Sierra Leone	2.0	3.2	-	7	8
Somalia	1.8	-	-	-	-
South Africa	3.8	3.9	4.5	7	7
South Sudan	-	-	-	-	-
Sudan	2.5	-	-	7	7
Swaziland	-	3.5	4.1	8	7
Tanzania	3.0	3.2	12.4	7	11
Togo	2.6	-	8.2	6	7
Tunisia	2.5	3.1	3.0	4	6
Uganda	-	4.0	10.0	7	10
Zambia	2.4	3.8	10.7	7	8
Zimbabwe	2.1	3.0	5.9	7	9

In theory, barriers to trade are completely lifted, or at least simplified, when Regional Economic Communities (RECs) establish free-trade areas. But challenges like overlapping REC memberships, the slow implementation of existing commitments related to trade-facilitation measures and the lack of transparency and trust hinder their effectiveness. But there are initiatives that will hopefully overcome all of this (See Chapter 2.4.).

Africa is certainly not lacking in initiatives to tackle the infrastructure deficit. But the continent does need the political will – and specifically, a higher degree of private-sector participation – to build organisational strength and technical skills. Most of all, it needs the money to do so.

Herein lies the biggest challenge of them all – a government's limited ability to invest in infrastructure. We expect only a marginal increase in infrastructure investment between 2018 and 2020, as governments focus on fiscal consolidation to reduce their recently racked-up debt burdens. From a private-sector perspective, we can expect to see a similar trend as companies rationalise capital expenditure.

For now, the African infrastructure sector is locked in a very vicious circle. At the beginning of this publication, we mentioned that the funding need for infrastructure development is now an estimated US\$130bn-US\$170bn annually. But because the continent cannot finance its needs in the education and health spaces or meet many other economic growth-related priorities, it is unlikely that it will have the means to finance this deficit anytime soon.

Africa does not lack the initiatives to tackle its infrastructure deficit. But it does need the political will and more private-sector participation to build organisational strength and technical skills. Most of all, it needs the money to do so.

APPENDIX: ADDITIONAL SOFT INFRASTRUCTURE DATA PER COUNTRY

Table A2.2.1: Education statistics

	LITERACY RATE			EDUCATION QUALITY	
	Adult (% of ages 15 and older)	Youth		Primary school teachers trained to teach (%)	Pupil-teacher ratio, primary school (number of pupils per teacher)
		Female (% of ages 15-24)	Male (% of ages 15-24)		
	2005-2015	2005-2015	2005-2015	2005-2015	2010-2015
Algeria	80	96	96	95	24
Angola	71	67	79	47	43
Benin	38	43	63	68	46
Botswana	88	100	96	99	23
Burkina Faso	36	43	48	86	44
Burundi	86	88	87	92	44
Cameroon	75	80	87	79	44
Cabo Verde	88	99	98	96	23
CAR	37	27	49	58	80
Chad	40	50	55	65	62
Comoros	78	88	87	75	28
Congo	79	77	86	80	44
Côte d'Ivoire	43	41	60	85	43
Djibouti	-	-	-	100	33
DRC	77	80	92	95	35
Egypt	75	92	94	73	23
Equatorial Guinea	95	99	98	49	26
Eritrea	74	92	95	80	40
Ethiopia	49	68	71	95	64
Gabon	83	91	88	-	25
Gambia	56	71	76	84	37
Ghana	77	90	91	55	31
Guinea	30	47	43	75	46
Guinea-Bissau	60	74	81	39	52
Kenya	78	87	85	97	57
Lesotho	79	93	77	76	33
Liberia	48	44	65	56	26
Libya	91	100	100	-	-
Madagascar	65	65	65	17	42
Malawi	66	75	75	91	61
Mali	39	46	61	52	42
Mauritania	52	55	70	91	34
Mauritius	91	99	98	100	19
Morocco	72	94	97	100	26
Mozambique	59	70	84	90	54
Namibia	82	93	86	96	30
Niger	19	17	36	50	36
Nigeria	60	65	80	66	38
Rwanda	71	82	78	95	58
São Tomé and Príncipe	75	82	84	34	39
Senegal	56	64	76	70	32
Seychelles	95	100	99	87	13
Sierra Leone	48	59	76	57	35
Somalia	-	-	-	-	-
South Africa	94	99	99	-	32
South Sudan	32	42	47	44	50
Sudan	76	88	91	60	25
Swaziland	87	96	94	79	28
Tanzania	80	87	87	99	43
Togo	67	81	89	76	41
Tunisia	82	98	98	100	17
Uganda	74	87	87	95	46
Zambia	63	62	69	93	48
Zimbabwe	87	93	90	86	36

NET ENROLMENT RATIO		GROSS ENROLMENT RATIO	
Pre-primary (% of preschool-age children) 2010-2015	Primary (% of primary school-age population) 2010-2015	Secondary (% of secondary school-age population) 2010-2015	Tertiary (% of tertiary school-age population) 2010-2015
74	97	-	35
54	76	11	10
11	95	45	15
17	92	-	28
4	66	21	5
6	97	22	4
22	91	44	12
61	87	65	23
5	67	14	3
1	71	-	3
14	83	45	9
11	85	-	10
6	73	31	9
3	55	35	5
4	-	-	7
23	96	79	32
36	45	-	-
12	43	32	3
15	80	31	8
35	-	-	-
29	69	-	3
78	85	51	16
9	74	32	11
5	71	-	-
-	82	-	-
24	80	35	10
57	39	16	12
-	-	-	-
10	-	31	4
-	-	30	1
3	61	32	7
-	71	23	6
96	96	85	39
50	93	54	25
-	87	18	6
18	88	-	-
5	59	14	2
-	64	-	-
12	-	28	8
43	91	52	13
12	72	-	7
91	-	74	6
7	94	32	-
-	-	-	-
22	80	65	20
5	36	5	-
-	57	-	17
17	78	35	5
31	82	-	4
9	92	-	10
-	99	-	35
13	90	-	4
-	86	-	-
26	86	43	6

Table A2.2.2: Health statistics

LIFE EXPECTANCY AT BIRTH (YEARS)					
HDI rank	Very high human development		HDI rank	High human development	
1	Norway	82	52	Belarus	71
2	Australia	83	53	Oman	77
3	Switzerland	83	54	Barbados	76
4	Germany	81	55	Uruguay	77
5	Denmark	80	56	Bulgaria	74
6	Singapore	83	57	Kazakhstan	70
7	Netherlands	82	58	Bahamas	76
8	Ireland	81	59	Malaysia	75
9	Iceland	83	60	Palau	73
10	Canada	82	61	Panama	78
11	United States	79	62	Antigua and Barbuda	76
12	Hong Kong	84	63	Seychelles	73
13	New Zealand	82	64	Mauritius	75
14	Sweden	82	65	Trinidad and Tobago	71
15	Liechtenstein	80	66	Costa Rica	80
16	United Kingdom	81	67	Serbia	75
17	Japan	84	68	Cuba	80
18	South Korea	82	69	Iran	76
19	Israel	83	70	Georgia	75
20	Luxembourg	82	71	Turkey	76
21	France	82	72	Venezuela	74
22	Belgium	81	73	Sri Lanka	75
23	Finland	81	74	Saint Kitts and Nevis	74
24	Austria	82	75	Albania	78
25	Slovenia	81	76	Lebanon	80
26	Italy	83	77	Mexico	77
27	Spain	83	78	Azerbaijan	71
28	Czech Republic	79	79	Brazil	75
29	Greece	81	80	Grenada	74
30	Brunei Darussalam	79	81	Bosnia and Herzegovina	77
31	Estonia	77	82	Macedonia	76
32	Andorra	81	83	Algeria	75
33	Cyprus	80	84	Armenia	75
34	Malta	81	85	Ukraine	71
35	Qatar	78	86	Jordan	74
36	Poland	78	87	Peru	75
37	Lithuania	73	88	Thailand	75
38	Chile	82	89	Ecuador	76
39	Saudi Arabia	74	90	China	76
40	Slovakia	76	91	Fiji	70
41	Portugal	81	92	Mongolia	70
42	United Arab Emirates	77	93	Saint Lucia	75
43	Hungary	75	94	Jamaica	76
44	Latvia	74	95	Colombia	74
45	Argentina	76	96	Dominica	78
46	Croatia	77	97	Suriname	71
47	Bahrain	77	98	Tunisia	75
48	Montenegro	76	99	Dominican Republic	74
49	Russian Federation	70	100	Saint Vincent and the Grenadines	73
50	Romania	75	101	Tonga	73
51	Kuwait	75	102	Libya	72
			103	Belize	70
			104	Samoa	74
			105	Maldives	77
			106	Uzbekistan	69

LIFE EXPECTANCY AT BIRTH (YEARS)

HDI rank	Medium human development		HDI rank	Low human development	
107	Moldova	72	148	Swaziland	49
108	Botswana	65	149	Syria	70
109	Gabon	65	150	Angola	53
110	Paraguay	73	151	Tanzania	66
111	Egypt	71	152	Nigeria	53
112	Turkmenistan	66	153	Cameroon	56
113	Indonesia	69	154	Papua New Guinea	63
114	Palestine, State of	73	155	Zimbabwe	59
115	Vietnam	76	156	Solomon Islands	68
116	Philippines	68	157	Mauritania	63
117	El Salvador	73	158	Madagascar	66
118	Bolivia	69	159	Rwanda	65
119	South Africa	58	160	Comoros	64
120	Kyrgyzstan	71	161	Lesotho	50
121	Iraq	70	162	Senegal	67
122	Cabo Verde	74	163	Haiti	63
123	Morocco	74	164	Uganda	59
124	Nicaragua	75	165	Sudan	64
125	Guatemala	72	166	Togo	60
126	Namibia	65	167	Benin	60
127	Guyana	66	168	Yemen	64
128	Micronesia	69	169	Afghanistan	61
129	Tajikistan	70	170	Malawi	64
130	Honduras	73	171	Côte d'Ivoire	52
131	India	68	172	Djibouti	62
132	Bhutan	70	173	Gambia	60
133	Timor-Leste	69	174	Ethiopia	65
134	Vanuatu	72	175	Mali	58
135	Congo	63	176	DRC	59
136	Equatorial Guinea	58	177	Liberia	61
137	Kiribati	66	178	Guinea-Bissau	55
138	Lao	67	179	Eritrea	64
139	Bangladesh	72	180	Sierra Leone	51
140	Ghana	62	181	Mozambique	55
141	Zambia	61	182	South Sudan	56
142	São Tomé and Príncipe	67	183	Guinea	59
143	Cambodia	69	184	Burundi	57
144	Nepal	70	185	Burkina Faso	59
145	Myanmar	66	186	Chad	52
146	Kenya	62	187	Niger	62
147	Pakistan	66	188	CAR	51

Source: Human Development Index

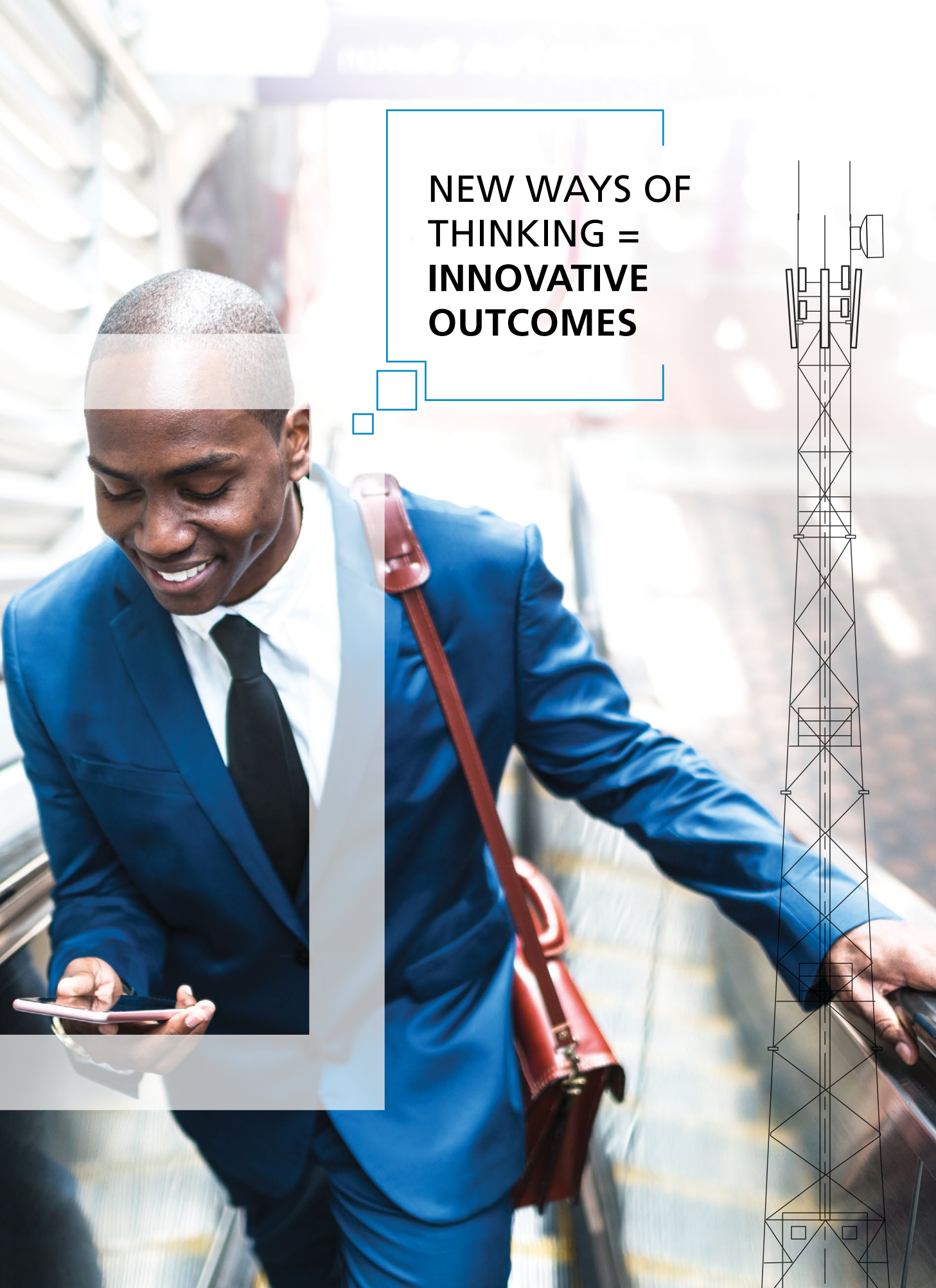
FINANCING INFRASTRUCTURE

The principal risk to the creation of sustainable infrastructure in Africa is a shortage of funding. There is no doubt that the continent is still underserved. Public funding is constrained, while traditionally supported aid flows are diminishing, demanding greater private-sector assistance.

M-PESA — MAKING MOBILE MONEY SAFER AND MORE TRANSPARENT

M-Pesa is a mobile banking service that allows users to store and transfer money through their mobile phones. It was introduced as a way for the unbanked population to have access to financial services. Designed by Safaricom in Kenya, the product has received global attention due to its uniqueness, innovativeness, rapid adoption and the impact it has made on a large population.





NEW WAYS OF
THINKING =
INNOVATIVE
OUTCOMES

FINANCING THE INFRASTRUCTURE GAP

Over the last 15 years, public-private partnerships (PPP) have grown in importance as a mechanism for infrastructure investment. These partnerships have been created through the strengthening of governments' programming and contracting capacities, and provide financial independence to local authorities and public enterprises.

By creating enabling environments with solid regulatory frameworks, governments acknowledge the role that private participants play in developing crucial infrastructure. The private sector is equally responsible for providing financing models that address societal

needs in a commercially viable manner. Investors who adopt an integrated approach – starting as sponsors, taking the project to bankability, closing the financing, and then supervising and controlling the execution per the Boston Consulting Group's recommendations – are likely to reap a return on investment that averages between 19% and 22%.

In this chapter, we take a look at Africa's chief financiers of infrastructure development and assess the various investment avenues.

The task of closing the infrastructure gap is a mammoth one – and one that must be taken on by both public and private sectors.

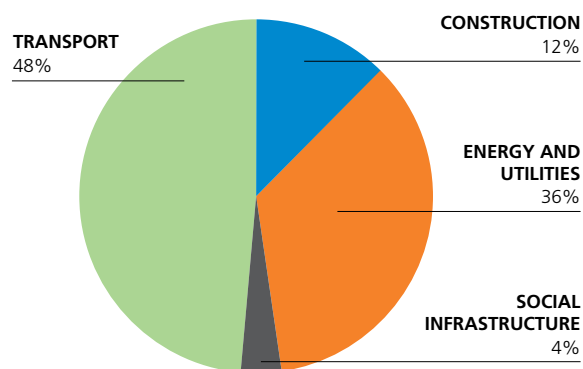
SAME TARGET, DIFFERENT TASTES

The task of closing the infrastructure gap in Africa is a mammoth one – and one that must be taken on by both the public and private sectors. These two sources of capital are often complementary in nature: the private sector allows for innovative funding models that can leverage a government's balance sheet for the creation of a commercially viable funding structure.

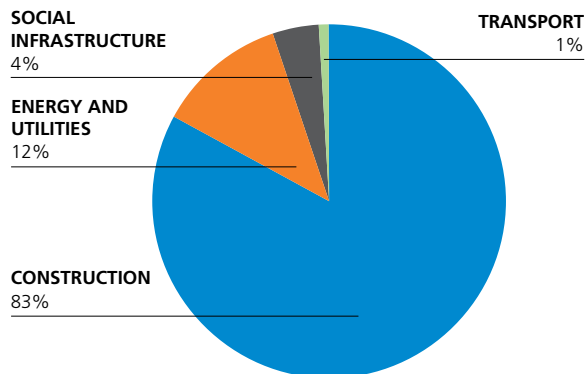
In Africa, 90% of the projects that are currently underway are being financed by public revenue through central governments or municipalities, with the remainder financed by private funders. A funder's preference for a particular type of project is often determined by the underlying investment mandate, source of capital and appetite for risk.

Figure 2.3.1: Africa's funding – sectoral split

PUBLIC FUNDING



PRIVATE FUNDING



Source: BMI, RMB Global Markets

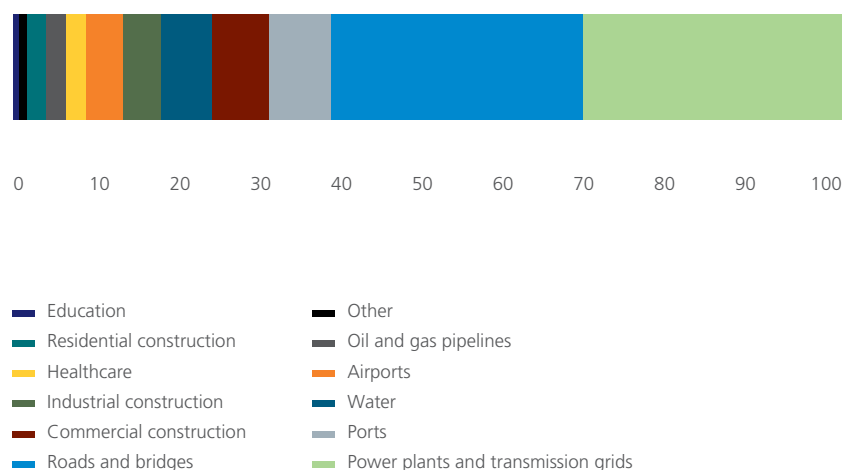
The data shows that construction accounts for 83% of all ongoing projects being funded by the private sector, while the same sector draws only 12% of public investment (Figure 2.3.1). This is understandable: the construction of a hotel or stadium, for instance, is usually short term in nature, with easily discernable cash-flow projects – attractive features for private funders.

Governments, on the other hand, show a strong leaning towards transport and energy-related projects, which together account for 84% of public investment and 13% of private investment. Governments typically see these classes of investments as social goods that must be provided for – even at sub-economical levels. In many instances, the regulatory burden that comes with these investments dissuades private funders.

The trend within the energy sector in particular is rapidly changing though, with the push towards renewable energy opening the space for private funders to invest in small-scale projects, with the government being the off-taker.

Looking at the split on a subsector level, we notice that private funders have a penchant for commercial and industrial construction – relatively less capital-intensive compared to the roads, bridges and power-related projects that governments typically fund (Figures 2.3.2 and 2.3.3).

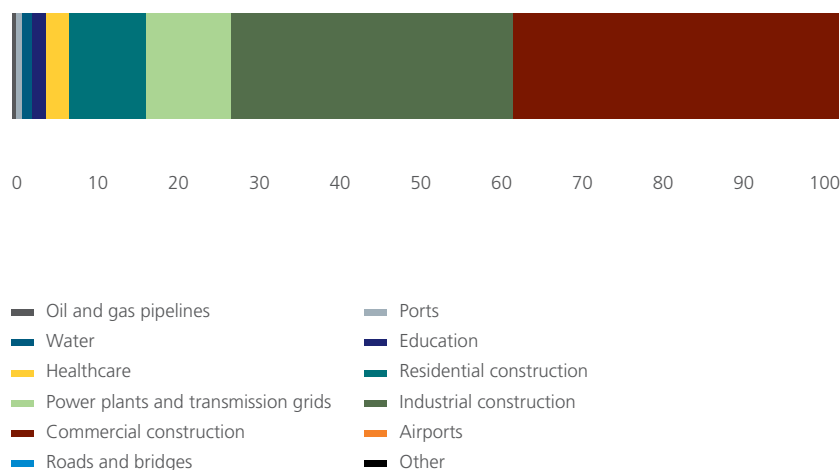
Figure 2.3.2: Number of public projects – subsector split (%)



Source: BMI, RMB Global Markets

The trend within the energy sector is changing. There is a push towards renewable energy, which makes way for private funds to invest in projects.

Figure 2.3.3: Number of private projects – subsector split (%)



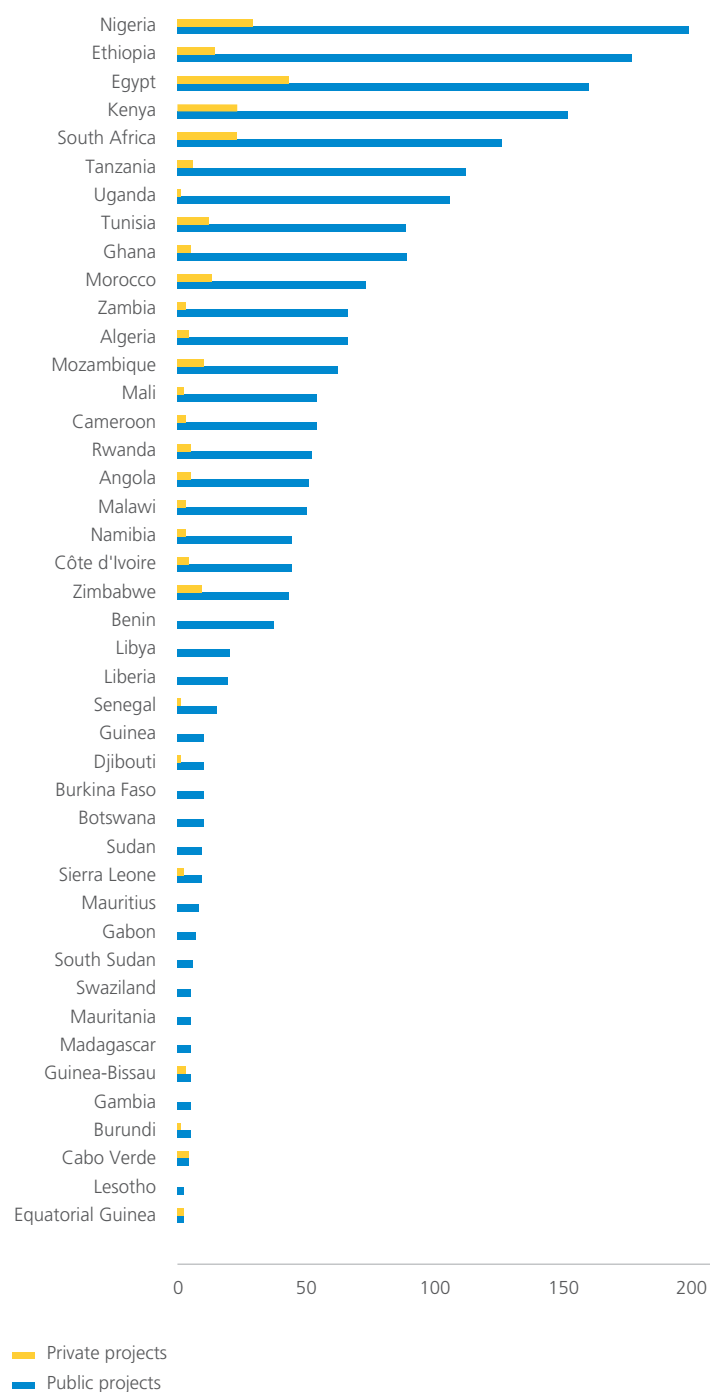
Source: BMI, RMB Global Markets

THE BUSIEST BEES IN THE HIVE

Nigeria, Ethiopia and Egypt (in that order) stand out as the three countries with the most publicly-funded infrastructure developments on the continent.

Private funders show similar country preferences as their public counterparts, with the notable exception of South Africa being the third-highest country by number of projects.

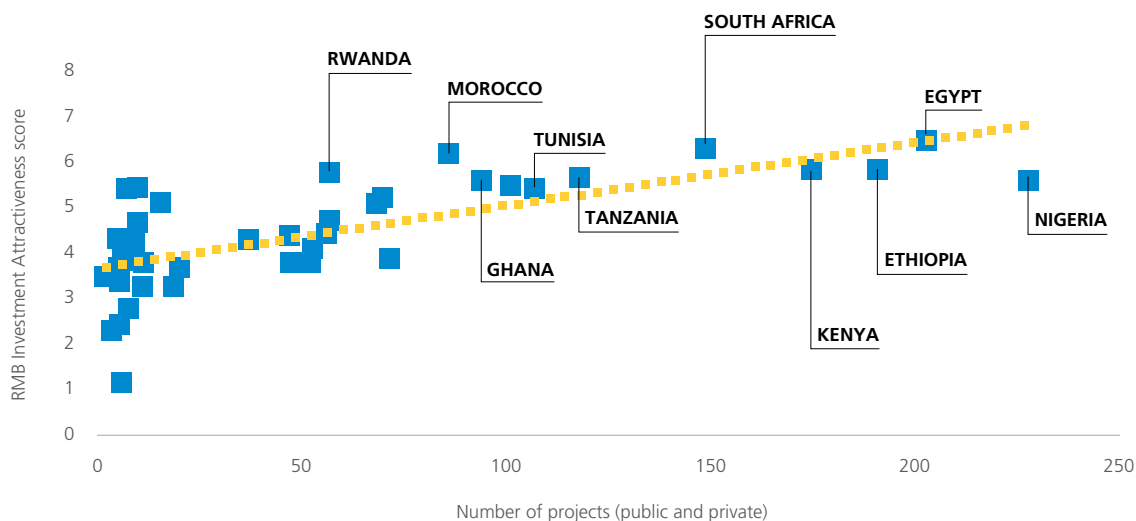
Figure 2.3.4: Number of projects currently underway – split between private and public investments



Source: BMI, RMB Global Markets

The total number of projects that a country has correlates with its RMB Investment Attractiveness score.

Figure 2.3.5: Investment projects relative to RMB's Investment Attractiveness score



Source: BMI, RMB Global Markets

This correlation is to be expected. For example, the building of electricity grids would be a catalyst to the manufacturing sector producing more goods and therefore boost the economic activity pillar, which accounts for 50% of our scoring criteria. The causation also runs the other way: if the operating environment in question – another of the pillars of our methodology – is business-friendly, private funders would be inclined to do more deals in that country.

WHAT ATTRACTS PRIVATE FUNDERS?

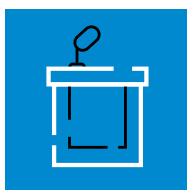
From our experience, when it comes to investing in various infrastructure projects across the continent, there are several key considerations to which to pay attention. These are essential to ensuring continuous appetite for the funding of projects.

Table 2.3.1: Key investment drivers



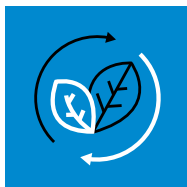
STRENGTH OF THE PPP FRAMEWORK

Successful PPPs are typically characterised by comprehensive planning, clear contractual rules and contingencies as well as competitive procurement and credible contract enforcement. Table 2.3.2 lists laws governing selected SSA countries' PPP frameworks.



POLITICAL WILLINGNESS

Large infrastructure projects tend to require huge capital commitment from the government and funders need to know that governments will honour their commitment. In some cases, governments need to drum up the necessary public support to ensure the project's success – as with a toll road, for instance.



ENVIRONMENTAL AND SOCIAL CONSIDERATIONS

Responsible and sustainable investing has gained priority among many international investors.



RISK MANAGEMENT

Most projects typically require sovereign guarantees or political-risk insurance to lower the cost of funding. A credit-enhancement mechanism allows multilateral institutions to bolster Africa's bond issuances and loan applications with their AAA credit-ratings. The subsidisation of partial capital costs could encourage the private sector to participate in projects with low financial returns. Additionally, currency-risk management is key for projects requiring hard-currency funding against revenues in local currency.

Source: RMB Global Markets

Table 2.3.2: PPP laws in selected African jurisdictions

	PPP LAWS AND OTHER APPLICABLE TEXTS	OTHER APPLICABLE SECTORAL LAWS
Egypt	<ul style="list-style-type: none"> Egypt Public Private Partnership Law No. 67, 2010 	<ul style="list-style-type: none"> Egyptian Electricity Law, Law No. 87, 2015
Ethiopia		<ul style="list-style-type: none"> The Ethiopian Federal Government Procurement and Property Administration Proclamation (GPPAP Act) No. 649/2009, 2009
Ghana	<ul style="list-style-type: none"> The National Policy on Public Private Partnerships (PPP), 2011 The PPP Bill Draft 2013 No. 2 (not adopted yet) 	<ul style="list-style-type: none"> The Ghana Investment Promotion Centre Act, 2013 (Act 865) The Renewable Energy Act, 2011 (Act 832) Public Procurement Act 663, 2003
Kenya	<ul style="list-style-type: none"> Public Private Partnerships Act, 2014 (No. 15 of 2013) Public Private Partnership Regulations, 2014 Policy Statement on Public Private Partnerships, 2011 The Privatization Act, 2005 The Public Roads Toll Act Cap. 407, 1984 The Public Procurement and Disposal Act, 2005 	<ul style="list-style-type: none"> Water Act, 2002 Energy Act, 2006 The Privatization Act, 2005
Nigeria	<ul style="list-style-type: none"> The Infrastructure Concession Regulatory Commission Act (ICRC), 2005 The National Policy on Public Private Partnerships (N4P), 2009 	<ul style="list-style-type: none"> The Public Procurement Act (PP Act), 2007
South Africa	<ul style="list-style-type: none"> National Treasury published nine PPP modules for each stage of a PPP The Standardised PPP Provisions, 2004 	<ul style="list-style-type: none"> The Public Finance Management Act (PFMA), 1999 The Revised Public Finance Management Act (PFMA 2015), 2015 The Preferential Procurement Policy Framework Act (PPPFA) (52,000)
Tanzania	<ul style="list-style-type: none"> The Public Private Partnership Act (Amended) (as PPP Act), 2014 The Public Private Partnership Regulations (Amended) (as PPP Regulations), 2015 The Public Private Partnership Regulations, 2011, as amended by the PPP Amendment Act, 2014 Public Procurement Act, 2011, as amended in 2014 National Public-Private Partnership Policy, 2009 	<ul style="list-style-type: none"> The Tanzania Investment Act, 1997 PPA Act, 2012 Electricity Act, 2008
Zambia	<ul style="list-style-type: none"> The Public-Private Partnership Act, 2009 The Public Procurement Act, 2008 	<ul style="list-style-type: none"> The Energy Regulation Act, 1995 The Electricity Act, 1995 The Railways Act, 2002

Source: African Legal Support Facility, RMB Global Markets

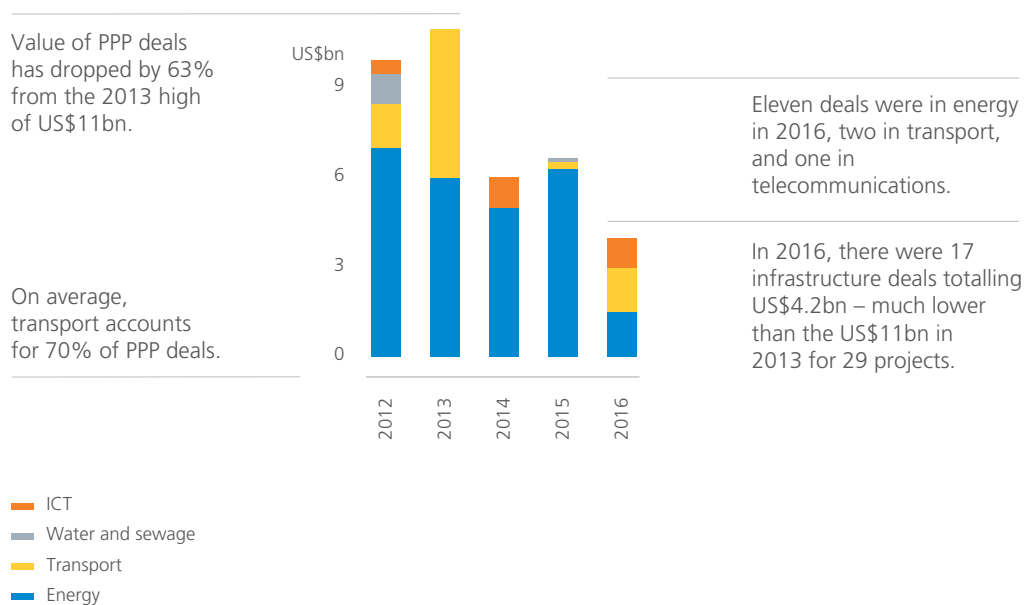
THE PPP LANDSCAPE IN NUMBERS

Despite the fact that the monetary amount invested has declined across the continent over the last six years, this trend is poised to turn around in the medium term, as regulatory frameworks are getting stronger, thereby allowing for ease of transacting for both the public and private sectors. Strengthening PPP frameworks across the continent is vital if Africa is to make inroads in closing the infrastructure gap.

Figure 2.3.6: PPP investments in Africa (2012-2016)

Value of PPP deals has dropped by 63% from the 2013 high of US\$11bn.

On average, transport accounts for 70% of PPP deals.



Source: AfDB, RMB Global Markets

FISHING FOR FINANCING

The funding of infrastructure schemes through traditional means is generally both complex and complicated, often necessitating new and innovative financing techniques. In this section, we highlight various avenues of investment that for the most part are spearheaded by African finance institutions and complemented by external development finance institutions (DFIs) and the private sector. However, in many cases, the uptake of alternative solutions has been quite slow due to regulatory hurdles, political risk, limited funding vehicles, and shallow and often illiquid financial markets, restricting the full participation of external investors.

THE PROVERBIAL SILVER BULLET: INSTITUTIONAL INVESTORS

Institutional investors, specifically sovereign wealth funds (SWFs) and pension funds, are described by the Infrastructure Consortium for Africa (ICA) as “absentee investors”, the term essentially a reference to a lack of reforms and the illiquid capital markets that have deterred active investment. Overcome these obstacles and Africa’s financing gap could be narrowed much faster than anticipated.

Here, we pay special attention to the role that pension funds could play in this regard.

THE PUZZLE OF PENSION FUNDS

It is puzzling that pension funds have not made progressive investments in infrastructure – especially in those sectors with the potential for high returns and stable and long-term cash flow and inflation-protection possibilities.

Furthermore, infrastructure investments have a low correlation to traditional asset classes.

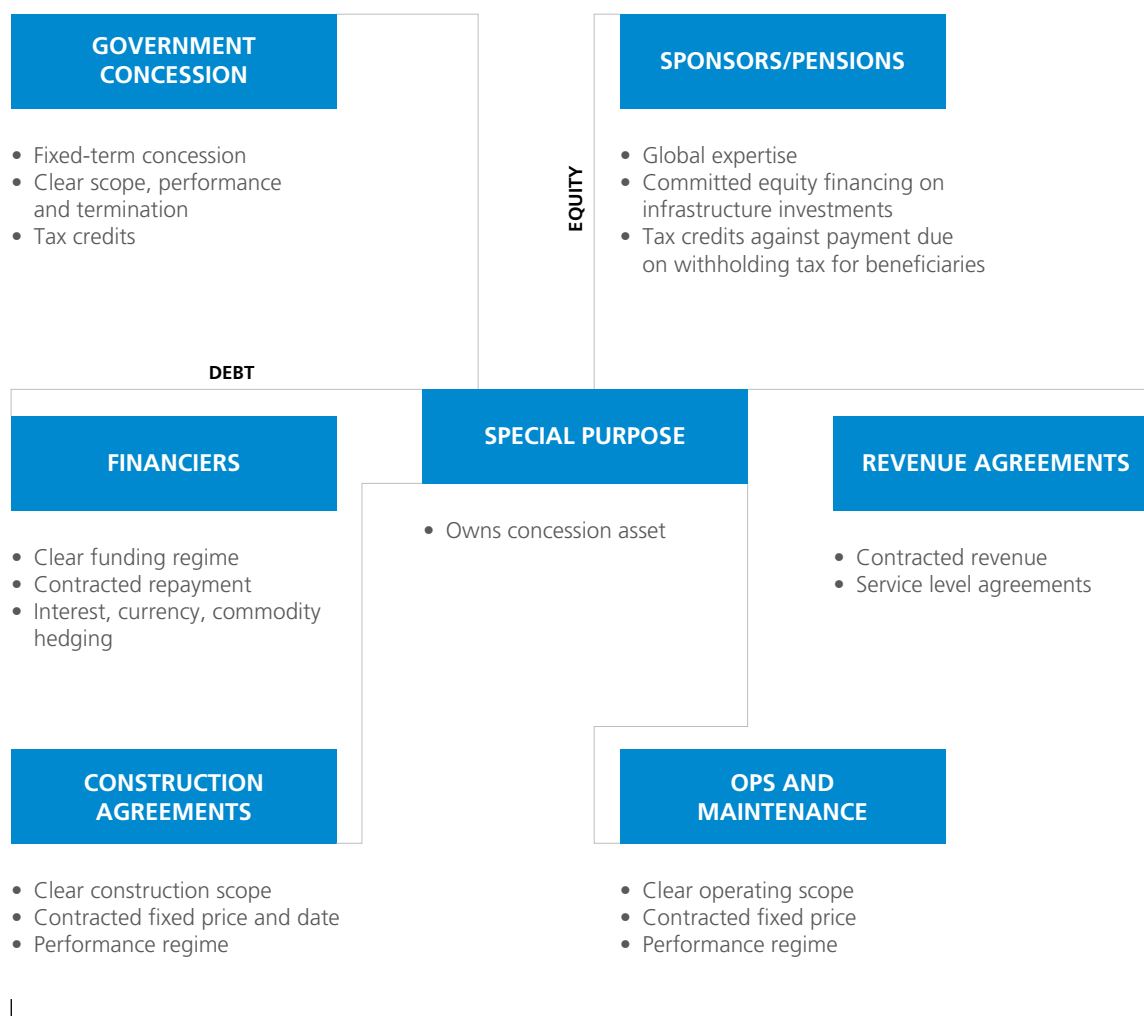
Infrastructure investments have a low correlation to traditional asset classes, providing opportunity for diversification of asset allocation.

This suggests that there should be directional linkage between the infrastructure deficit and pension funds’ investments in infrastructure as an asset class – although the allocation remains below 5%, even in developed markets. While smaller pension funds are limited in their ability to invest in infrastructure due to their shallower pools of finance and specialist-investment governance, it should be easier for larger funds to commit to longer-term investments or lengthy, capital-intensive projects.

Regardless of their size, the main purpose of pension funds is to accrue pension benefits for their members. The aim, therefore, is not to invest in a particular asset class (like infrastructure) per se, but instead to focus on the investment aspect. How is it managed, for example? How is the construction business allocated? Who gets paid for it? Will the infrastructure project be delivered on time? How is benefit derived from projects that lack revenue streams?

For these – and other – prospective investors, it is imperative that the regulatory and supervisory reforms for infrastructure projects within Africa are tailor-made to properly meet investor requirements.

Figure 2.3.7: Charting the course for pension funds as a conduit for infrastructure development



Source: Emkin and Seltzer, Pension Consulting Alliance

The channelling of pension funds into infrastructure investments within Africa is achieved mostly through government employee pension funds. For example, the South African Government Employees' Pension Fund (GEPPF) has previously made investments in solar power and telecommunications projects, while Tanzania's state-run pension fund invested in the construction of a toll bridge in Dar es Salaam.

As pension funds continue to grow and become more sophisticated, opportunities to direct funds to infrastructure projects will increase. But several legal and policy challenges remain. Here are some of the concerns that should be addressed for pension funds to drive major infrastructure construction and improvement within Africa:

- **The low number of pensions held:** Strategise around increasing pension cover. Currently, the bulk of pension funds in Africa is concentrated in sixteen major markets, the top four being Nigeria, South Africa, Namibia and Botswana. These countries hold at least 90% of Africa's pension-fund assets. The rest of the continent is limited mostly to traditional investment strategies for its pension funds, as liabilities growth remains restricted.

- **Union reluctance to infrastructure-focused pension investments:** Labour unions are generally opposed to pension investments in infrastructure. It is therefore imperative that countries employ regulatory reforms that instill trust in both public project management and delivery.
- **Restrictive pension-fund regulations:** A review of the restrictive regulations on the pension funds of many African countries is needed. There are several countries that set thresholds on offshore investments by pension funds, which limits ambitious diversification of pension funds within the region. It is vital that regulations allow for diverse investments, positioning pension funds to leverage off the international and regional funds targeting pension funds as institutional investors. These include the Pan-African Infrastructure Development Fund, African Development Bank's (AfDB) Africa50 Fund, and the COMESA Infrastructure Fund.

SOVEREIGN WEALTH FUNDS

Sovereign Wealth Funds (SWFs) have, in many cases, been born of commodity-induced balance-of-payment and fiscal surpluses across Africa. Though not on the scale of European, Asian and Middle Eastern funds, African SWFs are not to be scoffed at, holding over US\$160bn in assets under management, with more than 75% of these funds domiciled in North Africa. In a 2016 paper by Quantum Global, it was estimated that if just 20% of African SWFs' assets were dedicated to efficiently funding infrastructure, the continent's annual financing gap would be bridged. And the number increases to about 30% if efficiency losses are considered. The point is that SWFs can play a leading role in developing much-needed infrastructure across the continent, provided that their investment strategies and underlying mandates support countries' macroeconomic policies and development plans.

However, in terms of sectoral allocations, African infrastructure projects do not attract a large volume of global or local SWF flows. Instead, monies are channelled into extractive industries and industrial development, reflecting a clear bias toward resources. Yet infrastructure financing is starting to gather momentum: Preqin notes in its 2018 Sovereign Wealth Fund Review that infrastructure remains one of the most favoured alternative asset classes.

For African SWFs, the investment case should be sound: infrastructure projects provide long-term investment returns that are protected against inflation and bear little to no correlation with other financial assets, making them less vulnerable to economic shocks. Predictable and stable streams of long-term cash flow – typical of road, harbour and airport projects – would also align well with the investment time horizon and risk profile of African SWFs. The same reasoning holds for global SWFs, with Gulf entities like Mubadala Investment Company already heavily invested in infrastructure projects north of the Sahara.

PROJECT FINANCE

A multitude of private-industry players, including RMB, provide structured long-term project financing across Africa; debt is repaid from future cash flows generated once the project is operational.

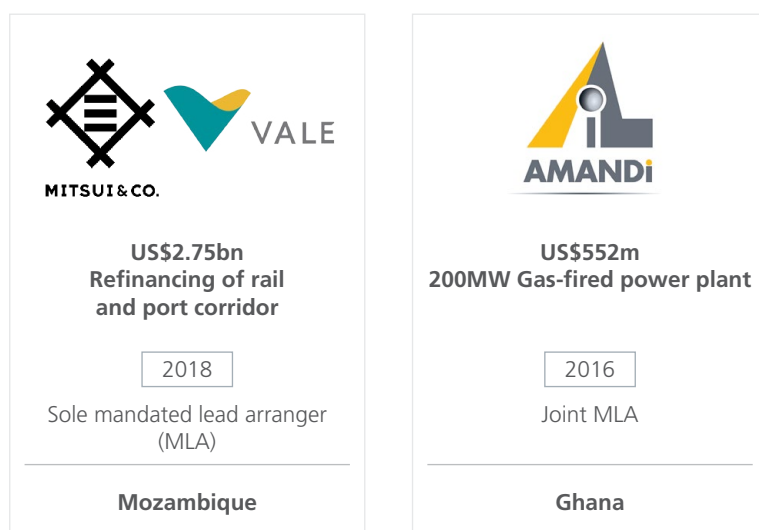
RMB is leading the charge in this respect, providing for:

- The arrangement and underwriting of senior and mezzanine finance (including inflation-linked debt), on a non-recourse or on-balance-sheet basis
- Financial advisory services to private companies, consortia and governments
- Equity investments in infrastructure projects and infrastructure-enabling organisations
- The financing of the import and export of capital goods and services across Africa with export credit agencies, recent successes being Mozambique and Ghana (Figure 2.3.8)

Infrastructure projects provide long-term investment returns for SWFs – protected against inflation, bearing little correlation with other financial assets and less vulnerable to economic shocks.

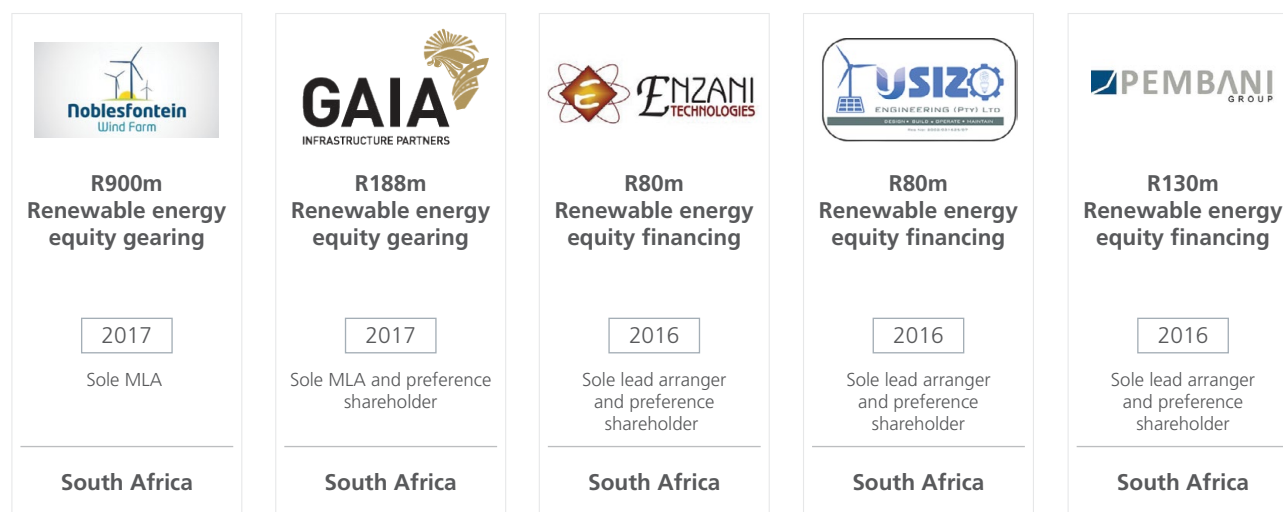
- Equity gearings through debt or preference share structures (Figure 2.3.9)
- The arranging for and structuring and underwriting of senior debt, junior debt and equity tranches for the financing of global aircraft and aircraft lessors
- The arranging for and structuring and underwriting of asset-backed financing structures

Figure 2.3.8: RMB's role in credit enhancements through export credit agencies



Source: RMB

Figure 2.3.9: RMB's track record in preference shares



Source: RMB

A BAG FULL OF BONDS

Bonds provide yet another alternative to traditional funding, making infrastructure debt more accessible to a wide array of institutions. Perhaps the most common option is the infrastructure project bond.

Figure 2.3.10: Bond options

MUNICIPAL BONDS	LOCAL-CURRENCY MECHANISMS	COMMODITY-LINKED BONDS	INFRASTRUCTURE PROJECT BONDS
Municipal Bonds aimed at diversifying funding streams for capital expenditure on infrastructure projects. This has commonly been used by municipalities in South Africa.	Local-currency mechanisms such as agency-backed bonds increase liquidity in domestic capital markets and provide access to long-term, local-currency finance for emerging private-sector participants. The IFC's kwacha-denominated "Zambezi" bond is a prime example of this type of solution.	Commodity-linked bonds provide lower-risk debt structures for export-dependent economies. By linking yield to export prices, commodity-linked bonds enable governments to hedge their issuances against volatile international commodity markets. Ghana used its cocoa resources to secure financing from China Eximbank for the 400MW Bui Dam power project.	Infrastructure project bonds allow institutional investors to participate in projects through listed, tradable securities that can offer superior risk-adjusted returns.

Source: ICA

Bonds provide yet another alternative to traditional funding, making infrastructure debt more accessible to a wide array of institutions.

INFRASTRUCTURE BONDS

Local-currency infrastructure bonds (IFBs) offer a growing avenue of financing that allows institutional investors the ability to participate in projects through listed, tradable securities that can offer superior risk-adjusted returns. IFBs are scarce in Africa, South Africa excluded.

They are typically issued in more developed bond markets like Kenya, a country that has been particularly successful in raising funds for specific stand-alone projects since 2009. Kenya attributes its achievement to the aggressive marketing and promotion of the bonds' specific incentives, which tend to be more appealing than shilling-denominated sovereign bonds. The government is also cognisant of the sizeable diaspora keen to participate in the enhancement of Kenya's infrastructure. Other examples include Morocco, which launched a €100m green bond to refinance its investments in selected renewable energy projects and Rwanda, which introduced a treasury-bond-issuance programme in 2014 to finance infrastructure projects and develop the local capital market.

The challenge in attracting an audience for IFBs in Africa is appropriate risk management due to the level of development risk. This has deterred government institutions in the most developed capital markets in Africa – notably South Africa – from utilising this type of funding, as it carries a significant premium relative to on-balance-sheet senior debt raised through the bond market. To reduce the level of risk and lower the pricing by attaining a higher credit rating, project financiers advise completion guarantees or support from sponsors or respective governments to safeguard bondholders against start-up and construction risks.

Though viable for EMs, infrastructure bonds are likely to be confined to larger capital markets in Africa until the necessary preconditions are met and risk-mitigation strategies are in place. Nevertheless, these bonds present a novel way of financing – a method to meet one of Africa's most dire needs. And, if managed correctly, they could provide superior risk-adjusted returns, as in the cases of countries in South America and Emerging Asia.

INFRASTRUCTURE FUNDS AND FRIENDS

Various infrastructure funds and co-financing programmes provide private-sector participants with a means by which to tap viable investment opportunities without necessarily taking on the associated risks. We highlight a few prominent examples here:



Launched in 2015, the **Africa50 Infrastructure Fund** was formulated to mitigate the risks attendant to PPPs by mobilising private financing for the acceleration of infrastructure delivery in Africa, thereby creating a new platform for Africa's growth. Twenty-three African countries, together with the AfDB and the central banks of Morocco and Economic Community of West African States (Bank Al Maghrib of Morocco and Banque Centrale des États de l'Afrique de l'Ouest), are party to the fund.



The **Emerging Africa Infrastructure Fund (EAIF)** currently funds 42 projects across Africa – all of which are run by the private sector. According to Investec, one of the most successful countries in this space is Uganda, where the GET FiT programme has provided a template for renewable PPPs. Senegal and Mali have also successfully utilised PPPs, with the EAIF helping to finance the Tobene power plant in Senegal.



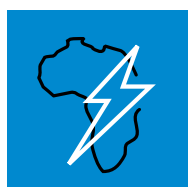
Created in 2007, the **EU-Africa Infrastructure Trust Fund's (EU-AITF)** main objective is to promote investment in infrastructure in SSA through various forms of grants, combined with long-term financing from development-finance institutions. In this way, the EU-AITF helps to mobilise additional finance for projects in the energy, transport, water and sanitation sectors, as well as information and communication technology (ICT). Ultimately, such projects contribute to poverty reduction and help foster sustainable economic growth.



Africa Growing Together Fund (AGTF) is a US\$2bn partnership between China and the AfDB aimed at providing co-financing to China's strategic infrastructure projects on the continent.



Private Infrastructure Development Group (PIDG) is a donor-backed organisation that encourages private-sector infrastructure investment in the world's lowest-income countries.



Power Africa is a US programme that took flight in June 2013. It aims to double the number of people with access to electricity in SSA. Initially, the initiative will carry out operations to enhance the electricity-generating capacity of six focus economies – Ethiopia, Ghana, Kenya, Liberia, Nigeria and Tanzania – by more than 10,000MW. The programme has sparked significant investor interest in SSA's energy markets and is providing increasingly tangible practical and financial support to galvanise both policy reform and projects.



Founded in 2016 by the BRICS group of countries, the **New Development Bank (NDB)** honed in on renewable energy programmes at the onset, committing US\$811m to Africa's infrastructure development through a series of loans to South African state-owned power utility, Eskom, in support of its renewable-energy drive. It was estimated that the projects would collectively provide additional generation capacity of 2,370MW of clean energy, though the deployment of capital has been suspended until at least 2018 as Eskom has not penned any new off-take agreements with independent power producers. The upshot is that South Africa can draw down on the loan to fund future green energy projects and will call on the NDB to potentially finance other infrastructure-led ventures.



The **Infrastructure Crisis Facility Debt Pool (ICF-DP)** acts as a catalyst for significant co-financing opportunities by offering flexible and rapidly deployable capital. Its €500m capital is provided by the German development bank, KfW.

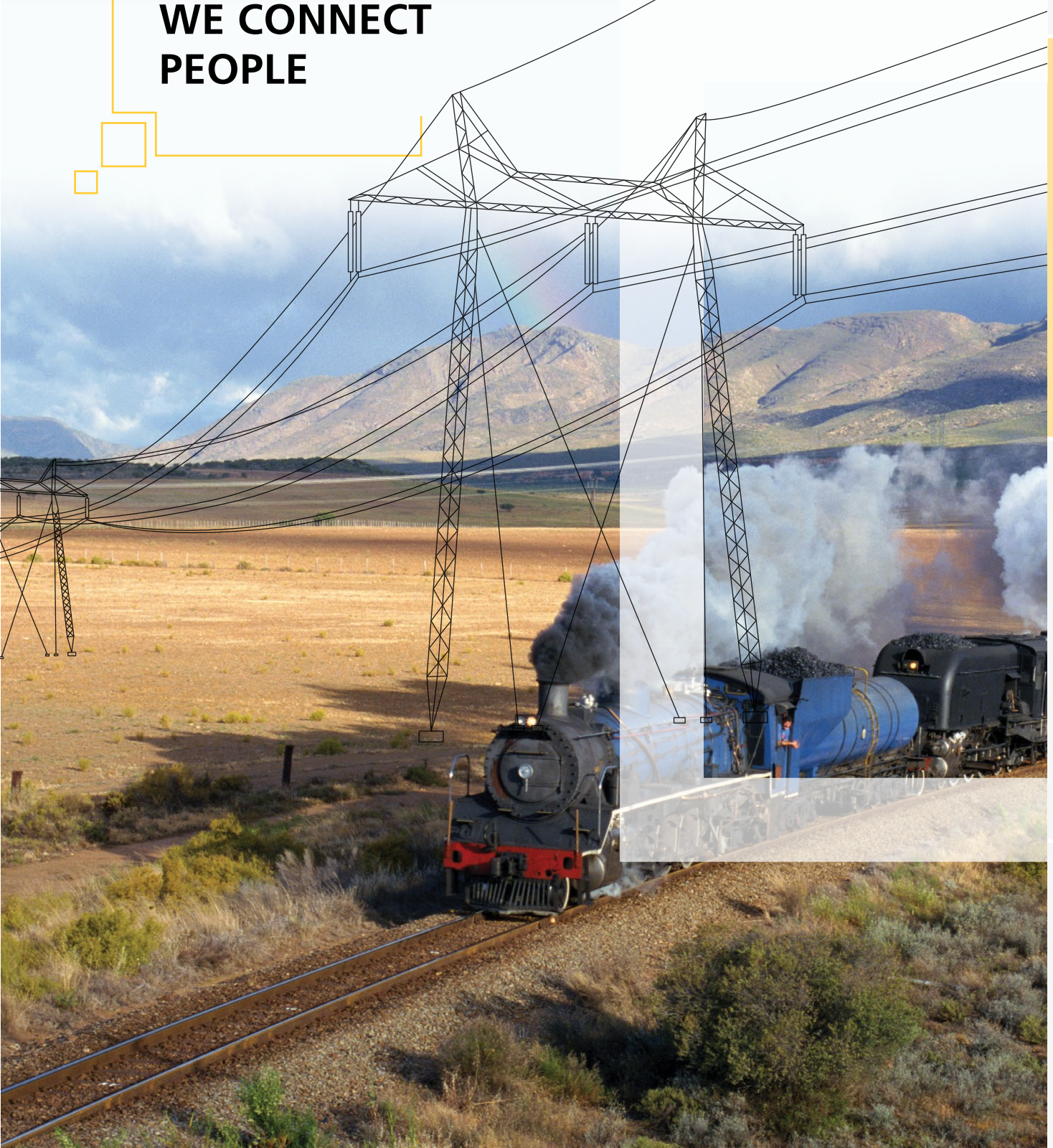
WHEN CRAFTING SOLUTIONS, WE CONNECT PEOPLE

1.0
OVERVIEW

2.0
INFRASTRUCTURE
IN AFRICA

3.0
COUNTRY
SNAPSHOTS

4.0
APPENDICES



REGIONAL INFRASTRUCTURE

It is no secret that China's insatiable demand for resources has seen it establish itself as Africa's leading export destination. And from this, Africa has benefitted.

WEST AFRICA REGIONAL RAIL INTEGRATION

This rail integration is aimed at boosting regional trade by connecting isolated areas in West Africa to urban areas and markets. It will greatly benefit landlocked countries like Niger, which faces constant transport problems. The project is a response to the need for better infrastructure and more reliable transport to move resources from one West African country to another, and then on to major ports.



ALL FOR ONE, ONE FOR ALL: A REGIONAL APPROACH TO INFRASTRUCTURE DEVELOPMENT

Africa has also prospered from its partnership with the US: the African Growth and Opportunity Act (AGOA), for example, has afforded countries like Uganda greater business opportunities across the Atlantic. But, there are growing concerns that the Trump administration could amend the agreement if there is a perceived threat to the US. Although bilateral relationships with both China and the US have been fruitful, Africa's reliance on those countries could stymie its growth prospects if a global trade war erupts.

At this stage though, it appears that President Trump, with the exception of Rwanda, has overlooked trade relations with Africa altogether, focusing his attention instead on regions with which the US runs deeper trade deficits. Nevertheless, the effects of an all-out trade war would be far-reaching. But herein lies the opportunity for Africa. Building economies of scale through regional integration could fundamentally change the face of continental trade by:

- Boosting competitiveness through increased productivity and reduced unit costs
- Improving wellbeing by allowing African citizens to purchase goods and services from the cheapest source, resulting in the re-allocation of resources based on comparative advantage
- Assisting smaller economies in achieving economies of scale by their pooling of resources or combining markets
- Encouraging greater competition among firms by removing distortions created by monopolies, resulting in increased investment spending, higher production efficiency, better-quality goods and lower prices

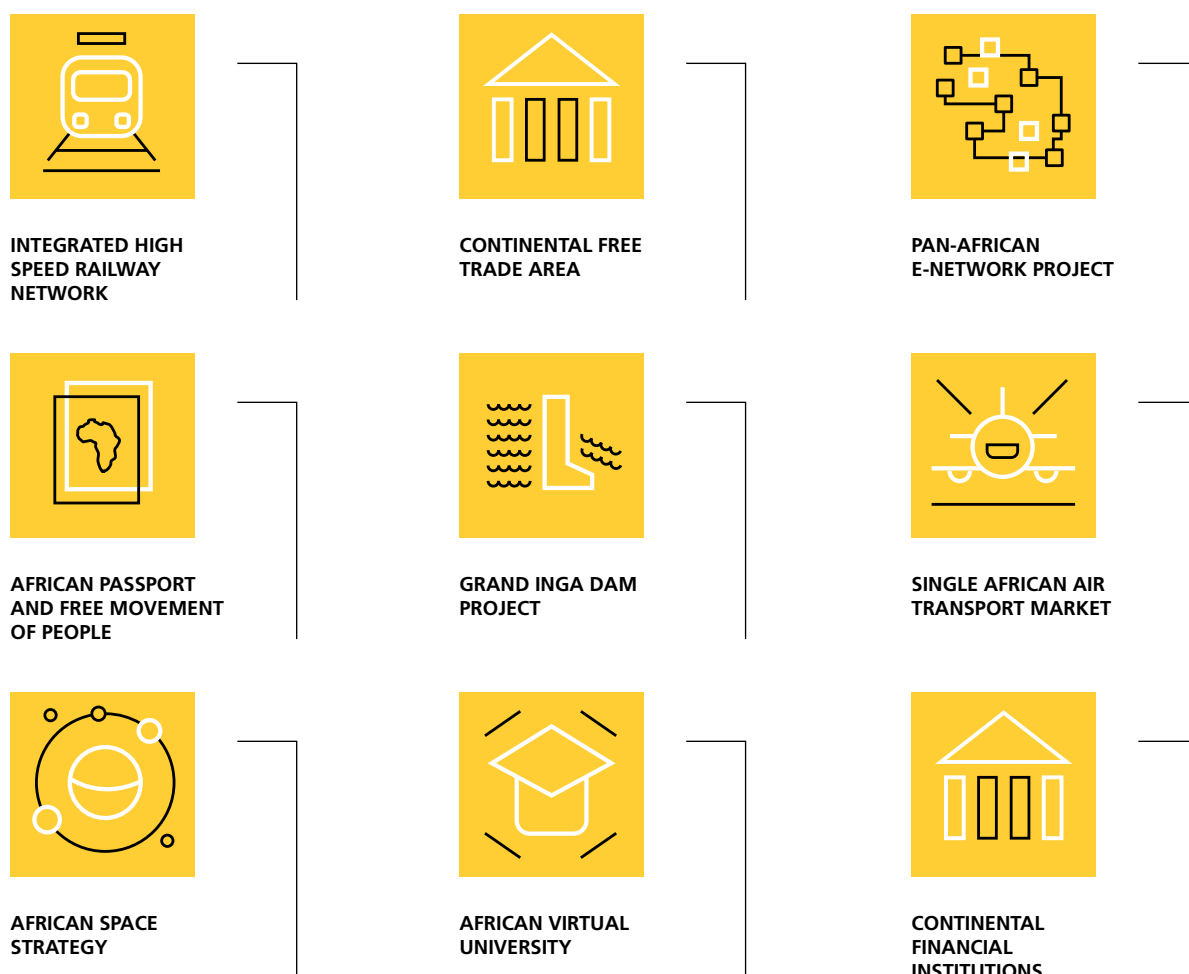
Key to integration and trade creation across the continent is infrastructure development, which requires long-term policy-planning and robust frameworks that will transcend geographical boundaries. In this chapter, we discuss initiatives to build capacity among neighbouring countries and the resultant soft- and hard-infrastructure gains.

While regional integration and the concept of shared infrastructure are theoretically sound, they have been more difficult to achieve in practice. This is often due to ambitious targets set within unrealistic timeframes. Yet, in the context of rising global geopolitical risk, regional co-operation is what is needed – now more than ever.

BUILDING BRIDGES ACROSS AFRICA: REGIONAL INFRASTRUCTURE PROGRAMMES

In recognition of the fact that limited infrastructure poses continental rather than a country-specific challenges, several programmes have been established to further regional development efforts. Agenda 2063 – a strategic framework adopted by African leaders in 2015 to drive socioeconomic transformation over the next 50 years – identifies 12 flagship programmes that focus largely on infrastructure build (Figure 2.4.1).

Figure 2.4.1: Flagship programmes under Agenda 2063



Source: AU

The most audacious of these is perhaps the African Integrated High Speed Railway Network (AIHSRN), which will connect the continent's major cities/capitals with adjacent highways and pipelines for gas, oil and water, information and communication technology (ICT) broadband cables and other infrastructure. The overall project comprises four longitudinal and six latitudinal north-south and east-west continental railway networks to be implemented over a period of 50 years over three planning phases – short term (2015-2025), medium term (2025-2045) and long term (2045-2065).

The Programme for Infrastructure Development in Africa (PIDA), formulated by the African Development Bank (AfDB) alongside the African Union Commission (AUC), New Partnership for Africa's Development Agency (NEPAD), United Nations Economic Commission for Africa (UNECA) and Regional Economic Communities (RECs), is perhaps the most well-known programme targeted at regional infrastructure development. The initiative is dedicated to the promotion of regional economic integration by developing mutually-beneficial infrastructure, which will enhance the trading ability of countries and establish regional value chains for greater competitiveness. The core of PIDA is the Priority Action Plan (PAP), a list of 51 immediately actionable programmes that total US\$67.9bn across four main infrastructure sectors in which the deficit is perceived to be the greatest (Figure 2.4.2), for initiation by 2020 (Table 2.4.1).

Figure 2.4.2: PIDA's priorities



ENERGY

- 15 projects
- 59.2% of total costs
- The PIDA energy priorities focus on major hydroelectric projects, the interconnection of regional power pools, including regional petroleum and gas pipelines. Through these projects, Africa will save US\$30bn on electricity-production costs and access to power will rise to nearly 70% by 2040, benefitting more than 800 million people



TRANSPORT

- 24 projects
- 37% of total costs
- Within the African regional transport infrastructure network, transport efficiency gains will be at least US\$172bn, with the potential for even larger saving



WATER

- Nine projects
- 3% of total costs
- PIDA's water projects will help to address the looming food deficit faced by many Africans



ICT

- Three projects
- 0.8% of total costs
- These projects will boost broadband connectivity by 20ppt. The increased broadband penetration of 10% is expected to grow GDP by 1%

Source: NEPAD

Table 2.4.1: Objectives overview of 51 PIDA PAP programmes and projects



TRANSPORT

Northern Multimodal Corridor

Modernise the high-priority multimodal African Regional Transport Integration Network (ARTIN) corridor in East Africa. Will facilitate travel of people and goods across the borders between Kenya, Uganda, Rwanda, Burundi and the DRC, with a spur to South Sudan.

North-South Multimodal Corridor

Modernise the high-priority multimodal ARTIN corridor in Southern Africa and facilitate the cross-border transport of people and goods between South Africa, Botswana, Zimbabwe, Zambia, Malawi and the DRC.

Central Multimodal Corridor

Modernise the priority ARTIN corridor in East Africa and facilitate travel for people and goods across the borders between Tanzania, Uganda, Rwanda, Burundi and the DRC.

Southern Africa Hub Port and Rail Programme

Develop sufficient port capacity to handle future demand from both domestic sources and landlocked countries.

Djibouti-Addis Corridor

Revive the rail system in the high-priority multimodal ARTIN corridor in East Africa and increase the flow of goods across the border between Djibouti and Ethiopia.

Lamu Gateway Development

Develop sufficient port capacity to handle future demand from both domestic sources and landlocked countries, with priority given to the Lamu project in Kenya.

Beira-Nacala Multimodal Corridors

Modernise and upgrade the rail and port systems serving a major coal export area at Moatize, Mozambique. This is part of the Beira and Nacala corridors.

Trans-African Highway (TAH) Programme

Focus on completing the missing links in TAH Phase I of this continental-connectivity programme.

Single African Sky Phase I

Create a high-level, satellite-based air-navigation system for the continent.

Yamoussoukro Decision (YD) Implementation

Identify countries ready to fully execute YD, and discuss the launch of a voluntary open-skies club on a full-membership basis.

Smart Corridor Programme Phase I

Develop model smart-corridor technology and design/implement a continental and regional corridor-efficiency monitoring system.

Abidjan-Lagos Coastal Corridor

Modernise the heavily-travelled ARTIN corridor in West Africa to promote trade facilitation, one-stop border posts (OSBPs), capacity enhancement and implementation of Public-Private Partnerships (PPPs) in five countries.

Dakar-Bamako-Niamey Multimodal Corridor

Modernise the heavily-travelled ARTIN corridor in West Africa to promote trade facilitation, OSBPs, capacity enhancement and implementation of PPPs in four countries.

Praia-Dakar-Abidjan Multimodal Corridor

Improve marine transport and connectivity between island and mainland countries by creating a new maritime service between regional ports, as well as a modern information system to link the maritime service with ports and roads in the Dakar-Abidjan Corridor.

Abidjan-Ouagadougou-Bamako Corridor

Modernise and rehabilitate the multimodal corridor damaged by civil war in Côte d'Ivoire.

West Africa Hub Port and Rail Programme

Address future capacity problems in West African ports with two components – a regional hub port and rail-link master plan, and port expansion.

West Africa Air Transport Programme

Improve air transport service in West Africa, which is currently limited by the lack of a regional air hub.

Pointe Noire-N'Djamena Multimodal Corridor

Revive river transport in the Congo-Ubangi River basin and modernise road transport along the corridor.

Kinshasa-Brazzaville Bridge Road/Rail Project, and rail link to Ilebo

Improve regional transportation and trade systems by building a crossing that links Kinshasa and Brazzaville, ensuring continuity in railway traffic from Matadi and Pointe Noire to the eastern border of the DRC and eastern and southern Africa.

Douala-Bangui Douala-Ndjamena Multimodal Corridor

Modernise the highest-priority multimodal ARTIN corridor in Central Africa and facilitate travel for people and goods across the borders between Cameroon, Chad and the Central African Republic.

Central African Inter-Capital Connectivity

Provide several missing inter-capital connectors.

Central Africa Air Programme

Improve air transport service and upgrade airports in Central Africa, which currently lacks a regional air hub.

Central Africa Hub Port and Rail Programme

Address Central African port-capacity constraints through a regional hub, a rail-link master plan and port expansion.

Trans-Maghreb Highway

Improve travel for people and goods across the Maghreb, where trade and travel are limited by artificial barriers. This includes designing and implementing a smart-corridor system along the highway.

**ENERGY****Mphanda Nkuwa Hydropower Plant**

Build a hydroelectric power plant with a capacity of 1,500MW for export to the Southern African Power Pool market.

Lesotho Highlands Water Project (LHWP) Phase II (hydropower component)

Supply power to Lesotho and export power to South Africa.

Batoka Gorge Hydropower Scheme

Build a hydroelectric plant with a capacity of 1,600MW to enable export of electricity. Involves Zambia and Zimbabwe.

Ruzizi III Hydropower Plant

Build a hydroelectric plant with a capacity of 145MW to share power between Rwanda, Burundi and the DRC.

Uganda-Kenya Petroleum Products Pipeline

Establish a 300km pipeline for a lower-cost mode of transport of petroleum products between Uganda and Kenya.

Grand Ethiopian Renaissance Dam

Build a 5,250MW plant to supply the domestic market in Ethiopia and export electricity to the Eastern African Power Pool market.

North-South Power Transmission Corridor

Establish an 8,000km line from Egypt through Sudan, South Sudan, Ethiopia, Kenya, Malawi, Mozambique, Zambia and Zimbabwe to South Africa.

Inga III Hydro

Build a 4,200MW-capacity run-of-the-river hydropower station on the Congo River, with eight turbines in the DRC.

Central African Power Interconnection

Establish a 3,800km line from the DRC to South Africa through Angola, Gabon and Namibia and to Equatorial Guinea, Cameroon and Chad to the north.

Sambaghalou Hydropower Plant

Provide 128MW of hydropower capacity, 930km from the mouth of the Gambia River to supply Senegal, Guinea, Guinea Bissau and The Gambia.

West African Power Transmission Corridor

Establish a 2,000km line along the coast connecting with an existing line involving Guinea, Guinea-Bissau, The Gambia, Sierra Leone, Liberia, Côte d'Ivoire and Ghana.

North Africa Transmission Corridor

Establish a 2,700km line from Morocco to Egypt through Algeria, Tunisia and Libya.

Kaleta Hydropower Plant

Generate hydropower of 117MW in Guinea.

Rusumo Falls III Hydropower Plant

Produce hydropower of 61MW for Burundi, Rwanda and Tanzania.

Trans-Sahara Gas Pipeline

Establish a 4,100km gas pipeline from Warri to Hassi R'Mel in Algeria for export to Europe. Involves Nigeria, Niger and Algeria.

**WATER****LHWP Phase II (water-transfer component)**

Supply water to the province of Gauteng in South Africa via a water-transfer programme.

Palambo Multipurpose Dam

Improve the navigability of the Obangui River with an added hydropower component.

Fomi Multipurpose Dam

Build a hydropower station in Guinea with irrigation water supply for Mali and regulation of the Niger River. Involves nine countries.

Okavango Basin Opportunity Studies

Identify and prepare investment programmes in the Zambezi River Basin.

Koutoutamba (ex Gourbassy) Multipurpose Dam

Regulate the Senegal River in four countries via a multipurpose dam located in Guinea.

Noumbiel Multipurpose Dam

Build a multipurpose dam with a hydropower-generation component for Burkina Faso and Ghana.

Nubian Sandstone Aquifer System

Implement a regional strategy for using the aquifer system.

North-West Sahara Aquifer System (NWSAS)

Conduct pre-feasibility studies for the improved use of the aquifer system.

Iullemeden Aquifer System

Conduct pre-feasibility studies for the improved use of the aquifer system.

**ICT****ICT Enabling Environment**

Improve the environment for the private sector in Africa to invest in high-speed broadband infrastructure.

ICT Terrestrial for Connectivity

Secure each African country's connection by at least two broadband cables.

Internet Exchange Point (IXP) Programme

Provide an adequate Internet node exchange on the continent to maximise internal traffic.

Source: World Economic Forum (WEF), African Development Fund, Boston Consulting Group

In 2014, participants of the Dakar Financing Summit (DFS) for Africa's Infrastructure lent their support to 16 of the 51 PIDA projects to successfully bring them to completion. The flagship projects, referred to as the DFS16, were selected based on their strategic, political and economic importance to regional industrialisation (Figure 2.4.3).

Figure 2.4.3: DFS16 – flagship PIDA projects

<p>Energy generation</p> <p>① Ruzizi III Hydropower Project</p> <p>Burundi, DRC and Rwanda Energie des Grands Lacs (EGL)</p> <table> <tr> <td>\$</td> <td>Total estimated Funding gap</td> <td>US\$600m US\$200m</td> </tr> </table>	\$	Total estimated Funding gap	US\$600m US\$200m	<p>Transport/port</p> <p>② Dar es Salaam Port Expansion</p> <p>Tanzania Tanzania Ports Authority</p> <table> <tr> <td>\$</td> <td>Total estimated Funding gap</td> <td>US\$384m US\$350m</td> </tr> </table>	\$	Total estimated Funding gap	US\$384m US\$350m	<p>Transport/port</p> <p>③ Serenje – Nakonde Road Project</p> <p>Zambia Zambian Road Development Agency, National Road Fund Agency, Ministry of Transport, Works, Supply and Communications</p> <table> <tr> <td>\$</td> <td>Total estimated Funding gap</td> <td>US\$674m US\$620m</td> </tr> </table>	\$	Total estimated Funding gap	US\$674m US\$620m
\$	Total estimated Funding gap	US\$600m US\$200m									
\$	Total estimated Funding gap	US\$384m US\$350m									
\$	Total estimated Funding gap	US\$674m US\$620m									
<p>Energy transmission</p> <p>④ Nigeria-Algeria Gas Pipeline</p> <p>Nigeria, Niger, Algeria Nigerian National Petroleum Corporation (NNPC), SONATRACH (Algeria), SONIDEP (Niger), Nigeria's Infrastructure Concession and Regulatory Commission (ICRC), ECOWAS</p> <table> <tr> <td>\$</td> <td>Total estimated Funding gap</td> <td>US\$23.7bn US\$10-13.7bn</td> </tr> </table>	\$	Total estimated Funding gap	US\$23.7bn US\$10-13.7bn	<p>Transport/rail</p> <p>⑤ Modernisation of Dakar-Bamako Rail Line</p> <p>Senegal and Mali Ministries of Infrastructure of the Governments of Senegal and Mali</p> <table> <tr> <td>\$</td> <td>Total estimated Funding gap</td> <td>US\$3 bn N/A</td> </tr> </table>	\$	Total estimated Funding gap	US\$3 bn N/A	<p>Energy generation</p> <p>⑥ Sambangalou Hydropower Project</p> <p>Gambia, Guinea Conakry, Guinea Bissau and Senegal Gambia River Basin Development Organisation (OMVG), ECOWAS, West African Power Pool (WAPP)</p> <table> <tr> <td>\$</td> <td>Total estimated Funding gap</td> <td>US\$1,1bn US\$324-524m</td> </tr> </table>	\$	Total estimated Funding gap	US\$1,1bn US\$324-524m
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\$	Total estimated Funding gap	US\$3 bn N/A									
\$	Total estimated Funding gap	US\$1,1bn US\$324-524m									
<p>Transport/multimodal</p> <p>⑦ Abidjan-Lagos Coastal Corridor</p> <p>Nigeria, Benin, Togo, Ghana, Côte d'Ivoire Project Steering Committee (PSC), ECOWAS, Union Economique et Monétaire Ouest Africaine (UEMOA), AUC, NPCA, AfDB.</p> <table> <tr> <td>\$</td> <td>Total estimated Funding gap</td> <td>US\$67.6m US\$35m</td> </tr> </table>	\$	Total estimated Funding gap	US\$67.6m US\$35m	<p>ICT/broadband</p> <p>⑧ Lusaka-Lilongwe – ICT Terrestrial Fibre Optic</p> <p>Zambia, Malawi Malawi Telecommunications Limited (MTL), Malawian Ministry of Information</p> <table> <tr> <td>\$</td> <td>Total estimated Funding gap</td> <td>US\$1,5m US\$1,5m</td> </tr> </table>	\$	Total estimated Funding gap	US\$1,5m US\$1,5m	<p>Energy transmission</p> <p>⑨ Zambia Tanzania Kenya Transmission Line (ZTK)</p> <p>Zambia, Tanzania, Kenya Office for Promoting Private Power Investment (OPPI) of the Government of Zambia</p> <table> <tr> <td>\$</td> <td>Total estimated Funding gap</td> <td>N/A N/A</td> </tr> </table>	\$	Total estimated Funding gap	N/A N/A
\$	Total estimated Funding gap	US\$67.6m US\$35m									
\$	Total estimated Funding gap	US\$1,5m US\$1,5m									
\$	Total estimated Funding gap	N/A N/A									

Energy transmission

⑩ **North Africa Transmission Corridor**

Egypt, Libya, Tunisia, Algeria, Morocco

General Electricity Company of Libya, Societe Nationale d'Electricite et du Gaz

\$	Total estimated Funding gap	US\$376m N/A
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Transport/multimodal

⑪ **Abidjan Ouagadougou Rail Road Projects**

Côte d'Ivoire, Burkina Faso

Sitarail – Chemins de Fer en Côte d'Ivoire, Société Internationale de Transport African par Rail

\$	Total estimated Funding gap	US\$600m US\$600m
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Transport/multimodal

⑫ **Doula Bangui Ndjamena Corridor – Rail Road Project**

Cameroon, CAR, Chad

Douala–N'Gaoundéré–N'Djamena Railway: Direction Générale des Grands Travaux du Cameroun: Direction des Routes, Kousséré OSBP: Central African Economic and Monetary Community, Koutéré OSBP: Central African Economic and Monetary Community, Garoua Boulai–Ngadundéré Road

\$	Total estimated Funding gap	US\$356m US\$246m
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Transport/road

⑬ **Kampala Jinja Road Upgrading**

Uganda

Uganda National Roads Authority

\$	Total estimated Funding gap	US\$74m N/A
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Transport/road

⑭ **Juba Torit Kapoeta Nadapal Eldoret Road Project**

South Sudan

Ministry of Transport, Roads and Bridges EAC, IGAD

\$	Total estimated Funding gap	US\$420m US\$420m
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Energy generation

⑮ **Batoka Gorge Hydropower Project**

Zimbabwe, Zambia

Zambezi River Authority (ZRA), East African Power Pool (EAPP)

\$	Total estimated Funding gap	US\$6bn N/A
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Transport/multimodal

⑯ **Brazzaville Kinshasa Road Rail Bridge Project and Kinshasa – Illebo Railways**

Congo, DRC

Délégation Générale des Grand Travaux (DGGT), ECCAS

\$	Total estimated Funding gap	US\$1,7bn US\$1,7bn
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- Connecting Africa – Projects that will increase regional and continental integration by ensuring better, more reliable connectivity for all, leading to the accelerated spread of broadband access and reduction of the cost of bandwidth through increased competition.
- Powering Africa – Affordable infrastructure projects that can utilise national and regional energy resources in a way that will benefit the continent.
- Moving Africa forward – Transport projects that have a major impact on interconnecting the continent and significantly facilitating regional trade and integration.

Source: Authors

SOFT INFRASTRUCTURE FOR REGIONAL INTEGRATION

There is no doubt that the provision of hard infrastructure – notably power, transport and ICT – will further Africa's integration efforts. But growth in soft infrastructure (Refer to Chapter 2.2) is as important as hard infrastructure to encourage cross-border trade. Various RECs and agencies have launched initiatives to simplify the processes crucial to boosting intra-African trade.

COMESA-EAC-SADC TRIPARTITE FREE TRADE AREA (FTA)

Tripartite FTA, launched in June 2015, aims to remove all tariffs and non-tariff barriers (NTBs) between its 26 member states. It provides for the harmonisation of various NTBs such as rules of origin, but also contains an entire annex that deals with the elimination of these barriers. The three RECs constituting the Tripartite FTA (Common Market for Eastern and Southern Africa [COMESA], East African Community [EAC] and Southern Development Community [SADC]) have also set up the Non-Tariff Barrier Reporting, Monitoring and Eliminating Mechanism. This mechanism enables stakeholders to report NTBs and provides for timelines and for the monitoring of the removal of such barriers by the RECs. It aims to contribute to the reduction of the cost of doing business in the region.

AFRICAN CONTINENTAL FREE TRADE AREA

Another promising initiative is the African Continental Free Trade Area (AfCFTA or CFTA). The CFTA will bring together all 55-member states of the African Union covering a market of more than 1.2 billion people, with a combined GDP of more than US\$3.4trn. The agreement, signed by nearly 50 states, has been ratified by six, with just 16 more to go before it becomes a reality. The CFTA also aims to align the various RECs to which its member states belong – as well as to not only remove tariffs, but eliminate non-tariff barriers.

Both the Tripartite FTA and the African CFTA focus strongly on trade facilitation, which includes the improvement of both hard and soft infrastructure. Soft-infrastructure trade facilitation involves the simplification, modernisation and harmonisation of export and import processes to remove red tape and reduce the cost for traders.

WORLD TRADE ORGANIZATION (WTO) TRADE FACILITATION AGREEMENT (TFA)

The TFA, concluded by WTO members in 2013, came into being in February 2017 and contains provisions on the faster movement, the release and clearance of goods, including goods in transit. It provides measures for effective co-operation between customs and other appropriate authorities, and technical assistance and capacity-building in the area of trade facilitation. The implementation of the TFA will contribute hugely to the improvement of Africa's soft infrastructure and – most importantly – it will reduce trade costs and boost African intra-regional trade.

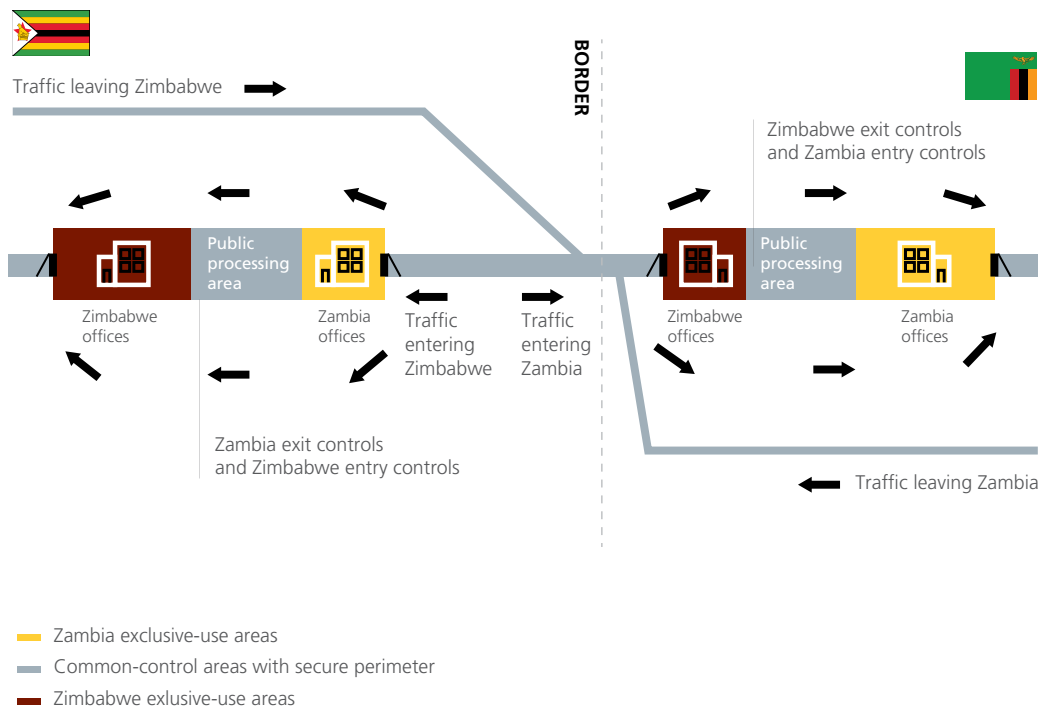
Hard infrastructure will further Africa's integration efforts. But soft infrastructure growth is as important for encouraging cross-border trade.

ONE-STOP BORDER POSTS

One-stop border posts (OSBPs) are shining examples of how shared hard and soft infrastructure can improve regional efficiency by reducing traffic and transport costs to facilitate the seamless movement of goods and people. In doing so, OSBPs can stimulate social and economic development in the areas along regional transport routes – provided that the operational procedures at all entry points (seaports, airports etc.) are streamlined and harmonised.

The Chirundu OSBP, catering to Zambia and Zimbabwe, is considered to be the first fully-functional OSBP in Africa, reducing the time it takes to cross the border from taking four to five days to between a few hours and up to – at most – three days (Figure 2.4.4).

Figure 2.4.4: The Chirundu One-Stop Border Post

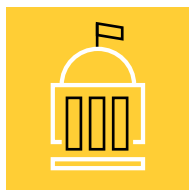


Source: Corridor Development Consultants

Its success has spurred the rapid development of similar posts across Africa – the Rusumo OSBP between Rwanda and Tanzania, for example – to tackle impediments to the growth of trade. There are urgent calls for the establishment of an OSBP to alleviate the congestion at Africa's busiest border post, Beitbridge, which straddles South Africa and Zimbabwe. Roughly 31,000 travellers and more than 10,000 vehicles cross the two-stop border post each festive season, resulting in critical delays as users are required to complete formalities twice.

More than 76 OSBPs/joint border posts (JBPs) are now at either planning or implementation stage (Figure 2.4.5), the African Union noting, however, that operational challenges are not uncommon after facilities are built. Needless to say, the benefits far outweigh the costs.

Table 2.4.2: Potential benefits of OSBPs for all



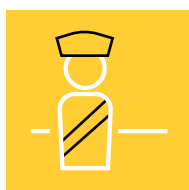
NATIONAL GOVERNMENT

- Improved collection of trade taxes associated with efficiency gains
- Efficient borders that facilitate international trade, investment and economic growth
- Promotion of economic competitiveness
- Improved border security
- Better utilisation of government resources by border agencies
- Promotion of better international relations between countries



BORDER-CONTROL AGENCIES

- Better resource utilisation through improved cross-border cooperation and sharing of intelligence, operational data and resources, using Coordinated Border Management (CBM) and Integrated Border Management (IBM) concepts
- Improved employee motivation, which translates to increased productivity through simplified and harmonised procedures as well as from working with better facilities e.g. buildings, equipment, furniture etc.
- Better environment for increased use of ICT and faster processing
- Faster processing of documents and travellers
- Provision of an opportunity for harmonising procedures, which improves predictability and certainty among users
- Provision of a platform for introducing other border-management reforms
- Improved traffic flow
- Improved border infrastructure – especially where modifications are to be undertaken
- Increased transparency, enhancing security and helping reduce corruption



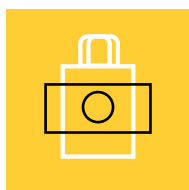
ROAD-TRANSPORT OPERATORS, SHIPPERS AND CUSTOMS AGENTS

- Reduction in delays at borders and in operating costs
- Greater asset utilisation in respect of truck turnaround times
- Predictability of border and transit procedures
- Faster processing of documents and travellers



MANUFACTURERS AND TRADERS

- Savings in the cost of inputs
- Increased reliability of shipments, enabling reduced inventories
- Reduced capital tied up in logistics through just-in-time delivery



CONSUMERS

- Reduced cost of consumer products
- Increased availability of goods

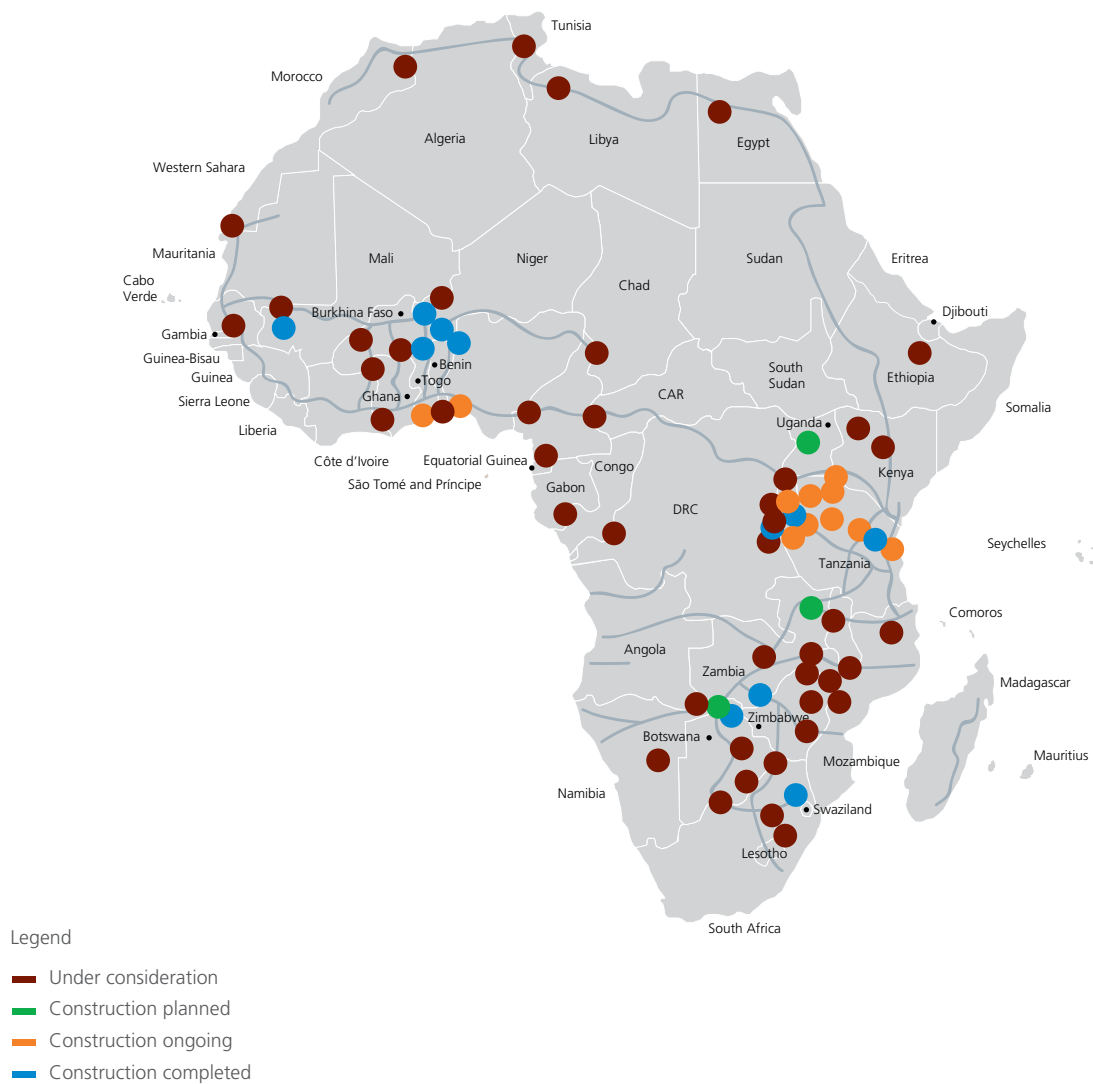


TRAVELLERS AND TOURISTS

- Reduced time spent at borders
- Predictable, simplified and harmonised procedures
- Transparent border procedures

Source: OSBP Sourcebook, 2nd Edition

Figure 2.4.5: Enhancing regional connectivity through OSBPs



Source: PIDA

THE RISE OF NEW TECHNOLOGIES

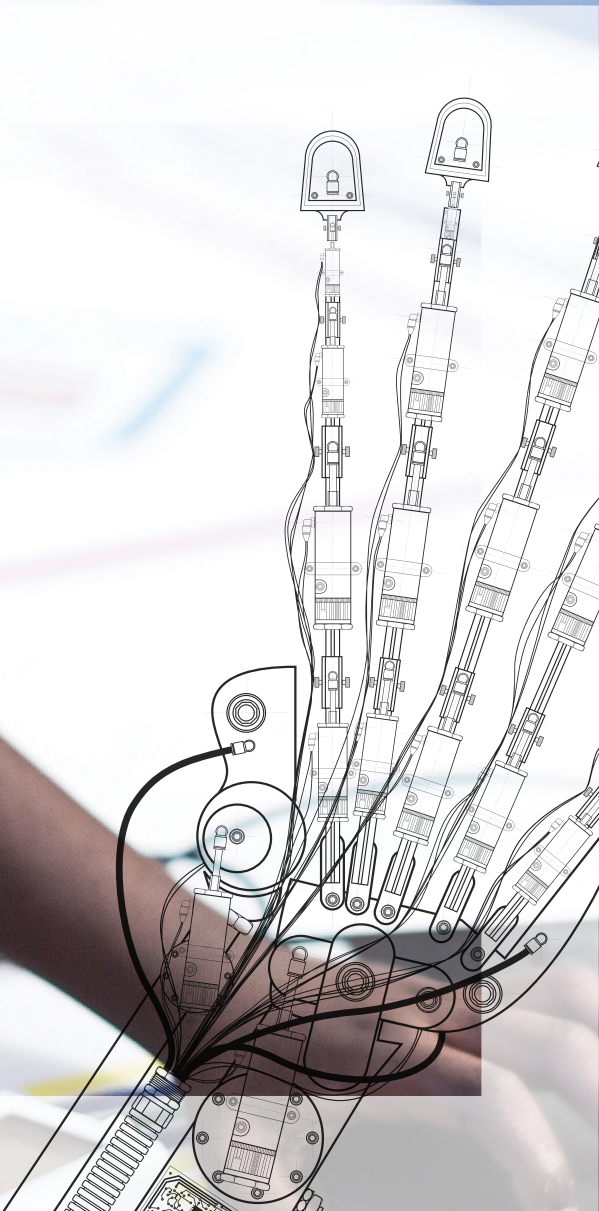
The concept of digitalisation in Africa is not a new one. But there are new challenges – and new opportunities – that it brings. Debates on the pros and cons of the impact of digitalisation on an economy are also nothing new.

FUNDIBOTS — ROBOTICS REVOLUTION IN UGANDAN CLASSROOMS

The Uganda-based organisation is using robotics training in schools to inspire young Ugandans to become the designers, makers and innovators of the future. FundiBots creates an environment in which children can be a part of finding solutions to social, commercial and local problems in Uganda. It provides a school-based programme that involves speaker presentations, hands-on robotics training and a robotics club that meets weekly.



NEW WAYS OF THINKING = THINKING DIGITAL



DIGITALISATION IN AFRICA: THE RISE OF NEW TECHNOLOGIES

From the Luddites who protested the use of machinery as a substitute to physical labour in the early 19th century to the Terminator movies that cautioned against the slavery of humanity to machines, to Stephen Hawkings' well-known warnings that artificial intelligence (AI) could destroy civilisation as we know it, the conversation continues. In Africa, the dialogue has centred broadly on the binary debate: employment versus productivity.

A widely held school of thought contends that on a continent of high unemployment such as Africa, digitalisation will lead to further job losses given that automation, by its nature, removes the need for human intervention from most processes. Another argues that robotics and automation bring with them productivity gains that are ultimately beneficial for broader economies. And that, in addition, they could create new industries that would open up unexplored employment avenues.

It is equally important to appreciate that the efficient adoption of technology aids ultimately in the narrowing of the infrastructure gap. The laying of fibre-optic cables and erection of cellphone towers, for instance, bode well for closing the hard-infrastructure gap, while the upskilling of labour in order to be technologically relevant elevates the quality of Africa's soft infrastructure.

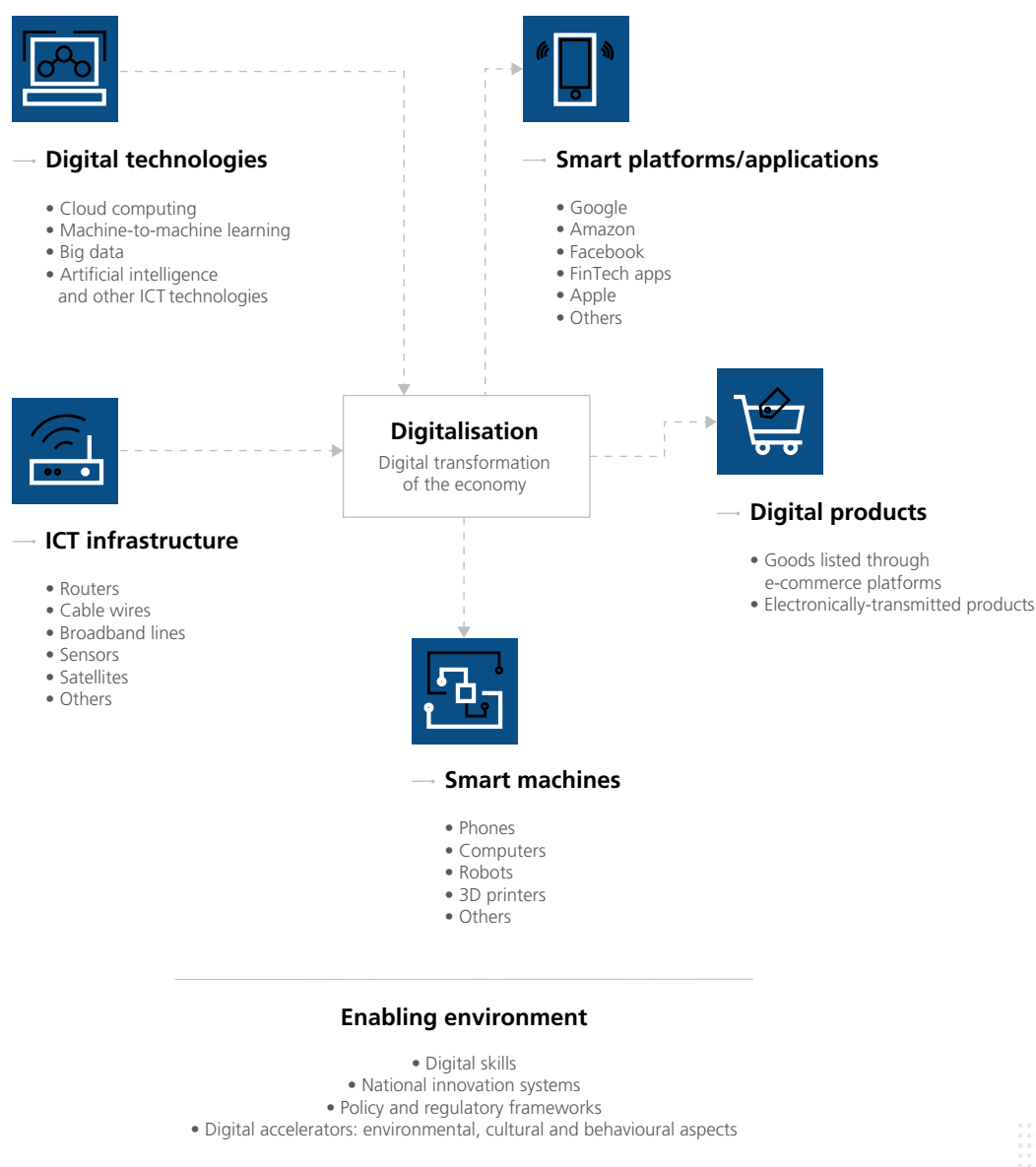
The efficient adoption of technology aids in the narrowing of the infrastructure gap.

Before we delve into some of the nuances of how new technologies are changing the African landscape, it's important to understand the fundamental pillars that comprise the "digital economy".

WHAT IS THE BACKBONE OF THE DIGITALISATION DRIVE?

When the term “digital economy” was first coined in the late 1990s, its emphasis was on the networking of humans through technology, which expanded to include the emerging phenomena of e-business and e-commerce in the early 2000s. More recently, the digital economy has been understood as a worldwide network of economic and social activities, enabled by digital technologies. For a more comprehensive understanding of the concept of digitalisation, Figure 2.5.1 maps its several aspects.

Figure 2.5.1: Digitalisation: inputs, outputs and the enabling environment



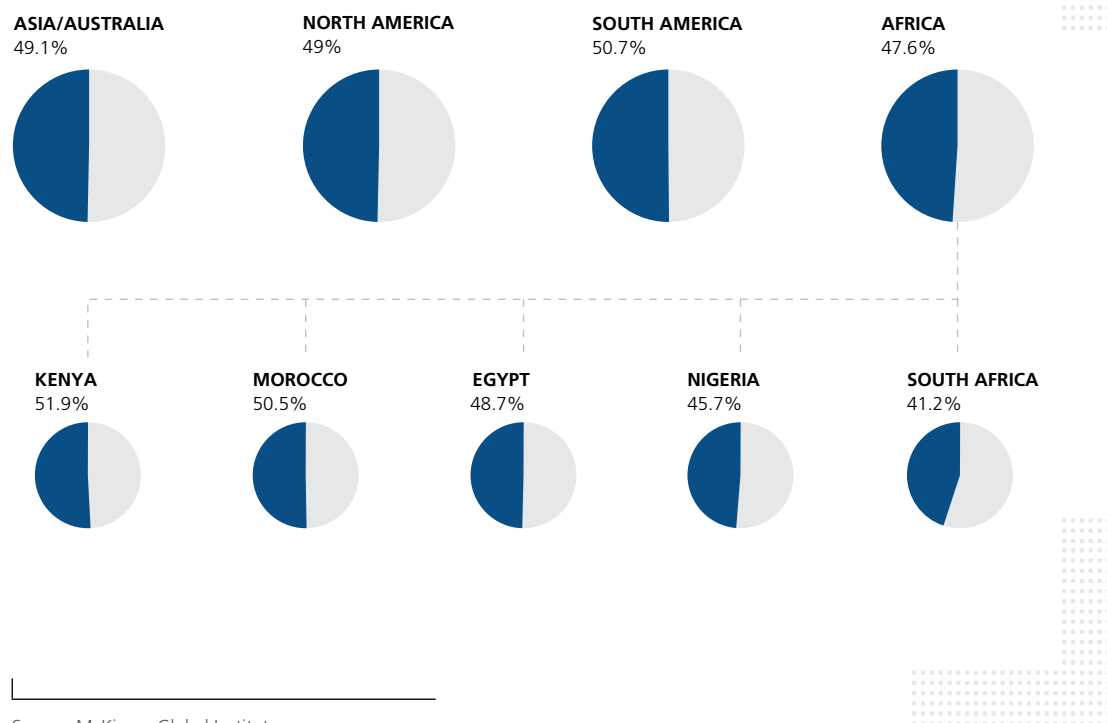
Source: Overseas Development Institute

For Africa to truly harness the positive impact that digitalisation can make, it is imperative to ensure that not only are the digital technologies and the ICT infrastructure in place but that the regulatory framework supports them.

UNDERSTANDING THE LABOUR-DIGITALISATION DYNAMIC

The McKinsey Global Institute's report entitled *A future that works: automation, employment and productivity* estimates that globally, 1.2 billion full-time jobs and US\$14.6trn in wages are associated with work activities that are automatable through digitalisation using current technology.

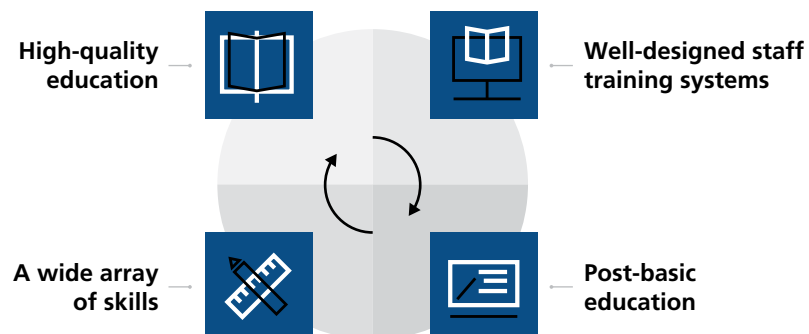
Figure 2.5.2: Percentage of work activities automatable by current-technology adaption



Outside of Africa, the automation potential of jobs differs significantly, ranging from 41%-56%, while the range is much narrower for Africa – from 41%-52%. The tighter variation of this metric in Africa is an obvious advantage for companies with a continental footprint. This allows businesses to achieve a high degree of homogeneity in their automation processes across different jurisdictions, given the similarity in constraints.

The World Economic Forum (WEF) goes beyond looking at adaptability to current technologies and identifies the following must-have characteristics of a country's labour force in order for it to acclimatise to future technologies:

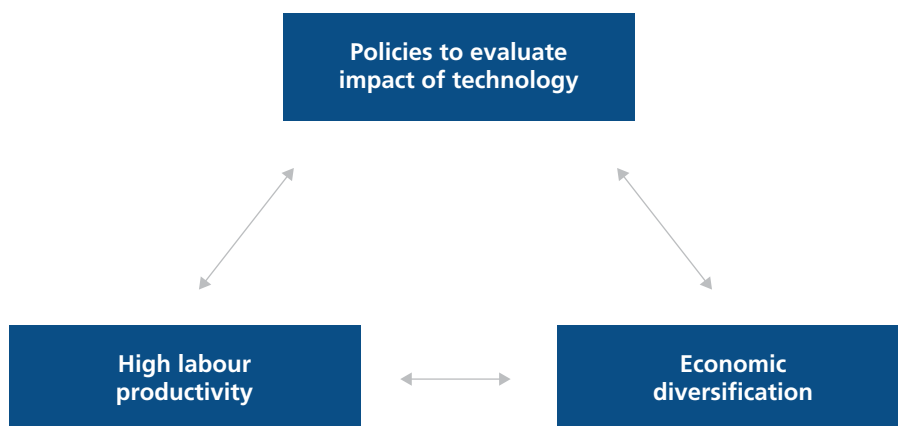
Figure 2.5.3: Requirements for adapting to new technologies



Source: World Economic Forum

These must be based on an economy that has the following economic pillars to harness technology:

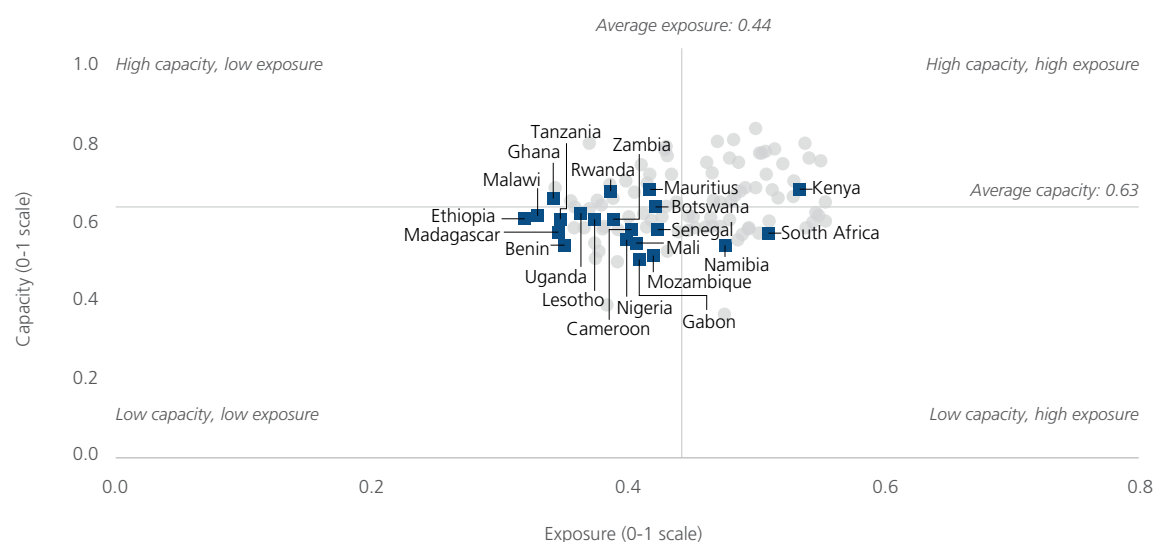
Figure 2.5.4: Economic pillars needed to harness new technologies



Source: World Economic Forum

On this basis, the WEF assesses a number of African countries for the purpose of determining their capacity to adapt to technological change as well as their exposure to future trends.

Figure 2.5.5: Capacity and exposure to technological change (selected SSA countries)



Source: World Economic Forum

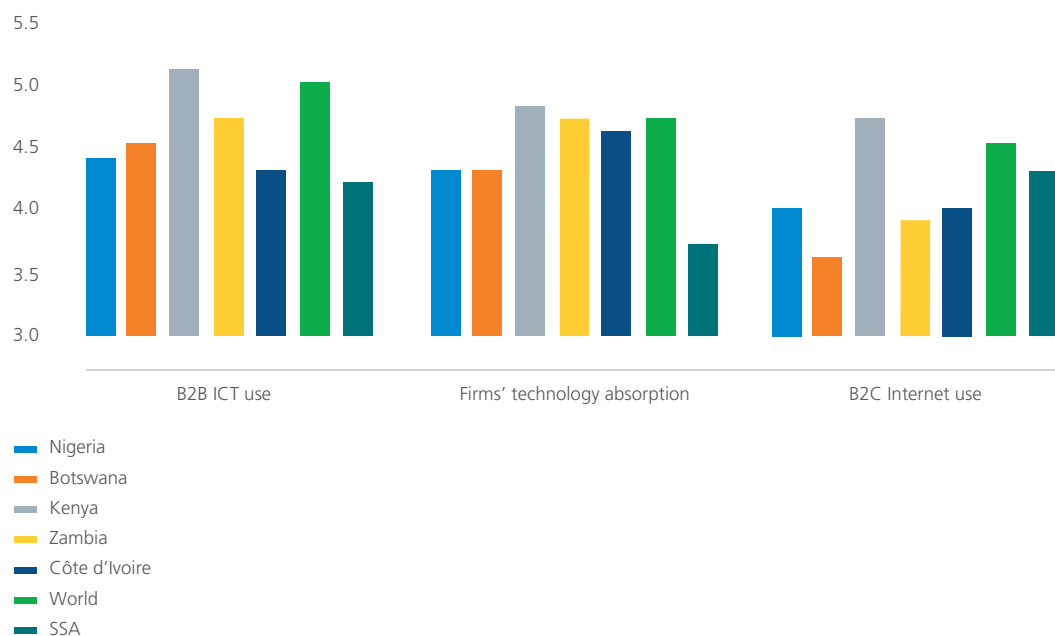
While the labour force of many African countries have low capacity to adapt to technological change, their exposure to these trends – at least for now – is also relatively low. While nowhere near ideal, this situation does present a unique opportunity for those economies to put in place policies that would better prepare them for the next technological wave.

Kenya stands out as an economy that is both highly exposed to new trends and technologies and is equipped with the capacity to adapt to the technological change. This has been driven, in part, by policies that focused on the development of ICT infrastructure by leveraging an ever-growing ecosystem of app-development platforms by the creation of local and unique content, improvements in labour productivity and the establishment and expansion of public-private partnerships (PPPs).

Another watershed moment for the East African giant was the laying of the first fibre-optic cables on the eastern seaboard of Africa, enabling cheaper telecommunications access. This allowed for quicker and cheaper Internet access for most universities, facilitating them in the embedding of ICT at the core of their curricula.

Kenya's viral adoption of technology is evident as it stands head and shoulders above its peers in the use of technology at a firm level.

Figure 2.5.6: Use of technology at a firm level



Note:

The Y axis represents the value for the ICT indices, ranging from 1-7.

B2B ICT use refers to the extent to which businesses use ICT for transactions with other businesses (1 = not at all; 7 = to a great extent).

B2C Internet use refers to the extent to which businesses use the Internet for selling their goods and services to consumers (1 = not at all; 7 = to a great extent).

Firms' technology absorption refers to the extent to which businesses adopt new technology (1 = not at all; 7 = adopt extensively).

Source: WITS E-Trade Indicators

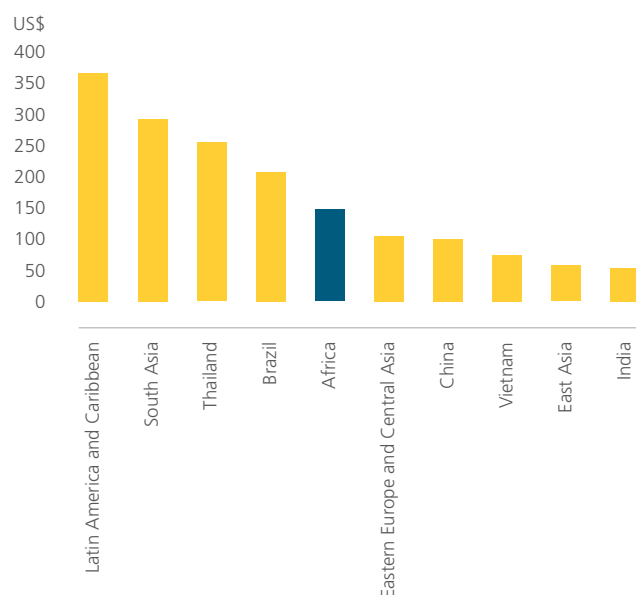
MOST READY FOR CHANGE? MANUFACTURING

Africa's manufacturing sector stands out as the most inclined towards automation, as companies in this industry tend to produce goods that are traded in international markets, and therefore operate competitively at a global level. As a result, these firms are constantly pushing to improve production processes. Furthermore, since manufacturing processes are not affected by outdoor factors such as soil and weather conditions in the same way that agriculture is, they are easier to standardise and automate. Therefore similarities in production processes across geographies tend to emerge.

The relative ease with which processes such as these can be automated implies that Africa's competitive advantage – low labour costs – is becoming less important.

Africa's manufacturing sector stands out as the most inclined towards automation.

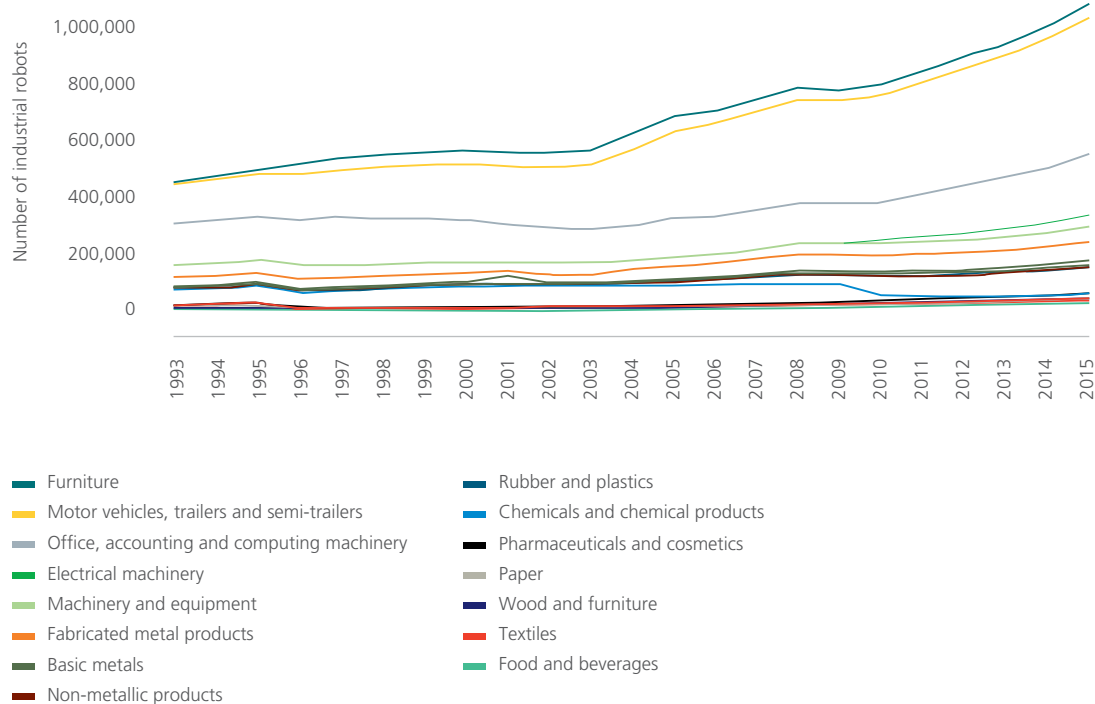
Figure 2.5.7: Monthly labour cost per worker: Africa vs. selected peers



Source: World Bank

The disadvantage of automation in this sector is that the jobs of low-skilled workers are at risk of becoming obsolete. However, the degree of take-up of robots varies significantly across subsectors (Figure 2.5.8), giving labourers an opportunity to migrate to other labour-intensive subsectors while upskilling themselves.

Figure 2.5.8: Global operational stock of industrial robots by manufacturing subsector

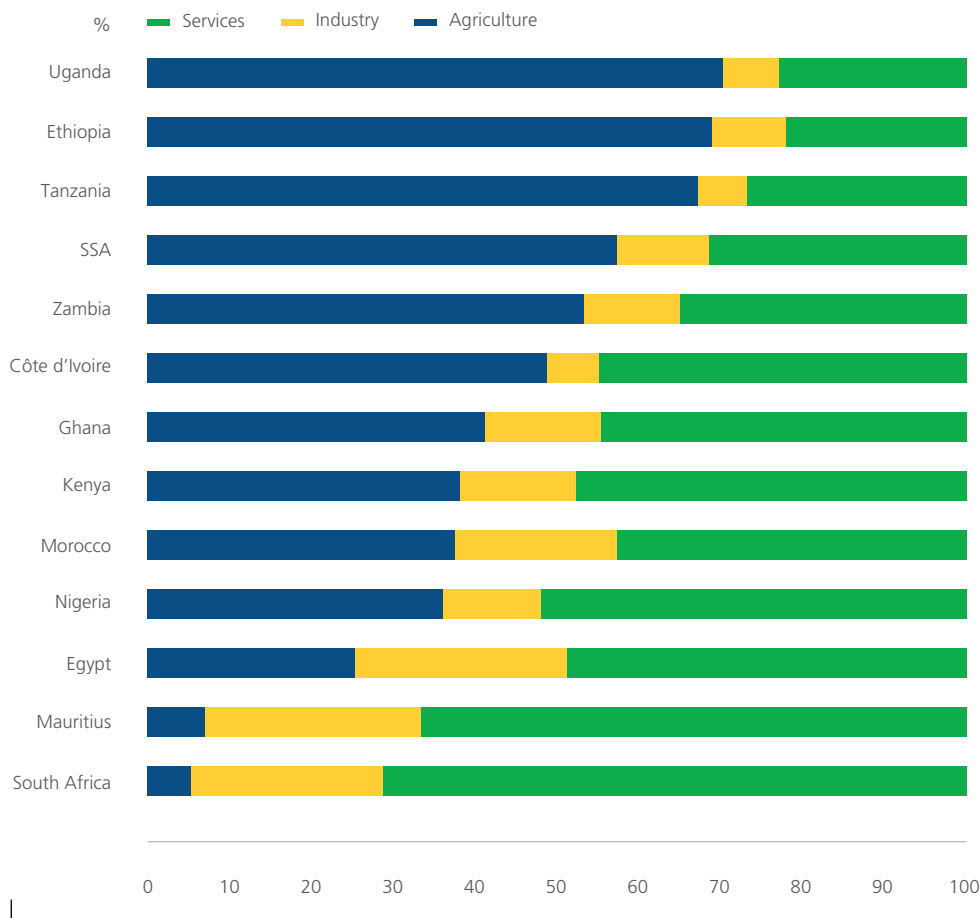


Source: The Brookings Institution

Given their slow pace of adopting new technologies, sectors such as wood and paper product manufacturing as well as food processing would offer temporary harbour for such workers.

Moreover, the bulk of the labour force in Africa is still concentrated in the agriculture sector (Figure 2.5.9). This implies that for most countries, the competitive advantage may still reside in manufacturing subsectors that are relatively unaffected by new technologies within the agriculture sector.

Figure 2.5.9: Percentage of employment in various sectors

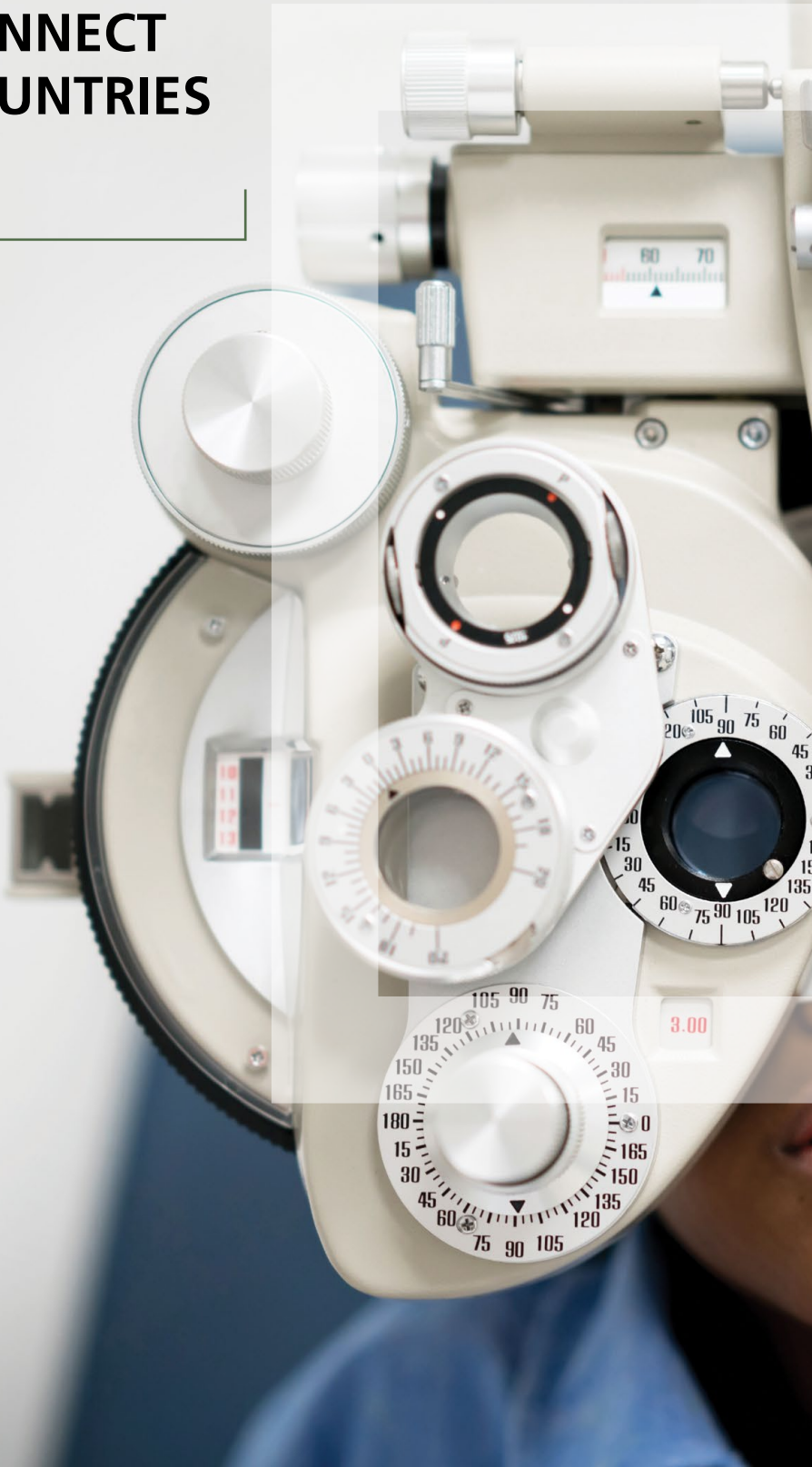
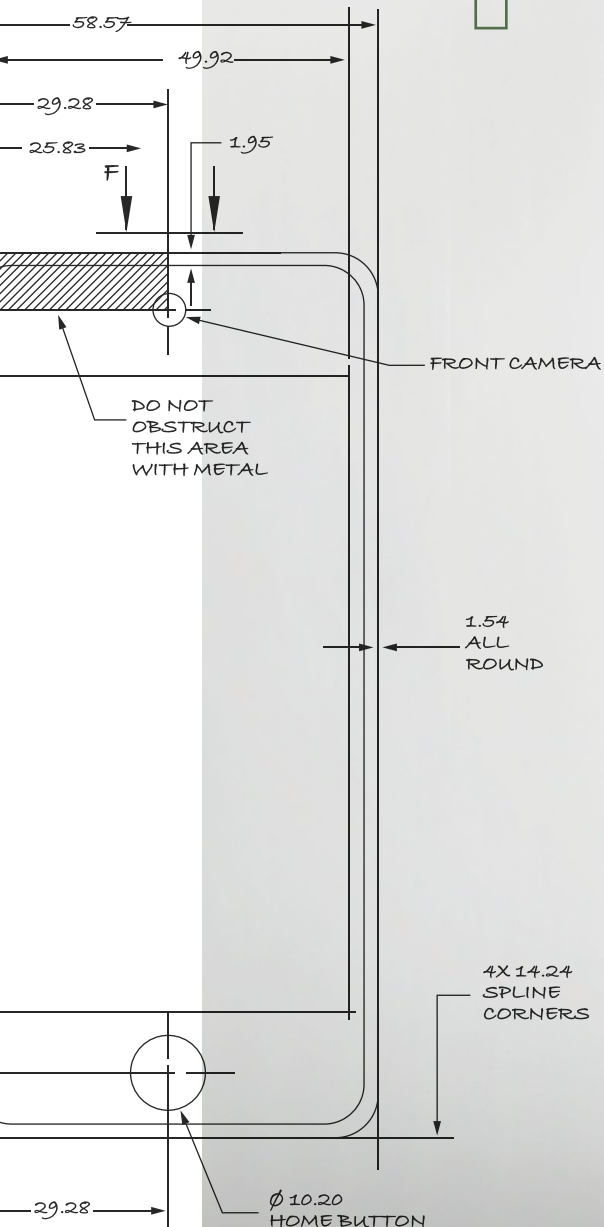


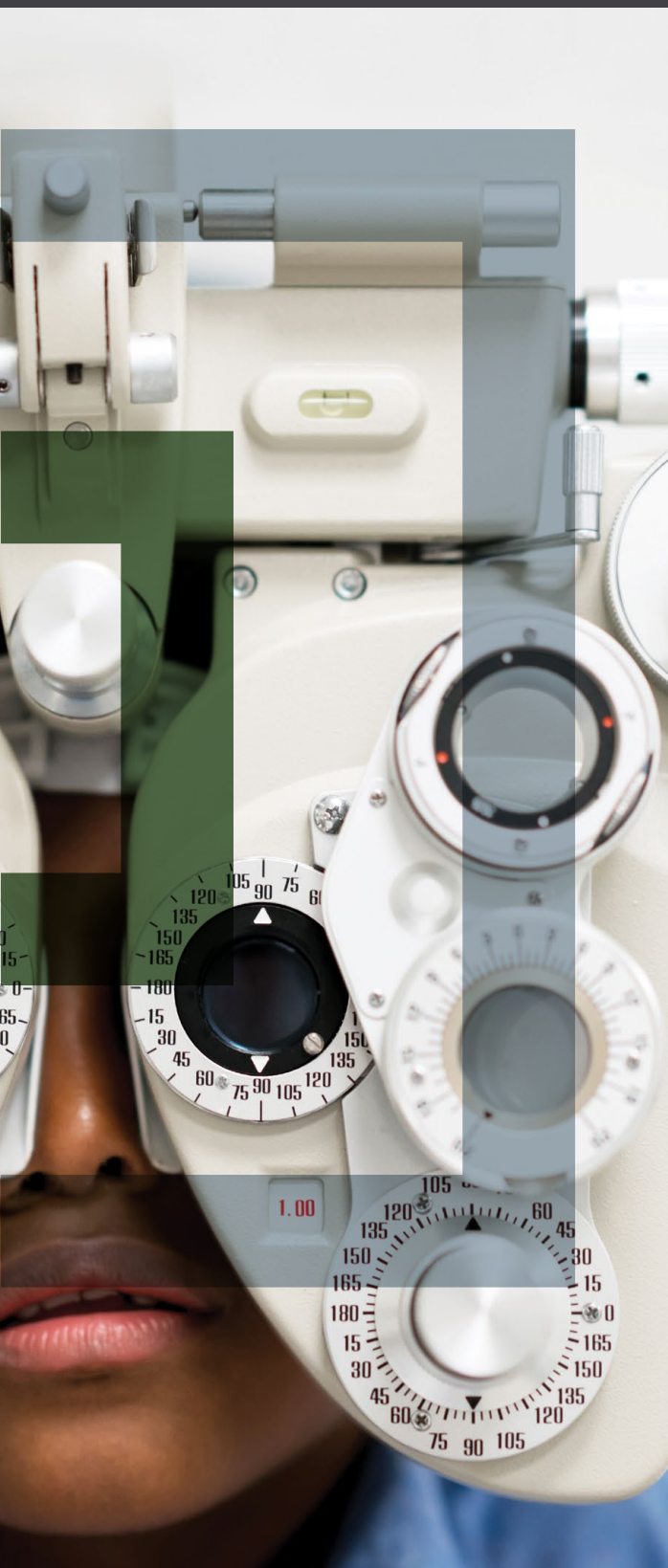
Source: World Bank

The adoption of new technologies in Africa has the potential to change the economic trajectory of many of its countries. The skills composition of the continent's labour force would have to change in order to harness the potential upside that new technologies bring. Within this broad characterisation, economies such as Kenya are well-positioned to take advantage of this fourth industrial revolution.

While manufacturing remains vulnerable to technological change, there are subsectors that still hold potential for labour-intensive processes.

NEW IDEAS CONNECT COUNTRIES





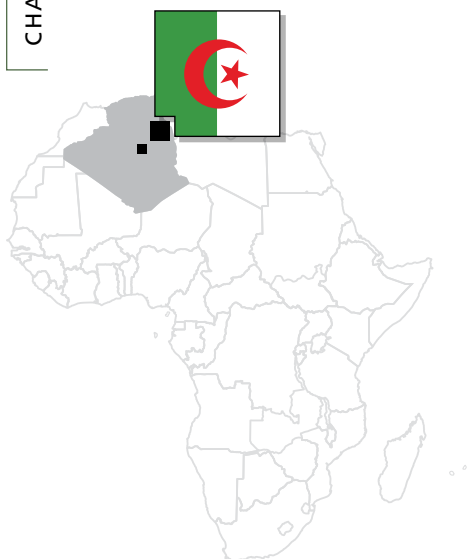
COUNTRY SNAPSHOTS

Our country snapshots are an alphabetical summary of each African country's macroeconomic environment and RMB's Investment Attractiveness scorings.

The RMB Investment Attractiveness and operating environment scores are out of 10, where 10 is the best and 0 is the worst.

VULA MOBILE — CONNECTING
UNDERSERVED AREAS TO MEDICAL
SPECIALISTS

Often unavailable at rural clinics, specialist care can be a life-and-death matter. Many calls on behalf of patients needing attention go unanswered. Dr. William Mapham of innovative app, Vula, aims for "every rural healthcare worker to have access to specialist advice." App users select one of 15 specialities and post a message that any specialist on the network can respond to. Today, Vula's network has over 4,000 doctors across South Africa, meeting the needs of approximately 3,000 patients a month.



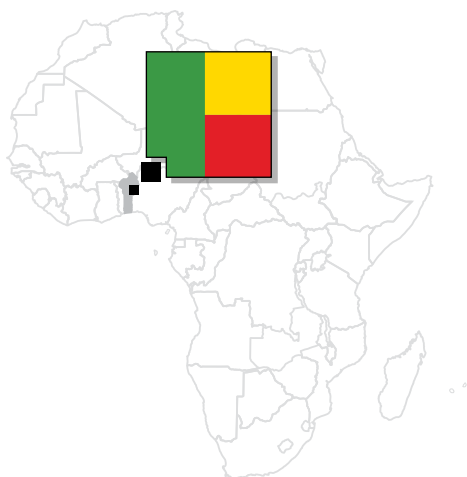
ALGERIA

Capital	Algiers
Business language	French and Arabic
Population (millions)	41.5
GDP/capita (market prices)	US\$4,292
RMB's Investment Attractiveness score	5.1
GDP (purchasing power)	US\$632.9bn
GDP (average annual growth 2018-2023)	1.6%
Primary export	Mineral fuels
Primary export destination	Italy
Primary import	Machinery
Primary import source	China
Operating environment score	3.7
Most problematic factor for doing business	Government bureaucracy



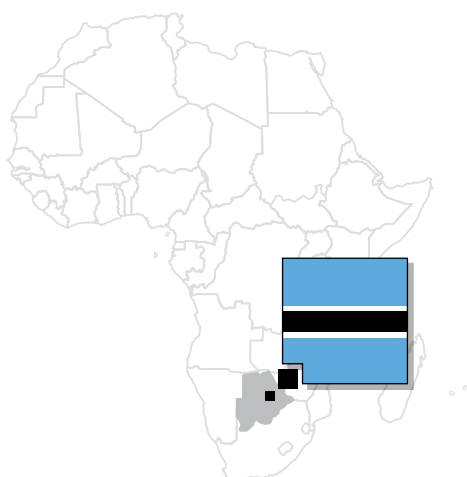
ANGOLA

Capital	Luanda
Business language	Portuguese
Population (millions)	28.2
GDP/capita (market prices)	US\$4,408
RMB's Investment Attractiveness score	4.5
GDP (purchasing power)	US\$190.3bn
GDP (average annual growth 2018-2023)	3.7%
Primary export	Mineral fuels
Primary export destination	China
Primary import	Machinery
Primary import source	Portugal
Operating environment score	2.9
Most problematic factor for doing business	Corruption



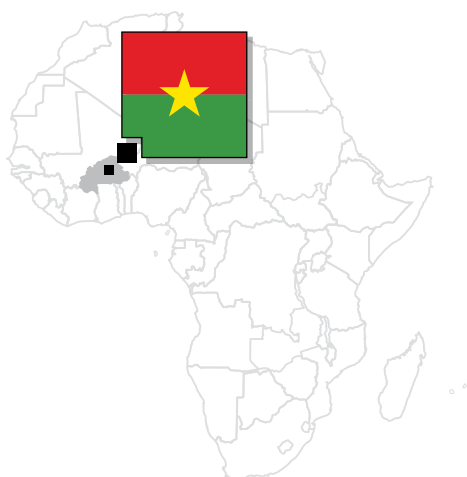
BENIN

Capital	Porto-Novo
Business language	French
Population (millions)	11.1
GDP/capita (market prices)	US\$830
RMB's Investment Attractiveness score	4.3
GDP (purchasing power)	US\$25.3bn
GDP (average annual growth 2018-2023)	6.4%
Primary export	Cotton
Primary export destination	India
Primary import	Cereals
Primary import source	India
Operating environment score	4.1
Most problematic factor for doing business	Access to financing



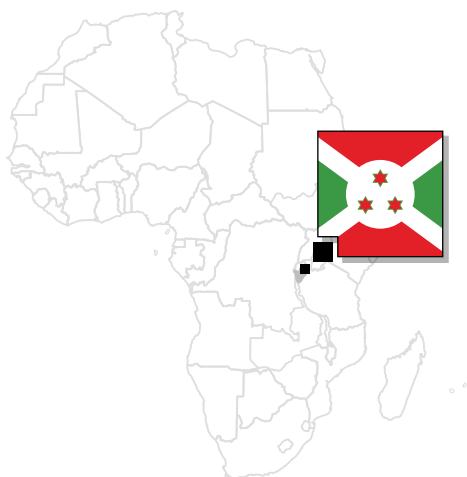
BOTSWANA

Capital	Gaborone
Business language	English
Population (millions)	2.2
GDP/capita (market prices)	US\$7,877
RMB's Investment Attractiveness score	5.3
GDP (purchasing power)	US\$38.9bn
GDP (average annual growth 2018-2023)	4.3%
Primary export	Diamonds
Primary export destination	Belgium
Primary import	Diamonds
Primary import source	South Africa
Operating environment score	6.2
Most problematic factor for doing business	Poor work ethic in national labour force



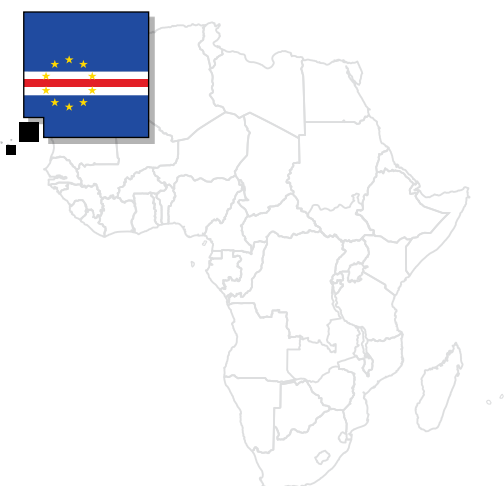
BURKINA FASO

Capital	Ouagadougou
Business language	French
Population (millions)	18.9
GDP/capita (market prices)	US\$664
RMB's Investment Attractiveness score	4.6
GDP (purchasing power)	US\$35.8bn
GDP (average annual growth 2018-2023)	5.9%
Primary export	Gold
Primary export destination	Switzerland
Primary import	Machinery
Primary import source	China
Operating environment score	4.2
Most problematic factor for doing business	Access to financing



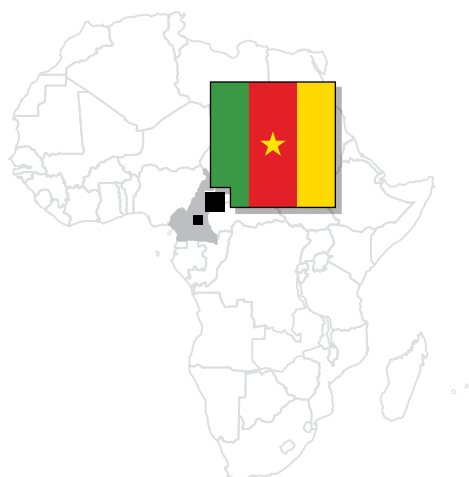
BURUNDI

Capital	Bujumbura
Business language	French and English
Population (millions)	10.9
GDP/capita (market prices)	US\$312
RMB's Investment Attractiveness score	2.4
GDP (purchasing power)	US\$8bn
GDP (average annual growth 2018-2023)	0.4%
Primary exports	Coffee and tea
Primary export destination	Congo
Primary import	Mineral fuels
Primary import source	India
Operating environment score	3.2
Most problematic factor for doing business	Access to financing



CABO VERDE

Capital	Praia
Business language	Portuguese
Population (millions)	0.5
GDP/capita (market prices)	US\$3,238
RMB's Investment Attractiveness score	3.8
GDP (purchasing power)	US\$3.7bn
GDP (average annual growth 2018-2023)	4.0%
Primary export	Fish
Primary export destination	Australia
Primary import	Machinery
Primary import source	Portugal
Operating environment score	5.1
Most problematic factor for doing business	Access to financing



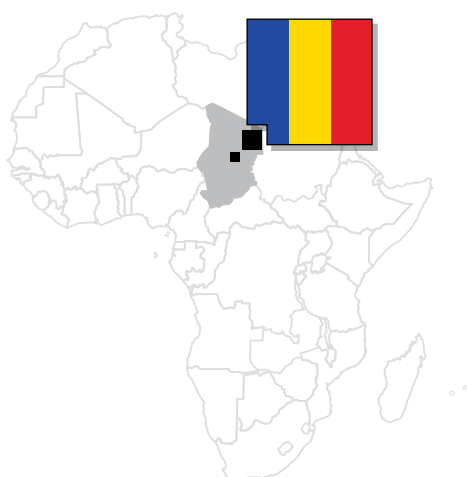
CAMEROON

Capital	Yaoundé
Business language	French and English
Population (millions)	24.3
GDP/capita (market prices)	US\$1,401
RMB's Investment Attractiveness score	4.7
GDP (purchasing power)	US\$88.9bn
GDP (average annual growth 2018-2023)	4.9%
Primary export	Cocoa
Primary export destination	Netherlands
Primary import	Mineral fuels
Primary import source	China
Operating environment score	3.6
Most problematic factor for doing business	Corruption

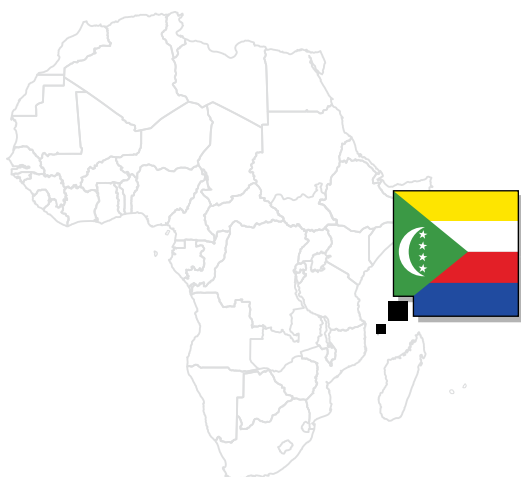


CENTRAL AFRICAN REPUBLIC

Capital	Bangui
Business language	French
Population (millions)	5.0
GDP/capita (market prices)	US\$387
RMB's Investment Attractiveness score	2.4
GDP (purchasing power)	US\$3.4bn
GDP (average annual growth 2018-2023)	4.0%
Primary export	Diamonds
Primary export destination	Belarus
Primary import	Vehicles
Primary import source	Egypt
Operating environment score	2.4
Most problematic factor for doing business	Insolvency

**CHAD**

Capital	N'Djamena
Business language	French
Population (millions)	12.2
GDP/capita (market prices)	US\$810
RMB's Investment Attractiveness score	3.5
GDP (purchasing power)	US\$28.6bn
GDP (average annual growth 2018-2023)	4.5%
Primary export	Mineral fuels
Primary export destination	US
Primary import	Mineral fuels
Primary import source	France
Operating environment score	2.9
Most problematic factor for doing business	Access to financing

**COMOROS**

Capital	Moroni
Business language	French
Population (millions)	0.8
GDP/capita (market prices)	US\$788
RMB's Investment Attractiveness score	2.5
GDP (purchasing power)	US\$1.3bn
GDP (average annual growth 2018-2023)	3.0%
Primary exports	Coffee and tea
Primary export destination	France
Primary import	Meat
Primary import source	UAE
Operating environment score	3.2
Most problematic factor for doing business	Insolvency

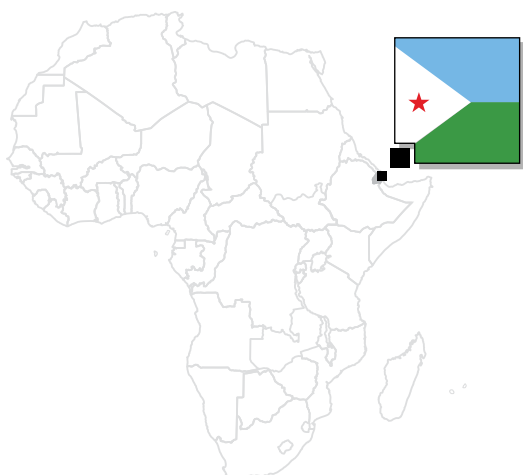
**CONGO**

Capital	Brazzaville
Business language	French
Population (millions)	4.3
GDP/capita (market prices)	US\$1,958
RMB's Investment Attractiveness score	2.4
GDP (purchasing power)	US\$28.9bn
GDP (average annual growth 2018-2023)	0.6%
Primary export	Mineral fuels
Primary export destination	China
Primary import	Machinery
Primary import source	France
Operating environment score	2.1
Most problematic factor for doing business	Paying taxes



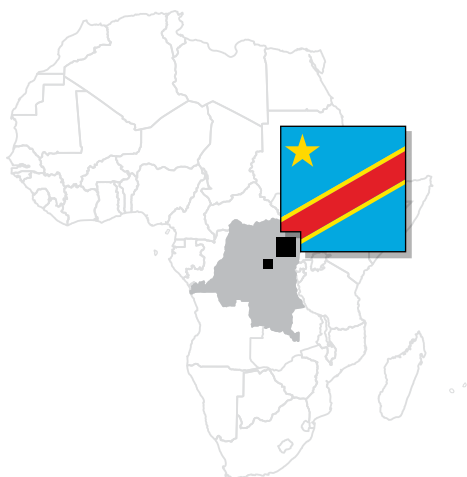
CÔTE D'IVOIRE

Capital	Yamoussoukro
Business language	French
Population (millions)	25.0
GDP/capita (market prices)	US\$1,617
RMB's Investment Attractiveness score	5.5
GDP (purchasing power)	US\$96.9bn
GDP (average annual growth 2018-2023)	6.8%
Primary export	Cocoa
Primary export destination	Netherlands
Primary import	Mineral fuels
Primary import source	Nigeria
Operating environment score	4.4
Most problematic factor for doing business	Access to financing



DJIBOUTI

Capital	Djibouti
Business language	French
Population (millions)	1.0
GDP/capita (market prices)	US\$1,989
RMB's Investment Attractiveness score	3.2
GDP (purchasing power)	US\$3.6bn
GDP (average annual growth 2018-2023)	6.2%
Primary export	Live animals
Primary export destination	Ethiopia
Primary import	Vehicles
Primary import source	UAE
Operating environment score	3.1
Most problematic factor for doing business	Protecting investors

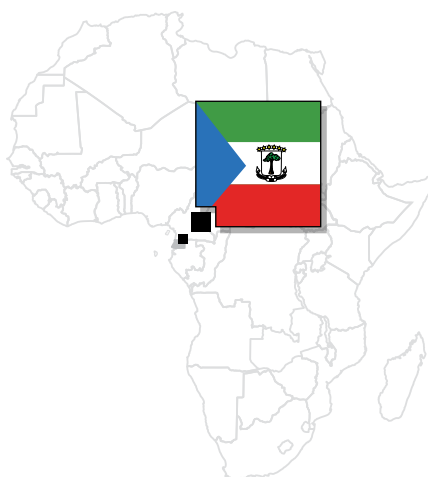


DEMOCRATIC REPUBLIC OF CONGO

Capital	Kinshasa
Business language	French
Population (millions)	86.7
GDP/capita (market prices)	US\$478
RMB's Investment Attractiveness score	4.0
GDP (purchasing power)	US\$68.5bn
GDP (average annual growth 2018-2023)	4.3%
Primary export	Copper
Primary export destination	China
Primary import	Machinery
Primary import source	South Africa
Operating environment score	3.1
Most problematic factor for doing business	Access to financing

**EGYPT**

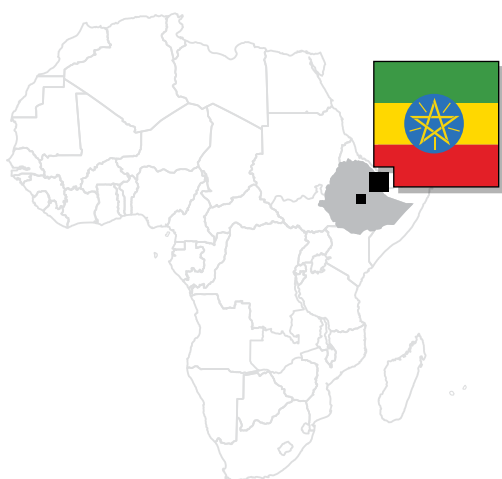
Capital	Cairo
Business language	Arabic and English
Population (millions)	94.8
GDP/capita (market prices)	US\$2,501
RMB's Investment Attractiveness score	6.4
GDP (purchasing power)	US\$1,201.2bn
GDP (average annual growth 2018-2023)	5.7%
Primary export	Mineral fuels
Primary export destination	UAE
Primary import	Mineral fuels
Primary import source	China
Operating environment score	4.3
Most problematic factor for doing business	Policy instability

**EQUATORIAL GUINEA**

Capital	Malabo
Business language	Spanish and English
Population (millions)	0.8
GDP/capita (market prices)	US\$12,727
RMB's Investment Attractiveness score	2.3
GDP (purchasing power)	US\$30.4bn
GDP (average annual growth 2018-2023)	-1.4%
Primary export	Mineral fuels
Primary export destination	India
Primary import	Machinery
Primary import source	US
Operating environment score	2.5
Most problematic factor for doing business	Insolvency

**ERITREA**

Capital	Asmara
Business language	English
Population (millions)	5.9
GDP/capita (market prices)	US\$980
RMB's Investment Attractiveness score	3.0
GDP (purchasing power)	US\$9.4bn
GDP (average annual growth 2018-2023)	4.1%
Primary exports	Ores, slag and ash
Primary export destination	China
Primary import	Machinery
Primary import source	UAE
Operating environment score	3.0
Most problematic factor for doing business	–



ETHIOPIA

Capital	Addis Ababa
Business language	English
Population (millions)	92.7
GDP/capita (market prices)	US\$873
RMB's Investment Attractiveness score	5.8
GDP (purchasing power)	US\$200.2bn
GDP (average annual growth 2018-2023)	8.2%
Primary exports	Coffee and tea
Primary export destination	Sudan
Primary import	Machinery
Primary import source	China
Operating environment score	3.9
Most problematic factor for doing business	Foreign-currency regulations



GABON

Capital	Libreville
Business language	French
Population (millions)	1.9
GDP/capita (market prices)	US\$7,972
RMB's Investment Attractiveness score	4.1
GDP (purchasing power)	US\$36.7bn
GDP (average annual growth 2018-2023)	4.1%
Primary export	Mineral fuels
Primary export destination	US
Primary import	Machinery
Primary import source	France
Operating environment score	4.0
Most problematic factor for doing business	Access to financing



GAMBIA

Capital	Banjul
Business language	English
Population (millions)	2.1
GDP/capita (market prices)	US\$480
RMB's Investment Attractiveness score	3.3
GDP (purchasing power)	US\$3.6bn
GDP (average annual growth 2018-2023)	5.0%
Primary exports	Oilseeds and grains
Primary export destination	Mali
Primary import	Mineral fuels
Primary import source	Côte d'Ivoire
Operating environment score	3.8
Most problematic factor for doing business	Tax rates



GHANA

Capital	Accra
Business language	English
Population (millions)	28.3
GDP/capita (market prices)	US\$1,663
RMB's Investment Attractiveness score	5.5
GDP (purchasing power)	US\$133.7bn
GDP (average annual growth 2018-2023)	5.5%
Primary export	Gold
Primary export destination	India
Primary import	Vehicles
Primary import source	China
Operating environment score	4.7
Most problematic factor for doing business	Access to financing



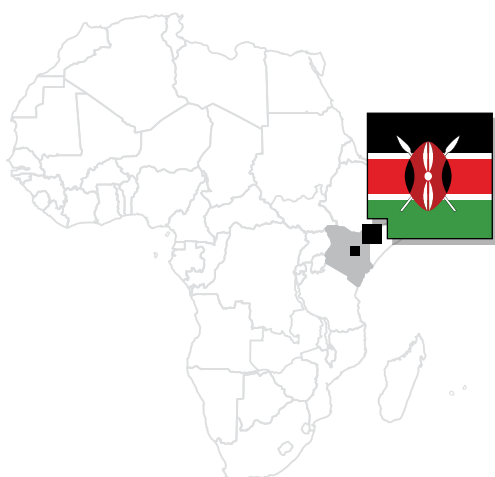
GUINEA

Capital	Conakry
Business language	French
Population (millions)	13.0
GDP/capita (market prices)	US\$749
RMB's Investment Attractiveness score	3.8
GDP (purchasing power)	US\$26.5bn
GDP (average annual growth 2018-2023)	5.6%
Primary exports	Ores, slag and ash
Primary export destination	China
Primary imports	Ships, boats and floating structures
Primary import source	Netherlands
Operating environment score	3.3
Most problematic factor for doing business	Corruption



GUINEA-BISSAU

Capital	Bissau
Business language	Portuguese
Population (millions)	1.7
GDP/capita (market prices)	US\$794
RMB's Investment Attractiveness score	2.7
GDP (purchasing power)	US\$3.1bn
GDP (average annual growth 2018-2023)	5.2%
Primary exports	Edible fruit and nuts
Primary export destination	Libya
Primary import	Mineral fuels
Primary import source	Greece
Operating environment score	2.7
Most problematic factor for doing business	Insolvency



KENYA

Capital	Nairobi
Business language	English
Population (millions)	46.7
GDP/capita (market prices)	US\$1,702
RMB's Investment Attractiveness score	5.7
GDP (purchasing power)	US\$163.1bn
GDP (average annual growth 2018-2023)	6.1%
Primary exports	Coffee and tea
Primary export destination	Uganda
Primary imports	Electrical machinery and equipment
Primary import source	India
Operating environment score	4.9
Most problematic factor for doing business	Corruption



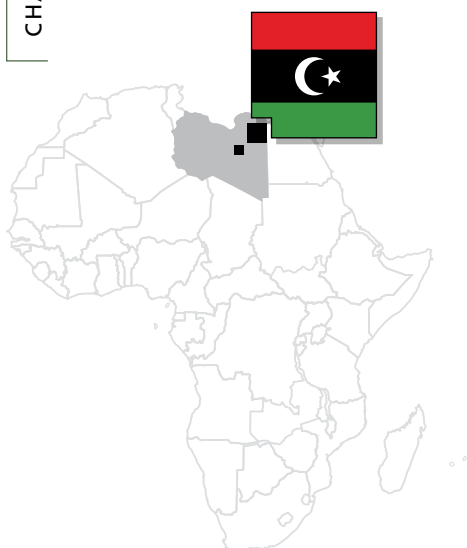
LESOTHO

Capital	Maseru
Business language	English
Population (millions)	1.9
GDP/capita (market prices)	US\$1,425
RMB's Investment Attractiveness score	3.4
GDP (purchasing power)	US\$7bn
GDP (average annual growth 2018-2023)	2.4%
Primary export	Diamonds
Primary export destination	South Africa
Primary import	Mineral fuels
Primary import source	South Africa
Operating environment score	4.7
Most problematic factor for doing business	Access to financing

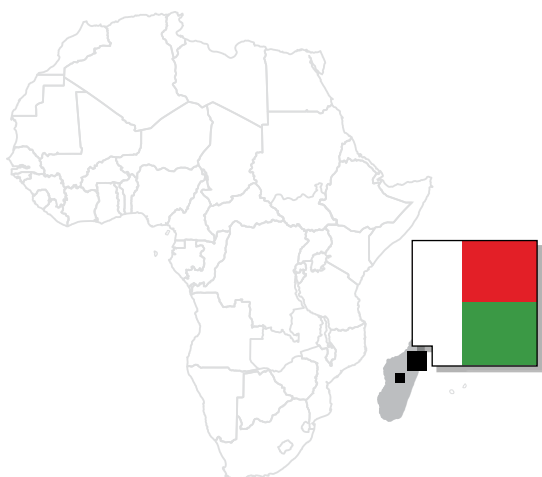


LIBERIA

Capital	Monrovia
Business language	English
Population (millions)	4.5
GDP/capita (market prices)	US\$729
RMB's Investment Attractiveness score	3.2
GDP (purchasing power)	US\$6.1bn
GDP (average annual growth 2018-2023)	4.8%
Primary exports	Ships, boats and floating structures
Primary export destination	Poland
Primary imports	Ships, boats and floating structures
Primary import source	US
Operating environment score	3.6
Most problematic factor for doing business	Access to financing

**LIBYA**

Capital	Tripoli
Business language	English and Arabic
Population (millions)	6.4
GDP/capita (market prices)	US\$4,859
RMB's Investment Attractiveness score	3.6
GDP (purchasing power)	US\$64.4bn
GDP (average annual growth 2018-2023)	3.9%
Primary export	Mineral fuels
Primary export destination	Italy
Primary import	Mineral fuels
Primary import source	China
Operating environment score	2.2
Most problematic factor for doing business	Government bureaucracy

**MADAGASCAR**

Capital	Antananarivo
Business language	French and English
Population (millions)	25.6
GDP/capita (market prices)	US\$448
RMB's Investment Attractiveness score	4.3
GDP (purchasing power)	US\$39.7bn
GDP (average annual growth 2018-2023)	5.2%
Primary export	Vanilla
Primary export destination	France
Primary import	Mineral fuels
Primary import source	China
Operating environment score	3.6
Most problematic factor for doing business	Government instability/coups

**MALAWI**

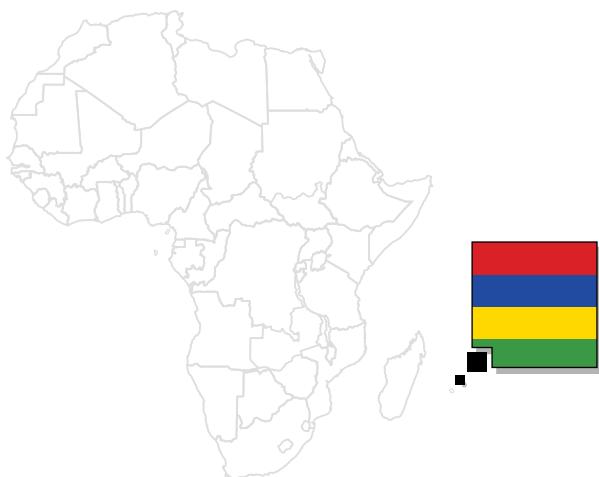
Capital	Lilongwe
Business language	English
Population (millions)	19.2
GDP/capita (market prices)	US\$324
RMB's Investment Attractiveness score	4.0
GDP (purchasing power)	US\$22.4bn
GDP (average annual growth 2018-2023)	5.2%
Primary export	Tobacco
Primary export destination	Zimbabwe
Primary import	Pharmaceutical products
Primary import source	South Africa
Operating environment score	4.2
Most problematic factor for doing business	Corruption

**MALI**

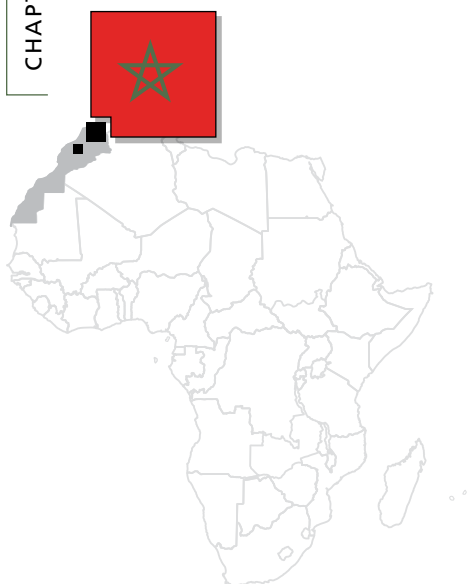
Capital	Bamako
Business language	French
Population (millions)	18.9
GDP/capita (market prices)	US\$811
RMB's Investment Attractiveness score	4.4
GDP (purchasing power)	US\$41bn
GDP (average annual growth 2018-2023)	4.8%
Primary export	Gold
Primary export destination	Switzerland
Primary import	Machinery
Primary import source	Senegal
Operating environment score	4.1
Most problematic factor for doing business	Access to financing

**MAURITANIA**

Capital	Nouakchott
Business language	French
Population (millions)	3.9
GDP/capita (market prices)	US\$1,318
RMB's Investment Attractiveness score	3.6
GDP (purchasing power)	US\$17.3bn
GDP (average annual growth 2018-2023)	5.5%
Primary exports	Ores, slag and ash
Primary export destination	China
Primary imports	Ships, boats and floating structures
Primary import source	US
Operating environment score	3.6
Most problematic factor for doing business	Access to financing

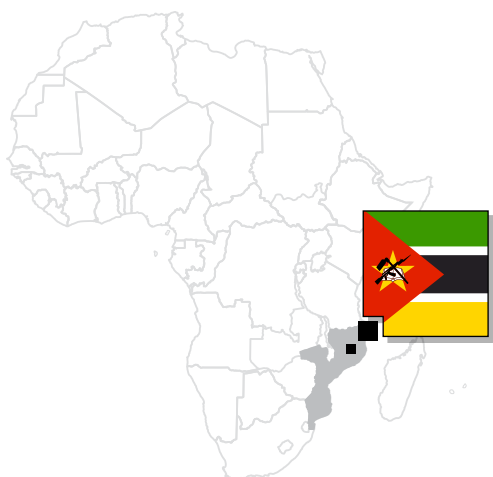
**MAURITIUS**

Capital	Port Louis
Business language	English
Population (millions)	1.3
GDP/capita (market prices)	US\$9,794
RMB's Investment Attractiveness score	5.4
GDP (purchasing power)	US\$27.5bn
GDP (average annual growth 2018-2023)	4.0%
Primary export	Textiles
Primary export destination	France
Primary import	Mineral fuels
Primary import source	India
Operating environment score	7.0
Most problematic factor for doing business	Government bureaucracy



MOROCCO

Capital	Rabat
Business language	French
Population (millions)	34.9
GDP/capita (market prices)	US\$3,151
RMB's Investment Attractiveness score	6.1
GDP (purchasing power)	US\$298.6bn
GDP (average annual growth 2018-2023)	4.1%
Primary exports	Electrical machinery and equipment
Primary export destination	Spain
Primary import	Mineral fuels
Primary import source	Spain
Operating environment score	5.6
Most problematic factor for doing business	Corruption



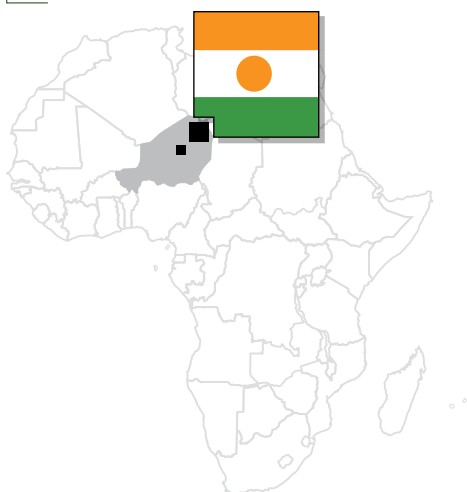
MOZAMBIQUE

Capital	Maputo
Business language	Portuguese
Population (millions)	29.5
GDP/capita (market prices)	US\$429
RMB's Investment Attractiveness score	3.9
GDP (purchasing power)	US\$36.7bn
GDP (average annual growth 2018-2023)	3.7%
Primary export	Coal
Primary export destination	India
Primary import	Mineral fuels
Primary import source	South Africa
Operating environment score	3.6
Most problematic factor for doing business	Access to financing

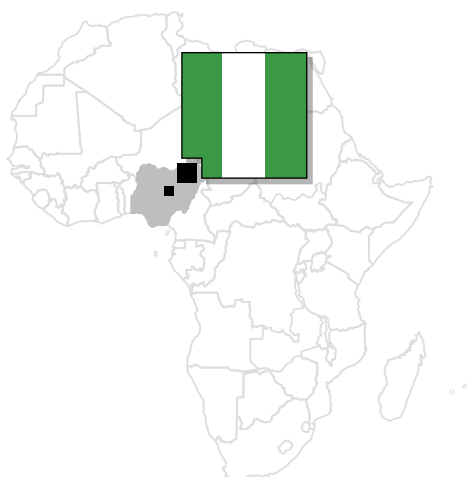


NAMIBIA

Capital	Windhoek
Business language	English
Population (millions)	2.3
GDP/capita (market prices)	US\$5,413
RMB's Investment Attractiveness score	4.3
GDP (purchasing power)	US\$26.5bn
GDP (average annual growth 2018-2023)	3.1%
Primary export	Diamonds
Primary export destination	South Africa
Primary import	Mineral fuels
Primary import source	South Africa
Operating environment score	5.3
Most problematic factor for doing business	Access to financing

**NIGER**

Capital	Niamey
Business language	French
Population (millions)	18.8
GDP/capita (market prices)	US\$440
RMB's Investment Attractiveness score	3.8
GDP (purchasing power)	US\$21.8bn
GDP (average annual growth 2018-2023)	5.8%
Primary export	Uranium
Primary export destination	France
Primary import	Pharmaceutical products
Primary import source	France
Operating environment score	3.6
Most problematic factor for doing business	Trading across borders

**NIGERIA**

Capital	Abuja
Business language	English
Population (millions)	188.7
GDP/capita (market prices)	US\$1,994
RMB's Investment Attractiveness score	5.5
GDP (purchasing power)	US\$1,118.8bn
GDP (average annual growth 2018-2023)	2.0%
Primary export	Mineral fuels
Primary export destination	US
Primary import	Mineral fuels
Primary import source	China
Operating environment score	4.0
Most problematic factor for doing business	Inadequate infrastructure

**RWANDA**

Capital	Kigali
Business language	French and English
Population (millions)	11.8
GDP/capita (market prices)	US\$772
RMB's Investment Attractiveness score	5.7
GDP (purchasing power)	US\$24.6bn
GDP (average annual growth 2018-2023)	7.6%
Primary exports	Coffee and tea
Primary export destination	UAE
Primary imports	Electrical machinery and equipment
Primary import source	China
Operating environment score	6.6
Most problematic factor for doing business	Access to financing



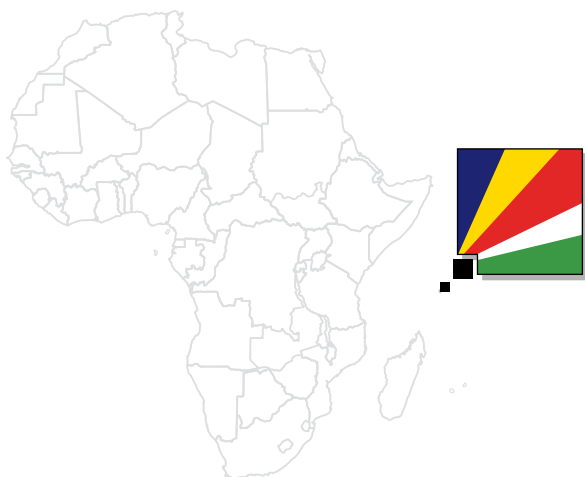
SÃO TOMÉ AND PRÍNCIPE

Capital	São Tomé
Business language	Portuguese
Population (millions)	0.2
GDP/capita (market prices)	US\$1,785
RMB's Investment Attractiveness score	3.0
GDP (purchasing power)	US\$0.7bn
GDP (average annual growth 2018-2023)	5.4%
Primary export	Cocoa
Primary export destination	Belgium
Primary imports	Electrical machinery and equipment
Primary import source	Portugal
Operating environment score	3.7
Most problematic factor for doing business	Getting credit



SENEGAL

Capital	Dakar
Business language	French
Population (millions)	15.9
GDP/capita (market prices)	US\$1,038
RMB's Investment Attractiveness score	5.1
GDP (purchasing power)	US\$43.2bn
GDP (average annual growth 2018-2023)	6.9%
Primary exports	Fish and crustaceans
Primary export destination	Mali
Primary import	Fuels
Primary import source	France
Operating environment score	4.5
Most problematic factor for doing business	Access to financing



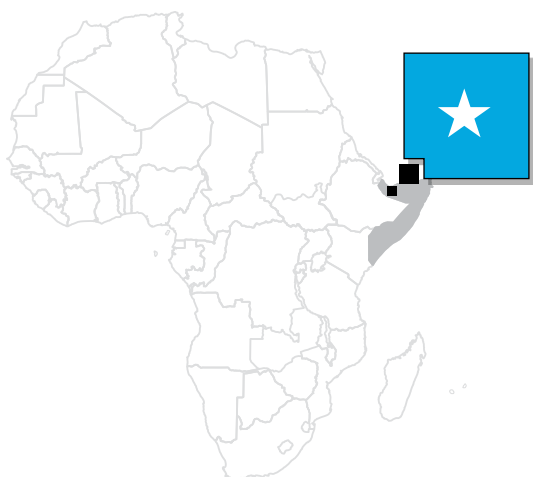
SEYCHELLES

Capital	Victoria
Business language	English and French
Population (millions)	0.1
GDP/capita (market prices)	US\$15,686
RMB's Investment Attractiveness score	3.9
GDP (purchasing power)	US\$2.7bn
GDP (average annual growth 2018-2023)	3.6%
Primary exports	Fish and crustaceans
Primary export destination	UAE
Primary imports	Machinery and transport equipment
Primary import source	UAE
Operating environment score	5.6
Most problematic factor for doing business	Access to financing



SIERRA LEONE

Capital	Freetown
Business language	English
Population (millions)	7.4
GDP/capita (market prices)	US\$491
RMB's Investment Attractiveness score	3.7
GDP (purchasing power)	US\$11.5bn
GDP (average annual growth 2018-2023)	6.2%
Primary exports	Ores, slag and ash
Primary export destination	Côte d'Ivoire
Primary import	Cereals
Primary import source	China
Operating environment score	3.6
Most problematic factor for doing business	Access to financing



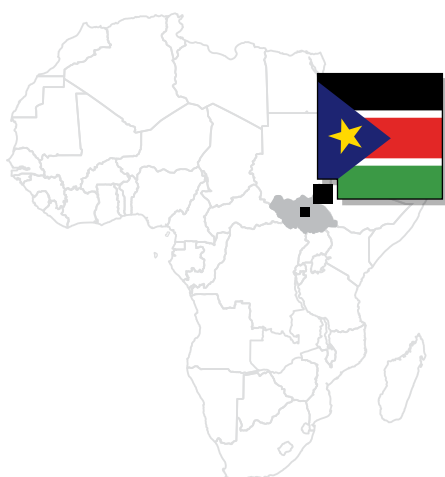
SOMALIA

Capital	Mogadishu
Business language	English
Population (millions)	–
GDP/capita (market prices)	–
RMB's Investment Attractiveness score	–
GDP (purchasing power)	US\$18.7bn
GDP (average annual growth 2018-2023)	3.2%
Primary export	Live animals
Primary export destination	UAE
Primary imports	Sugars and sugar confectionery
Primary import source	Djibouti
Operating environment score	–
Most problematic factor for doing business	–



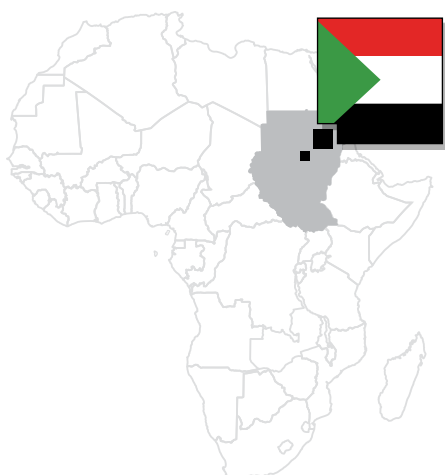
SOUTH AFRICA

Capital	Pretoria
Business language	English
Population (millions)	56.5
GDP/capita (market prices)	US\$6,180
RMB's Investment Attractiveness score	6.2
GDP (purchasing power)	US\$765.6bn
GDP (average annual growth 2018-2023)	1.7%
Primary exports	Precious stones and metals
Primary export destination	China
Primary import	Machinery
Primary import source	China
Operating environment score	5.7
Most problematic factor for doing business	Corruption



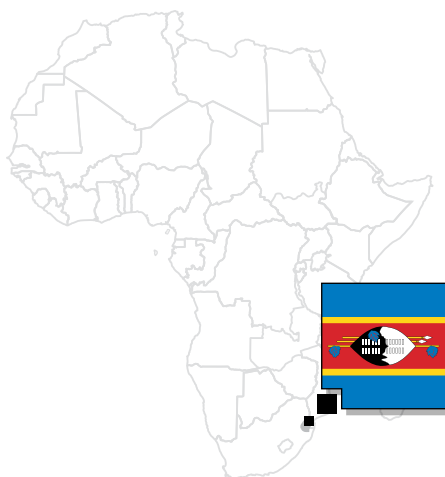
SOUTH SUDAN

Capital	Juba
Business language	English
Population (millions)	12.6
GDP/capita (market prices)	US\$228
RMB's Investment Attractiveness score	1.1
GDP (purchasing power)	US\$18.7bn
GDP (average annual growth 2018-2023)	-2.0%
Primary export	Mineral fuels
Primary export destination	China
Primary imports	Printed books, newspapers and similar products
Primary import source	Uganda
Operating environment score	0.6
Most problematic factor for doing business	Insolvency



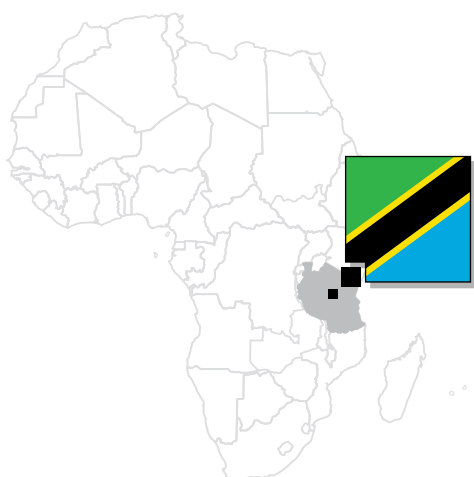
SUDAN

Capital	Khartoum
Business language	Arabic and English
Population (millions)	40.8
GDP/capita (market prices)	US\$1,428
RMB's Investment Attractiveness score	4.2
GDP (purchasing power)	US\$187bn
GDP (average annual growth 2018-2023)	3.3%
Primary export	Mineral fuels
Primary export destination	UAE
Primary import	Machinery
Primary import source	UAE
Operating environment score	2.5
Most problematic factor for doing business	Construction permit issues



SWAZILAND

Capital	Mbabane
Business language	English
Population (millions)	1.1
GDP/capita (market prices)	US\$3,915
RMB's Investment Attractiveness score	3.4
GDP (purchasing power)	US\$11.3bn
GDP (average annual growth 2018-2023)	1.2%
Primary export	Essential oils
Primary export destination	South Africa
Primary import	Mineral fuels
Primary import source	South Africa
Operating environment score	4.8
Most problematic factor for doing business	Government bureaucracy



TANZANIA

Capital	Dodoma
Business language	English
Population (millions)	50.0
GDP/capita (market prices)	US\$1,034
RMB's Investment Attractiveness score	5.6
GDP (purchasing power)	US\$162.2bn
GDP (average annual growth 2018-2023)	6.6%
Primary export	Gold
Primary export destination	India
Primary import	Mineral fuels
Primary import source	India
Operating environment score	4.3
Most problematic factor for doing business	Access to financing



TOGO

Capital	Lomé
Business language	French
Population (millions)	7.8
GDP/capita (market prices)	US\$611
RMB's Investment Attractiveness score	3.4
GDP (purchasing power)	US\$12.9bn
GDP (average annual growth 2018-2023)	5.4%
Primary exports	Salt, sulphur, earth and stone
Primary export destination	Benin
Primary import	Mineral fuels
Primary import source	China
Operating environment score	3.2
Most problematic factor for doing business	Paying taxes



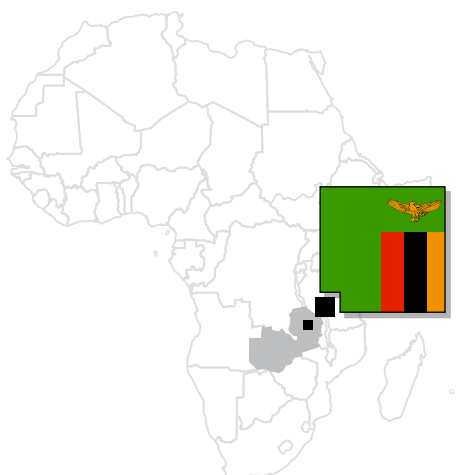
TUNISIA

Capital	Tunis
Business language	French and English
Population (millions)	11.5
GDP/capita (market prices)	US\$3,496
RMB's Investment Attractiveness score	5.4
GDP (purchasing power)	US\$135.4bn
GDP (average annual growth 2018-2023)	3.4%
Primary exports	Electrical machinery and equipment
Primary export destination	France
Primary import	Mineral fuels
Primary import source	France
Operating environment score	5.2
Most problematic factor for doing business	Government bureaucracy



UGANDA

Capital	Kampala
Business language	English
Population (millions)	37.7
GDP/capita (market prices)	US\$699
RMB's Investment Attractiveness score	5.3
GDP (purchasing power)	US\$88.7bn
GDP (average annual growth 2018-2023)	6.4%
Primary exports	Coffee and tea
Primary export destination	Kenya
Primary import	Mineral fuels
Primary import source	China
Operating environment score	4.4
Most problematic factor for doing business	Tax rates



ZAMBIA

Capital	Lusaka
Business language	English
Population (millions)	17.2
GDP/capita (market prices)	US\$1,480
RMB's Investment Attractiveness score	5.1
GDP (purchasing power)	US\$68.9bn
GDP (average annual growth 2018-2023)	4.4%
Primary export	Copper
Primary export destination	Switzerland
Primary import	Machinery
Primary import source	South Africa
Operating environment score	5.0
Most problematic factor for doing business	Access to financing



ZIMBABWE

Capital	Harare
Business language	English
Population (millions)	14.9
GDP/capita (market prices)	US\$1,176
RMB's Investment Attractiveness score	3.7
GDP (purchasing power)	US\$34bn
GDP (average annual growth 2018-2023)	4.3%
Primary exports	Precious stones and metals
Primary export destination	China
Primary import	Mineral fuels
Primary import source	South Africa
Operating environment score	3.3
Most problematic factor for doing business	Policy instability

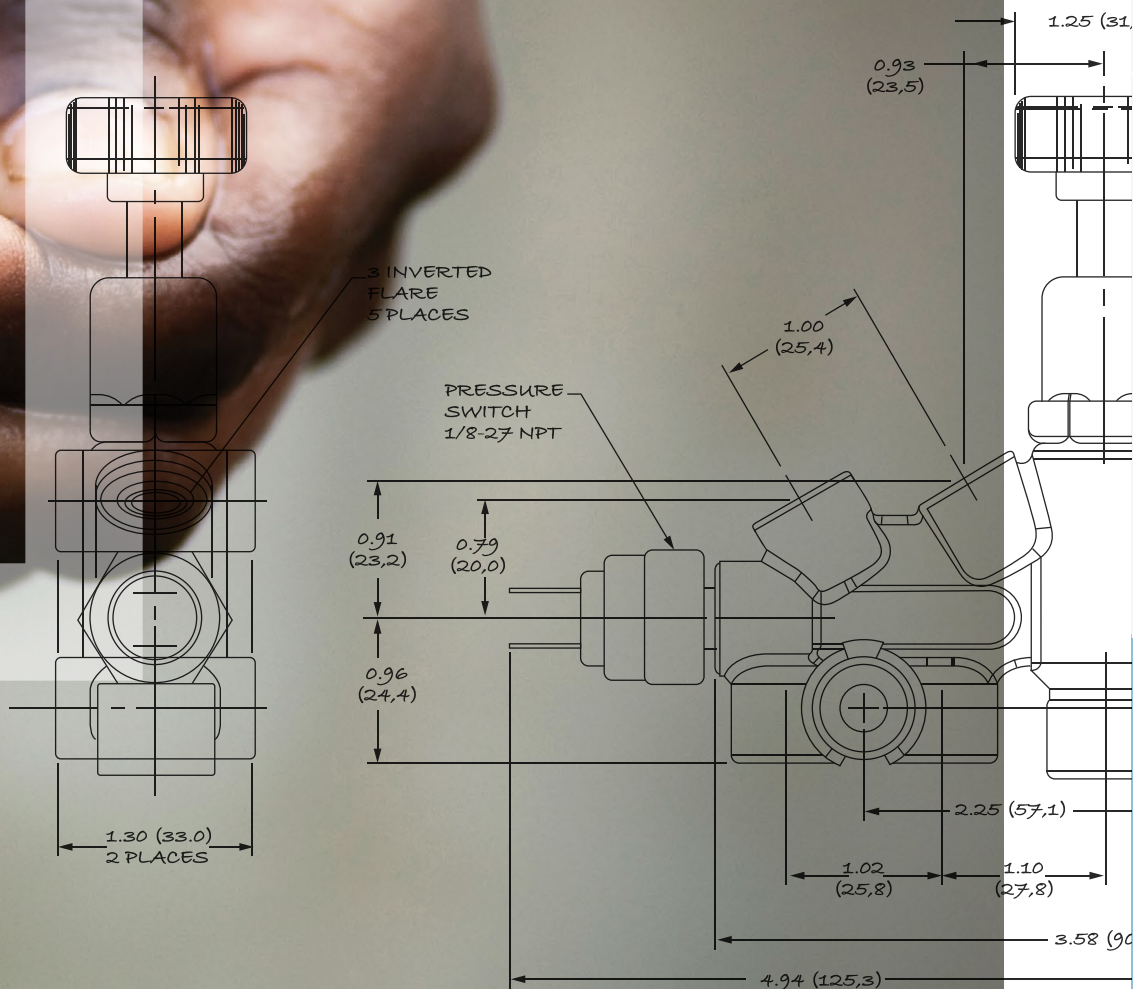
APPENDICES

This section comprises our data tables, methodology and sources.

AQUARENU — HOME-GROWN SOLUTION TO WATER CRISIS

South African engineering student, Nkosinathi Nkomo, formed AquaRenu, a company that aims to reduce water usage. Nkomo has developed a greywater system that can be used in homes and places of business, and is working with the AquaRenu team on a design that utilises rainwater and greywater as primary water sources for irrigation and toilet-flushing for large properties such as schools and complexes.

NEW WAYS OF THINKING = NEW INFORMATION



APPENDICES

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4.1 TABLES

Table A1: RMB's investment attractiveness rankings and subcomponents

INVESTMENT ATTRACTIVENESS						
	Score	Ranking Africa	Ranking world	Market size	Market growth	Operating environment
	1 = poor 10 = good	1 = best 53 = worst	1 = best 191 = worst	US\$bn PPP ¹ (2018)	% (2018-2023 average)	1 = poor 10 = good
AFRICA						
Algeria	5.1	15	98	667.0	1.6	3.7
Angola	4.5	20	118	198.8	3.7	2.9
Benin	4.3	23	129	27.5	6.4	4.1
Botswana	5.3	13	91	41.6	4.3	6.2
Burkina Faso	4.6	19	117	38.8	5.9	4.2
Burundi	2.4	50	180	8.2	0.4	3.2
Cabo Verde	3.8	31	143	4.0	4.0	5.1
Cameroon	4.7	18	115	94.5	4.9	3.6
CAR	2.4	49	179	3.6	4.0	2.4
Chad	3.5	38	158	30.2	4.5	2.9
Comoros	2.5	48	178	1.4	3.0	3.2
Congo	2.4	51	181	29.7	0.6	2.1
Côte d'Ivoire	5.5	10	86	106.4	6.8	4.4
Djibouti	3.2	44	167	4.0	6.2	3.1
DRC	4.0	28	138	72.6	4.3	3.1
Egypt	6.4	1	44	1,292.7	5.7	4.3
Equatorial Guinea	2.3	52	183	28.4	-1.4	2.5
Eritrea	3.0	46	174	10.0	4.1	3.0
Ethiopia	5.8	4	67	222.3	8.2	3.9
Gabon	4.1	26	135	38.6	4.1	4.0
Gambia	3.3	42	164	3.9	5.0	3.8
Ghana	5.5	9	85	145.4	5.5	4.7
Guinea	3.8	33	146	28.6	5.6	3.3
Guinea-Bissau	2.7	47	177	3.4	5.2	2.7
Kenya	5.7	5	70	176.0	6.1	4.9
Lesotho	3.4	39	159	7.2	2.4	4.7
Liberia	3.2	43	166	6.4	4.8	3.6
Libya	3.6	36	152	76.7	3.9	2.2
Madagascar	4.3	24	130	42.7	5.2	3.6
Malawi	4.0	27	137	23.7	5.2	4.2
Mali	4.4	21	121	44.0	4.8	4.1
Mauritania	3.6	37	153	18.1	5.5	3.6
Mauritius	5.4	12	88	29.2	4.0	7.0
Morocco	6.1	3	54	314.7	4.1	5.6
Mozambique	3.9	30	142	38.7	3.7	3.6
Namibia	4.3	22	128	27.4	3.1	5.3
Niger	3.8	32	144	23.5	5.8	3.6
Nigeria	5.5	8	84	1,168.4	2.0	4.0
Rwanda	5.7	6	72	27.0	7.6	6.6
São Tomé and Príncipe	3.0	45	172	0.7	5.4	3.7
Senegal	5.1	16	99	47.3	6.9	4.5
Seychelles	3.9	29	141	2.9	3.6	5.6
Sierra Leone	3.7	35	149	12.2	6.2	3.6
Somalia	-	-	-	-	-	-
South Africa	6.2	2	48	794.7	1.7	5.7
South Sudan	1.1	53	189	18.4	-2.0	0.6
Sudan	4.2	25	132	198.4	3.3	2.5
Swaziland	3.4	41	162	11.5	1.2	4.8
Tanzania	5.6	7	81	176.5	6.6	4.3
Togo	3.4	40	161	13.9	5.4	3.2

INVESTMENT ATTRACTIVENESS

	Score 1 = poor 10 = good	Ranking Africa 1 = best 53 = worst	Ranking world 1 = best 191 = worst	Market size US\$bn PPP ¹ (2018)	Market growth % (2018-2023 average)	Operating environment 1 = poor 10 = good
AFRICA						
Tunisia	5.4	11	87	141.8	3.4	5.2
Uganda	5.3	14	92	95.4	6.4	4.4
Zambia	5.1	17	100	73.3	4.4	5.0
Zimbabwe	3.7	34	148	35.6	4.3	3.3
DEVELOPED ECONOMIES						
Germany	7.9	-	3	4,374.0	1.7	8.1
Japan	7.5	-	14	5,619.5	0.7	7.6
UK	7.9	-	2	3,028.6	1.6	8.4
US	8.1	-	1	20,412.9	2.0	8.2
EMERGING ASIA						
China	7.5	-	12	25,238.6	6.1	5.7
Hong Kong	7.7	-	7	482.1	3.2	8.6
India	7.5	-	11	10,385.4	7.9	5.2
Indonesia	7.3	-	19	3,492.2	5.5	5.7
Malaysia	7.6	-	9	1,002.1	4.9	7.1
Pakistan	6.0	-	57	1,141.2	5.0	4.0
Philippines	6.8	-	32	955.2	6.9	5.1
Singapore	7.8	-	5	554.9	2.7	8.8
South Korea	7.6	-	8	2,138.2	2.8	7.4
Taiwan	7.4	-	16	1,234.9	2.0	7.6
Thailand	7.1	-	26	1,310.6	3.7	6.4
Vietnam	6.8	-	34	705.8	6.5	5.3
EMERGING EUROPE AND MIDDLE EAST						
Bulgaria	5.8	-	62	162.6	3.0	6.2
Czech Republic	6.8	-	35	397.7	2.8	7.0
Hungary	6.2	-	53	306.8	2.7	6.2
Israel	6.7	-	36	334.3	3.2	7.0
Poland	7.3	-	21	1,193.1	3.1	7.0
Romania	6.7	-	39	517.5	3.5	6.4
Russia	6.7	-	37	4,168.9	1.5	5.8
Turkey	7.0	-	27	2,320.6	3.8	5.9
EMERGING LATIN AMERICA						
Argentina	5.9	-	61	959.5	3.0	4.5
Brazil	6.2	-	52	3,389.0	2.3	4.6
Chile	6.9	-	31	476.8	3.2	7.0
Colombia	6.6	-	40	750.3	3.4	5.9
Mexico	6.8	-	33	2,571.7	2.8	5.8
Peru	6.4	-	45	450.1	3.9	5.8

Note:
¹ PPP: Purchasing Power Parity.

Source: IMF, RMB Global Markets

Table A2: Investment attractiveness scores over time

	2000 1 = poor 10 = good	2005 1 = poor 10 = good	2010 1 = poor 10 = good	2013 1 = poor 10 = good	2014 1 = poor 10 = good	2015 1 = poor 10 = good	2016 1 = poor 10 = good	2017 1 = poor 10 = good	2018 1 = poor 10 = good
AFRICA									
Algeria	6.3	5.5	5.5	5.2	5.5	5.6	5.5	5.2	5.1
Angola	4.2	4.6	4.7	4.6	4.8	4.7	4.5	4.1	4.5
Benin	5.0	4.0	3.8	3.6	3.7	3.9	4.2	4.2	4.3
Botswana	5.6	5.6	5.7	5.5	5.6	5.2	5.4	5.4	5.3
Burkina Faso	4.8	4.3	4.3	4.5	4.5	4.3	4.5	4.6	4.6
Burundi	2.9	3.6	2.8	2.9	3.2	3.3	3.3	2.5	2.4
Cabo Verde	4.2	4.2	3.0	3.3	3.6	3.8	3.8	3.8	3.8
Cameroon	6.8	6.7	6.5	5.6	4.4	4.5	4.6	4.5	4.7
CAR	-	3.5	3.0	3.3	2.4	2.6	2.6	2.7	2.4
Chad	4.0	4.4	3.1	3.6	4.2	3.7	3.4	3.2	3.5
Comoros	-	-	2.0	2.3	2.4	2.5	2.6	2.7	2.5
Congo	3.5	3.6	3.1	3.6	3.4	3.3	3.0	2.9	2.4
Côte d'Ivoire	5.3	3.8	4.4	4.6	4.8	5.1	5.6	5.5	5.5
Djibouti	3.3	3.7	3.0	2.9	3.2	3.4	3.4	3.1	3.2
DRC	3.1	3.6	3.6	3.6	4.1	4.1	4.0	4.1	4.0
Egypt	6.0	5.9	6.4	6.2	5.8	6.2	6.2	6.4	6.4
Equatorial Guinea	4.5	5.4	2.6	2.3	2.2	2.3	2.2	2.4	2.3
Eritrea	-	2.3	2.4	1.9	2.0	2.5	2.9	3.0	3.0
Ethiopia	5.4	4.6	5.6	5.4	5.6	5.7	5.6	5.7	5.8
Gabon	5.1	4.0	3.6	4.3	4.5	4.6	4.3	4.1	4.1
Gambia	3.8	3.3	3.5	3.7	3.5	3.6	3.1	3.1	3.3
Ghana	5.0	5.1	5.9	6.0	6.0	5.9	5.7	5.7	5.5
Guinea	4.7	4.4	2.9	3.8	3.8	3.5	3.6	3.2	3.8
Guinea-Bissau	2.3	2.8	2.1	2.5	2.2	2.3	2.6	2.7	2.7
Kenya	4.7	4.5	5.3	5.2	5.3	5.4	5.7	5.7	5.7
Lesotho	3.6	3.8	3.2	3.2	3.6	3.8	3.7	3.7	3.4
Liberia	-	-	3.3	3.5	3.7	3.3	3.4	3.3	3.2
Libya	4.4	4.3	5.0	5.4	4.6	4.6	4.5	4.4	3.6
Madagascar	4.7	4.3	4.1	4.0	4.0	4.2	4.2	4.2	4.3
Malawi	4.2	3.4	4.1	3.9	3.9	3.6	3.8	3.9	4.0
Mali	4.8	4.3	3.8	3.9	3.8	4.1	4.5	4.5	4.4
Mauritania	3.7	5.1	3.6	3.8	3.7	3.5	3.3	3.4	3.6
Mauritius	5.0	4.6	5.4	5.5	5.4	5.2	5.3	5.2	5.4
Morocco	5.8	5.3	5.8	5.8	5.9	6.2	6.0	6.1	6.1
Mozambique	4.6	4.5	4.2	4.7	4.8	4.8	4.8	4.6	3.9
Namibia	4.7	4.3	4.4	4.5	4.4	4.8	4.9	4.6	4.3
Niger	3.9	3.4	3.4	3.5	3.9	3.8	3.9	3.9	3.8
Nigeria	5.1	5.3	6.0	6.2	6.2	5.9	5.7	5.3	5.5
Rwanda	3.2	4.2	4.7	5.2	5.5	5.4	5.4	5.5	5.7
São Tomé and Príncipe	-	-	2.4	3.2	2.7	3.0	3.1	3.1	3.0
Senegal	4.6	4.5	4.2	4.1	4.2	4.5	5.0	5.0	5.1
Seychelles	-	2.5	3.1	3.8	3.8	3.8	3.8	3.9	3.9
Sierra Leone	2.6	3.7	3.1	4.0	3.9	3.3	3.5	3.9	3.7
Somalia	-	-	-	-	-	-	-	-	-
South Africa	6.5	6.4	6.9	6.7	6.6	6.5	6.3	6.3	6.2
South Sudan	-	-	-	-	2.8	2.5	2.3	1.7	1.1
Sudan	5.4	4.4	4.0	3.5	3.7	3.7	3.8	4.3	4.2
Swaziland	4.5	4.1	4.3	2.9	3.3	3.4	3.6	3.5	3.4
Tanzania	4.5	5.1	6.1	5.3	5.3	5.5	5.5	5.6	5.6
Togo	4.0	3.6	3.8	3.1	3.2	3.5	3.6	3.6	3.4
Tunisia	6.0	5.7	6.0	5.9	5.8	5.7	5.5	5.5	5.4
Uganda	4.6	4.8	6.0	5.0	5.1	4.9	5.2	5.4	5.3

	2000	2005	2010	2013	2014	2015	2016	2017	2018
	1 = poor 10 = good	1 = poor 10 = good	1 = poor 10 = good	1 = poor 10 = good	1 = poor 10 = good	1 = poor 10 = good	1 = poor 10 = good	1 = poor 10 = good	1 = poor 10 = good

AFRICA

Zambia	3.9	4.0	4.1	5.1	5.1	5.3	5.1	5.0	5.1
Zimbabwe	4.2	2.2	2.5	2.9	2.9	3.2	3.4	3.0	3.7

DEVELOPED ECONOMIES

Germany	7.7	7.5	7.5	7.7	7.7	7.8	7.9	7.9	7.9
Japan	7.2	7.2	7.7	7.6	7.5	7.6	7.5	7.5	7.5
UK	8.1	8.1	6.8	7.8	7.9	7.9	8.0	8.0	7.9
US	8.1	8.0	7.1	8.1	8.1	8.1	8.1	8.1	8.1

EMERGING ASIA

China	6.9	7.0	7.6	7.5	7.3	7.3	7.4	7.5	7.5
Hong Kong	7.6	7.7	7.7	7.9	7.8	7.6	7.6	7.6	7.7
India	6.3	6.5	7.0	6.8	6.9	7.1	7.3	7.3	7.5
Indonesia	5.4	5.9	6.4	6.6	6.7	6.9	7.0	7.2	7.3
Malaysia	6.6	6.6	7.0	7.4	7.5	7.5	7.6	7.6	7.6
Pakistan	5.7	5.8	6.3	5.8	6.3	6.4	6.1	6.2	6.0
Philippines	6.0	5.6	5.6	6.1	6.5	6.8	6.8	7.0	6.8
Singapore	8.0	7.8	7.6	7.9	7.9	7.8	7.7	7.8	7.8
South Korea	6.8	6.9	7.5	7.6	7.7	7.7	7.6	7.6	7.6
Taiwan	7.3	7.0	6.3	7.6	7.6	7.7	7.5	7.5	7.4
Thailand	6.0	6.5	5.9	7.1	7.0	7.0	6.8	6.9	7.1
Vietnam	5.2	5.6	6.1	6.0	6.2	6.5	6.6	6.7	6.8

EMERGING EUROPE AND MIDDLE EAST

Bulgaria	4.6	5.7	5.7	5.6	5.6	5.6	5.8	5.8	5.8
Czech Republic	6.2	6.0	6.2	6.2	6.1	6.4	6.6	6.6	6.8
Hungary	6.2	6.0	6.1	5.9	6.0	6.0	6.1	6.2	6.2
Israel	6.6	6.1	6.7	6.7	6.7	6.6	6.6	6.7	6.7
Poland	6.6	6.1	6.7	6.9	7.1	7.2	7.4	7.3	7.3
Romania	5.0	5.7	6.2	6.0	6.1	6.4	6.7	6.7	6.7
Russia	5.6	6.3	6.0	6.3	6.2	6.1	6.3	6.7	6.7
Turkey	6.5	6.0	6.5	6.9	6.8	6.9	6.9	6.9	7.0

EMERGING LATIN AMERICA

Argentina	6.3	5.4	5.7	5.8	5.5	5.3	5.6	5.9	5.9
Brazil	6.5	6.4	6.3	6.5	6.4	6.2	6.0	6.1	6.2
Chile	7.2	7.3	7.1	7.3	7.2	7.1	6.9	6.8	6.9
Colombia	5.8	6.0	6.7	6.8	6.8	6.8	6.7	6.7	6.6
Mexico	6.5	6.4	6.9	6.9	7.0	7.2	7.0	6.8	6.8
Peru	6.2	5.7	6.7	6.9	6.8	6.6	6.4	6.4	6.4

Source: RMB Global Markets

Table A3: Long-term real GDP forecasts (2018-2023)

	IMF %	GI %	BMI %	Average growth %	Standard deviation
AFRICA					
Algeria	1.6	3.0	3.0	2.5	0.78
Angola	3.7	1.7	2.6	2.6	0.99
Benin	6.4	6.2	5.0	5.9	0.76
Botswana	4.3	4.3	5.0	4.5	0.38
Burkina Faso	5.9	5.1	6.0	5.7	0.50
Burundi	0.4	1.8	2.6	1.6	1.07
Cameroon	4.9	4.1	5.4	4.8	0.64
Cabo Verde	4.0	4.0	3.4	3.8	0.36
CAR	4.0	5.0	5.0	4.7	0.58
Chad	4.5	3.1	0.9	2.8	1.81
Comoros	3.0	3.8	-	3.4	0.54
Congo	0.6	2.9	1.7	1.7	1.17
Côte d'Ivoire	6.8	4.9	6.3	6.0	0.98
Djibouti	6.2	4.8	7.1	6.1	1.13
DRC	4.3	2.9	5.0	4.1	1.06
Egypt	5.7	5.0	4.5	5.1	0.64
Equatorial Guinea	-1.4	-2.2	-0.2	-1.3	1.04
Eritrea	4.1	3.0	0.7	2.6	1.73
Ethiopia	8.2	9.0	7.3	8.1	0.83
Gabon	4.1	3.5	3.4	3.7	0.41
Gambia	5.0	4.0	5.0	4.7	0.58
Ghana	5.5	6.1	6.1	5.9	0.36
Guinea	5.6	5.1	5.4	5.4	0.29
Guinea-Bissau	5.2	4.4	4.6	4.7	0.39
Kenya	6.1	5.3	5.4	5.6	0.44
Lesotho	2.4	4.7	3.8	3.7	1.16
Liberia	4.8	4.6	5.2	4.9	0.31
Libya	3.9	8.3	8.0	6.8	2.45
Madagascar	5.2	4.1	4.0	4.5	0.67
Malawi	5.2	4.6	4.8	4.9	0.28
Mali	4.8	4.5	5.1	4.8	0.29
Mauritania	5.5	6.1	4.4	5.3	0.84
Mauritius	4.0	4.0	3.9	4.0	0.07
Morocco	4.1	3.7	3.6	3.8	0.31
Mozambique	3.7	4.3	5.5	4.5	0.92
Namibia	3.1	2.7	2.9	2.9	0.20
Niger	5.8	5.2	4.9	5.3	0.46
Nigeria	2.0	2.8	3.8	2.9	0.91
Rwanda	7.6	5.6	8.5	7.2	1.51
São Tomé and Príncipe	5.4	4.8	4.8	5.0	0.36
Senegal	6.9	6.2	6.9	6.7	0.40
Seychelles	3.6	3.3	4.3	3.7	0.53
Sierra Leone	6.2	5.4	5.5	5.7	0.41
Somalia	7.3	2.1	2.6	2.4	2.90
South Africa	1.7	1.9	2.4	2.0	0.32
South Sudan	-2.0	4.1	3.8	2.0	3.44
Sudan	3.3	3.8	3.3	3.5	0.31
Swaziland	1.2	2.0	1.3	1.5	0.46
Tanzania	6.6	5.6	6.3	6.2	0.52
Togo	5.4	5.4	4.3	5.0	0.61
Tunisia	3.4	3.9	3.7	3.7	0.26
Uganda	6.4	6.5	6.3	6.4	0.09

	IMF %	GI %	BMI %	Average growth %	Standard deviation
AFRICA					
Zambia	4.4	4.6	5.5	4.8	0.57
Zimbabwe	4.3	4.5	3.5	4.1	0.55
DEVELOPED ECONOMIES					
Germany	1.7	1.8	1.6	1.7	0.08
Japan	0.7	1.0	0.6	0.8	0.22
UK	1.6	1.7	1.6	1.6	0.03
US	2.0	2.1	2.1	2.1	0.07
EMERGING ASIA					
China	6.1	6.2	5.8	6.0	0.21
Hong Kong	3.2	2.7	3.0	3.0	0.24
India	7.9	7.4	6.7	7.3	0.60
Indonesia	5.5	5.1	5.7	5.4	0.29
Malaysia	4.9	5.2	4.8	5.0	0.22
Pakistan	5.0	5.3	4.4	4.9	0.48
Philippines	6.9	6.1	6.3	6.4	0.40
Singapore	2.7	2.7	3.0	2.8	0.18
South Korea	2.8	2.5	3.1	2.8	0.30
Taiwan	2.0	2.5	3.3	2.6	0.64
Thailand	3.7	3.4	3.5	3.5	0.14
Vietnam	6.5	6.4	6.6	6.5	0.09
EMERGING EUROPE					
Bulgaria	3.0	3.5	2.9	3.1	0.28
Czech Republic	2.8	2.9	2.8	2.8	0.07
Hungary	2.7	3.1	2.8	2.9	0.20
Israel	3.2	3.5	3.8	3.5	0.32
Poland	3.1	3.2	3.0	3.1	0.13
Romania	3.5	4.0	3.5	3.6	0.29
Russia	1.5	1.9	1.7	1.7	0.17
Turkey	3.8	4.0	3.6	3.8	0.21
EMERGING LATIN AMERICA					
Argentina	3.0	2.7	3.3	3.0	0.28
Brazil	2.3	3.2	2.5	2.7	0.45
Chile	3.2	3.5	3.2	3.3	0.18
Colombia	3.4	2.8	3.4	3.2	0.34
Mexico	2.8	2.3	2.7	2.6	0.25
Peru	3.9	3.8	3.8	3.8	0.03

Source: IMF, BMI, IHS Global Insight, RMB Global Markets

Table A4: Operating environment scores

	2000 1 = poor 10 = good	2005 1 = poor 10 = good	2010 1 = poor 10 = good	2013 1 = poor 10 = good	2014 1 = poor 10 = good	2015 1 = poor 10 = good	2016 1 = poor 10 = good	2017 1 = poor 10 = good	2018 1 = poor 10 = good
AFRICA									
Algeria	5.7	4.5	4.2	3.9	4.0	4.0	3.9	3.9	3.7
Angola	2.4	2.0	2.5	2.5	3.0	2.8	2.8	2.8	2.9
Benin	6.2	4.4	3.5	3.8	3.8	4.0	4.1	4.1	4.1
Botswana	6.3	6.2	6.5	6.6	6.6	6.4	6.4	6.4	6.2
Burkina Faso	5.6	4.4	4.0	4.1	4.0	4.1	4.2	4.3	4.2
Burundi	4.3	4.8	2.7	3.0	3.5	3.5	3.5	3.3	3.2
Cabo Verde	-	-	2.0	4.0	5.3	5.3	5.2	5.0	5.1
Cameroon	7.1	6.2	4.9	5.1	3.5	3.6	3.6	3.5	3.6
CAR	-	5.7	3.4	3.8	2.4	2.4	2.4	2.5	2.4
Chad	4.7	3.6	2.7	2.7	3.5	2.8	2.8	2.9	2.9
Comoros	-	-	2.6	3.0	3.2	3.1	3.2	3.3	3.2
Congo	4.1	3.5	2.1	2.4	2.3	2.5	2.4	2.2	2.1
Côte d'Ivoire	5.0	3.8	3.3	3.4	3.7	4.2	4.3	4.4	4.4
Djibouti	5.5	5.5	3.0	3.3	3.6	3.4	3.3	2.9	3.1
DRC	3.5	3.0	2.0	2.1	2.2	2.3	2.4	3.2	3.1
Egypt	4.2	4.8	4.7	4.5	4.2	4.4	4.4	4.4	4.3
Equatorial Guinea	4.6	5.3	2.5	2.5	2.5	2.3	2.4	2.5	2.5
Eritrea	-	2.6	2.2	2.1	2.0	2.8	3.0	3.0	3.0
Ethiopia	5.0	3.9	4.2	4.1	4.2	3.9	4.0	3.9	3.9
Gabon	5.8	4.4	3.3	3.9	4.0	4.2	4.1	4.0	4.0
Gambia	5.3	4.2	3.6	3.8	3.6	3.6	3.5	3.8	3.8
Ghana	4.6	4.6	5.0	5.7	5.7	5.1	5.0	4.9	4.7
Guinea	5.8	5.7	2.5	3.0	3.2	3.2	3.3	2.9	3.3
Guinea-Bissau	3.5	4.6	2.1	2.6	2.5	2.5	2.5	2.7	2.7
Kenya	4.0	4.2	4.5	4.3	4.3	4.2	4.5	4.7	4.9
Lesotho	4.8	5.4	4.0	4.1	4.4	4.8	4.7	4.8	4.7
Liberia	-	-	3.2	4.1	4.1	3.6	3.6	3.5	3.6
Libya	3.5	2.9	4.0	3.7	2.3	2.3	2.2	2.1	2.2
Madagascar	5.4	4.6	4.2	4.1	4.0	3.8	3.7	3.6	3.6
Malawi	4.9	4.1	4.1	3.9	3.7	4.0	3.8	3.9	4.2
Mali	6.0	4.5	3.6	3.9	3.7	4.1	4.1	4.1	4.1
Mauritania	4.6	5.9	3.3	3.5	3.4	3.3	3.5	3.5	3.6
Mauritius	5.8	5.4	7.0	7.2	7.0	7.0	6.9	6.7	7.0
Morocco	5.2	4.7	4.5	5.1	5.2	5.4	5.4	5.6	5.6
Mozambique	4.4	4.1	3.8	3.8	4.0	4.1	4.0	3.7	3.6
Namibia	6.0	5.2	5.7	5.4	5.3	5.3	5.5	5.4	5.3
Niger	4.6	3.8	2.9	3.1	3.2	3.4	3.5	3.6	3.6
Nigeria	3.5	3.9	4.1	4.1	3.8	3.5	3.6	3.6	4.0
Rwanda	4.2	5.2	5.2	6.2	6.5	6.2	6.1	6.4	6.6
São Tomé and Príncipe	-	-	3.8	3.5	3.4	3.6	3.7	3.9	3.7
Senegal	4.6	4.4	3.8	3.9	3.9	4.3	4.4	4.4	4.5
Seychelles	-	4.4	4.5	5.6	5.7	5.3	5.6	5.6	5.6
Sierra Leone	4.4	3.4	3.0	3.6	3.7	3.7	3.7	3.7	3.6
Somalia	-	-	-	-	-	-	-	-	-
South Africa	5.7	5.7	6.3	6.2	6.1	5.8	5.8	5.8	5.7
South Sudan	-	-	-	-	0.8	0.8	0.8	0.6	0.6
Sudan	4.7	2.2	1.5	1.8	1.6	1.4	1.4	2.5	2.5
Swaziland	6.3	5.9	4.4	4.4	4.6	5.0	5.1	5.1	4.8
Tanzania	3.8	4.4	4.1	4.3	4.1	4.1	4.2	4.3	4.3
Togo	4.6	4.8	2.8	3.2	3.2	3.4	3.5	3.5	3.2
Tunisia	5.6	5.6	5.7	5.7	5.7	5.4	5.3	5.3	5.2
Uganda	4.0	4.6	4.4	4.4	4.1	4.1	4.3	4.4	4.4

	2000	2005	2010	2013	2014	2015	2016	2017	2018
	1 = poor 10 = good	1 = poor 10 = good	1 = poor 10 = good	1 = poor 10 = good	1 = poor 10 = good	1 = poor 10 = good	1 = poor 10 = good	1 = poor 10 = good	1 = poor 10 = good

AFRICA

Zambia	4.9	4.1	4.7	5.0	5.2	5.1	5.0	4.8	5.0
Zimbabwe	4.5	2.9	2.4	2.6	2.9	3.2	3.2	3.2	3.3

DEVELOPED ECONOMIES

Germany	7.3	7.6	7.9	8.0	8.0	8.1	8.2	8.1	8.1
Japan	6.5	7.1	8.0	7.8	7.7	7.8	7.7	7.6	7.6
UK	8.2	8.3	8.1	8.1	8.1	8.2	8.3	8.3	8.4
US	7.6	7.7	8.3	8.1	8.1	8.2	8.2	8.2	8.2

EMERGING ASIA

China	4.5	5.0	5.2	5.3	5.3	5.4	5.4	5.7	5.7
Hong Kong	8.3	8.5	9.0	8.9	8.8	8.7	8.7	8.6	8.6
India	3.8	4.7	4.4	4.5	4.6	4.5	4.7	4.7	5.2
Indonesia	3.6	4.4	4.4	4.6	4.8	4.9	5.1	5.4	5.7
Malaysia	5.9	6.1	6.7	7.0	7.2	7.2	7.2	7.1	7.1
Pakistan	3.9	4.2	4.6	4.4	4.3	4.0	4.1	4.0	4.0
Philippines	4.9	4.5	3.9	4.5	5.0	5.3	5.2	5.3	5.1
Singapore	8.9	8.6	8.9	8.9	8.9	8.8	8.8	8.8	8.8
South Korea	5.4	5.6	7.2	7.4	7.4	7.4	7.4	7.4	7.4
Taiwan	6.4	6.4	6.9	7.5	7.6	7.6	7.7	7.7	7.6
Thailand	4.9	5.5	6.4	6.4	6.4	6.1	6.1	6.1	6.4
Vietnam	3.5	3.7	4.6	4.7	4.7	4.9	5.0	5.1	5.3

EMERGING EUROPE AND MIDDLE EAST

Bulgaria	4.0	5.3	5.9	5.8	5.9	6.3	6.2	6.3	6.2
Czech Republic	5.7	5.7	6.1	6.2	6.1	6.8	6.9	7.0	7.0
Hungary	5.8	5.8	6.3	6.4	6.3	6.5	6.4	6.3	6.2
Israel	6.7	6.6	7.0	7.0	7.0	6.9	6.9	7.0	7.0
Poland	5.1	5.1	5.9	6.5	6.7	7.0	7.1	7.1	7.0
Romania	4.3	4.5	5.8	5.7	5.7	6.3	6.4	6.5	6.4
Russia	3.8	4.0	4.2	4.5	4.8	5.3	5.4	5.7	5.8
Turkey	5.0	4.6	5.7	5.9	6.1	6.1	5.9	5.8	5.9

EMERGING LATIN AMERICA

Argentina	5.0	4.4	4.3	4.3	4.1	4.3	4.2	4.5	4.5
Brazil	5.1	5.3	4.6	4.8	5.0	5.1	4.8	4.6	4.6
Chile	7.2	7.3	7.1	7.4	7.4	7.3	7.2	7.0	7.0
Colombia	4.6	5.1	6.0	6.0	6.1	6.1	6.0	6.0	5.9
Mexico	4.7	5.3	5.8	5.9	5.9	6.0	6.0	5.8	5.8
Peru	5.7	4.9	5.8	6.1	6.1	6.1	5.9	5.9	5.8

Source: RMB Global Markets

Table A5: Inputs into the composite Operating Environment Index

COMPOSITE OPERATING ENVIRONMENT INDEX							
	Score	Ranking Africa	Ranking world	Ease of Doing Business Index	Global Competitiveness Index	Index of Economic Freedom	Corruption Perceptions Index
	1 = poor 10 = good	1 = best 53 = worst	1 = best 191 = worst	1 = best 191 = worst	1 = poor 7 = good	0 = poor 100 = good	0 = high 10 = low
AFRICA							
Algeria	3.7	28	148	166	4.1	44.7	3.3
Angola	2.9	45	172	175	-	48.6	1.9
Benin	4.1	23	140	151	3.5	56.7	3.9
Botswana	6.2	3	52	81	4.3	69.9	6.1
Burkina Faso	4.2	20	132	148	-	6-	4.2
Burundi	3.2	41	166	164	3.2	50.9	2.2
Cameroon	5.1	9	98	127	3.8	6-	5.5
Cabo Verde	3.6	34	155	163	3.7	51.9	2.5
CAR	2.4	50	180	184	-	49.2	2.3
Chad	2.9	46	174	180	3.0	49.3	2.0
Comoros	3.2	40	165	158	-	56.2	2.7
Congo	2.1	52	184	179	-	38.9	2.1
Côte d'Ivoire	4.4	16	123	139	-	62.0	3.6
Djibouti	3.1	42	168	154	-	45.1	3.1
DRC	3.1	43	169	182	3.3	52.1	2.1
Egypt	4.3	18	129	128	3.9	53.4	3.2
Equatorial Guinea	2.5	48	177	173	-	42.0	1.7
Eritrea	3.0	44	170	189	-	41.7	2.0
Ethiopia	3.9	26	146	161	3.8	52.8	3.5
Gabon	4.0	24	142	167	-	58.0	3.2
Gambia	3.8	27	147	146	3.5	52.3	3.0
Ghana	4.7	14	114	120	3.7	56.0	4.0
Guinea	3.3	37	162	153	3.5	52.2	2.7
Guinea-Bissau	2.7	47	176	176	-	56.9	-
Kenya	4.9	11	110	80	4.0	54.7	2.8
Lesotho	4.7	13	113	104	3.2	53.9	4.2
Liberia	3.6	35	156	172	3.1	50.9	3.1
Libya	2.2	51	183	185	-	-	1.7
Madagascar	3.6	31	152	162	3.4	56.8	2.4
Malawi	4.2	21	133	110	3.1	52.0	3.1
Mali	4.1	22	139	143	3.3	57.6	3.1
Mauritania	3.6	33	154	150	3.1	54.0	2.8
Mauritius	7.0	1	35	25	4.5	75.1	5.0
Morocco	5.6	6	85	69	4.2	61.9	4.0
Mozambique	3.6	30	151	138	2.9	46.3	2.5
Namibia	5.3	7	94	106	4.0	58.5	5.1
Niger	3.6	32	153	144	-	49.5	3.3
Nigeria	4.0	25	145	145	3.3	58.5	2.7
Rwanda	6.6	2	41	41	4.3	69.1	5.5
São Tomé and Príncipe	3.7	29	150	169	-	53.3	4.6
Senegal	4.5	15	121	140	3.8	55.7	4.5
Seychelles	5.6	5	84	95	3.8	61.6	6.0
Sierra Leone	3.6	36	157	160	3.2	51.8	3.0
Somalia	-	-	-	-	-	-	-
South Africa	5.7	4	77	82	4.3	63.0	4.3
South Sudan	0.6	53	190	187	-	-	1.2
Sudan	2.5	49	179	170	-	49.4	1.6
Swaziland	4.8	12	111	112	3.4	55.9	3.9

COMPOSITE OPERATING
ENVIRONMENT INDEX

	Score 1 = poor 10 = good	Ranking Africa 1 = best 53 = worst	Ranking world 1 = best 191 = worst	Ease of Doing Business Index 1 = best 191 = worst	Global Compet- itiveness Index 1 = poor 7 = good	Index of Economic Freedom 0 = poor 100 = good	Corruption Perceptions Index 0 = high 10 = low
AFRICA							
Tanzania	4.3	19	130	137	3.7	59.9	3.6
Togo	3.2	39	164	156	-	47.8	3.2
Tunisia	5.2	8	95	88	3.9	58.9	4.2
Uganda	4.4	17	125	122	3.7	62.0	2.6
Zambia	5.0	10	103	85	3.5	54.3	3.7
Zimbabwe	3.3	38	163	159	3.3	44.0	2.2
DEVELOPED ECONOMIES							
Germany	8.1	-	13	20	5.7	74.2	8.1
Japan	7.6	-	21	34	5.5	72.3	7.3
UK	8.4	-	7	7	5.5	78.0	8.2
US	8.2	-	10	6	5.9	75.7	7.5
EMERGING ASIA							
China	5.7	-	80	78	5.0	57.8	4.1
Hong Kong	8.6	-	3	5	5.5	90.2	7.7
India	5.2	-	97	100	4.6	54.5	4.0
Indonesia	5.7	-	78	72	4.7	64.2	3.7
Malaysia	7.1	-	29	24	5.2	74.5	4.7
Pakistan	4.0	-	143	147	3.7	54.4	3.2
Philippines	5.1	-	101	113	4.4	65.0	3.4
Singapore	8.8	-	1	2	5.7	88.8	8.4
South Korea	7.4	-	24	4	5.1	73.8	5.4
Taiwan	7.6	-	20	15	5.3	76.6	6.3
Thailand	6.4	-	46	26	4.7	67.1	3.7
Vietnam	5.3	-	93	68	4.4	53.1	3.5
EMERGING EUROPE AND MIDDLE EAST							
Bulgaria	6.2	-	53	50	4.5	68.3	4.3
Czech Republic	7.0	-	34	30	4.8	74.2	5.7
Hungary	6.2	-	51	48	4.3	66.7	4.5
Israel	7.0	-	32	54	5.3	72.2	6.2
Poland	7.0	-	33	27	4.6	68.5	6.0
Romania	6.4	-	45	45	4.3	69.4	4.8
Russia	5.8	-	69	35	4.6	58.2	2.9
Turkey	5.9	-	65	60	4.4	65.4	4.0
EMERGING LATIN AMERICA							
Argentina	4.5	-	120	117	4.0	52.3	3.9
Brazil	4.6	-	118	125	4.1	51.4	3.7
Chile	7.0	-	36	55	4.7	75.2	6.7
Colombia	5.9	-	66	59	4.3	68.9	3.7
Mexico	5.8	-	71	49	4.4	64.8	2.9
Peru	5.8	-	68	58	4.2	68.7	3.7

Table A6: Selected global competitiveness pillars

	Labour market efficiency	Financial market development	Technological readiness	Business sophistication	Innovation
	1 = worst 7 = best	1 = worst 7 = best	1 = worst 7 = best	1 = worst 7 = best	1 = worst 7 = best
AFRICA					
Algeria	3.27	3.06	3.36	3.32	2.94
Angola	3.52	2.50	2.34	2.61	2.12
Benin	4.41	3.36	2.39	3.30	3.03
Botswana	4.52	4.04	3.63	3.69	3.19
Burkina Faso	4.22	3.14	2.49	3.00	2.89
Burundi	4.26	2.80	2.11	3.27	2.75
Cameroon	4.14	3.62	2.63	3.52	3.25
Cabo Verde	3.67	3.21	3.80	3.44	3.08
CAR	-	-	-	-	-
Chad	3.78	2.73	1.96	2.85	2.58
Comoros	-	-	-	-	-
Congo	-	-	-	-	-
Côte d'Ivoire	4.19	3.88	3.39	3.68	3.38
Djibouti	-	-	-	-	-
DRC	4.34	3.04	2.50	3.18	2.81
Egypt	3.22	3.89	3.45	3.79	2.92
Equatorial Guinea	-	-	-	-	-
Eritrea	-	-	-	-	-
Ethiopia	4.19	3.41	2.36	3.51	3.20
Gabon	3.89	3.50	3.06	3.17	2.71
Gambia	4.64	4.04	3.22	4.07	2.93
Ghana	4.30	3.78	3.56	4.09	3.40
Guinea	4.36	4.60	2.97	4.06	3.57
Guinea-Bissau	-	-	-	-	-
Kenya	4.70	4.16	3.71	4.35	3.85
Lesotho	3.83	2.39	2.58	3.56	2.84
Liberia	4.14	3.70	2.22	3.49	2.79
Libya	3.41	1.95	2.56	3.01	1.98
Madagascar	4.34	3.10	2.52	3.35	3.08
Malawi	4.47	3.55	2.28	3.27	2.71
Mali	3.76	3.36	2.86	3.55	3.20
Mauritania	3.33	2.13	2.24	2.71	2.32
Mauritius	4.40	4.38	4.52	4.49	3.36
Morocco	3.58	3.93	3.81	3.99	3.14
Mozambique	3.90	2.77	2.87	3.16	2.80
Namibia	4.59	4.21	3.63	3.77	3.24
Niger	-	-	-	-	-
Nigeria	4.60	3.70	2.98	3.68	2.85
Rwanda	5.37	4.52	3.24	4.09	3.65
São Tomé and Príncipe	-	-	-	-	-
Senegal	3.91	3.67	3.25	3.78	3.46
Seychelles	4.10	3.27	4.15	3.85	2.94
Sierra Leone	3.72	3.17	2.46	3.24	2.68
Somalia	-	-	-	-	-
South Africa	3.96	4.35	4.58	4.49	3.80
South Sudan	-	-	-	-	-
Sudan	-	-	-	-	-
Swaziland	4.07	3.77	2.61	3.45	2.40
Tanzania	4.29	3.52	2.64	3.68	3.22
Togo	-	-	-	-	-
Tunisia	3.09	3.39	3.73	3.67	3.07
Uganda	4.64	3.72	2.90	3.62	3.27

	Labour market efficiency	Financial market development	Technological readiness	Business sophistication	Innovation
	1 = worst 7 = best	1 = worst 7 = best	1 = worst 7 = best	1 = worst 7 = best	1 = worst 7 = best

AFRICA

Zambia	3.86	3.66	2.90	3.62	3.17
Zimbabwe	3.72	3.17	2.74	3.19	2.55

DEVELOPED ECONOMIES

Germany	5.03	5.03	6.17	5.65	5.65
Japan	4.78	4.89	6.01	5.73	5.37
UK	5.44	5.03	6.33	5.58	5.09
US	5.64	5.73	6.23	5.77	5.82

EMERGING ASIA

China	4.55	4.23	4.18	4.51	4.14
Hong Kong	5.59	5.51	6.17	5.38	4.53
India	4.15	4.37	3.12	4.49	4.09
Indonesia	3.91	4.50	3.86	4.56	4.02
Malaysia	4.72	4.96	4.90	5.15	4.67
Pakistan	3.37	3.64	2.98	3.81	3.38
Philippines	4.02	4.19	3.80	4.10	3.35
Singapore	5.79	5.66	6.09	5.22	5.28
South Korea	4.18	3.90	5.65	4.91	4.78
Taiwan	4.73	4.90	5.74	5.13	5.11
Thailand	4.26	4.44	4.48	4.37	3.46
Vietnam	4.35	3.98	3.98	3.67	3.31

EMERGING EUROPE AND MIDDLE EAST

Bulgaria	4.25	4.14	5.13	3.82	3.32
Czech Republic	4.49	4.80	5.50	4.61	3.87
Hungary	4.21	4.31	5.09	3.68	3.36
Israel	4.90	5.07	6.17	5.26	5.80
Poland	4.14	4.17	4.89	4.11	3.40
Romania	3.97	3.74	4.78	3.47	3.08
Russia	4.33	3.45	4.55	3.97	3.55
Turkey	3.39	3.82	4.42	3.99	3.31

EMERGING LATIN AMERICA

Argentina	3.29	3.10	4.32	3.82	3.30
Brazil	3.68	3.70	4.57	4.12	3.21
Chile	4.42	4.92	5.21	4.26	3.46
Colombia	3.98	4.64	4.34	4.07	3.27
Mexico	3.77	4.51	4.21	4.27	3.41
Peru	4.27	4.51	3.73	3.81	2.85

Source: WEF

Table A7: Human Development Indicators

HUMAN DEVELOPMENT INDEX			GENDER INEQUALITY INDEX ¹	POVERTY
Rank out of 188	Average annual HDI growth 1990-2015 (%)	Rank out of 188	PPP ² of US\$1.90 a day 2005-2014 (% of population)	
AFRICA				
Algeria	83	1.0	94	-
Angola	150	-	-	-
Benin	167	1.4	144	53
Botswana	108	0.7	95	-
Burkina Faso	185	-	146	44
Burundi	184	1.6	108	78
Cameroon	153	0.6	138	24
Cabo Verde	122	-	-	-
CAR	188	0.4	149	66
Chad	186	-	157	38
Comoros	160	-	-	13
Congo	135	0.5	141	37
Côte d'Ivoire	171	0.8	155	29
Djibouti	172	-	-	23
DRC	176	0.8	153	77
Egypt	111	0.9	135	-
Equatorial Guinea	135	-	-	-
Eritrea	179	-	-	-
Ethiopia	174	-	116	34
Gabon	109	0.5	127	8
Gambia	173	1.3	148	-
Ghana	139	1.0	131	25
Guinea	183	1.7	-	35
Guinea-Bissau	178	-	-	67
Kenya	146	0.6	135	34
Lesotho	160	0.0	132	60
Liberia	177	-	150	69
Libya	102	0.2	38	-
Madagascar	158	-	-	78
Malawi	170	1.5	145	71
Mali	175	2.8	156	49
Mauritania	157	1.2	147	6
Mauritius	64	0.9	82	-
Morocco	123	1.4	113	3
Mozambique	181	2.8	139	69
Namibia	125	0.4	108	23
Niger	187	2.1	157	46
Nigeria	152	-	-	53
Rwanda	159	2.9	84	60
São Tomé and Príncipe	142	0.9	122	32
Senegal	162	1.2	120	38
Seychelles	63	-	-	-
Sierra Leone	179	1.7	151	52
Somalia	-	-	-	-
South Africa	119	0.3	90	17
South Sudan	181	-	-	43
Sudan	165	1.6	140	15
Swaziland	148	-0.0	137	42
Tanzania	151	1.5	129	47

POVERTY	POPULATION	HEALTH	EDUCATION	LABOUR
Population in multidimensional poverty	Urban	Infant mortality rate	Gross enrolment ratio	Labour force participation rate
(headcount '000)	(% of population)	(per 1,000 live births)	2010-2015 (% of tertiary school-age population)	2015 (% of ages 15 and older)
-	71	22	35	44
-	44	96	10	68
6,454	44	64	15	72
-	57	35	28	77
12,951	30	61	5	83
7,740	12	54	4	84
10,170	54	57	12	76
-	66	21	23	68
3,392	40	92	3	78
10,339	22	85	3	72
252	28	55	9	57
1,844	65	33	10	70
12,521	54	67	9	67
213	77	54	5	52
54,314	42	75	7	71
3,750	43	20	32	49
-	40	68	-	82
-	23	34	3	84
79,298	19	41	8	83
270	87	36	-	49
1,068	60	48	3	77
8,688	54	43	16	77
8,588	37	61	11	82
1,201	49	60	-	73
16,170	26	36	-	67
984	27	69	10	66
3,010	50	53	12	61
82	79	11	-	53
15,774	35	36	4	86
9,369	16	43	1	81
13,009	40	75	7	66
2,049	60	65	6	47
-	40	12	39	61
5,090	60	24	25	49
17,552	32	57	6	79
1,054	47	33	-	59
15,838	19	57	2	65
88,018	48	69	-	56
6,263	29	31	8	85
79	65	35	13	61
7,621	44	42	7	57
-	54	12	6	-
4,791	40	87	-	67
7,104	-	85	-	54
5,446	65	34	20	53
8,980	19	60	-	73
19,161	34	48	17	48
309	21	45	5	52
30,290	32	35	4	79

	HUMAN DEVELOPMENT INDEX		GENDER INEQUALITY INDEX ¹	POVERTY
	Rank out of 188	Average annual HDI growth 1990-2015 (%)	Rank out of 188	PPP ² of US\$1.90 a day 2005-2014 (% of population)
AFRICA				
Togo	166	0.8	134	54
Tunisia	97	1.0	58	2
Uganda	163	1.9	121	35
Zambia	139	1.5	124	64
Zimbabwe	154	0.1	126	21
DEVELOPED ECONOMIES				
Germany	4	0.6	9	-
Japan	17	0.4	21	-
UK	16	0.6	28	-
US	10	0.3	43	-
EMERGING ASIA				
China	90	1.6	37	2
Hong Kong	12	0.6	-	-
India	131	1.5	125	21
Indonesia	113	1.1	105	8
Malaysia	59	0.8	-	-
Pakistan	147	1.2	130	6
Philippines	116	0.6	96	13
Singapore	6	1.0	11	-
South Korea	18	0.8	10	-
Taiwan	-	-	-	-
Thailand	87	1.0	79	0
Vietnam	115	1.5	71	3
EMERGING EUROPE AND MIDDLE EAST				
Bulgaria	56	0.5	45	-
Czech Republic	28	0.6	27	-
Hungary	43	0.7	49	-
Israel	19	0.5	20	-
Poland	36	0.7	30	-
Romania	50	0.5	72	-
Russia	49	0.4	52	-
Turkey	71	1.2	69	-
EMERGING LATIN AMERICA				
Argentina	45	0.6	77	2
Brazil	79	0.8	92	4
Chile	38	0.8	65	-
Colombia	95	0.8	89	6
Mexico	77	0.6	73	3
Peru	87	0.8	86	3

Note:

1. Gender Inequality Index: A composite measure reflecting inequality in achievement between women and men in three dimensions: reproductive health, empowerment and the labour market.

2. Population below PPP US\$1.90 a day: percentage of the population living below the international poverty line of US\$1.90 (in purchasing power parity terms) a day.

POVERTY	POPULATION	HEALTH	EDUCATION	LABOUR
Population in multidimensional poverty	Urban	Infant mortality rate	Gross enrolment ratio	Labour force participation rate
(headcount '000)	(% of population)	(per 1,000 live births)	2010-2015 (% of tertiary school-age population)	2015 (% of ages 15 and older)
3,454	40	52	10	81
161	67	12	35	48
24,088	16	38	4	85
8,554	41	43	-	75
4,409	32	47	6	82
-	-	-	-	-
-	75	3	65	60
-	93	2	62	59
-	83	4	56	63
-	82	6	87	62
-	-	-	-	-
70,807	56	9	39	71
-	100	-	-	60
642,391	33	38	24	54
14,644	54	23	31	67
-	75	6	-	63
82,612	39	66	10	54
6,169	44	22	36	65
-	100	2	-	67
-	-	-	-	-
-	-	-	-	-
667	50	11	53	71
3,646	34	17	30	78
-	-	-	-	-
-	74	9	71	54
-	73	3	66	59
-	71	5	53	54
-	92	3	66	64
-	61	5	71	57
-	55	10	53	56
-	74	8	79	63
-	73	12	79	50
-	-	-	-	-
1,457	92	11	80	61
4,994	86	15	46	67
-	90	7	87	62
3,494	76	14	51	69
7,346	79	11	30	62
3,150	79	13	41	74

Table A8: Strength of the legal and administrative environment

	Judicial independence 1 = heavily influenced 7 = entirely independent	Strength of investor protection 1 = very weak 10 = very strong	Property rights 1 = very weak 7 = very strong	Efficiency of legal framework in settling disputes 1 = extremely inefficient 7 = highly effective	Efficiency of legal framework in challenging regulations 1 = extremely inefficient 7 = highly effective	Intellectual property protection 1 = not protected at all 7 = fully protected
AFRICA						
Algeria	3.51	3.30	3.81	3.78	3.41	3.68
Angola	-	-	-	-	-	-
Benin	3.01	4.00	3.99	3.69	3.23	3.64
Botswana	4.21	5.50	5.09	4.55	3.95	4.20
Burkina Faso	-	-	-	-	-	-
Burundi	2.26	4.20	3.03	2.97	2.62	3.16
Cameroon	3.06	4.20	4.06	3.69	3.35	4.52
Cabo Verde	4.26	3.70	4.19	3.35	3.12	3.86
CAR	-	-	-	-	-	-
Chad	2.07	3.80	2.90	2.97	2.47	2.89
Comoros	-	-	-	-	-	-
Congo	-	-	-	-	-	-
Côte d'Ivoire	-	-	-	-	-	-
Djibouti	-	-	-	-	-	-
DRC	2.39	3.70	3.38	3.12	2.62	3.40
Egypt	5.12	4.80	3.93	3.48	3.42	3.00
Equatorial Guinea	-	-	-	-	-	-
Eritrea	-	-	-	-	-	-
Ethiopia	3.68	3.20	4.20	3.73	3.42	3.78
Gabon	-	-	-	-	-	-
Gambia	3.76	3.50	4.51	4.46	3.69	3.77
Ghana	4.62	5.30	4.31	4.43	3.92	4.06
Guinea	2.50	4.00	4.53	2.36	2.95	4.06
Guinea-Bissau	-	-	-	-	-	-
Kenya	4.23	5.30	4.58	3.99	3.72	4.36
Lesotho	3.76	5.00	3.65	3.55	3.39	3.53
Liberia	3.31	2.80	3.77	3.72	3.01	3.47
Libya	-	-	-	-	-	-
Madagascar	2.37	4.80	3.14	2.76	2.56	3.38
Malawi	4.09	4.30	3.90	3.31	3.09	3.33
Mali	3.34	4.00	3.62	3.43	3.37	3.68
Mauritania	2.85	4.50	2.56	2.21	2.14	3.03
Mauritius	4.95	6.50	4.89	4.55	4.27	4.42
Morocco	3.75	5.30	4.70	3.60	3.50	4.40
Mozambique	2.89	4.30	3.70	2.82	2.48	3.18
Namibia	5.28	5.50	5.22	4.60	4.44	4.61
Niger	-	-	-	-	-	-
Nigeria	3.63	6.50	3.78	3.00	2.65	3.16
Rwanda	5.57	5.20	5.47	5.43	4.99	5.18
São Tomé and Príncipe	-	-	-	-	-	-
Senegal	3.70	4.20	4.27	4.35	3.78	4.30
Seychelles	4.02	5.00	4.43	3.72	3.62	3.51
Sierra Leone	2.92	5.30	3.57	3.39	2.56	3.38
Somalia	-	-	-	-	-	-
South Africa	4.91	7.00	4.52	4.57	3.97	4.82
South Sudan	-	-	-	-	-	-
Sudan	-	-	-	-	-	-
Swaziland	3.57	4.30	3.79	3.30	3.20	3.14

Judicial independence
1 = heavily influenced
7 = entirely independent

Strength of investor protection
1 = very weak
10 = very strong

Property rights
1 = very weak
7 = very strong

Efficiency of legal framework in settling disputes
1 = extremely inefficient
7 = highly effective

Efficiency of legal framework in challenging regulations
1 = extremely inefficient
7 = highly effective

Intellectual property protection
1 = not protected at all
7 = fully protected

AFRICA

Tanzania	3.85	4.00	4.09	4.13	3.53	3.73
Togo	-	-	-	-	-	-
Tunisia	3.82	4.70	4.50	3.55	3.39	3.89
Uganda	3.42	5.00	4.04	3.84	3.14	3.39
Zambia	3.40	5.30	4.36	3.85	2.72	3.96
Zimbabwe	2.99	5.20	2.54	3.48	2.53	3.40

DEVELOPED ECONOMIES

Germany	5.52	6.00	5.56	5.29	5.07	5.74
Japan	6.03	6.00	6.07	5.17	4.53	5.81
UK	6.35	7.80	6.30	5.57	4.99	6.18
US	5.51	6.50	5.72	5.55	5.19	5.83

EMERGING ASIA

China	4.49	4.50	4.58	4.12	4.09	4.50
Hong Kong	6.11	8.00	6.18	5.87	5.13	5.94
India	4.36	7.30	4.36	4.49	4.39	4.41
Indonesia	4.37	5.70	4.62	4.12	3.84	4.54
Malaysia	4.65	8.00	5.36	5.12	4.65	5.30
Pakistan	3.63	6.70	3.60	3.41	3.35	3.61
Philippines	3.56	4.20	4.26	2.80	3.07	4.06
Singapore	5.68	8.30	6.36	6.20	4.67	6.24
South Korea	3.79	7.30	4.94	3.81	3.51	4.40
Taiwan	4.45	7.00	5.59	3.78	3.65	5.19
Thailand	4.08	6.70	4.09	4.02	3.30	3.46
Vietnam	3.60	5.30	4.00	3.41	3.53	3.56

EMERGING EUROPE AND MIDDLE EAST

Bulgaria	3.00	7.30	3.51	3.00	2.99	3.19
Czech Republic	4.50	6.00	4.63	3.07	2.59	5.00
Hungary	3.16	5.50	3.30	3.09	2.18	4.03
Israel	6.06	7.50	5.55	4.60	4.17	5.91
Poland	3.22	6.30	4.07	2.95	2.56	4.04
Romania	3.88	6.00	4.38	3.43	2.19	4.59
Russia	3.52	6.00	3.59	3.55	3.15	3.67
Turkey	3.06	7.00	4.35	3.14	2.68	3.66

EMERGING LATIN AMERICA

Argentina	3.21	6.20	3.55	2.76	2.76	3.73
Brazil	4.11	6.50	4.31	2.83	2.77	4.22
Chile	4.86	6.50	5.24	4.04	3.61	4.38
Colombia	2.96	7.30	3.88	2.66	2.64	4.02
Mexico	2.90	6.00	3.97	2.71	2.87	4.09
Peru	3.02	6.00	3.69	2.25	2.85	3.47

Table A9: Political risk for trade and investment

	Overall risk	Exchange transfer	Sovereign non-payment	Political interference	Supply-chain disruption	Legal and regulatory	Political violence
AFRICA							
Algeria	Medium high	✓	✓	✓	✓	✓	✓
Angola	Medium high	✓	✓	✓	✓	✓	✓
Benin	Medium high	✓	✓		✓	✓	
Botswana	Medium low	✓	✓	✓	✓	✓	✓
Burkina Faso	Medium high	✓	✓	✓	✓	✓	✓
Burundi	Very high	✓	✓	✓	✓	✓	✓
Cameroon	Medium high	✓	✓	✓	✓	✓	✓
Cape Verde	Medium high	✓	✓	-	✓	✓	✓
CAR	Very high	✓	✓	✓	✓	✓	✓
Chad	Very high	✓	✓	✓	✓	✓	✓
Comoros	Medium high	✓	✓	✓	✓	✓	✓
Congo	Medium high	✓	✓	✓	✓	✓	✓
Côte d'Ivoire	Medium high	-	✓	✓	✓	✓	✓
Djibouti	Medium high	✓	✓	✓	✓	✓	✓
DRC	Very high	✓	✓	✓	✓	✓	✓
Egypt	Medium high	✓	✓	✓	✓	✓	✓
Equatorial Guinea	Medium high	✓	✓	✓	✓	✓	-
Eritrea	Very high	✓	✓	✓	✓	✓	✓
Ethiopia	Medium high	✓	✓	✓	✓	✓	✓
Gabon	Medium high	-	✓	✓	✓	✓	-
Gambia	High	✓	✓	✓	✓	✓	✓
Ghana	Medium high	✓	✓	-	-	-	-
Guinea	Medium high	✓	✓	✓	✓	✓	✓
Guinea-Bissau	Very high	✓	✓	✓	✓	✓	✓
Kenya	Medium high	-	✓	-	✓	✓	✓
Lesotho	Medium high	✓	✓	-	✓	✓	-
Liberia	Medium high	✓	✓	✓	✓	✓	✓
Libya	Very high	✓	✓	✓	✓	✓	✓
Madagascar	Medium high	-	✓	✓	✓	✓	-
Malawi	Medium high	✓	✓	✓	✓	✓	-
Mali	Medium high	✓	✓	✓	✓	✓	✓
Mauritania	Medium high	✓	✓	✓	✓	✓	✓
Mauritius	Medium low	-	-	-	-	-	-
Morocco	Medium	✓	✓	-	✓	-	✓
Mozambique	Medium high	✓	✓	✓	✓	✓	✓
Namibia	Medium	✓	-	-	-	-	-
Niger	Medium high	✓	✓	-	✓	✓	✓
Nigeria	Very high	✓	✓	✓	✓	✓	✓
Rwanda	Medium	✓	-	✓	-	-	-
São Tomé and Príncipe	Medium high	✓	✓	-	✓	✓	✓
Senegal	Medium high	✓	✓	-	✓	-	✓
Seychelles	Medium high	✓	✓	-	✓	-	-
Sierra Leone	Medium high	✓	✓	-	✓	✓	✓
Somalia	Very high	✓	✓	✓	✓	✓	✓
South Africa	Medium	-	-	-	-	-	✓
Sudan	Very high	✓	✓	✓	✓	✓	✓
Swaziland	Medium high	✓	✓	✓	✓	✓	✓
Tanzania	Medium high	-	✓	✓	✓	✓	✓
Togo	High	✓	✓	✓	✓	✓	✓
Tunisia	Medium high	✓	✓	-	✓	-	✓

	Overall risk	Exchange transfer	Sovereign non-payment	Political interference	Supply-chain disruption	Legal and regulatory	Political violence
AFRICA							
Uganda	Medium high	-	✓	✓	✓	✓	✓
Zambia	Medium	-	✓	-	✓	✓	-
Zimbabwe	Very high	✓	✓	✓	✓	✓	✓
DEVELOPED ECONOMIES							
Germany	Not rated	-	-	-	-	-	-
Japan	Not rated	-	-	-	-	-	-
UK	Not rated	-	-	-	-	-	-
US	Not rated	-	-	-	-	-	-
EMERGING ASIA							
China	Medium	✓	-	✓	-	-	✓
Hong Kong	Low	-	-	-	-	-	-
India	Medium	-	✓	-	✓	-	✓
Indonesia	Not rated	-	-	-	-	-	-
Malaysia	Not rated	-	-	-	-	-	-
Pakistan	Medium high	✓	✓	✓	✓	✓	✓
Philippines	Medium high	-	-	-	✓	✓	✓
Singapore	Low	-	-	-	-	-	-
South Korea	Not rated	-	-	-	-	-	-
Taiwan	Not rated	-	-	-	-	-	-
Thailand	Medium high	-	-	-	✓	-	✓
Vietnam	Medium high	✓	✓	-	✓	✓	-
EMERGING EUROPE AND MIDDLE EAST							
Bulgaria	Not rated	-	-	-	-	-	-
Czech Republic	Not rated	-	-	-	-	-	-
Hungary	Not rated	-	-	-	-	-	-
Israel	Not rated	-	-	-	-	-	-
Poland	Not rated	-	-	-	-	-	-
Romania	Not rated	-	-	-	✓	-	-
Russia	Medium high	✓	✓	✓	✓	✓	✓
Turkey	Not rated	-	-	-	-	-	-
EMERGING LATIN AMERICA							
Argentina	Medium high	✓	✓	-	-	-	-
Brazil	Medium	-	-	✓	✓	-	✓
Chile	Not rated	-	-	-	-	-	-
Colombia	Medium	-	-	-	✓	-	-
Mexico	Not rated	-	-	-	-	-	-
Peru	Medium	-	-	-	✓	-	-

Source: Aon Risk Services

Table A10: Currency regimes

Country	Currency	Currency code	IMF regime classification
AFRICA			
Algeria	Dinar	DZD	Other managed arrangement
Angola	Kwanza	AOA	Other arrangement
Benin	West African franc	XOF	Conventional peg (EUR)
Botswana	Pula	BWP	Crawling peg (composite)
Burkina Faso	West African franc	XOF	Conventional peg (EUR)
Burundi	Franc	BIF	Stabilised arrangement
Cameroon	Franc	XAF	Conventional peg (EUR)
Cabo Verde	Escudo	CVE	Conventional peg (EUR)
CAR	Central African franc	XAF	Conventional peg (EUR)
Chad	Central African franc	XAF	Conventional peg (EUR)
Comoros	Franc	KMF	Conventional peg (EUR)
Congo	Central African franc	XAF	Stabilised arrangement
Côte d'Ivoire	West African franc	XOF	Conventional peg (EUR)
Djibouti	Franc	DJF	Currency board (USD)
DRC	Franc	CDF	Stabilised arrangement
Egypt	Pound	EGP	Other arrangement
Equatorial Guinea	Central African franc	XAF	Conventional peg (EUR)
Eritrea	Nakfa	ERN	Conventional peg (USD)
Ethiopia	Birr	ETB	Crawl-like arrangement
Gabon	Central African franc	XAF	Conventional peg (EUR)
Gambia	Dalasi	GMD	Other managed arrangement
Ghana	Cedi	GHS	Floating
Guinea	Franc	GNF	Stabilised arrangement
Guinea-Bissau	West African franc	XOF	Conventional peg (EUR)
Kenya	Shilling	KES	Floating
Lesotho	Loti	LSL	Conventional peg (ZAR)
Liberia	Dollar	LRD	Other managed arrangement
Libya	Dinar	LYD	Conventional peg (composite)
Madagascar	Ariary	MGA	Floating
Malawi	Kwacha	MWK	Floating
Mali	West African franc	XOF	Conventional peg (EUR)
Mauritania	Ouguiya	MRO	Crawl-like arrangement
Mauritius	Rupee	MUR	Floating
Morocco	Dirham	MAD	Conventional peg (composite)
Mozambique	Metical	MZM	Floating
Namibia	Dollar	NAD	Conventional peg (ZAR)
Niger	West African franc	XOF	Conventional peg (EUR)
Nigeria	Naira	NGN	Stabilised arrangement
Rwanda	Franc	RWF	Other managed arrangement
São Tomé and Príncipe	Dobra	STD	Conventional peg (USD)
Senegal	West African franc	XOF	Conventional peg (EUR)
Seychelles	Rupee	SCR	Floating
Sierra Leone	Leone	SLL	Floating
Somalia	Shilling	SOS	Free floating
South Africa	Rand	ZAR	Floating
South Sudan	Pound	SSP	Other arrangement
Sudan	Pound	SDG	Stabilised arrangement
Swaziland	Lilangeni	SZL	Conventional peg (ZAR)
Tanzania	Shilling	TZS	Floating
Togo	West African franc	XOF	Conventional peg (EUR)
Tunisia	Dinar	TND	Conventional peg (EUR)
Uganda	Shilling	UGX	Floating
Zambia	Kwacha	ZMW	Floating
Zimbabwe	Dollar	USD	Multi-currency regime

Country	Currency	Currency code	IMF regime classification
DEVELOPED ECONOMIES			
Germany	Euro	EUR	Free floating
Japan	Yen	JPY	Free floating
UK	Pound	GBP	Free floating
US	Dollar	USD	Free floating
EMERGING ASIA			
China	Renminbi	CNY	Crawl-like arrangement
Hong Kong	Dollar	HKD	Currency board (USD)
India	Rupee	INR	Floating
Indonesia	Rupiah	IDR	Floating
Malaysia	Ringgit	MYR	Other managed arrangement
Pakistan	Rupee	PKR	Other managed arrangement
Philippines	Peso	PHP	Floating
Singapore	Dollar	SGD	Stabilised arrangement
South Korea	Won	KRW	Floating
Taiwan	New dollar	TWD	Free floating
Thailand	Baht	THB	Floating
Vietnam	Dong	VND	Stabilised arrangement
EMERGING EUROPE AND MIDDLE EAST			
Bulgaria	Lev	BGN	Currency board (EUR)
Czech Republic	Koruna	CZK	Other managed arrangement
Hungary	Forint	HUF	Floating
Israel	Shekel	ILS	Floating
Poland	Zloty	PLN	Free floating
Romania	New leu	RON	Floating
Russia	Ruble	RUB	Free floating
Turkey	Lira	TRY	Floating
EMERGING LATIN AMERICA			
Argentina	Peso	ARS	Floating
Brazil	Real	BRL	Floating
Chile	Peso	CLP	Free floating
Colombia	Peso	COP	Floating
Mexico	Peso	MXN	Free floating
Peru	Nuevo sol	PEN	Floating

Source: IMF, RMB Global Markets

Table A11: Sovereign long-term foreign-currency ratings

	Fitch	Moody's	Standard and Poor's
AFRICA			
Algeria	-	-	-
Angola	B	B3	B-
Benin	WD	-	B+
Botswana	-	A2	A-
Burkina Faso	-	-	B
Burundi	-	-	-
Cameroon	B	B2	B
Cabo Verde	B	-	B
CAR	-	-	-
Chad	-	-	-
Comoros	-	-	-
Congo	CC	Caa2	CCC+
Côte d'Ivoire	B+	Ba3	-
Djibouti	-	-	-
DRC	-	B3	CCC+
Egypt	B	B3	B
Equatorial Guinea	-	-	-
Eritrea	-	-	-
Ethiopia	B	B1	B
Gabon	B	Caa1	-
Gambia	-	-	-
Ghana	B	B3	B-
Guinea	-	-	-
Guinea-Bissau	-	-	-
Kenya	B+	B2	B+
Lesotho	B+	-	-
Liberia	-	-	-
Libya	WD	-	-
Madagascar	-	-	-
Malawi	-	-	-
Mali	-	-	-
Mauritania	-	-	-
Mauritius	-	Baa1	-
Morocco	BBB-	Ba1	BBB-
Mozambique	RD	Caa3	SD
Namibia	BB+	Ba1	-
Niger	-	-	-
Nigeria	B+	B2	B
Rwanda	B+	B2	B
São Tomé and Príncipe	-	-	-
Senegal	-	Ba3	B+
Seychelles	BB-	-	-
Sierra Leone	-	-	-
Somalia	-	-	-
South Africa	BB+	Baa3	BB
South Sudan	-	-	-
Sudan	-	-	-
Swaziland	-	B2	-
Tanzania	-	B1	-
Togo	-	-	-
Tunisia	B+	B2	-
Uganda	B+	B2	B
Zambia	B	Caa1	B
Zimbabwe	-	-	-

	Fitch	Moody's	Standard and Poor's
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DEVELOPED ECONOMIES

Germany	AAA	Aaa	AAA
Japan	A	A1	A+
UK	AA	Aa2	AA
US	AAA	Aaa	AA+

EMERGING ASIA

China	A+	A1	A+
Hong Kong	AA+	Aa2	AA+
India	BBB-	Baa2	BBB-
Indonesia	BBB	Baa2	BBB-
Malaysia	A-	A3	A-
Pakistan	B	B3	B
Philippines	BBB	Baa2	BBB
Singapore	AAA	Aaa	AAA
South Korea	AA-	Aa2	AA
Taiwan	AA-	Aa3	AA-
Thailand	BBB+	Baa1	BBB+
Vietnam	BB	Ba3	BB-

EMERGING EUROPE AND MIDDLE EAST

Bulgaria	BBB	Baa2	BBB-
Czech Republic	AA-	A1	AA-
Hungary	BBB-	Baa3	BBB-
Israel	A+	A1	AA-
Poland	A-	A2	BBB+
Romania	BBB-	Baa3	BBB-
Russia	BBB-	Ba1	BBB-
Turkey	BB	Ba3	B+

EMERGING LATIN AMERICA

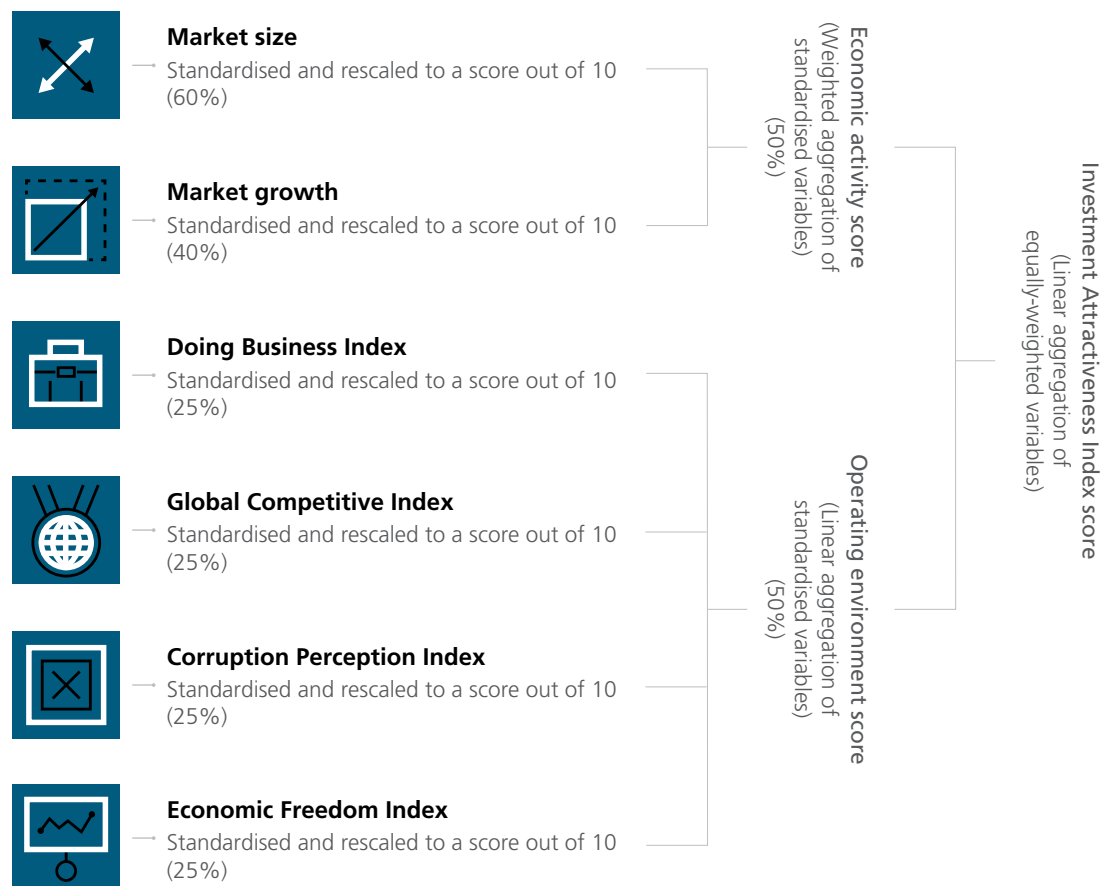
Argentina	B	B2	B+
Brazil	BB-	Ba2	BB-
Chile	A	A1	A+
Colombia	BBB	Baa2	BBB-
Mexico	BBB+	A3	BBB+
Peru	BBB+	A3	BBB+

Source: Fitch, Moody's and Standard and Poor's, Bloomberg

RMB'S INVESTMENT ATTRACTIVENESS INDEX – THE METHODOLOGY

We believe that the decision to invest is typically based on two key considerations: economic activity (specifically, market size and growth) and the business environment. These factors form the basis of our methodology and are discussed in more detail in our Overview (Chapter 1).

Figure 4.2.1: The structural DNA of RMB's Investment Attractiveness Index



Source: RMB Global Markets

ECONOMIC ACTIVITY

The economic activity variable aims to measure the economic performance of a country by assessing both size and forecasted growth rates.

MARKET SIZE

The market size of each economy is converted to US dollars to ensure that there is a common unit of measurement between all the countries. Rather than multiplying the respective sizes of each economy by its prevailing exchange rate, we standardised the variables by using the purchasing power parity (PPP) method. This ensures that the unit measures the real – rather than nominal – value of an economy.

A score ranging from 0-10 is allocated to the market-size variable using the ranking method. Market sizes can differ significantly – especially after national accounts are rebased, resulting in a number of outliers. However, the ranking method isn't affected by outliers and allows us to track the country rankings over time.

GROWTH

The real-growth variable measures the average growth rate in the size of the economy over a five-year forecast period after adjusting for inflation. However, this unit can be quite volatile from year to year, subjecting the economic-activity variable to large fluctuations. In order to overcome some of the discrepancies, we standardised the variable using the z-score method to identify exceptional GDP growth exhibited by some countries and extreme outliers that could distort our scoring process. We then used the rescaling method to widen the range of the observed growth rates lying within a small interval, as most of the rates were clustered around the mean.

The rescaled variables are multiplied by ten and then allocated to the respective countries.

The overall economic activity score is then calculated by simply aggregating the two variables, with the best possible score being 10 and the worst score being 0.

OPERATING ENVIRONMENT

The operating environment index is arguably the most subjective. Our estimate uses the same four sources as in previous years: the World Bank's *Doing Business Report*, the Heritage Foundation's Index of Economic Freedom, the World Economic Forum's (WEF) *Global Competitiveness Report* and Transparency International's Corruption Perceptions Index, which are surveyed at different times of the year. We have used these four as they are highly regarded, have long histories, and contain a mix of hard and subjective data, but acknowledge that there are many other indices that could be used.

It could also be argued that some indices overlap or that certain indices should be given higher weights. However, we have found that most assessments of business operating conditions tend to be highly correlated: countries where corruption is high will also have prohibitive bureaucracy, less economic freedom and be perceived as being less competitive. Quite simply, it would probably not make too much of a difference which indices (or with which weights) are included. That is because each individual index would have its own idiosyncrasies. But, taking an equally-weighted average of four indices serves to smooth out individual anomalies. To combine the indices, we adjusted each of their scales so that the best possible score is 10 and the worst possible score is 0.

AGGREGATE SCORE

The composite investment attractiveness score is an equally weighted, linearly aggregated index, comprising the operating and economic activity variables. Equal weights are allocated to both variables. A linear aggregation method is used because all the composites use the same measurement unit. It therefore rewards variables based on their weights – unlike geometric aggregation, which rewards variables with high scores. This means that countries with low scores would benefit much more from the linear aggregation method than geometric aggregation.

It must be noted that not all raw datasets have information regarding all the African countries. Somalia, for instance, may have no ranking at all or some of the subcomponents may be unavailable when calculating the operating environment score. As we update the attractiveness of the countries on an annual basis, we use point estimates rather than averages, which could lead to volatility.

While we believe our methodology is sound, it provides only a general overview of the attractiveness of each country rather than a specific rating relevant to each company or each sector. With this in mind, we still highly recommend that individual companies look at the factors relevant to their particular businesses.

If anything, our methodology is biased towards companies looking to sell into Africa but, even then, high- and low-end retailers would face different market sizes, neither of which would necessarily be adequately captured by GDP only.

ALTERNATIVE RANKINGS USING DIFFERENT WEIGHTINGS

The alternative index rankings in Chapter 1 use a linear aggregation method, with unequal weights. Since the alternative ranking caters to investors who may place greater emphasis on the economic environment or the operating climate when making their investment decision, the weights are changed accordingly to reflect this. A weight of 60% is allocated to the emphasised variable, while a 40% weight is allocated to the other variable.

INFRASTRUCTURE RANKING

We have incorporated an infrastructure ranking that encompasses both the hard- and soft-infrastructure quality for 53 African countries. Firstly, our proxy for hard infrastructure development is the African Development Bank's Africa Infrastructure Development Index (AIDI), which looks at the quality of electricity, ICT and water and sanitation infrastructure. The AIDI index is calculated by a weighted average of the indicators of each component index: 1) The Transport Index – total paved roads as well as total road network; 2) the Electricity Index – net power generation; 3) the ICT Index – total phone subscriptions, number of Internet users, fixed broadband Internet subscribers and international Internet bandwidth; 4) the Water and Sanitation Index – water source and sanitation facilities.

Secondly, we use the Human Development Index (HDI) as a measurement of the quality of soft infrastructure development. The HDI is estimated by the United Nations Development Program as a summary measure of human development and is calculated by using the geometric mean of normalised indices of three dimensions: 1) a long and healthy life (life expectancy); 2) access to knowledge (education); and 3) decent standard of living (per-capita income).

We then compose the ranking by a simple weighted average of the HDI and AIDI. We use equal weightings to avoid judgment error in the methodology. Given that the two major components of the ranking are scaled from 0 to 100, we have rebased our ranking to 0 to 10 – a score of 10 being the highest and 0, the lowest.

4.3 SOURCES AND FURTHER INFORMATION

SOURCES AND FURTHER INFORMATION

RMB'S AFRICA RESEARCH PUBLICATIONS

Rand Merchant Bank's annual *Africa Investor Guide* provides clients details of macroeconomics and financial markets of 22 economies. To log on to the research portal, go to: grid.rmb.co.za

Rand Merchant Bank's annual *Trading in Africa* report makes available to clients the details of selected countries, their major imports and exports, trading partners and operating environment indicators that are relevant to trade. To log on to the research portal, go to: grid.rmb.co.za

OVERVIEW

The **IMF's** *Regional Economic Outlook on Sub-Saharan Africa* highlights the importance of domestic revenue mobilisation and private investment for the purposes of fostering sustainable growth.

<https://www.imf.org/en/Publications/REO/SSA/Issues/2018/04/30/sreo0518>

McKinsey Global Institute's *Lions on the move II: Realising the potential of African economies* addresses the question of whether Africa's growth has lost its momentum.

<http://www.mckinsey.com/global-themes/middle-east-and-africa/lions-on-the-move-realizing-the-potential-of-africas-economies>

The **World Economic Forum's** annual *Global Competitiveness Report* provides cross-country rankings on over 100 economic, regulatory and political issues. It also showcases survey results relating to the most problematic business-environment factors.

<https://www.weforum.org/reports/the-global-competitiveness-report-2017-2018>

The **World Bank's** *Doing Business Report* makes available details relating to the costs, time and procedures to follow as regards various aspects of doing business. These include starting a business, dealing with construction permits, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts and closing a business.

<http://www.doingbusiness.org/reports/global-reports/doing-business-2018>

The **Heritage Foundation's** Index of Economic Freedom scores nations on ten broad factors of economic freedom. It provides a two-page discussion on the operating environment for each country.
<https://www.heritage.org/index/>

Transparency International's Corruption Perceptions Index ranks nearly 200 countries according to perceived levels of corruption, as determined by expert assessments and opinion surveys.
http://www.transparency.org/policy_research/surveys_indices/cpi

Freedom House's flagship annual report, *Freedom in the World* assesses the condition of political rights and civil liberties around the world. It is composed of numerical ratings and supporting descriptive texts for 195 countries and 14 territories.
<https://freedomhouse.org/report/freedom-world/freedom-world-2018>

The **International Finance Corporation's** *Enterprise Survey* provides summary statistics on the operating environments on issues of access to financing, regulations, electricity, taxes, crime, transportation, land, education, corruption and customs duties.
<http://www.enterprisesurveys.org/>

Aon's interactive *Political Risk, Terrorism and Political Violence* maps help investors better understand and mitigate exposure to these global risks.
<http://www.aon.com/2018-political-risk-terrorism-and-political-violence-maps/index.html>

UNCTAD's *Investment Policy Reviews* provide an objective evaluation of countries' legal, regulatory and institutional frameworks for FDI from the perspective of what countries need to do to attract more FDI.
<http://unctad.org/en/Pages/DIAE/Investment%20Policy%20Reviews/Investment-Policy-Reviews.aspx>

Economist Intelligence Unit is the research and analysis division of The Economist Group, the sister company to *The Economist* newspaper. The EIU helps businesses, financial firms and governments understand how the world is changing – and how those changes create opportunities for the seizing – along with risks that need to be managed.
<http://www.eiu.com>

INFRASTRUCTURE IN AFRICA

The **African Development Bank's** *Africa Economic Outlook* unpacks the current state of affairs in Africa, diving deep into the continent's key macroeconomic and financing challenges.
https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/African_Economic_Outlook_2018_-_EN.pdf

The **African Development Bank's** website on infrastructure development focuses on current and future infrastructure projects in Africa. It also provides indices to assess the quality of African infrastructure.
<http://infrastructureafrica.opendataforafrica.org/>

McKinsey Global Institute's *Dance of the lions and the dragons* looks at the partnership between Africa and China, and how this engagement will evolve in future.
<http://www.mckinsey.com/global-themes/middle-east-and-africa/the-closest-look-yet-at-chinese-economic-engagement-in-africa>

The **International Financial Statistics**, published monthly by the IMF, is a compilation of financial data collected from various sources and covering over 200 countries worldwide.
<http://www.imf.org/en/Data>

Oxford Analytica covers geopolitics and macroeconomics across all regions and countries of the world. It has specialists in the political, diplomatic, policy, economic, social, legal, regulatory and governance aspects of the geographies and sectors.
<http://www.oxan.com>

The **Infrastructure Consortium for Africa (ICA)** focuses on the improvement of the lives and economic well-being of Africa's people by promoting increased investment and development of infrastructure in Africa.
<https://www.icafrica.org/en/>

HARD INFRASTRUCTURE

PwC's *Strengthening Africa's gateways to trade* combines information obtained from interviews with port authorities and port operators, together with detailed research on the port, trade and transport sector in Africa.

<https://www.pwc.co.za/en/publications/african-ports.html>

The **AfDB's** first *Electricity Regulatory Index for Africa (ERI) 2018* measures the level of development of regulatory frameworks in 15 African countries and examines their impact on the performance of their respective electricity sectors.

<https://www.afdb.org/en/news-and-events/african-development-bank-launches-first-electricity-regulatory-index-for-africa-18250/>

The **World Bank's** *ICT Competitiveness in Africa* report outlines the current and historical landscape of the ICT sector in Africa. It explains the primary areas of ICT that will most benefit the continent, and makes tactical recommendations to continue the momentum of growth.

<https://openknowledge.worldbank.org/handle/10986/19025>

The **AfDB's** *Rail Infrastructure in Africa – Financing Policy Options* proposes a broad overview of policy options to be considered in financing rail infrastructure investment and maintenance.

https://www.afdb.org/fileadmin/uploads/afdb/Documents/Events/ATFforum/Rail_Infrastructure_in_Africa_-_Financing_Policy_Options_-_AfDB.pdf

The **International Renewable Energy Agency (IRENA)** is an intergovernmental organisation that supports countries in their transition to a sustainable energy future, and serves as the principal platform for international cooperation, a centre of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy.

<http://www.irena.org/power>

The **International Telecommunications Union (ITU)** ranks countries according to their progress in ICT access, use and skills in its annual *ICT Development Index (IDI)*.

<http://www.itu.int/net4/ITU-D/idi/2017/index.html>

SOFT INFRASTRUCTURE

The **United Nations Development Programme's Human Development Index (HDI)** is a summary measure of average achievement in key dimensions of human development – a long and healthy life, being knowledgeable and have a decent standard of living.

<http://hdr.undp.org/en/content/human-development-index-hdi>

United Nations Educational, Scientific and Cultural Organization's (UNESCO) Africa Department works with partners in the respective fields to mobilise human and institutional resources.

<http://www.unesco.org/new/en/africa/>

The **Africa-America Institute** is dedicated to increasing educational opportunities for young Africans and improving global understanding of the continent.

<https://www.aionline.org/>

Lancet's *Healthcare Quality and Access (HAQ) Index* provides a robust avenue for tracking progress on universal health coverage and identifying local priorities for strengthening personal healthcare quality and access throughout the world.

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(18\)30994-2/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)30994-2/fulltext)

The **World Bank's** *Logistics Performance Index* combines companies' knowledge of the countries with which they trade by focusing on their experience of those countries' logistics supply chains as well as core logistics processes, institutions and performance time and cost data.

<https://lpi.worldbank.org/>

INFRASTRUCTURE FINANCING

The **African Legal Support Facility** is a public international institution hosted by the African Development Bank Group.
<http://www.aflsf.org/>

BMI Research is a firm that provides macroeconomic, industry and financial market analysis, covering 24 industries and 200 global markets.
<https://www.bmiresearch.com>

REGIONAL INFRASTRUCTURE

Programme for Infrastructure Development in Africa (PIDA) is a strategic continental initiative that has the buy-in of all African countries for the mobilisation of resources to transform Africa through modern infrastructure.
<http://www.au-pida.org/>

Trade Law Chambers is a leading international trade law firm in South Africa. It specialises in international trade, corporate, commercial and investment law as well as dispute resolution related to these fields.
<https://www.tradelawchambers.com/>

NEW TECHNOLOGIES

The **Overseas Development Institute** is an independent global think tank aimed at creating sustainable solutions for global peace and prosperity.
<https://www.odi.org/>

McKinsey & Company's *A future that works: Automation, employment, and productivity* report analyses the automation potential of the global economy, the factors that will determine the pace and extent of workplace adoption, and the economic impact associated with its potential.
<https://www.mckinsey.com/mgi/overview/2017-in-review/automation-and-the-future-of-work/a-future-that-works-automation-employment-and-productivity>

The **World Integrated Trade Solution (WITS)** software provides access to international merchandise trade, tariff and non-tariff measures (NTM) data.
<https://wits.worldbank.org/Default.aspx>

The **Brookings Institution's** *Foresight Africa 2018 report* explores six overarching themes that provide opportunities for Africa to overcome its obstacles and spur inclusive growth.
<https://www.brookings.edu/research/rethinking-africas-structural-transformation/>

OTHER DATA SOURCES USED

African Union, Bloomberg, Reuters, IHS Global Insight, Moody's Investor Services, Standard & Poor's, Fitch Ratings, Africa Progress Panel, Centre for Economic and Policy Research, Journal of African Economies, OECD, United Nations, Mo Ibrahim Foundation, Institute for Security Studies, US Energy Information Administration, International Finance Corporation, respective central bank and finance ministry websites.

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