Specific areas within the Northern Cape Industrial Corridor are open for business and make an attractive proposition for investors.

NAMAKWA SPECIAL ECONOMIC ZONE (NSEZ)

The proposed Namakwa SEZ is located in the small mining town of Aggeneys. Aggeneys is in the Khai-Ma Local Municipality within the Namakwa District Municipality of the Northern Cape Province. Aggeneys is 66km from Pofadder (headquarters of the local municipality) and 110km from Springbok, where the office of the district municipality is located.

The value proposition of the Namakwa SEZ is based on the existence of the Gamsberg Zinc Mine and the proposed building of a smelter by Vedanta Zinc International. These would be the anchor tenants of the SEZ.

It is proposed that a smelter be built to treat zinc concentrate produced at Gamsberg. The zinc concentrate produced at the existing concentrator plant will be treated in the smelter using the conventional roast-leach-electrowinning (R-L-E) process.

The full process would involve the treatment of 680 000 tpa of zinc concentrate to produce 300 000 tpa of high-grade zinc ingots for export.

As a by-product 450 000 tpa of 98.5% pure sulphuric acid will be produced for both export and consumption within South Africa.

Non-ferrous metals such as zinc have characteristics that make them immensely useful in a wide range of downstream applications. Resistance to corrosion and their non-magnetic qualities are among the reasons for the wide range of uses to which they can be put.

Various wastes and by-products will be generated by the smelter that could be useful to investors. Waste includes iron cake stabilized (dry), Jarofix; effluent treatment plant cake (dry); evaporation pond salts (dry); and cellhouse sludge (dry).

By-products include manganese cake (dry); Cu-Cd cement (dry); Co-Ni cement (dry); and sulphuric acid (wet). Investors in this category include businesses in the follow sectors: sulphuric acid (including pharmaceutical, automotive batteries and paper bleaching); fertilisers; explosives; paints.

Another category of potential investors in the SEZ are those providing ancillary services.
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African Business
A unique guide to business and investment in Africa.

The 2021 edition of African Business is the second issue of this useful guide to business and investment on the continent. The positive reception accorded the inaugural edition in 2020 was encouraging and we are optimistic that this publication and future issues will continue to meet the need for timely and relevant information in an exciting time for African business.

African Business 2021 has articles on recent trends plus overviews of the key economic sectors on the continent and regional and country profiles. There is an in-depth analysis of the implications for trade on the continent of the introduction of the African Continental Free Trade Area agreement (AfCFTA) and an article on the growth and importance of exploration for minerals, gas and oil.

Neighbours Namibia and Botswana feature in an article on how cooperation can drive economic growth and an opinion piece focuses on the role that digital technology can play not only in the financial sector, but in the driving progress in a broader sense.

Global African Network is a proudly African company which has been producing region-specific business and investment guides since 2004, including South African Business and Nigerian Business, in addition to its online investment promotion platform www.globalafricanetwork.com.

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The continent’s most developed economy, South Africa, is ready for greater ease in transferring money between customers of different banks. Such an enhancement will mean that those who often face barriers within the local financial system could be brought into the fold.

The country is betting on interoperability with the Rapid Payment Project (RPP). The RPP will bring instant clearing and allow banks, and presumably non-bank financial institutions, the ability to ‘push’ payment clearing messages like instant electronic funds transfers (EFTs) to other financial institutions, facilitating a high volume of low-value instant payments.

This will be transformative for the national payment system (NPS) and will allow for instant clearing and instant access to funds for small merchants. This represents a move towards instant digital ‘push’ payments for consumers, and the market will presumably open up to various last-mile payment technologies to enable choice in the market.

What about cards?
Cards are a ‘pull’ payment where consumers provide authorisation for merchants to withdraw money from their accounts by providing card authorisation information.

This subtle difference has a profound effect. With cards, the merchants’ banks authorise merchants to accept card payments and the banks seek settlements on behalf of those merchants. This infers a close and interdependent relationship between banks and merchants and allows the bank to extend risk-based financial products and services.

The downside of cards includes foreign rules, complex compliance and security requirements that have to do with the legacy technology behind transactions, and associated fraud risk. All the costs of plastic (POS terminals, fraud risk, data privacy compliance, and foreign exchange fees on local currency transactions) limit the reach of card acceptance to the established, more affluent segments of the market.

The best of both worlds
South Africa’s payments ecosystem needs a digital account-based alternative to cards: a mobile digital ‘pull’ open-loop merchant payment that provides the benefit of cards without the inherent costs and constraints.

Additionally, this digital, mobile, open payment needs to have general acceptance, like card payments, but not be dependent on a foreign legacy card scheme.

A digital, mobile account-based merchant payment would increase the size of the addressable market for financial services and create opportunities for banks and aggregators to bring the informal sector into the formal economy. This would benefit consumers and, most importantly, small, medium and micro enterprises (SMMEs), including micro traders, small farmers, artisans, and the myriad sellers of goods and services that make up the informal economy.

For digital mobile merchant payments to scale against cash, there must be a strong value proposition for both the consumer and the merchant. The consumer needs to be able to pay in a consistent way anywhere, irrespective of who the consumer or merchant banks with. For the merchant, payments must be simple, convenient. The merchant should also be able to experience the benefits of access to valued and affordable financial services.

Interoperability and the Rapid Payment Project

Murray Gardiner, MD of Bluecode Africa, explains the transformative power of digital mobile open payment.

Interoperability and the Rapid Payment Project

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Murray Gardiner, MD of Bluecode Africa
Malawi’s constitutional court ordered an election rerun in 2020.

By John Young

While 2020 will always be remembered as the year of Covid, some of the other events that took place in that year may also create a longstanding impact.

A large number of presidential and general elections were held and although there were a few instances of leaders wanting to hang on for third terms and by so doing, making enemies of opposition forces and constitutionalists, a significant milestone was achieved when Malawi’s constitutional court threw out the results of the 2019 presidential elections and ordered another election to be held.

That election was held in June 2020 and led to a new president being elected, Lazarus Chakwera winning 58.5% of the vote against the incumbent Peter Mutharika. If this is the harbinger of an increased respect for the rule of law, Africa’s chances of progressing in other fields will be improved.

Another milestone will be achieved in 2021 when Niger’s current president stands down at the end of his term, allowing for a first peaceful transfer of power under a relatively new constitution.

Altogether, African governance has not advanced to the degree that was expected five years ago. The 2020 Ibrahim Index on African Governance (IIAG) reports that progress has slowed in improving governance on the continent, even though fully 60% of Africans live in places which were in better shape in 2019 than they were in 2010. The 2020 report is based on data gathered in 2019.

The 2021 election in Uganda will be watched very carefully. President Yoweri Museveni has been in power since 1986 and shows no signs of wanting to retire but Robert Kyagulanyi, a popular musician who goes by the stage name of Bobi Wine, has been gathering tremendous support in the face of several detentions and restrictions. Eighty percent of Uganda’s population is under the age of 30.

Other serious obstacles to citizens being able to exercise their right to vote were experienced.
in the Central African Republic, where rebels made the 2020 election a fraught affair, and in Guinea, where violence during and after the elections led to dozens of deaths.

The new president of the Seychelles has been nothing if not persistent. Wavel Ramkalawan’s successful bid for the presidency was his sixth attempt to attain the nation’s highest office. Seychelles is ranked third on the IIAG Index, behind Mauritius and Cape Verde. The rest of the top 10 is made up of Tunisia, Botswana, South Africa, Namibia, Ghana, Senegal and Morocco. Gambia showed the most improvement in 2019 and South Sudan and Somalia are at the bottom of the table.

**Mixed messages**

The first day of 2021 brought good news for Africa – that the continent’s first comprehensive free trade agreement had come into operation – but it was sorely needed to balance some of the big events that characterised 2020.

Chief among these was Covid-19 but bad politics and increased violence contributed to a sense that many of the gains of recent years cannot be taken for granted. The two areas that best illustrate the fragility of progress are Ethiopia and Mozambique.

In 2019 the prime minister of Ethiopia, Abiy Ahmed, was awarded the Nobel Peace Prize for restoring relations with neighbouring Eritrea and beginning a series of bold internal reforms. A decision to postpone elections because of Covid-19 sparked anger in the northern region of Tigray and the last months of 2020 were spent with the country engaged in civil war.

The discovery of vast reserves of liquid natural gas off the coast of Mozambique has attracted huge investments from several international energy companies. However, the government’s inability to provide security against insurgents in the Cabo Delgado province has put those investments at risk.

In December, the Export-Import Bank of Korea announced $500-million worth of financing for the Mozambique Offshore Area 1 Project but the same month brought news of towns being evacuated because of insurgent activity. So far, there has been no talk of international or regional peacekeeping forces, but that will surely come up sooner rather than later.

The central Sahel region also had a turbulent 2020. The area along the boundaries that divide Burkino Faso, Mali and Niger has been at the centre of violent attacks by Islamist and ethnic militias which, according to The Economist, displaced 1.7-million people and led to an average of 3 000 people per day having to flee their homes. The UN has peacekeeping forces in the area and both the US and France have troops deployed there to assist local government forces.

The size of Africa’s population (currently estimated at 1.2-billion) represents both opportunity and challenge. The continent by 2030 will increase the number of children in primary school from 189-million to 251-million and by 2050 Africa will record 42% of all global births (UNICEF).

The upside of this is that huge markets for goods will be created but housing, education and healthcare will have to expand. As things stand, about 120-million Africans are unemployed and about 40% of the population live below the poverty line ($1.25).

Urbanisation is already happening at a fast pace. This is another opportunity and a further challenge. The fact that Africa is arriving somewhat later in the digital age is an advantage because there are opportunities to leapfrog technologies. This is happening in mobile banking, where mobile telephones are delivering financial services across the continent.

**Integration and trade**

Africa has introduced a free trade agreement. In 2018 the African Continental Free Trade Area (AfCFTA) agreement was signed by 49 countries, making it one of the most comprehensive and potentially influential agreements ever signed on the continent. Since then, all but one country has signed the agreement and it officially came into effect on 1 January 2021.

Although no-one expects that the agreement will immediately lead to borderless trade with
no tariffs, there is great symbolic importance in the implementation of the agreement. Problems remain with the movement of people and certificates of origin, and the more likely trend will be for regional economic communities (RECs) and large countries within RECs to accelerate steps towards integration. Large infrastructure projects such as rail and energy corridors that traverse the continent could be game-changers.

Regional corridors are intended to boost intra-African trade. The North-South Corridor in the Southern African region runs through 26 countries and ends at the Port of Durban. Ten corridors are being developed across the continent to make the movement of goods easier and to improve access to ports.

Central to future of the AfCFTA is the degree to which African states and regions can integrate. A first Africa Regional Integration Index was published in 2016 and a second (ARII 2019) was published by the Economic Commission for Africa (ECA), the African Development Bank (AfDB) and the African Union Commission (AUC).

The report’s conclusion is that a great deal still needs to be done to integrate regional economies, with the average country score being recorded as 0.327 out of 1. Even the most integrated country, South Africa, scored just 0.625 out of 1.

Scores are allocated across five areas: trade, productive capacity, macroeconomic policy, infrastructure, and free movement of people. The index also covers intellectual property, competition policy, investment and digital trade which are critical to the successful negotiations of Phase II and III of AfCFTA. By allocating scores, the index allows progress to be plotted.

In early 2020, the Development Bank of Central African States (BDEAC) made progress on integration by signing off on projects worth $213-million for Cameroon, Congo, Gabon and Equatorial Guinea. The linking of the electrical grids of Equatorial Guinea and Gabon are the two most obvious integration-themed projects but others in the fields of agro-industry and microfinance are also relevant.

Tanzania Zambia Railway Authority, popularly known as TAZARA, is a bi-national railway linking the Southern Africa Regional transport network to Eastern Africa. The Southern African
Development Community (SADC) has been active with multimodal projects such as the development corridors of Nacala, Maputo and Lobito (Zambia to Angola).

There are many infrastructure investment opportunities that can boost trade. Among the initiatives of the Programme for Infrastructure Development in Africa (PIDA) is the West Africa Hub Port and Rail Programme, a regional hub-port, rail-linkage and port-expansion plan. Kenya’s $68-million Naivasha Dry Port project supports this plan.

Investing in infrastructure

The African Union’s Agenda 2063 lays out ambitious goals for the continent. The flagship projects designed to achieve these goals cover infrastructure, education, freedom of trade and movement of people, arts, culture and technology. The projects are:

• Integrated high-speed train network.
• Formulation of an African commodities strategy.
• Establishment of the African continental free trade area (AfCFTA).
• The African passport and free movement of people.
• Silencing the guns by 2020.
• Implementation of the Grand Inga Dam (hydropower) Project.
• Establishment of a single African air-transport market (SAATM).
• Establishment of an annual African economic forum.
• Establishment of African financial institutions.
• The pan-African e-network.
• Africa outer space strategy.
• An African virtual and e-university.
• Cybersecurity.
• An African virtual and e-university.
• Great African museum.
• Encyclopaedia Africana.

The African Development Bank Group comprises the African Development Bank, the African Development Fund (ADF) and the Nigeria Trust Fund (NTF). The AfDB is a key funder of infrastructure projects and has set itself a set of goals known as the High Five: light up and power Africa; feed Africa; industrialise Africa; integrate Africa; and improve the quality of life for the people of Africa.

The bank’s African Economic Outlook 2019 highlights energy and infrastructure as key areas for investment. If Africa is to prosper, infrastructure has to be improved and built.

The Emerging Africa Infrastructure Fund (EAIF), which forms part of the Private Infrastructure Development Group (PIDG) and is managed by Ninety One, encourages and mobilises private investment in infrastructure. PIDG is funded by donors from seven countries (UK, Switzerland, Australia, Norway, Sweden, Netherlands, Germany) and the World Bank Group.

Power plants in Togo, Ivory Coast and Uganda are typical examples of the types of projects supported by the EAIF. Having been involved in the establishment of a first fertiliser plant for Indorama Eleme at Port Harcourt in Nigeria, the fund is now also a participant in a $1.1-billion expansion project which will double the company’s annual output to 2.8-million tons.

South African firm Futuregrowth Asset Management manages the largest debt fund of its kind in Sub-Saharan Africa, the Futuregrowth Infrastructure and Development Bond Fund, which has a market value of more than R15-billion.

On the energy front, one of the AfDB’s projects, the Desert to Power Initiative in the Sahel region, will bring power to 250-million people who were previously unconnected.

One way of fast-tracking the provision of energy to remote regions is through mini-grids. Recognising that raising funds for mini-grids can be tricky, the AfDB has approved a $7-million grant from the Sustainable Energy Fund for Africa (SEFA) to create a funding infrastructure for a sector that is in growing despite the challenges. The Africa Minigrid Developers Association (AMDA) comprises 29 private companies that are active in rolling out minigrids in 12 countries.
A new era in trading has begun

The African Continental Free Trade Area offers enormous opportunities for expansion.

On 1 January 2021 a new era in African trade began. All but one of Africa’s 54 countries have signed on to the African Continental Free Trade Area (AfCFTA) and 34 countries have ratified it. Implementation was postponed for six months because of Covid-19. Eritrea is the outlier but fully 41 members have already submitted tariff reduction schedules, suggesting that there is an appetite for getting down to detail on this agreement, rather than leaving it in “talking shop” mode.

Tariffs on 90% of items are due to be reduced in the next decade. More time has been allocated to poorer countries to allow them to adapt, 7% of items will take longer and 3% can stay protected.

The African market of 1.3-billion people is expected to grow to 2.5-billion by 2050 but the key statistic targeted by AfCFTA is intra-African trade. If the agreement is to have meaning, then the insipid figure of 16.6% in 2017 must grow. This compares with 69% in Europe and 59% in Asia (United Nations Conference on Trade and Development and Brookings Institution). Exports to the rest of the world made up between 80% and 90% of Africa’s total trade from 2000 to 2017 (UNCTAD). In 2019 only about 27% of South Africa’s exports were delivered to the rest of the continent.

Just four countries currently account for 41.7% of intra-African trade, South Africa, Namibia, Nigeria and Zambia, according to the Export Credit Insurance Corporation of South Africa (ECIC). The ECIC has invested in the African Export Import Bank in an effort to boost intra-continental trade to $250-billion. The South Africa-Africa Trade and Investment Promotion Programme has the same goal.

Areas with existing regional trade blocs that function well – such as the Common Market for Eastern and Southern Africa (COMESA) and the Southern African Development Community (SADC) – will likely be the quickest to gain from AfCFTA. These regional groupings are best placed to start thinking beyond tariffs: more efficient customs posts, lower air-freight costs, better-run ports, regulatory alignment and improved rail and road infrastructure.

Railways, roads and ports are not the only kinds of logistics infrastructure that is needed. South African-based investment fund African Rainbow Capital is a participant in a $100-million
fund that includes investment in cold-storage facilities in East Africa in its portfolio.

Donald Trump did not pay much attention to Africa when he was president of the US but he was strongly in favour of bilateral, rather than regional agreements so it is surprising that the African Growth and Opportunity Act (AGOA) survived the Trump years. The deal, which gives duty-free access to about 6,500 products from 39 Sub-Saharan countries, is due to expire in 2025.

By then AfCFTA will have been operating for four years and the region’s ability to negotiate as a collective should be stronger. As much as Africa countries’ trade within the continent will grow, exports will remain key to adding value and attracting good prices. Trade between the US and Africa in 2018 was valued at $41.2-billion.

Namibia achieved a breakthrough in 2020 when, after nearly two decades of negotiations, 25 tons of the African country’s beef was shipped duty-free to the US. Under AGOA, Namibia may send the US up to 860 tons of beef but the fact that negotiations took so long points to the fact that the treaty is not a panacea. A possibly even more significant event took place in 2019 when the same producer, MeatCo, a Namibian state-owned entity, exported some meat to China.

**Trade finance**

In preparation for AfCFTA, development finance institutions and banks have been developing methods of trading in local currencies, rather than hard currencies like the US dollar. The African Virtual Trade-Diplomacy Platform (AVDP) is a private-sector initiative by more than 20 companies (in partnership with the AU Commission) which will support AfCFTA by enabling member states to participate effectively and securely.

Banking groups such as Citi have been investing heavily in digital platforms related to payments infrastructure. Many African traders already do their banking on hand-held devices and so the market is ready for more innovation in taking digital payments further into the world of trade.

Developing reliable cross-border payment platforms will be vital in supporting increased intra-African trade.

**Navigating challenges through innovation**

Citi’s trade business has evolved in line with the fundamental changing market needs to address a wide range of financing requirements from the basic to the more complex structures in a domestic and international trade environment. At Citi, we are always looking to help our clients navigate the current future challenges through innovation and a foundation in digitally-enabled strategies.

We have focused on resilience in three ways: financially, by focusing on working capital needs within the buyer and seller ecosystem and longer-term financing needs; operationally, by helping clients de-risk supply chains to provide long-term sustainable growth; and technologically, by offering the latest technology to improve speed, accuracy, data and security of clients’ trade. Fundamentally, as Citi operates more globally than any other financial institution, providing a standardised yet locally sensitive offering to clients, wherever they do business, is an enabler of progress.

As our clients shift trade patterns and flows around the world, we are there to provide support.

ECIC provides export credit and investment guarantees, stepping in where commercial banks might be risk-averse to support private investment.

The European Investment Bank is the investment arm of the European Union and often partners with African institutions.

China has a wide range of financial entities which are active across a range of sectors in Africa. These entities include the China Development Bank (CDB), the China International Trade and Investment Corporation (CITIC), China Export and Credit Insurance Corporation (CECIC), China Export Credit Insurance Corporation (Sinosure) and the China Export-Import Bank.
The statistics that hover uncertainly around Africa are not ones that should make the continent proud. The World Bank has estimated that Africa could potentially hold 90% of the global poor population by 2030 and has recently cut its economic growth predictions to between -2.1% and -5.1% in 2020 from the 2.4% of 2019.

The situation has been significantly worsened by the global pandemic, as the continent hits its first recession in 25 years. But this is not the picture that defines a continent that has long defied expectation and prediction. In fact, a young population, a growing consumption market, and the rapid movement towards mobile inclusion and connectivity are shifting the conversation. Africa is poised on the cusp of change introduced by mobile and Internet technology.

Africa has undergone a remarkable journey over the past 30 years. It has not only leapfrogged legacy technology and systems into a more relevant future, but it has done so in spite of challenging circumstances. This is particularly relevant when it comes to mobile – the technology, the connectivity, and the financial inclusion. To date, according to the GSMA 2019 Mobile Money Report, there are more

Murray Gardiner, the Managing Director of Bluecode Africa, explains how digital payments can do more than open the doorway to financial inclusion, they can take the continent into a more dynamic and inventive future.

African payments for African development

African Business 2021 12
than one-billion mobile money accounts globally that account for 57% of mobile money transaction values. Over the next five years, also according to the GSMA, it’s expected that 84% of Africans will have access to a SIM connection and that mobile payments will play a critical role in empowering individuals, businesses and the economy as a whole.

This is the principle that’s dominating the current approach taken by the World Bank in an effort to provide Africa with much-needed support in the wake of Covid-19. The organisation is focusing on putting women at the centre of digital payment programmes and leveraging digital technologies to improve trade, government and resource management. This underpins the organisation’s focus on national payment systems that are secure, affordable and accessible as these are the tenets that underpin an economy that’s focused on financial inclusion and stability.

African payment solutions are critical to improve the free flow of funds to boost business and economic activity. Payment technology that allows for individuals from all walks of life to manage their money securely is the equivalent of putting a bank into every person’s pocket. Digital payments equalise engagements while improving transparency and control over finances and business. They also empower small to medium enterprises (SMEs), giving them greater scope for inclusion and access to customers and markets.

This has become particularly true in the current environment. Digital payments are now, more than ever, the key to unlocking business growth on the continent. The rigorous regulations put in place by African countries to minimise the impact of the virus have led to inventive approaches to shopping and living. Digital payment platforms are significantly safer than cash and are increasingly being leveraged by governments and organisations to improve customer access to resources and services.

According to a study released by McKinsey & Company in June 2020, “innovation in payments should be one component of the industry’s response to the crisis”, and this should include promoting awareness of digital payments, partnering with other industries, and introducing new and relevant products.

In Africa, digital payments are more than just keys to open the doorways of financial inclusion, they are increasingly the steps that will take the continent out of recession and into a more dynamic and inventive future. This view is echoed by the investments made by the World Bank and organisations such as SWIFT and Bluecode Africa; programmes such as the African Continental Free Trade Area (AfCFTA), and the International Monetary Fund (IMF).

Investments include cross-border payment platforms, increased commerce capacity, cost management, digital innovation, and the empowerment of individual, micro-enterprise and SMEs. It’s time to educate businesses and individuals as to the costs and risks of cash as opposed to digital, to showcase the value of digital payments in not just opening up new markets and opportunities, but in providing tighter cash flow control at a better price point than cash.

Digital payments are a gateway to more valuable financial services and other value-added merchant services. To effectively compete against cash the digital payment must realise positive externalities that provide exponentially greater value than cash replacement alone.

The continent may not be showered in stunning statistics, few continents are at this point in time, but it is hovering on the edge of a future that has the potential to transform poverty, business and its economy.

About Bluecode: Bluecode is a mobile payment solution that combines cashless payments via smartphones with value-added services and enables payments with merchant and banking apps. Founded in Europe, Bluecode has now expanded into Africa. Bluecode Africa is taking mobile payments into markets where its value as a technology payment service and scheme can make a significant difference for retailers, SMMEs and in the everyday lives of consumers. Bluecode Africa is focused on driving economic growth in the productive economy by unlocking opportunity and business potential with digital transparency.

For more information: www.bluecodeafrica.com or email: info@bluecodeafrica.com.
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Another category of potential investors in the SEZ are those providing ancillary services.

The Namakwa SEZ yields the potential investor for logistics, petro-chemical, mining and engineering supplies, mineral beneficiary on, agriculture, agri-processing and pharmaceutical with tremendous localization potential and incentives with close access to the resources.

A definite opportunity is the sulphuric acid and the related fertilizer plant in addition to the existing opportunities above. This investment has a local and export market with access to Africa and the globe via existing logistic links. This array of investment opportunities are available now and will provide the first takers with a definite competitive advantage!
The large differences between Africa’s proven resources and the amount of production presents clear opportunities, both for host countries and for extractive companies.

Where Angola’s gas resource is 32,792.4-billion cubic feet (bcf), production is currently below 200 bcf. Nigeria’s production of 671.59-million barrels of oil is significant, but the resource of 30,079.99-million barrels remains vast. These figures are taken from Deloitte’s Africa Oil & Gas State of Play (November 2018). Deloitte predicts a 78% increase in exploration expenditure in African oil and gas between 2018 and 2025.

This prediction was made before the year of the Coronavirus but there is every reason to suppose that countries and companies will support this trend. With global demand for so-called “battery minerals” on the rise in the era of the electric vehicle, African mining is starting to receive increased levels of exploration funding. There are 170 companies in Africa which are listed on the Australian securities exchange, ASX.

The number of African countries where successful exploration for oil and gas has taken place continues to rise. It now stands at 28, with new reserves unearthed in Ghana, Niger, Mozambique, Uganda, Kenya, Senegal, Mauritania, South Africa and Tanzania. New finds in the oil and gas sector have significant downstream repercussions. Fertiliser plants and refineries become viable, for example.

A lack of exploration not only inhibits expansion, it also reduces the life of an existing mine. The global figure for mining exploration in 2019 was around $9-billion and although this will be reduced in 2020, it is almost certain that Africa will attract an increased share. In 2019 Africa was ranked fourth in the world, with $1.1-billion, behind Latin America ($2.6-billion), Australia and Canada.

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**Gas exploration is leading the way, but oil and mining are attracting international interest.**

*The Deepsea Stavanger drilling rig has made two big discoveries off South Africa’s south-eastern coast. Total E&P South Africa is the lead shareholder in a joint venture investigating the block. Credit: Anton Swanepoel.*
South Africa is currently attracting just 1% of global spending on mining exploration and is determined to increase that percentage. The nation’s Council for Geoscience is working on producing improved data towards that goal.

Gas is leading the way on the continent, with significant finds off the coasts of Senegal and Mozambique attracting global interest. Both Mozambique and Tanzania are receiving major investments in infrastructure to support liquified natural gas (LNG).

Most recently, Total and its partners announced major finds off the south-eastern coast of South Africa and Renergen has begun work on the onshore 187,000ha Virginia Gas Project which is reported to have one of the richest helium concentrations recorded globally. Both of these South African projects have been encouraged and overseen by Petroleum Agency SA (PASA), the promoter and regulator of oil and gas exploration. PASA has also awarded hydrocarbon exploration licenses over a further 30,132km² to six mining companies to prospect and drill exploratory wells in three provinces.

Shell has bought into blocks west of the offshore Total discoveries, an indication of increased international interest in that geological basin. Offshore blocks in Western Africa are the site of active investment by multinationals. One example off Ghana is the $4.4-billion Pecan field. In North Africa, Egypt is transitioning to gas power on the back of large discoveries. A planned refinery and pipeline for Uganda could be major additions to East African capacity, where Kenya has led the way for some time. Eni is heavily invested in offshore drilling for oil off the Kenyan coast.

**Investment climate**

Reports that China’s steel blast furnaces were operating at 92% capacity in the first week of June 2020 was good news for African miners of iron ore (*The Economist*). When China is building, it needs commodities and this trend shows no sign of tapering off.

The world wants battery minerals and Africa has them in large quantities. These include copper, cobalt, lithium, nickel, graphite and rare earth elements. This demand will continue to grow as everything from motor cars to smart phones needs storage. It is possible that automotive manufacturers will themselves start investing directly in mining to ensure a stable supply of vital minerals.

The global appetite for natural gas is growing and so the discovery of gas fields off the African coast has come at the right time.

Exploration itself is a complex task, involving not only estimates related to mineral resources but environmental impact assessments and metallurgical testing.

The CEO of Minerals Council South Africa, Roger Baxter, in a presentation on how to promote a greenfields exploration boom, outlined in October 2019 the seven fundamentals that have to be in place to encourage exploration:

- Stable, predictable regulatory environment.
- Sound geological information.
- Expeditious and transparent licensing.
- Social licence to operate.
- Good infrastructure.
- Improving productivity and competitiveness.
- Access to funding and incentives.
Baxter noted that the Johannesburg Stock Exchange (JSE) has just 10 emerging/exploration mining companies listed, against 705 on the ASX and 1 193 on the Toronto Stock Exchange.

Access to reliable data is an area where a lot of work has to be done. The extent of digitisation of resources in Africa is low: this presents a challenge and an opportunity. There is great potential to explore exponentially larger areas with airborne geophysics and drones.

Other risks to investment in African resources are primarily related to governance. The “Africa 2020 Mining Outlook” published by Investing in the African Mining Indaba points to three countries where “resource nationalism” is on the rise, the Democratic Republic of Congo (DRC), Swaziland and Zimbabwe. In the DRC this involves trying to seize operators and preventing exports.

The Fraser Institute’s global “Annual Survey of Mining Companies” released in 2020 includes five African companies in the bottom 10 when it comes to the perceptions of investors. The DRC and Zimbabwe feature again, as do Tanzania, Guinea and Zambia.

Another area where Africa can do better is spending on infrastructure. According to Deloitte only the Republic of the Congo, Equatorial Guinea and Gabon are regularly spending 30% of their GDP on infrastructure, a figure regarded as the minimum for development to advance.

In terms of tackling corruption, the adoption by 24 African countries of the Extractive Industries Transparency Initiative (EITI) is a good sign, and Deloitte lists Cape Verde, Rwanda, Ivory Coast and Senegal as places where efforts against corruption are paying off.

Gas markets expanding

Africa has 7.1% of the world’s proven oil reserves and 7.5% of global gas reserves. China recorded a 15% rise in natural gas consumption in the seven years to 2017. Nine African countries are developing liquified natural gas (LNG) facilities. There are 21 African countries where oil is among the top three commodities exported. Nigeria earned $43.6-billion from petroleum exports in 2018.

Discoveries of natural gas (estimated at 180 trillion cubic feet) off the coast of Mozambique have spurred massive infrastructure building and encouraged further exploration. Four LNG plants are under construction. In Nigeria, the $18-billion Dangote refinery and petrochemical complex is expected to be working in 2021. The East African Crude Oil Pipeline (EACOP) will be able to carry 216 000 bbl/d of crude oil 1 443km from an oilfield in Uganda to the Tanzanian port of Tanza.

Big mergers have been a feature of the LNG sector
in recent years as companies prepare to deal with greater volumes. Shell and BG Group merged in 2016, Total bought Engie’s LNG division in 2018 and recently acquired Anardarko’s share in the Mozambique project for $3.9-billion (Norton Rose Fullbright).

Transnet, the South African state-owned entity that runs railways, ports and pipelines, is investigating using its pipelines for inland gas transmission and “virtual” LNG pipelines. The World Bank is a partner in the $2-million study.

The probability that national utility Eskom will be broken up into three units (generation, distribution and transmission) will have a big impact on the gas market and South Africa is in the process of developing a Gas Utilisation Master Plan. The country’s Integrated Resource Plan (IRP) anticipates 6 380MW of installed capacity (or 8.1%) to come from gas by 2030.

The biggest news for South Africa came in 2019 and 2020 with the announcement by Total and its partners of finds of gas condensate off the coast of Mossel Bay. The block, in the Outeniqua Basin 175km off the southern coast, covers an area of about 19 000km² in water depths of 200-1 800m.

If Total goes ahead, the PetroSA GTL refinery at Mossel Bay (Mossgas) could be revived and the gas market in South Africa would get a massive boost. Petroleum Agency SA (PASA), which encourages exploration and regulates the oil and gas industry, has noted the significance of international oil companies committing to exploration off South Africa’s coast. Increased confidence by such companies can only lead to growth in the industry, and with the massive gas finds in the Rovuma Basin off Mozambique, there are sure to be more companies interested in South Africa’s potential. In addition to adjudicating on coastal fields, the agency has awarded coalbed-methane-gas exploration rights in KwaZulu-Natal and natural-gas exploration permits in the Free State.

More than 90% of Africa’s gas production comes from Algeria, Angola, Egypt, Libya and Nigeria (Deloitte). Countries with great potential in oil and gas include Tanzania, Uganda (which will start producing oil in 2021), Ghana (the continent’s newest oil producer), Gabon and the Republic of Congo, which has joined OPEC.

Mining
Africa’s mineral resources are vast. In several categories, Africa is either the global leader or it has the second-biggest reserve. These include cobalt, phosphate rocks, bauxite, industrial diamonds, platinum-group metals (PGM), zirconium and vermiculite.

Iron ore, copper, nickel, zinc, uranium, manganese, vanadium, ilmenite and gold, the continent’s biggest resource, are also found in large quantities.

The mining sector is responsible for 90% of the exports of the Democratic Republic of Congo (DRC) and the figure is about 80% for countries such as Botswana (which has gold, nickel, copper and soda ash in addition to its rich diamond resource), Guinea (gold, diamonds, alumina and bauxite), Senegal (phosphate and diamonds) and Sierra Leone (diamonds).

Ghana exported gold to the value of $8.3-billion in 2017, which was just less than half of the total value of exports, including crude petroleum. South Africa’s top three exports (out of a total of $108-billion) were gold ($16.9-billion), diamonds ($9.8-billion) and platinum ($9-billion) (OEC).

Global demand for copper is rising because of its versatility and relevance for energy storage, renewable energy and electric vehicles. In 2019, more than 20-million tons of copper from new sources was mined globally. The Central African Copperbelt (encompassing parts of DRC and Zambia) increased mined volumes to 2.2-million tons in 2018, more than twice the 800 000 tons mined in 2008, but developments in Zambia in particular make major investments unlikely in the near future. Serious debt problems have led to the government targeting mining companies for extra revenue.

The critical metals in new battery production are lithium, graphite, cobalt and nickel. A research body estimates that the global lithium-ion battery market could be worth as much as $77-billion by 2024 (Transparency Market Research). The DRC and countries such as Madagascar, Morocco, Mozambique, Namibia, Zambia and Zimbabwe all stand to benefit from this boom.
South African oil and gas is ready to compete

Recent light oil and gas condensate discoveries have the potential to turbo-charge the sector.

Significant discoveries have been made off South Africa’s south-eastern coastline by Total and its investment partners. Drilling activity such as this could be the kickstart that makes South Africa’s oil and gas sector a major player in the African market.

In successive years, Total and its partners had great news: gas condensate was found in 2019 at a site called Brulpadda off the coast of Mossel Bay and in 2020, the nearby Luiperd prospect in Block 11B/12B delivered more good results.

The block, in the Outeniqua Basin 175km off the southern coast, covers an area of about 19 000km² in water depths of 200-1 800m. The exploration was done by the semi-submersible rig Deepsea Stavanger, which journeyed twice from Norway to lead the exploration projects.

The two finds raise the odds of Total investing in what it calls a “world-class” offshore gas site. The drilling campaign employed 195 South Africans with specialist skills but the potential spinoff is enormous if the find leads to drilling and commercialisation.

The new CEO of Petroleum Agency SA, Dr Phindile Masangane, describes the prospect of regular drilling operations off the South African coast as, “A game-changer for South Africa’s upstream oil and gas industry.”

Natural gas lies also lies offshore to the west of South Africa in the Atlantic Ocean (Ibhubesi). Block 2A of the Ibhubesi gas field north-west of Saldanha is estimated to have reserves of 850-billion cubic feet of gas.

If Total goes ahead with further investments, the PetroSA GTL refinery at Mossel Bay (Mossgas) could be revived and the idea of creating a gas market in South Africa would get a massive boost and the country’s four Special Economic Zones (SEZs) at ports would become critical to its utilisation.

A Gas Utilisation Master Plan (GUMP) is being developed as a part of national energy policy and private companies are responding to this changing environment. The major economic sectors currently using gas are the metals sector and the chemical, pulp and paper sector.

Large quantities of oil are transported around the Cape of Good Hope every year: 32.2% of West Africa’s oil and 23.7% of oil emanating from the Middle East. The long-term prospects for shipping and oil and gas have persuaded national government to pursue Operation Phakisa (with a strong maritime focus) and for Transnet National Ports Authority to spend R2.5-billion on new equipment at South Africa’s eight ports in 2019/20.

At the Richards Bay Special Economic Zone (RBSEZ) a feasibility study is being done on a gas-to-power plant and a large liquid petroleum gas import and storage terminal was recently built for Petredec by Bidvest Tank Terminals.
Dr Phindile Masangane was appointed as the CEO of the South African upstream oil and gas regulatory authority, Petroleum Agency South Africa, in May 2020. Before then, Dr Masangane was an executive at the South African state-owned energy company, CEF (SOC) Ltd, which is the holding company of PASA. Dr Masangane was responsible for clean, renewable and alternative energy projects. In partnership with private companies, she led the development of energy projects including the deal structuring, project economic modelling and financing on behalf of the CEF Group of Companies. Her responsibilities also included supporting the national government in developing energy policy and regulations for diversifying the country’s energy mix.

In 2019, Dr Masangane was Head of Strategy for the CEF Group of Companies where she led the development of the group’s long-term strategic plan, Vision 2040+ as well as the group’s gas strategy. From 2010 to 2013, Dr Masangane was a partner and director at KPMG, responsible for the Energy Advisory Division. She successfully led the capital raising of $2-billion for hydro and coal power plants expansion programmes of the Zimbabwean power utility, ZESA/ZPC.

An alumnus of three universities, Dr Masangane has a BSc (mathematics and chemistry) from the University of Swaziland, a PhD in Chemistry from Imperial College, London and an MBA from the University of the Witwatersrand.
Pollution of the environment by human activities has left a legacy of negative environmental impacts, often with a widespread and serious effect. While the mining industry remains an important driver for economic development and growth, its negative impacts cannot be ignored. The mining environmental impacts are a particular focus of the CGS, looking at both the physical transport of hazardous materials such as dust and asbestos, as well as the chemical changes caused by mining, which generally lead to the leaching of minerals and the release of pollutants into water bodies. Mining and industrialisation have had local and regional impacts on water quality, biodiversity and land availability, as well as global impacts due to the release of greenhouse gases and the degradation of land and vegetation, reducing the natural carbon sequestration capacity. Over and above these anthropogenic impacts, natural environmental conditions also exist, which are not conducive for human development.

The Council for Geoscience (CGS) is actively implementing programmes to address both natural and anthropogenic environmental issues. These include:

- *In-situ* manganese and iron removal from groundwater to prevent borehole clogging and reduce water treatment costs;
- Remediation of acid mine water through passive treatment, using natural materials and energy sources;
- Monitoring of asbestos contamination in and around former asbestos mining areas; and
- Exploring the potential for coexistence of mining and an ecologically robust environment.

**New technology to prevent borehole clogging:**

In some instances, natural groundwater resources are contaminated by processes such as leaching of certain minerals. Borehole clogging due to iron and manganese biofouling is a problem in primary and secondary aquifers worldwide, including South Africa. Biogeochemical processes due to the
Ingress of oxygen through pumping cause borehole clogging in aquifers with high concentrations of bivalent iron (Fe\(^{2+}\)) and manganese (Mn\(^{2+}\)), threatening the quality and availability of this resource. Within South Africa, most interventions/technologies depend on costly, surface (ex-situ) infrastructure to remove iron and manganese from groundwater.

The Council for Geoscience (CGS) is conducting a study on an alternative treatment for resolving borehole clogging related to iron and manganese build-up. The treatment procedure as patented by CGS (registered South African Patent No.2015/08887) comprises injection of ozonated water (as an oxidant) into boreholes, located at various distances up to 10m up-gradient of production boreholes. When the ozonated water approaches a borehole, the redox chemistry changes from reducing conditions to oxidising conditions. Soluble manganese (Mn\(^{2+}\)) is then oxidised to form manganese dioxide MnO\(_2\) and ferrous iron oxidises to ferric iron and then hydrolysises to form Fe(OH)\(_3\), which is a particulate and can be removed by standard filtration or which attaches to surfaces within the aquifer. The treatment has managed to reduce the levels of iron (Fe) and manganese (Mn) from the Atlantis Aquifer system to within the relevant water quality guidelines, confirming the feasibility of in-situ iron and manganese removal using the CGS system.

**Passive Treatment of Polluted Mine Water**

The generation of acid mine drainage (AMD) is a problem related to mining activities throughout the world. In South Africa, the most serious AMD problems occur due to gold and coal mining, with AMD continuing to be generated and contaminate the environment long after mining activities have ceased. Remediation becomes vital to avoid contamination to the receiving environments. The CGS has undertaken research into passive treatment systems, particularly for remote areas where large numbers of small mining operations result in multiple small AMD flows. Passive treatment systems improve water quality using naturally available energy sources in gravity-flow treatment systems which are designed to require only infrequent maintenance. This treatment technique is usually associated with low costs of operation and a low frequency of monitoring, and maintenance and, since they rely on natural ameliorative processes, they can be integrated into the natural landscape.

Up to now, in South Africa, the application of passive treatment for the amelioration of contaminated mine water has largely been demonstrated at a pilot and laboratory scale. Following successful bench and pilot stage, an up-scaled passive treatment system is currently being installed by the CGS at a legacy coal mining site in Mpumalanga to treat acid mine drainage. The passive treatment system consists of a vertical flow wetland or reducing alkalinity-producing system (RAPS) which combines the mechanisms of anaerobic treatment wetlands and anoxic limestone drains (ALDs).
Measuring environmental asbestos levels around the former asbestos mining areas
Asbestos fibres pose a high risk to human health due to their high inhalation potential and the serious respiratory problems (asbestosis and mesothelioma) related to their inhalation. Abandoned asbestos mines are generally a significant source of asbestos exposure to their surrounding areas. An integrated asbestos study was undertaken between 2014 and 2018 to assess the success and shortcomings measures put in place to protect surrounding communities. The study identified high risk areas and highlighted the airborne route as the main risk of exposure. Amphibole asbestos (crocidolite and amosite) minerals were identified in Limpopo and the Northern Cape, while serpentine asbestos (chryottilite) was found in Mpumalanga. The study identified the shortcomings of the rehabilitation processes at some sites, many of which are in close proximity to rural communities, posing a risk of continuous exposure. The study made preliminary site-specific recommendations that include rehabilitation, maintenance and care of the identified asbestos dumps.

Coexistence of Mining and the Environment
Coexistence as a concept primarily focuses on the existence of two entities existing at the same time and/or in the same location and exploring the symbiosis between them as they compete for resources. The CGS’s research on the coexistence of mining and the environment is aimed at investigating sustainable solutions which can enable mining with minimal to no adverse or irreversible damage to the environment. The purpose is to ensure environmentally responsible mineral extraction, through establishing best practice and standards throughout the life cycle of the mine. In the mining context, coexistence therefore, is underpinned by sustainability principles, following a systems approach where economic, socio-political and natural systems (ecosystem) are integrated by governance through regulation and policy. The CGS is in the process of investigating the applications of innovative and disruptive technologies related to treating and reducing waste, reducing CO₂ emissions and the environmental footprint of mining, as well as alternative mining methods. This includes automation and 4IR technologies such as the internet of things. This in part is tackled through developing a GIS based online platform which is a national database integrating biophysical datasets, mineral commodity datasets in order to enable strategic planning of future mining activities that will benefit the economy and the environment.

Through these and other projects, the CGS is assessing the remediation of the legacies from historical human activities, improving governance of current activities and keeping an eye on future use of natural resources, within environmental limits. Innovative and systems approaches are encouraged to improve environmental stewardship.

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The Council for Geoscience (CGS) is the national custodian responsible for the collection, compilation and curation of all onshore and offshore geoscience data and information. The CGS aims to use this information and knowledge to develop geoscience solutions to real-world challenges in South Africa.

**Geoscience Mapping**
Geoscience mapping is the core function of the CGS and aims to develop fundamental geoscience knowledge using an integrated and multidisciplinary approach as well as innovation that merges several onshore and offshore geoscience themes such as geology, geotechnical studies, geochemistry, geophysics and economic geology for mineral and energy resources and their mineralising systems information to boost sustainable exploration for economic growth.

**Engineering Geology and Geohazards**
As the custodian of the national seismological network, the CGS monitors and maintains a geohazard inventory for South Africa. This information is primarily used in developing effective and novel geohazard mitigation solutions for safe and judicious land use. Modern artificial intelligence techniques are applied in subsidence mapping and seismic hazards characterization.

**World Class Facilities**
The geoscience functions are supported by a multi-faceted laboratory that performs a wide range of analytical services such as petrography, whole rock geochemistry, petrophysics, coal science and hydrochemistry. The CGS also manages a geoscience museum, library, bookshop, and national core repository which are used by the scientific community and the general public.

**Water and Environment**
The CGS carries out hydrogeological studies and aquifer modelling and is also responsible for environmental geoscience research which aims to provide sustainable solutions to monitor and mitigate the impact of geology and mining activities on the health of the environment including its inhabitants.

**African Footprint and Other Collaborations**
As the permanent secretariat of the Organisation of African Geological Surveys (OAGS), the CGS has an impressive footprint in the African continent where various geoscience services have been rendered in line with global standards, international policy and governance. The CGS also collaborates with various academic institutions and science councils around the world.

**CGS at Work**
The CGS is undertaking integrated and multidisciplinary geoscience mapping programme across South Africa. Some of the recent projects include:
- Multidisciplinary geoenvironmental baseline investigations in the Southern Karoo for possible shale gas development, which uncovered previously undefined groundwater aquifers.
- Regional soil geochemical sampling and detailed follow-up surveys, particularly within the Northern Cape, North West and Mpumalanga provinces.
- Geothermal energy and carbon capture and storage research, which aims to expand the current renewable energy mix of South Africa and decrease the carbon footprint.
- Ground stability and geotechnical assessments for infrastructure development in the Northern Cape and Free State Provinces.

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Council for Geoscience
Neighbours working together for growth

A new bridge over the Okavango River neatly symbolises increased ties between Botswana and Namibia, neighbours within the Southern African Development Community (SADC), but the two countries are cooperating on a range of other initiatives as well.

The bridge at Mohembo in the north-west of Botswana will facilitate better access to the Caprivi Strip in Namibia. An Italian joint venture between Itinera SPA and Cimolai was appointed by Botswana’s Ministry of Finance and Economic Development and is expected to be completed in May 2021. CPP Botswana is consulting on the project. Sectors that are expected to benefit include tourism, agriculture, manufacturing and the film industry.

The two countries are also discussing the possibility of jointly building solar power projects with a view to supplying their own markets and exporting into Southern Africa. This project is backed by Power Africa, a USAID initiative that works to bring together state and private actors to add more than 30,000MW to the continent’s capacity. Botswana is reliant on coal-fired power stations and Namibia currently imports more than 60% of its electricity requirements.

Botswana has plans for new thermal and solar plants which it will develop independently to become self-sufficient in energy. Diversification is an important part of the plan although the country still has vast reserves of coal, estimated to be 200-billion tons. The state-owned Botswana Power Corporation (BPC) will retain distribution rights to electricity, but licences have been granted to three private power producers for 827MW.

Four wind farms in the Tsau/Khaeb National Park in Namibia will help to wean the country off foreign supply of energy. State-owned NamPower is building two farms which will generate 90MW.
Two private companies, InnoSun Energy Holding and United Africa, will generate the same amount of electricity on the two other farms.

When it comes to trade, transport and tourism, a specialised unit, the Trans Kalahari Corridor Secretariat (TKCS), works on easing conditions for interaction between the two countries. South Africa is the third participant in an initiative which focusses on organisational efficiency, border management, stakeholder management and safety and security.

**Namibia**

Namibia's population of about 2.5-million has lots of room to move in more than 842 000km² of land, much of which is desert, along Africa's west coast. Historically, the country has been rich in diamonds and uranium production. Husab Uranium Mine is the third-largest uranium mine in the world but no new mines are planned. Good copper prices are expected to boost earnings in the short term.

The agricultural sector made breakthroughs in 2019 and 2020 with the acceptance by China and the US of consignments of imported Namibian beef.

A $72-million rail project, part-funded by a loan from the African Development Bank, will see the Walvis Bay-Kranzberg line upgraded. State entity TransNamib regards this as a strategic line as it links the port with the interior and beyond to other countries in the region. Other infrastructure news is that Chinese state-owned construction company, China Henan International Cooperation Group, has won the contract worth $35.6-million to construct the Tses-Gochas road in the south.

The marine sector is growing in importance. Marine engineering and ship-repair company Namdock has onshore engineering and fabricating facilities and operates three floating docks, including a Panamax-sized dock, in Walvis Bay.

Engen Namibia’s acquisition of the services of a 77.4m barge will boost bunkering capabilities at the Namibian ports of Walvis Bay and Lüderitz. Engen Namibia has stated its support of Namport’s vision to attract increased volumes of cargo to the Port of Walvis Bay and position the Walvis Bay Corridor as a natural gateway for international trade.

A kelp farm to be developed off the coast of Lüderitz is said to be the first in the world to be developed to a large scale (Engineering News). Netherlands-based Kelp Blue will run the project which is currently backed by Climate Fund Managers’ Climate Investor Two Fund and Namibia Infrastructure Development and Investment Fund (NIDIF). More investors will be invited to join the $60-million project.

The Namibia Investment Centre (NIC) falls under the Ministry of Industrialisation, Trade and SME Development.

**Botswana**

Botswana’s Vision 2036 aims to transform Botswana from an upper middle-income country to a high-income country by 2036. A National Transformation Strategy (NTS) is to be developed. In 2020 proposals were invited from local providers for the development of methodology for Vision 2036. Consultants were also invited to register.

In implementing infrastructure projects ranging from hospitals, schools and police stations, the state is looking at various models of delivery, including creating smaller tasks within projects that can be tackled by co-operatives.

Botswana has made the most of its natural resources and succeeded in turning what was a poor country at the time of its independence from Britain in 1966 into the ranks of middle-income countries. The country has enjoyed long periods of political stability and runs credible elections. Botswana’s mineral wealth includes diamonds, copper, nickel, salt, soda ash, potash, coal, iron ore and silver. The main economic sectors are mining and tourism where the Okavango Delta is the jewel in the crown, attracting high-spending tourists.

The Botswana Trade and Investment Centre (BTIC) is responsible for investment and export promotion, and the promotion and development of the nation’s brand.
# Key Sectors

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Agriculture

Uganda has a new coffee brand.

Modern consumers like to know where the food they eat or the coffee they drink comes from. Nespresso understands this, but the Swiss coffee company has taken it a step further by creating a programme to revive coffee production in areas where it has stopped: the programme is called “Reviving Origins”.

Launched in 2019, the programme expanded to Uganda with the launch in 2020 of Amaha awe Uganda (Hope of Uganda) from the Rwenzori Mountains (pictured). Working with Agri Evolve, Nespresso is backing 2 000 farmers to return to cultivating coffee. The programme met with significant success in the Manicaland province of Zimbabwe: the availability of AAA high-quality coffee grew by 9% from 2018 to 2019. Nespresso is investing a total of $11.2-million in the programme over a period of five years from 2019.

Agriculture is the second-largest contributor to the continent’s GDP, after mining and quarrying. South Africa, Egypt and Kenya have thriving agricultural exports, but most farming on the continent is on a subsistence basis. Roughly 6% (or 13-million hectares) of land is irrigated which means that the vast majority of farming relies on rain, a risky undertaking. In countries such as the DRC and Tanzania, only a small fraction of arable land is farmed.

Access to appropriate storage, good transport and reliable power supplies are all constraints on African farming. High input costs for fertiliser, pesticide and seeds are additional problems. Access to good seeds has been sporadic.

Zimbabwean farmers can earn from renting out equipment.

The International Maize and Wheat Improvement Center (CIMMYT) runs a seed test centre near Nairobi in Kenya but few Kenyan farmers use new seeds because the state subsidises its seed company and approval for new seeds can be difficult to obtain. The Economist argues that “Sub-Saharan Africa is decades behind” when it comes to agricultural productivity (November 28, 2019) and cites the development of a seed that can resist fall armyworm that neither Ugandan nor Kenyan farmers may use as their governments have banned genetically modified crops.
CIMMYT is involved in a project of a quite different nature in Zimbabwe. Fifteen Zimbabwean farmers have signed up for a programme where they become the owners of agricultural equipment which they then rent out. Funding is supplied by the Swiss Agency for Development and Cooperation (SDC). CIMMYT is the lead implementor of the pilot in collaboration with Kurima Machinery and the Zimbabwe Agriculture Development Trust (ZADT).

The mechanisation package (a two-wheel tractor and trailer, a direct planter and a maize-cob sheller) is purchased through a “lease-to-own” credit facility. Participants can pay over 24 months after paying a deposit.

A quarter of Sub-Saharan Africa’s population is undernourished and yet agriculture is often the biggest contributor to GDP. In Guinea-Bissau, the sector accounts for over 90% of exports, nearly 85% of employment and just over 45% of GDP.

The Food and Agriculture Organisation (FAO) of the United Nations has warned that if things do not change, Africa will in 2050 be able to feed only 13% of its population. The scale of the problem actually holds the seeds of the solution. While demand is driven by a rising population and a more demanding middle-class, this is creating a market for agri-business which is expected to reach $1-trillion by 2030. This makes agriculture an investable sector.

There is enough arable land in Africa for the problems to be solved, and for Africa to become a net exporter. Although 20% of Tanzania is suitable for farming, only 5% is currently cultivated. The World Bank calculates that Africa could farm on 202-million hectares of arable land.

Access to new technology also gives hope that progress can be quick. Smart phones, drones, hydroponics, improved genetics and precision farming equipment could be part of renewal strategies.

If Africa can scale up and make agricultural production more efficient, the ramifications for the broader economy will be profound.

Ethiopia cut poverty by 33% in just over decade, driven largely by annual agricultural growth of close to 10% (World Bank). The African Development Bank (AfDB) has flagged increased agricultural production as one of the keys to improved economic growth in countries which do not have minerals. The 2019 African Economic Overview highlights the growth of Senegal, Rwanda and Ivory Coast and points out that increased agricultural production, if it is accompanied by an expansion of the value chain and development of processing facilities, can lead to the creation of manufacturing enterprises and ultimately play a role in industrialisation.

Countries that currently rely too heavily on fossil fuels are looking to diversify into agriculture. Nigeria is increasing the contribution that agriculture makes to GDP. By contrast, Kenya’s recent oil discoveries are a welcome break for a country very reliant on a small basket of exports, tea and flowers chief among them.

The AfDB has an Agribusiness Development Division and funds the Technologies for African Agricultural Transformation (TAAT), which aims to radically transform the sector through technology. TAAT works on soil fertility management, water management and training. It also advocates for supportive seed technology policies.

Investment into agri-processing is promoted via Special Agri-Processing Zones (SAPZs). Ethiopia, Guinea and Togo have such zones which the AfDB, together with other investment banks such as the European Investment Bank and Korea-Exim Bank, has helped establish.
Energy

An ECCAS interconnection project shows the way.

The growth of African cities is happening quickly and many of the trends that will affect Africa in years to come are playing out in cities. One of these is the increasing uptake of small-scale renewable energy options such as rooftop solar. For this to be effective, decentralisation has to be embraced, something which the City of Cape Town in South Africa has gone to court to try to secure.

In East Africa, Nairobi and Kigali are taking steps to promote renewable energy within their city limits, either through legislation insisting on new buildings embracing new technology or creating green zones. A reduced building permit fee acts as an incentive for installing renewable technology in Accra.

Even countries that are already using renewable energy are looking for more sustainable solutions. Sudan relies heavily on hydropower but this is not always reliable so various solar projects are underway. These include a series of solar farms paid for with a grant from the United Nations Development Programme (UNDP) and a Solar Lab set up in Khartoum with funding from the same source.

The lack of diversity in energy generation represents a real risk for African countries and regions. Consulting firm Frost & Sullivan points out that most Sub-Saharan economies generate the bulk of their electricity through three or fewer sources, whereas at least six types of power are used in other economies around the world.

Relying on hydropower, as the Central African Power Pool (CAPP) and the bulk of the Southern African Power Pool (excluding South Africa) do, makes both regions susceptible to drought and other changes in climate. The East (EAPP) and West African Power Pools (WAPP) supplement hydropower with natural gas.

There is a need to diversify into solar and wind, especially as renewable energy technologies will be cost-competitive with fossil fuel sources by 2030. The Global Wind Energy Council estimates that wind could supply 18GW to the SADC grid by 2030. That amounts to a third of the existing power pool in the region. The fact that such estimates are published is evidence of the ambitions of the promoters of renewable energy. A giant wind project at Lake Turkana in Kenya will supply 310MW from 365 turbines on 40 000ha.
The African Development Bank’s (AfDB’s) investment portfolio of $52-billion will not include any new coal projects. The bank has declared that it wants to help Africa move away from fossil fuels. AfDB has allocated $20-billion to solar and clean energy plans that will produce about 10 000 MW for the Sahel’s rapidly increasing population.

The European Bank for Reconstruction and Development (EBRD) is also funding renewable energy. A $202-million loan to the Egyptian Electricity Transmission Co will be used to integrate 1.3 GW of new renewable energy generation capacity into the national grid.

The Cameroon–Chad Power Interconnection Project will deliver the first transmission grid to the region, allowing for electricity trade between the two countries and the optimal use of infrastructure. The capital of Chad, N'Djamena, will have better access to electricity and Cameroon’s two regional power systems will be integrated. Both countries are members of the Economic Community of Central African States (ECCAS) and the project has received funding in the form of a $385-million loan from the International Development Association (IDA), a subsidiary of the World Bank Group.

Microgrids

Microgrid solutions are becoming more popular in sectors such as agriculture and mining. Financing for such projects can be problematic but there is an expectation that development financiers such as the World Bank will provide solutions. Rapidly falling costs for solar photo-voltaic solutions are making the idea of power generation in remote areas more feasible.

The Africa Minigrid Developers Association (AMDA), which was formed partly to address the funding issue, has 30 private-sector members operating mini-grids across 15 countries.

In an interview conducted in 2020 by ESI Africa with the CEO of the AMDA, Aaron Leopold said, “Scale is our number one emphasis and focus and really helping governments know and trust the sector is at the core of our mandate and helping investors know and trust the sector too.”

The largest company in AMDA’s portfolio is PowerGen which has mini-grids in four countries, Tanzania, Kenya, Nigeria and Sierra Leone, with Benin soon to be added to the portfolio.

Africa had installed capacity of 96 GW in 2015 and 600 million of its citizens do not have access to electricity. Sub-Saharan Africa’s electrification rate is 32% (AfDB).

Although all infrastructure sectors need funding, the energy sector is where Africa has the most catching up to do. In response to this imperative, the AfDB planned to invest $12-billion in the energy sector in the period 2016-2021.

Regulations, concessions and licences were some of the subjects to come up at the DRC Digital Mining Week held in June 2020, as reported by ESI Africa. The CEO of Tembo Power, Raphael Khalifa, said that the DRC’s lack of regulation and security for licences and concessions for power projects was a problem. The Mauritius-based company runs 10 projects as an independent power producer in the DRC, Kenya and Burundi, totalling $500-million in investments.
THE CHALLENGE

Making sure the data centre has maximum uptime

Tier 3 data centres need to be able to guarantee almost 100 percent uptime, which means failure is just not an option.

icolo.io designs, builds and operates state of the art carrier neutral data centres and just completed a Tier 3 unit in Mombasa, the coastal town, and second largest city in Kenya.

They needed to test all the equipment, including power generators, UPS systems and precision cooling before they could get it online, to ensure everything met the strict industry standards.

KEY FACTS

675 kW
Capacity of data centre

13,000 sq ft
Size of building

1
1266 kW capacity loadbank
We engaged Aggreko to help us test and certify our new data centre in Mombasa. We required an engineer and a large loadbank to provide power and heat to test all HVAC, UPS and generator systems and controls. Their engineer was always willing to work with us throughout the testing, and although we had a minor technical issue initially, it was solved efficiently. We successfully tested and certified our site on time and I look forward to testing our next facility!

Alex Rhys-Hurn
Chief Operating Officer
icolo.io

We supplied a 1266 kW loadbank to test the 675 kW capacity data centre. We made sure it was commissioned quickly to test the capabilities of the on-site power and cooling system so the operator could confirm the accreditation. We undertook the testing in stages: a 500 kW UPS system, cooling system and two 1000 kVA generators. We worked in close partnership with the data centre to get it all done in time.

The data centre will provide 180 cabinets for customer use with up to 675 kW of available customer power. The centre is purpose-built and spans more than 13,000 sq ft of floor space. It has redundant power and its own back-up generators, precision cooling and pre-cabled inter-connect infrastructure.

Our loadbank service helped icolo.io test and commission the data centre and meet the Uptime Institute’s requirement for a tier 3 facility. With our help, they were able to demonstrate the capability of the data centre and attract global customers with their unique offering.

Test proves capacity and helped attract global interest

Failure is not a word in our vocabulary
Manufacturing

A focus on manufacturing exports can add value.

Manufacturing makes up about 40% of intra-African trade but only 19% of exports. The Brookings Institution estimates that business-to-business spending in manufacturing in Africa could be $666.3-billion by 2030. This figure represents a $201.2-billion increase over the amount for 2015.

To get even greater value for their manufactured goods, Africans must export more. The African Growth and Opportunity Act (AGOA), which gives duty-free access to the US for about 6 500 products from 39 Sub-Saharan countries, will be in place for another five years and there is a chance to ramp up production of goods of higher value to take advantage of the agreement, which has not been exploited to the extent that it might have been.

Exactly how to move Africa’s economy away from agriculture into productive manufacturing is a subject of some debate. The “Vietnam Model” is based on growing the sector by offering manufacturing companies a low-wage environment as wages in China rise. Other countries to take this route include Sri Lanka and Bangladesh.

Ethiopia is following this trend. A Bangladeshi garment manufacturer has set up a factory in Ethiopia which supplies H&M and a Sri Lankan company, Hela Clothing (pictured), has produced and shipped its one-millionth garment from its factory in Ethiopia. TAL Apparel, a company with Hong Kong roots, had 27 000 employees in the same town in which Hela is operating, Hawassa, until Covid-19 struck. This is part of a drive by Ethiopia to increase its annual export earnings in clothing from $145-million to $30-billion (CNN).

Lesotho and Mauritius are other countries exporting textiles, although the island nation chose to focus on the high-end market and has developed the skills and quality-control protocols needed to supply that niche. As a colony Mauritius was a sugar-based monoculture. Today sugar cane is still in the export basket but there are also textiles, clothing, processed fish and cut flowers. Services exports such as financial services and tourism are rising, and medical tourism and higher education are seen as a high-value sectors worth investing in.

Dr Yuwa Hong and Dr Martyn Davies have argued that wage rates are just one of the “pull” factors that attract manufacturers (Sunday Times, 26 January 2020). Of the six countries referenced in their article, Rwanda, Ethiopia,
Ghana, Mauritius and Egypt have lower wage regimes than China but Egypt, Ghana and Mauritius have higher manufacturing wages than Vietnam.

Capital stock per capita and the rate of growth of that capital stock are also vital, the academics claim. Capital stock refers to invested assets that improve an economy’s chances of performing well: infrastructure, equipment, technology, warehouses, transportation, logistics and communication. On the basis of the three rankings, the countries they studied rank as follows in terms of “pulling” manufacturers: first, Rwanda, followed by Ethiopia, Ghana and Mauritius (joint third), Egypt and South Africa.

Other factors for attracting manufacturers referred to by the doctors (but which fell outside their study) are regulations and tax policy, enabling infrastructure, access to finance, skills of the workforce and the capabilities of local firms.

One of the consequences of the Covid-19 epidemic is to make African leaders more conscious of the need to make more things locally. Incentives for the manufacture of pharmaceuticals and other items found to be in short supply during the crisis are likely to follow.

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**Agenda 2063**

The African Union’s Agenda 2063 focusses on raising the continent’s industrial and manufacturing capacity. At the Africa Industrialisation Week held in Addis Ababa in 2018, various complementary plans were outlined to support this goal: the Accelerated Industrial Development of Africa (AIDA), the Pharmaceutical Manufacturing Plan for Africa (PMPA), the SME Strategy, Boosting Intra-African Trade and the African Continental Free Trade Area and the UN General Assembly’s Third Industrial Development Decade for Africa (IDDA III).

The African Development Bank (AfDB) reports that growth spurts driven by manufacturing have a more lasting and deeper impact on a country’s economy than resource-driven booms. The AfDB concludes that, “The implications of such a strong association between manufacturing-driven growth episodes and jobs is that industrialisation is the key to the employment conundrum in Africa” (African Economic Outlook, 2019).

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**Growing the manufacturing sector across the continent will lead to industrialisation, urbanisation and more value being added. The bank reports that, “African countries with the highest shares of manufacturing in value added also have higher levels of development.”**

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**Food processing and beverage production are among the strongest sectors in Africa.** The Dangote Group, which has interests in cement, sugar, salt, flour, pasta and beverages, is active in 16 African countries and has a turnover of $4.1-billion. **Anheuser-Busch InBev** has built or is building new breweries in Nigeria, Mozambique and Tanzania and intends to increase its local supply, which will help grow local businesses.

Mozambique will soon have a new alcoholic beverage facility as Distell expands its African footprint. The wine, cider and spirits producer already has plants in Angola, Kenya, Nigeria, South Africa, Tanzania and Zimbabwe.

A favoured strategy to encourage manufacturing is through Special Economic Zones. These come in different forms, including Free Trade Zones (FTZs), Export Processing Zones (EPZs) and industrial parks. Typically, these zones attract tax benefits and tariff exemptions. Zones in Ethiopia, Djibouti, Nigeria and Rwanda were established with the help of state-owned Chinese companies.

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**ONLINE RESOURCES**

- Accelerated Industrial Development of Africa: www.au.int/en/ti/aida
- Agenda 2063: www.au.int/en/agenda2063
- Association of Ghana Industries: www.agighana.org
- Kenya Association of Manufacturers: www.kam.co.ke
- SME Strategy: www.ifc.org
Transport and logistics

Open access railway lines have doubled freight volumes in Tanzania.

African development corridors are based on existing or planned railway systems. For landlocked countries, rail links to ports are the lifeblood of trade.

Creating standardised infrastructure is a vital part of all regional planning. In the rail context, this includes the standardisation of brakes, couplings and gauge. The Mombasa-Nairobi Standard Gauge Railway project is Kenya’s most ambitious infrastructure project since independence.

The Economic Community of West African States (ECOWAS) bases its integration plans for the region on the development of an integrated rail network. The rail component is critical to the ultimate success of the Northern Corridor, the multimodal trade route linking the countries of the Great Lakes Region with the port of Mombasa in Kenya.

China has been a leading funder of rail projects on the continent. This includes large projects in Angola, Djibouti, Ethiopia, Kenya and Nigeria.

The goals set out in the 2018-2022 Strategic Plan of the Southern African Railways Association include increasing rail market share to at least 40% and advocating for pro-rail policies. The AU has plans for an African Integrated High-Speed Railway Network (AIHSRN) among its goals.

The existing line that runs from Zambia to the coast of Tanzania, known as the Tazara line, provides freight and passenger services along a 1 860km route. The decision in 2018 to make this an “open access” line, allowing a number of rail operators to use the line, has led to a doubling of freight volumes. This option is now being explored for the route linking Dar es Salaam with the Great Lakes.

Freight operator Traxtion, which is in a joint venture on the Tazara line called Calabash, is lobbying for open access to become the norm in South Africa where the state-owned entity, Transnet, currently has a near-monopoly on infrastructure and operations.

An ambitious idea has been put forward by Angola’s authorities, to build another line to link to Tazara that would start at the port of Lobito in Angola, thus spanning the continent from west to east.

In March 2020, the government of Zambia signed an agreement with Railnet International to do studies on the plan to build new rail infrastructure which would link the Copperbelt Province to the Port of Beira in Mozambique, passing through the Zimbabwean capital city of Harare. Railnet International has put forward the figure of $11-billion that would be spent across the three nations in a private-public partnership.

A new rail link has been proposed between Ethiopia
and Sudan which has the potential to assist regional integration and development. The NEPAD Infrastructure Project Preparation Facility (NEPAD-IPPF), a multi-donor special fund administered by the AfDB, is contributing towards the costs of the project. The transformative nature of 1,500 km of railway line linking Khartoum with the coast via the Ethiopian capital of Addis Ababa would be difficult to understate.

**Ports**

Improving efficiency, increasing volumes and reducing costs are the most important priorities for African ports. The cost of using African ports is about 40% higher than the global average, and up to 70% of the delays in delivering cargo that are experienced are because of the time that containers spend in ports (AfDB).

Egypt deals with the most containers on the continent, followed by South Africa but Algeria has shown strong growth. West Africa is also increasing its capacity. There are port expansion projects underway and new ports are being built across the continent. A notable example is the Lamu Port on the Kenyan coast. Lamu is the final (eastern) point in a new transport and infrastructure corridor linking Kenya’s coast with South Sudan and Ethiopia, thus extending the concept of the hinterland beyond Rwanda, Burundi and Uganda. The LAPSSET Transport Corridor encompasses railways, highways, pipelines and airports, at Lamu, Isiolo and Lake Turkana. Tanzania’s port of Dar es Salaam also in the business of receiving and sending cargo.

**Logistics**

A first Africa Supply Chain in Action (ASCA) virtual conference and exhibition was held in August 2020. The event was co-hosted by SAPICS, the Professional Body for Supply Chain Management, and Smart Procurement.

Sixty speakers covered topics ranging from Covid-19’s impact on supply chains to the rise of informal economies and the circular economy, blockchain, drone technology, skills development, sustainability and e-commerce. The annual SAPICS Conference for supply chain professionals, held in November 2020, has been running for more than four decades.

Imperial Logistics intends using money made in the sale of its European shipping business to expand and improve its operations in Africa. Market Access, the group’s consumer and healthcare company, has a presence in more than 20 African countries and has plans to double its non-South African activity in the short term.

**Road**

The vast majority of freight within Africa is carried by road. All of Sub-Saharan Africa had 3,700 km of highways in 2015, compared with 24,000 km in India and 111,000 km in China. A quarter of Africa’s road are paved against 60% in India (AfDB).

There is no shortage of activity on the road-building front. Ethiopia has built 2,700 km of asphalt roads every year for the last four years. Most road-building in Africa is happening within a broader framework. The Trans-African Highway (TAH) network is a transcontinental road project including nine highways covering more than 50,000 km.

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**ONLINE RESOURCES**

- Association for Supply Chain Management: www.ascm.org
- AUDA-NEPAD: www.nepad.org
- Ethiopian railways corporation: www.erc.gov.et
- LAPSSET Corridor Development Authority: www.lapsset.go.ke
- Southern African Railways Association: www.sararail.org
A virtual event was held in December 2020 to share ideas on the state of African aviation. Hosted by the African Development Bank (AfDB), participants at the African Aviation Recovery Conference debated whether African airlines needed to consolidate to stay in business. Various solutions were discussed, including aircraft leasing, taking the opportunities presented by the airlifting of vaccines and finding ways to reduce costs.

In the context of wanting to achieve a more liberalised and freer air market in Africa, more than one speaker noted that the sector had its deficiencies before Covid-19 hit, citing high prices, poor safety and market restrictions.

The Director for Infrastructure and Urban Development of the AfDB, Amadou Oumarou, was quoted by Infrastructure News as saying that the pandemic’s effects were felt sharpest in Africa. As much as $7.5-billion in revenue had been lost by African airlines.

The International Air Transport Association (IATA) estimates that globally, the industry saw revenues shrink by 60%, with passenger traffic worst affected. Cargo fared less badly, with essential supplies and protective equipment having to be flown around the world and the drive to deliver vaccines will support another uptick in volumes in 2021.

Africa has not seen massive state support for its airlines during the crisis. Elsewhere, $173-billion was forthcoming to keep airlines operating. Ethiopian Airlines, one of the continent’s most successful carriers, quickly converted 45 passenger planes to enable them to carry cargo.

The decision by the African Union (AU) in 2018 to sign the Single African Air Transport Market is a sign that there is movement towards an “open skies” policy. The agreement was signed by 22 countries, representing about 75% of the intra-African air transport market and 600-million people.

The AfDB cites Morocco as a success story in liberalising the aviation sector. Competition led to increased flights into the country and yet the state airline managed to keep going. Many state-owned airlines in Africa are too small and fly too few routes to be profitable. Even South Africa’s large state-owned airline is failing, although there are complex reasons behind that story.

A related issue is the ease of entering a country. Rwanda and Seychelles have achieved positive results in tourist numbers and trade by introducing a much more relaxed visa regime, essentially allowing African travellers to get a visa on arrival.

An article titled “Coronavirus: a unique opportunity for African aviation?” on The Africa Report suggested that the crisis will have the effect of forcing airline strategists and governments to come up with...
realistic solutions to long-standing problems. The article summed up the historical approach as being based on one of three models:

• Intercontinental mega-hub strategy. With huge state support, this has been successful for Ethiopian Airlines. This also requires the geography to be right.

• Domestic low-cost strategy, which is predicated on a prosperous middle-class and long distances between popular destinations, as in South Africa where kulula followed this tactic.

• The regional premium strategy followed by Airlink (South Africa) and Air Côte d’Ivoire. In 2020 Airlink signed connectivity agreements with Emirates and Qatar Airways, giving its customers a chance to book through to overseas airports and the foreign carriers access to regional markets.

The report’s author noted that the worst possible scenario was to try to combine all three strategies, and this is unfortunately what has been done in the past. The international scenario is likely to contain fewer and more powerful competitors in the years that follow Covid-19, and the African aviation sector will have to consolidate and focus on its strengths if it is to thrive.

Airports Company South Africa (ACSA) is planning to cut capital expenditure to R1-billion a year, down from the projected R17-billion that was planned before the global epidemic hit. But cost-cutting is not the only option for airline-related businesses. ACSA for example, runs airports in other parts of the continent (Ghana) and elsewhere (India and Brazil) and is branching out into a range of other income-generating activities.

These include promoting the development of an aerotropolis around the OR Tambo International Airport near Johannesburg through land and business development. A similar project has been mooted for Cape Town International Airport. Revenue from hotels, accommodation, offices and other sectors would complement the existing revenue streams of logistics and warehousing traditionally associated with airports.

### ONLINE RESOURCES

African Airlines Association: www.afraa.org
African Civil Aviation Commission: afcac.org
Air Transport Action Group: www.atag.org
International Air Transport Association: www.iata.org
International Civil Aviation Organisation: www.icao.org
Tourism

Recovery from Covid-19 will be hard.

Foreign tourists who flew into Africa in 2018 contributed a collective $44-billion to GDP and supported 6.5-million jobs. In addition, for every job created by the aviation sector in support of tourism, another 16.5 jobs were created (Air Transport Action Group). Travel and tourism grew in Africa at 5.6% in 2018, according to the World Travel & Tourism Council (WTTC). The global average was 3.9% in the same period.

A survey by the W Hospitality Group reported that 90 hotels with 17,000 rooms were scheduled to open in 2020, but the company has predicted that the global pandemic will delay at least half of those projects.

Ethiopia is the focus of several hotel groups, including Accor, Hilton and the Radisson Group. The Radisson Hotel Addis Ababa will be the group's fifth in the East African country and it is adding two airport-linked hotels in South Africa (Johannesburg and Durban), a Radisson Collection Hotel Bamako in Mali and a further two hotels in Ghana and Nigeria due to open in 2023 and 2024. Radisson has a presence in 32 African countries.

Other areas with potential for growth in the tourism sector include Tunisia, Zimbabwe (with a focus on ecotourism) and Tanzania, where the African Development Bank says there is "immense development potential".

In 2019 Hotelier Middle East quoted an official from STR, a travel research company, saying, “There are now just seven countries in Africa with no internationally branded properties present, compared to 18 just six years ago. Accor and Marriott continue to lead the way in Africa, not just in terms of supply, but also pipeline.”

The purchase by Onomo Hotels of Bon Hotels increases the group’s footprint to 4,300 rooms in 15 African countries with a further 3,000 rooms planned. The group has also acquired the Signature Lux in Johannesburg, which caters to the “millennial and business traveller”.

The creation by the African Union (AU) of the Africa Visa Openness Index acknowledges the importance of relatively free movement to the economies of the continent. HVS, in its Hotel Valuation Index (HVI) notes that countries such as Mozambique, Senegal and Uganda offer visas on arrival.
A great deal can be achieved by good policy. An open-skies agreement between Morocco and the European Union in 2006 led to a 51% increase in seats by 2010. The Western Cape’s “Air Access” programme was spectacularly successful in attracting new direct flights to Cape Town. A collaborative programme between city, province, state and private sector actors, the initiative led to 15 new routes being established.

Areas with potential for growth in the tourism sector include Tunisia, Zimbabwe (with a focus on ecotourism) and Tanzania, where the African Development Bank says there is “immense development potential”.

Countries emerging from conflict such as South Sudan are obviously coming off a low base, but the potential is high. The same is true for Eritrea and Ethiopia, which should be able to reap a peace dividend.

Hyatt Hotels & Resorts has six new hotels in development, in Morocco and Tanzania (where it already has properties) and in Algeria, Cameroon and Senegal. The company is further considering investing in Ghana, Uganda, Ivory Coast, Rwanda, Kenya and Mozambique.

StayEasy Maputo, a 125-room Tsogo Sun property, will be the group’s third in Mozambique and 11th in Africa outside South Africa. A new 199-suite hotel is being developed close to the Mosi- oa-Tunya National Park and the Zambezi National Park in Zimbabwe. Mbano Manor Hotel is just 4km from Victoria Falls.

**ONLINE RESOURCES**

Africa Tourism Association.org: www.africatourismassociation.org  
African Tourism Board: www.africantourismboard.com  
African Travel & Tourism Association: www.atta.travel
Information and Communications Technology

Entrepreneurs are using technology to overcome hurdles.

Combine a lively imagination, youthful ambition and some encouragement (or funding) and Africa’s entrepreneurs will tackle the continent’s problems – with the latest technology.

Helping Nigerian factories in the food sector get access to quality raw materials quickly and efficiently via the latest technology was the central idea behind the Releaf Group venture. MAX (Metro Africa Xpress) turned the problem of a poor public transport system into an opportunity by creating an Uber-like motorcycle-taxi company in Lagos.

What these successful ventures share is membership of the Harambe Entrepreneur Alliance, a group of more than 300 African innovators who have been working since 2008 to develop scalable businesses. Mentoring and sharing is part of the plan, as is raising capital. Since it began, members of the alliance (“Harambeans”) have generated over 3 000 jobs and raised more than $500-million from Google Ventures, the Chan Zuckerberg Initiative and Alibaba. Andela (which builds and manages engineering teams) and Yoco (payment card machines) are tech businesses that began in the Harambe stable.

The Harambeans Prosperity Fund has allocated $1-million to provide low-interest loans and equity investments to businesses in the post-Covid environment which have sound business models, proven traction and demonstrated adaptability.

The fund will make capital available to entrepreneurs who have repositioned their ventures, or had proven business models prior to the pandemic, and are likely to thrive in the new norm but are unable to access capital markets.

Founders Factory Africa is supporting tech startups across Africa. The plan is to assist with the launch of 140 small businesses between 2019 and 2025. Standard Bank, which has a presence in 22 African countries, has invested in Founders Factory Africa and may be able to help individual entrepreneurs expand their businesses through local knowledge and access to markets.

The Overseas Private Investment Corporation, a self-sustaining US government agency, has a three-year plan (Connect Africa) to invest $1-billion in projects that include telecommunications and Internet access.

SECTOR INSIGHT
Telecoms operators spend $10-billion in Africa annually.
Satellites are a critical part of the telecommunications network of Africa. Content and data providers typically use satellite services where no fibre network is available. SES Africa has a fleet of satellites that orbit four times closer to earth than other models. Vodacom Business Nigeria is partnering with Intelsat to offer more to its customers in the enterprise and Internet of Things sectors.

Several African countries are participating in the Square Kilometre Array (SKA) radio telescope project. Based in South Africa, SKA’s Africa programme will see the creation of the AVN (the African very-long baseline interferometry (VLBI) network). The other participating countries are Botswana, Ghana, Kenya, Madagascar, Mauritius, Mozambique and Zambia.

Telecoms

A figure of $10-billion is invested by the continent’s telecoms operators, according to one of the biggest, MTN. A lack of spectrum is the only constraint on even more being invested into a sector with huge growth potential.

Several countries’ overall GDP growth has been boosted by the telecommunications sector: Benin (10.6%) and Gabon (18%) are examples and Ethiopia is expected to see a spike when parts of its telecommunications network are privatised. GSMA expects mobile phone and data usage to grow in Africa at a compound rate of 4.5% to 2024.

In 2018 there were 456-million mobile phone subscribers Tanzania has 6.4-million users of the M-Pesa mobile phone payment system. Senegal expects to achieve a 95.3% mobile phone penetration rate in 2021.

The high price of data in most African countries is a serious obstacle to the development and deepening of the sector.

The number of broadband connections in Africa crossed the 400-million mark in 2018 (which was nearly 20 times more than in 2010) but the regional average broadband penetration was only 25%. Mobile broadband coverage in Africa is still at 70% of the population.

Key areas for investment are infrastructure, digital transformation (including digital platforms and services), digital skills and cybersecurity. Other key factors are the development of a common digital market and aligned policies and regulations.

Smart Africa is an initiative backed by all the leaders of the AU to promote and expand the telecommunications potential of the continent. Examples of projects under the Smart Africa banner are data centres (Djibouti), innovation and entrepreneurship programmes (Egypt), e-payments (Ghana), cybersecurity (Ivory Coast) and smart energy and the blue economy (Togo).

A Kenyan company has found a way to offer WiFi for free. BRCK has 700 000 active unique visitors per month and operates out of 2 700 sites in East Africa. It has its own operating system, Moja, and is robust enough to be installed in taxis.

In reporting on the introduction of BRCK to South Africa, TimesLive quoted World Wide Worx MD Arthur Goldstuck saying, “Between 25% and 33% of SA smartphone owners don’t use cellular data with their devices because they can’t afford to.”

**ONLINE RESOURCES**

Connect Africa: www.opic.gov
Founders Factory Africa: www.foundersfactory.africa
Harambe Entrepreneur Alliance: www.harambeans.com
Research ICT Africa: www.researchictafrica.net
Smart Africa: www.smartafrica.org
Mobile payment applications are growing more sophisticated.

More than 500-million Africans have Internet access and most of those people use mobile devices to connect. This number continues to grow quickly and it is no surprise that many of the most innovative startups are in the fintech sector.

With movement restricted by Covid-19 lockdown regulations, even more customers signed up for mobile money solutions. Transactions in Rwanda increased five-fold by late April and a Nigerian payments firm, Paga, reported a 330% increase in customer signups in the second quarter (The Economist).

M-Pesa launched in 2007 in Kenya and has grown steadily ever since. M stands for mobile and pesa is the Swahili word for money. M-Pesa is operated by Safaricom and Vodacom and has more 41-million customers in seven countries, the Democratic Republic of Congo, Egypt, Ghana, Kenya, Lesotho, Mozambique and Tanzania. In 2019, a total of 12-billion transactions were recorded.

The average monthly amount processed by M-Pesa is $1.9-billion. Similar services are offered in Zimbabwe by EcoCash, Ethiopia’s M-Birr and services like Orange Money and Airtel Money.

MTN’s mobile money platform, MoMo, has connected more than 13-million users in 14 African countries. Customers can pay salaries, buy airtime or data, pay bills, among other services.

Where 170-million Africans had access to banking in 2012, that number grew to nearly 300-million in 2018. The consulting group McKinsey expects that number to reach 450-million by 2022.

The presidents of Ivory Coast and France agreed in 2019 that the West African franc is no more.

The West African franc is no more.
CFA franc would be replaced by a new currency, the eco. There are currently no plans to change the Central African franc, but it is possible that this currency will also be changed in the near future.

Eight countries used the West African CFA franc, while six countries continue to use the Central African franc. Both currencies were historically pegged to the euro and were supported by France. The Dakar-based Central Bank of West African States (BCEAO) issues currency in all of the member states of the West African Monetary Union (WAMU): Benin, Burkina Faso, Guinea-Bissau, Ivory Coast, Mali, Niger, Senegal and Togo.

The social development bond issued by the African Development Bank (AfDB) has received the Environmental Finance 2020 bond award. The proceeds of the one-billion Norwegian kroner (NOK) bond, which was made available to investors in Norway and Sweden in 2019, are allocated to inclusive growth in Africa, poverty reduction and job creation. AfDB has issued about $5-billion of similar bonds since 2017, denominated in US dollars and euros, and now NOK.

The rebranding of Absa’s assets in Africa is speeding up. Absa bought Barclays’ African operation in 2013 but continued to trade for some time under the Barclays brand. In February 2020, the bank’s largest two operations outside South Africa – Ghana and Kenya – went into the red, but only in the branding sense.

In financial terms, Absa’s 11 African operations outside of South Africa hugely outperformed the home base: 17% growth in earnings compared to a drop of 3% in South Africa (Business Times). Absa Kenya (of which Absa owns 68.5%) is listed on the Nairobi Securities Exchange. The banking group earns 21% of its income from north of the Limpopo River.

Standard Bank’s non-South African assets in Africa contribute 31% to headline earnings and have a far better return on equity than do those in South Africa. Standard Bank is present in 20 African countries. Standard Bank’s history involves both colonial and African components, but its current ownership reflects a major trend. The bank’s market capitalisation at the end of 2018 was $20-billion and the group’s largest shareholder is the Industrial and Commercial Bank of China (ICBC), the world’s largest bank, with a 20.1% shareholding.

The Making Finance Work for Africa Partnership (MFW4A) is an initiative to support the development of African financial sectors by coordinating initiatives across the continent and avoiding duplication. The Secretariat of the partnership is hosted within the AfDB in the Ivory Coast capital of Abidjan.

**Exchanges**

There are 27 stock exchanges in Africa, 25 of which are members of the African Securities Exchanges Association. Ethiopia intends launching a stock exchange. The African Exchanges Linkage Project (AELP) aims to assist cross-border trade and the settlement of securities, increase continental investment flows and to add depth and liquidity to African financial markets. Seven exchanges are currently participating, representing 85% of the continent’s securities market capitalisation.

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**ONLINE RESOURCES**

- Africa Financial Markets Initiative: www.africanbondmarkets.org
- Association of African Central Banks: www.aacb.org
- Central Bank of West African States: www.bceao.int/en
- Making Finance Work for Africa: www.mfw4a.org
The Grand Ethiopian Renaissance Dam on the Blue Nile is causing tension.

Tanzania is not a member of the East Africa's biggest Regional Economic Community (REC), the Common Market for Eastern and Southern Africa (COMESA), but it is a member of two other blocs, the Southern African Development Community (SADC) and the East African Community (EAC).

This type of overlapping membership is fairly common but can create problems if an REC concludes a deal with a foreign trading partner such as the EU. African planners are hoping that the continent-wide African Continental Free Trade Area (AfCFTA) will iron out the anomalies that come with multiple memberships of RECs.

The EAC comprises six states: Burundi, Kenya, Rwanda, South Sudan, Uganda and United Republic of Tanzania.

The member states of COMESA are Burundi, the Comoros, the Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Sudan, Swaziland, Seychelles, Uganda, Zambia and Zimbabwe.

The building by Ethiopia of the Grand Ethiopian Renaissance Dam on the Blue Nile is causing tension with its neighbours, Egypt and Sudan. A planned hydroelectric project would benefit the region but the downstream countries are concerned about waterflows.

The Intergovernmental Authority on Development (IGAD) tackles drought and desertification in the Horn of Africa. The member states of IGAD are Djibouti, Ethiopia, Eritrea, Kenya, Somalia, the Sudan, South Sudan and Uganda.

Climate

East Africa has been experiencing extreme weather patterns in recent years, including droughts and storms. The high altitudes of the Ethiopian Highlands and the mountains of the lake region combine to create a cooler and drier climate than one might expect for the region's latitude. Rather than equatorial weather, it is closer to a temperate upland climate with low temperatures. Snow occurs on the highest peaks such as Kilimanjaro.

Savanna conditions allow for the cultivation of maize, cassava, potatoes, millet, pulses, sorghum and beans. Cash crops include cashew nuts, tea, coffee, cotton, tobacco, sisal and cloves.

Economy

East Africa was the fastest-growing African region in 2018 (5.7%) and was projected (before Covid-19) to go above 6% in 2020. The region is Africa's most integrated in terms of market access (African Development Bank). COMESA established a Free Trade Area in 2000, which led to an average growth in intra-regional trade of 7%.

Countries within the region have been cooperating on cross-border infrastructure and transport projects, expanding access to electricity and building capacity in renewable energy and ICT projects.

Strong foreign direct investment is led by Chinese and Turkish involvement in Ethiopia. The diverse nature of the region's economies makes for an attractive investment proposition. Standard Bank expects the development of the Uganda-Tanzania pipeline to attract capex of $25-billion in the short term. Tourism was a strong earner.

Resources

Nickel, uranium, copper, oil, diatomite, gold.
Gas pipelines are important to the regional economy.

Capital: Dar es Salaam
Other towns/cities: Dodoma, Mwanza, Arusha, Mbeya, Morogoro
Population: 58.5-million (2020)
GDP: $63.2-billion (2019)
GDP per capita (PPP): $959 (2019)
Currency: Tanzanian shilling
Regional Economic Community: East African Community (EAC), Common Market for Eastern and Southern Africa (COMESA), Southern African Development Community (SADC)
Landmass: 947 300km²
Coastline: 1 424 km
Main economic sectors: Tourism (Serengeti Plain, Mount Kilimanjaro). Agriculture, agro-processing, cement, fertiliser, mining, oil refining.
Other sectors: Apparel, hydropower shoes, wood products.

New sectors for investment: Gas and pipelines. Renewable energy.
Key projects: Standard Gauge Railway (SGR) project. The fifth phase, connecting Dar es Salaam to Mwanza on Lake Victoria, was launched in 2021. Rukwa Power Plant. Hoima-Tanga crude oil pipeline.
Chief exports: Cashew, coffee, cotton, gold, manufactured products.
Top export destinations: India, South Africa, Kenya, Switzerland, Belgium, Democratic Republic of the Congo, China.
Top import sources: India, China, UAE, Saudi Arabia, South Africa, Japan, Switzerland.
Main imports: Consumer goods, machinery and transportation equipment, industrial raw materials, crude oil.
Infrastructure: 10 airports with paved runways; two seaports at Dar es Salaam and Zanzibar; 4 567km of railways; 87 581km of roads (10 025km paved); commercial trade with neighbouring countries via Lake Tanganyika, Lake Victoria and Lake Nyasa (also known as Lake Malawi).
Climate: Coastal tropical region, temperate in the highlands. Kilimanjaro is the highest point in Africa and has glaciers. The country forms part of the Great Lakes region.
Religion: Christians account for about 60% and Muslim 35% but Zanzibar is almost wholly Muslim.
Modern history: Swahili, English and Arabic are the primary languages of Tanzania. Germany had to give up German East Africa after World War I. Soon after gaining independence from Britain, Tanganyika and Zanzibar united to form Tanzania in 1964, but Zanzibar continues to have a degree of autonomy.
A new constitution ensured that the country has had multi-party politics since 1992. John Magufuli has been president since 2015, winning reelection in 2020.
Gas was discovered off the coast of Tanzania in 2012. The development of petro-gas resources to meet increasing domestic demand and for export have become vital components of economic strategy.
The Tanzanian military is part of the United Nations Force Intervention Brigade (MONUSCO) in the Democratic Republic of the Congo (DRC).
Elections were held across the region in 2020. The member states of the Economic Community of West African States (ECOWAS) are Benin, Burkina Faso, Cabo Verde, Côte d’Ivoire, the Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.

The languages in which ECOWAS conducts its business reflect the varied colonial history of the region: French, English and Portuguese. The main body of ECOWAS is The Authority of Heads of States and Government. Several West African countries held presidential and parliamentary elections in 2020, with incumbents doing well but facing objections from opposition parties. The peacekeeping force of ECOWAS has deployed joint military forces in times of instability, most recently in the Gambia.

Climate

The region’s climate varies from very dry in the north to humid in the south. In the Sahelian Zone the dry season can extend to 10 months and cattle, sheep and goats graze on grassland. Cotton is the main cash crop and food crops are groundnuts, sorghum and millet. Further south is the Sub-Humid Zone which includes Guinea-Bissau, Benin and the central parts of Nigeria where grass and shrubland predominate. The Humid Zone comprises the Guinea Zone (annual rainfall up to 1 800mm) and the Forest Zone. Both areas have tsetse fly, so livestock is less common. Multiple crops are cultivated and when dense tropical forests are cleared in the south, the land can carry oil palms, coconuts, rubber and cocoa (FAO).

Economy

The Nigerian economy contributes about 70% of regional GDP, so when that large oil-producer experiences a recession, growth figures for the region are disproportionally affected. Low oil prices led to such a recession in 2016.

After several good years of growth, average GDP growth in West Africa was down to just 0.5% in 2016. In 2017 it recovered to 2.5% and three of the six African countries in the World Bank’s top 10 in terms of growth predictions in 2018 were in West Africa: Ghana (8.3%), Côte d’Ivoire (7.2%) and Senegal (6.9%). Nigeria has also done better with better commodity prices and the completion of successful presidential elections in 2019.

The African Development Bank’s West Africa Economic Outlook 2018 notes that most of the region’s economies are dominated by the service sector and that manufacturing is the smallest contributor to GDP in all of them. AfDB predicts that gross capital formation will grow quickly as the region moves away from reliance on demand from private consumption (70%).

Several of the region’s economies are dependent on single commodities which makes them vulnerable to price shocks. More than one country is looking to join the existing producers of oil and gas, but the creation of stronger manufacturing bases is the key to more stable economies and more formal jobs.

Resources

Oil, gold, phosphate, iron ore, bauxite, diamonds.
Senegal has a stable political system.

Capital: Dakar
Other towns/cities: Touba
Population: 15.7-million (2020)
GDP: $23.9-billion (2019)
GDP per capita (PPP): $1 583 (2019)
Currency: West African CFA franc (expected to change to Eco soon)
Regional Economic Community: Economic Community of West African States (ECOWAS) and within that, WAEMU (West African Economic and Monetary Union)
Land mass: 192 530km²
Coastline: 531km
Resources: Fish, phosphates, iron ore, zircon, gold.
Main economic sectors: Fishing, mining and agriculture.
Other sectors: Services, construction, fertiliser production, tourism, ship repair and forestry.
New sectors for investment: Oil exploration, maritime support for gas, mineral beneficiation.
Key projects: Emerging Senegal Plan (with support from IMF) includes competitiveness reforms, energy infrastructure upgrades.
Chief exports: Food, live animals, chemicals (phosphates), minerals fuels and lubricants. Rice, cotton, tomatoes, corn, millet, sorghum, peanuts.
Top export destinations: Mali, Switzerland, India. Exports to other ECOWAS nations was 39.5% of total exports in 2017. Top import sources: China, France, Nigeria, India.
Main imports: Machinery and transport equipment (25%), lubricants, food, manufactured goods.
Infrastructure: 16 496km of highway (5 957km paved); 906km rail network; floating dry dock at deepwater Dakar port; container terminal, three secondary harbours; Dakar Airport handles 1.5-million passengers and 20 000 tons of freight; 90% of urban population has access to electricity (28% rural). Installed capacity of 1 250MW (2018), double capacity in 2012.
Climate: Dry and humid seasons determined by winter wind (northeast) and hot harmattan wind in summer (south-west).
Religion: Majority Muslim, small Christian community.
Modern history: The aftermath of colonial rule saw several state boundary changes. A so-called Mali Federation broke up soon after being granted independence from France in 1960 and Mali went on its own. Senegal joined with the Gambia to form Senegambia, but this was dissolved.

Between independence from France in 1960 and 2019 Senegal had five executive presidents. President Macky Sall won a second term in 2019 but a change to the constitution means he will serve five years, not seven, in his second term.

The country is named for the Senegal River which rises in Guinea (south of Senegal), runs through eastern neighbour Mali, before forming the northern border of the country with Mauritania. The Republic of Gambia is on both sides of the Gambia River and is surrounded on all sides by Senegal.
Elections in the Central African Republic were marred by violence in 2020.

**Climate**

The region covers 6.5-million square kilometres. The place where the rains from the north-east meet the winds from the south-east is called the Intertropical Convergence Zone (ITCZ). The ITCZ crosses the equator twice a year, creating two rainy seasons and two dry seasons. Thunderstorms are common. Rainfall in the southern section is more variable and proximity to the coast influences weather patterns, as does topography.

The equatorial region is the wettest part of the continent and its evergreen tropical rainforest is the second-biggest on earth. The Congo Basin is Africa’s biggest water catchment area. Variations in climate extend north and south of the equator, starting with the savanna forest, and getting drier the further one travels away from the equator. In the most northerly part of the region, the thorny steppe occurs, which is typical of the Sahel.

**Economy**

Commodity prices play a big role in the fate of the economies of the Central African region because minerals and oil are the two biggest assets currently being utilised. The vast forests contribute to the export baskets of many nations but there are concerns that illegal logging may be reducing this resource. The powerful rivers of the region present further opportunities; the Congo Basin has 44% of all Africa’s estimated internal renewable water reserves (African Development Bank).

Political instability hinders growth. Three of the region’s states are considered “fragile” (Central African Republic, Chad and the Democratic Republic of Congo) and Cameroon is experiencing severe tensions between English-speaking regions that want to secede from the predominately Francophone country. There is little integration within the region and infrastructure is under-developed. The region’s abundant natural resources could fuel the development of a manufacturing sector.

**Resources**

Oil, timber, copper, cobalt, diamonds, uranium, gold, natural gas, fish.
Economic growth of 10% was achieved in 2019.

**Capital:** Kigali

**Other towns/cities:** Butare, Ruhengeri, Gisenyi

**Population:** 12.1-million (2018)

**GDP:** $9.5-billion (2018)

**GDP per capita (PPP):** $2 251

**Currency:** Rwandan franc

**Regional Economic Community:** Common Market for Eastern and Southern Africa (COMESA), East African Community (EAC), Economic Community of Central African State (ECCAS)

**Land mass:** 24 668km²

**Coastline:** Landlocked

**Resources:** Gold, cassiterite tin ore, tungsten ore, beryllium, methane, coffee, tea, pyrethrum, bananas, beans, sorghum.

**Main economic sectors:** Agriculture.

**Other sectors:** Tourism, mineral processing, agri-processing, cement, textiles, cigarettes.

**New sectors for investment:** Energy, manufacturing, infrastructure.

**Key projects:** National Strategies for Transformation, seven-year programmes which follow previous five-year Economic Development and Poverty Reduction Strategies.

**Chief exports:** Coffee, tea, hides, tin ore.

**Top export destinations:** UAE, Kenya, Switzerland, Democratic Republic of the Congo, US, Singapore.

**Top import sources:** China, Uganda, India, Kenya, Tanzania, UAE.

**Main imports:** Steel, machinery and equipment, food, petroleum products, cement and construction material.

**Infrastructure:** Four paved airports; roads 4 700km of which 1 207km paved (2012); lake port(s): Cyangugu, Gisenyi, Kibuye (Lake Kivu).


**Climate:** Temperate, two rainy seasons. Mountainous with grassy uplands. Mild in mountains with some frost and snow.

**Religion:** Christian with almost half Protestant, 44% Roman Catholic.

**Modern history:** In the period before Rwanda achieved independence from Belgium, the country’s king (from the minority Tutsi ethnic group) was overthrown by Hutus who also drove tens of thousands of Tutsis out of the country. These exiles banded together as the Rwandan Patriotic Front (RPF) and a civil war ensued. A state-sponsored genocide in 1994 led to the deaths of approximately 800 000 ethnic Tutsis and moderate Hutus. The mainly Tutsi RPF won the civil war against the national army of Rwanda and Hutu militias and established a government of national unity.

The first post-genocide elections were held at local level in 1999 and at national and presidential level in 2003. President Paul Kagame has been president since 2000, having overseen the amendment of the constitution to allow for a third term of office, which began in 2017. Kagame has worked hard to build national unity and has won international praise for his efforts to turn around the nation’s economy. Critics believe that democratic opposition has been crushed under the guise of protecting unity.
Mozambique’s northermost province has rich gas reserves, and a violent insurgency.

The member states of the Southern African Development Community (SADC) are Angola, Botswana, the Democratic Republic of the Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia and Zimbabwe.

The executive arm of SADC has eight directorates which deal with matters such as policy, defence, trade, finance and investment, infrastructure, agriculture and social and human development.

The Southern African Customs Union, which is based in the Namibian capital of Windhoek, is a customs union among Eswatini, Botswana, Lesotho, Namibia and South Africa.

Climate

The fact that Africa narrows in the south means that oceans play a greater role in climate than they do in the wider, northern part of the continent. The south is generally cooler and more humid. The eastern coast and hinterland have experienced destructive cyclones in recent years and many parts of the region were hit by severe drought after 2016.

South of the Zambezi River, semi-arid areas receive some rains, but temperatures remain high. In the savanna, temperatures are cooler than in the tropical areas. The South African Highveld comprises a temperate upland climatic region with temperatures that vary between warm and very cold depending on altitude and thunderstorms are frequent. A humid subtropical marine climate occurs on the south-east coast. On the southern coast, Mediterranean conditions occur.

Economy

The southern region is relatively well integrated and communications between states is supported by good infrastructure.

South Africa has the most diverse economy with a sophisticated banking and financial services to back it up. Manufacturing, industry, retail and construction are other strong sectors. The regional economy’s growth has been affected by the weak performance of South Africa. Commodity price fluctuations have something to do with the slump, but the most important reason was an outbreak of looting that became known as “state capture”.

Mining and tourism are key sectors across the region. In Malawi, 80% of the population are dependent on agriculture but productivity levels are low. A very stable country, Malawi has adopted a vision to lift its people out of poverty focusing on education, energy, agriculture, health and tourism.

The Democratic Republic of the Congo is home to a vast array of minerals. Botswana is the world’s leading diamond producer. Mauritius is forging ahead as an investment destination in high-value fields. Investment in renewable energy in Tanzania is on the rise and Mozambique exports hydropower. The discovery of big gas fields off the coast of Mozambique could be a game-changer for the whole region but the province of Cabo Delgado is experiencing violent attacks. Energy group Total has committed to spending $14.9-billion on extracting gas.

Resources

Gas, oil, manganese, iron ore, diamonds, gold, zinc, copper, potash, phosphate, tantalum, ilmenite, rutile, cobalt, platinum group metals.
The island nation’s service industry is growing.

**Mauritius**

**Capital:** Port Louis  
**Other towns/cities:** Vacoas-Phoenix, Beau Bassin-Rose Hill, Curepipe, Quatre Bornes  
**Population:** 1.37-million (2020)  
**GDP:** $14-billion (2019)  
**GDP per capita (PPP):** $22 300 (2017)  
**Currency:** Mauritian rupee  
**Regional Economic Community:** Southern African Development Community (SADC), Common Market for Eastern and Southern Africa (COMESA), Indian Ocean Rim Association  
**Landmass:** 2 040km² (all islands), Island of Mauritius 1 864km²  
**Coastline:** 177km  
**Resources:** Sugar cane, tea, banana, pulses, potatoes, fish.  
**Main economic sectors:** Sugar milling, textiles, tourism, financial services.  
**Other sectors:** Mining, chemicals, metal products, transport equipment, machinery.  
**New sectors for investment:** Creative sector (film), higher education, ICT, retail, medical tourism.  

**Key projects:** Positioning as a hub for the rest of Africa for logistics, re-export and trade. Smart city projects.  
**Chief exports:** Clothing, sugar cane, processed fish, molasses, cut flowers.  
**Top export destinations:** France, US, UK, South Africa, Madagascar, Italy, Spain.  
**Top import sources:** India, China, France, South Africa.  
**Main imports:** Chemicals, equipment, foodstuffs, manufactured goods, petroleum products.  
**Infrastructure:** Export Processing Zone; Sir Seewoosagur Ramgoolam International Airport at Plaisance about 50km from Port Louis, an airstrip at Plaine Corail on Rodrigues; 2 150km of roads, 98% paved; Port Louis harbour has a container terminal and terminals for sugar, oil, wheat and cement.  
**ICT:** Mobile subscriptions per 100 inhabitants: 151 (2019). Internet percentage of population: 58.6% (2018). ICT Development Index 2017 (ITU) ranking: 1 in Africa, 72 in world.  
**Climate:** Maritime subtropical modified by south-east trade winds. Cyclones can occur. Warm, dry winter (May to November): hot, wet, humid summer. A fertile central plateau is surrounded by mountains and the island is ringed by coral reefs.  
**Religion:** Hindu, Christian about 30% (majority Roman Catholic), Muslim, other.  
**Modern history:** Mauritius gained independence from the United Kingdom in 1968. English is the official language of the legislative body but Creole is the dominant language with Bhojpuri and French accounting for about 10% between them. Just two years before independence, Britain expelled about 2 000 residents of the Chagos archipelago and leased islands to the US for 50 years. A military base was built on the largest island, Diego Garcia. In 2019 the UN International Court of Justice gave a non-binding legal opinion that the islands had not been legally separated and that Britain should end its control. Former President Sir Anerood Jugnauth became Prime Minister for the third time in 2014 but resigned in 2017 to make way for his son Pravind Kumar Jugnauth, the leader of the Militant Socialist Movement party. The president is head of state in a Westminster-type system and the role is largely symbolic.
South Africa

An extensive renewable energy programme has been rolled out.

**New sectors for investment:** Renewable energy, water, tourism.

**Key projects:** The National Development Plan (NDP) aims to eliminate poverty and reduce inequality. Renewable Energy Independent Power Producer Procurement Programme (REIPPPP).

**Chief exports:** Iron ore, manganese, gold, diamonds, platinum, other metals and minerals, machinery and equipment, agricultural products.

**Top export destinations:** China, US, Germany, Japan, India, Botswana, Namibia.

**Top import sources:** China, Germany, US, Saudi Arabia, India.

**Main imports:** Machinery and equipment, chemicals, petroleum products, scientific instruments.

**Infrastructure:** Roads 750 000km, of which 158 124km paved (2016); railways 20 986km (2014); 144 paved airports; four crude oil refineries; multi-product pipeline from coast to inland areas; major ports at Cape Town, Durban, Port Elizabeth, Richards Bay and Saldanha Bay; LNG import terminal at Mossel Bay.

**ICT:** Mobile phone subscriptions per 100 inhabitants: 168 (2017). Internet percent of population: 54% (2016.) ICT Development Index 2017 (ITU) ranking: 3 in Africa, 92 in world.

**Climate:** Coastal areas range from dry along the Atlantic Ocean, Mediterranean in the south-west to subtropical on the east coast. Interior is mostly dry and semi-arid. The Drakensberg Mountains separate the east coast from the interior.

**Religion:** Christian, traditional, Muslim.

**Modern history:** After an intense struggle against the racist policy of apartheid, democratic South Africa installed Nelson Mandela as its first president in 1994. Major gains have been made housing and social grants, but there have been poor outcomes in education and the state had to reverse earlier denialist responses to HIV/Aids.

President Cyril Ramaphosa was inaugurated in February 2018 and his party promised to put an end to widespread corruption. A judicial commission of enquiry into state capture is due to report in 2021. Ramaphosa became Chair of the AU in 2020. A large scheme to get private groups to invest in renewable energy has been revived amid hopes that more reliable energy supply can be achieved than is currently provided by the ailing state utility, Eskom.
Revenues from oil and tourism have dropped markedly.

**Climate**

The three outstanding features of North Africa help to define its climate: the Nile River in the east, the Atlas Mountains in the west and the Sahara Desert to the south, the largest sand desert on earth. Mediterranean conditions occur along the coast, bringing rain in winter and relatively mild temperatures. Crops include onions, figs, olives, oranges, cauliflower and tomatoes. The hot desert and semi-arid regions further inland Temperatures range widely and can reach 130°. Desert crops include cotton and date palms.

**Economy**

The Arab Spring and falling oil prices had a significant impact on the economies of North Africa. Libya’s political turmoil had a huge impact on the region’s GDP. Oil production levels rose after 2016 but are still a fraction of levels achieved before the revolution.

North Africa contributes disproportionately to African GDP growth figures, up to 40% (African Development Bank). Most of the economies of North Africa have diversified production systems and manufacturing and industrial capacity.

Morocco used to receive about 11-million tourist arrivals. Egypt experienced a significant drop in revenue from tourism after the political upheavals of 2011. The Covid-19 epidemic will hit tourism hard across the region.

Casablanca Finance City has been established in Morocco in an attempt to attract investors to Africa. Tunisia has plans to privatise large parts of its economy and Egypt is building a mega-city to ease the overcrowding in Cairo.

Morocco and Tunisia have integrated supply chains which are linked to the European market. Other countries in the region have focussed on the upstream side (AfDB).

**Resources**

Oil, natural gas, phosphates, iron ore.
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