

State of Web 3.0 in Africa: Kenya, Nigeria and South Africa

EMURGO Africa
2023



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Vision of EMURGO

Cardano is one of the largest open-source blockchain platforms that started its development in 2015 and formally launched in 2017, aiming to be a decentralized application development platform with a multi-asset ledger and verifiable smart contracts. It is THE blockchain platform for innovators and visionaries, to create positive changes to the world.

EMURGO, a co-founding entity of Cardano, has focused on providing the tools and resources necessary for developers, startups, and organizations to build unique and impactful Web3 products and services leveraging Cardano.



Being the former CEO of EMURGO Japan, I have personally spent many years driving awareness of blockchain technology to expand the Cardano ecosystem in developed countries. By fostering dialogue with top executives from global companies and government officials on the unique values of blockchain technology, EMURGO has established and nurtured relationships with key stakeholders in various major countries around the world.

While we have pursued the expansion of the ecosystem in developed countries, Africa has always been our primary focus since inception. In Africa, we aim to position Cardano as the standard open-source blockchain platform for adoption by entrepreneurs and organizations to develop decentralized products and services that can provide access to basic economic services for the 1 billion that currently lack this access..

At the beginning of 2021, we established EMURGO Middle East & Africa (Dubai) and its regional entity EMURGO Africa (Kenya), to focus our resources on developing the region's blockchain market.

Thus far, we have established subsidiaries/joint ventures such as Adaverse (Africa-focused accelerator), and EMURGO Kepple Ventures to increase our visibility and reach, and also work together with other top-tier business stakeholders in the region.

Thank you for your interest, and we are pleased to get connected with partners that can share our vision to build the next digital era together.

Yosuke Yoshida

A handwritten signature in black ink, appearing to read 'Yosuke Yoshida'.

Co-CEO of EMURGO Middle East & Africa
CEO of EMURGO Kepple Ventures

Foreword

Dear Readers,

Blockchain has just begun scratching the surface of what it can do for the African continent. The IFC estimates that 230 million jobs in Sub-Saharan Africa will require digital skills by 2030. That's a \$130 billion opportunity to train the future workforce in digital skills.

2.7 billion people globally don't have access to the internet. That's one-third of the world's population. The majority of which are in Africa. 40% only of which have access to the internet. In comparison, 64% in Asia and the Pacific, 80% in the Americas, and 89% in Europe.

We launched EMURGO Africa approximately one year ago, out of our deepest conviction in the impact the power of blockchain can have on providing equitable opportunities around the continent. When just under 50% of the population is banked, is connected to the internet, and possesses mobile phones, we cannot disregard the opportunity blockchain creates, in leveraging the sheer human capital throughout the entire African continent. From fintech: liquidity provision, lending, and trade to climate change mitigation through on-chain transparency, logistics, inventory management, and supply chain of goods and services, to creating identities and providing accessible health care services for the unbanked, the use cases are endless.

In bridging the traditional defacto financial, trade, and infrastructure systems with new-age blockchain-driven advances in finance, trade and infrastructure, and data processing, we foresee an economic, social, and environmental revolution.

This is why we have come to Africa.

In the last year, we have invested in over 40 African startups, are building on-chain solutions for leading Fortune 500s, and financial institutions, and are facilitating the cross-border growth of novel change-making concepts that legitimize the informal economy and give its citizens rights in possessing an identity, accessing adequate healthcare and building financial capabilities.

It is not in replacing old systems that we seek to create value, it is rather in bridging traditional systems with novel, more efficient, and more sustainable ones. Thus creating equitable, fair, and progressive societies with access to the basic rights of education, financial literacy, and access to healthcare, safety, housing, and nutrition.

This is just the beginning of the blockchain revolution in Africa. Thank you for taking the time to know more about what blockchain can do for Africa and Africans.

Ahmed M Amer



Chief Executive Officer
EMURGO Africa



Contents

Foreword	4
Executive Summary	6
List of Abbreviations	8
Global Overview	9
Blockchain and Cryptocurrency in Africa	17
Country Focus	26
Kenya	27
Nigeria	34
South Africa	41
Egypt	47
The United Arab Emirates (UAE)	51
Key Takeaways	57
Appendices	61

Executive Summary

EMURGO Africa Background

EMURGO Middle East & Africa (MEA) launched in October 2021 as a part of EMURGO's initial USD 100 million Cardano ecosystem investment vehicle. Originally EMURGO Africa, the investment grew to become EMURGO MEA reflecting the huge opportunity for blockchain adoption and growth in the Middle East.

Upon its inception, EMURGO MEA partnered with pan-African venture builder Adanian Labs and started the Adaverse Cardano accelerator program in Africa to begin identifying, supporting, and incubating local blockchain talent.

Purpose of this Research

EMURGO Africa is keen to understand the Web 3.0 landscape in three target markets, Kenya, Nigeria and South Africa, in order to continue identifying, supporting and incubating blockchain and Web 3.0 talent in these countries. This report therefore outlines research on Web 3.0 within the aforementioned target markets.

The three countries were selected due to their high uptake of Web 3.0 technologies and ongoing stakeholder conversations regarding policy development and regulation of digital currencies. In addition we see a trend of rapid urbanisation across the target countries, due to infrastructural development, technological revolution, and growth of the gig economy.

Executive Summary

Key Highlights of the Report

Web 3.0 presents a plethora of opportunities for the African continent. Blockchain, in particular, possesses the qualities of transparency and decentralization, allowing for this technology to solve challenges such as international remittance, financial inclusion, and land registration. Potential areas of application for Blockchain in Africa include: SME Financing, Supply Chain, Smart Contracts for Informal Labour Markets, Governance, Digitising Trade Infrastructure, Title Deed Registration, Verification of Education Credentials, and Mobility.

There is an increasing need for key stakeholders to work closely with regulators. Blockchain and Crypto Assets are increasing in popularity across the African continent: the adoption of blockchain technology is slow but progressive, while the cryptocurrency market is growing significantly. Africa's cryptocurrency market grew by over 1200% between 2020 and 2021, with Kenya, Nigeria, South Africa and Tanzania ranking in the global top 20 for crypto adoption. As the need for the regulation of Blockchain and cryptocurrencies increases, key stakeholders need to work closely with regulators. This will ensure that risks that may arise as a result of regulatory changes are adequately mitigated.

The Blockchain industry is growing exponentially and will continue to do so. Investors are keen to fund blockchain startups and companies, having injected approximately USD 88.5 million in Kenya, Nigeria and South Africa in 2021. This figure is expected to grow significantly in the next few years. Compared to general funding growth, African blockchain venture funding growth was 11 times more when considering 2021 and 2022 Q1.

List of Abbreviations

Abbreviation	Meaning
ACI	Advanced Cargo Information
AI	Artificial Intelligence
AML	Anti-Money Laundering
B2B	Business To Business
B2C	Business To Customer
CBK	Central Bank of Kenya
CBN	Central Bank of Nigeria
CMA	Capital Markets Authority
CTF	Counter-Terrorist Financing
DAOPs	Digital Assets Offering Platforms
DACs	Digital Asset Custodians
DAX	Digital Assets Exchange
EAC	East African Community
FSCA	Financial Sector Conduct Authority
GIZ	The Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
ILO	International Labour Organization
IMF	International Monetary Fund
KES	Kenyan Shilling
LE	Livre Égyptienne (Egyptian Pound)
MENA	Middle East and North Africa
NIFC	Nairobi International Finance Center
NFTs	Non-Fungible Tokens
SEC	Securities and Exchange Commission
SMEs	Small and medium-sized enterprises
SSA	Sub-Saharan Africa
UNCTAD	United Nations Conference on Trade and Development
USD	United States Dollar
VASPs	Virtual Assets Service Providers

Global Overview



Global Macroeconomic Shifts Since the Onset of the Pandemic

The onset of the COVID-19 pandemic resulted in a multitude of macroeconomic shifts across the world. In general, numerous economies experienced the following: inflation, unemployment and decline in trade.



GLOBAL INFLATION

According to the IMF, global inflation increased to 7.5% in August 2022, from an average of 2.1 percent in the decade preceding the COVID-19 pandemic.¹ A major trend was the collapse in global demand lowering inflation during the initial stage of the COVID-19 pandemic, followed by the strong recovery in economic activity pushing consumer prices higher.¹ The fast rebound of economic activity due to vaccine drives, the lifting lockdowns, and virtual working exerted upward pressure on consumer price inflation, while supply chain disruptions contributed to rising inflation when firms passed their increasing costs to consumers.



SHARP RISE IN UNEMPLOYMENT

The cessation of numerous economic activities contributed to widespread unemployment. In its latest assessment of the state of the labour market, the ILO reported that unemployment would remain above 2019 levels until at least 2023, and the damage caused by the pandemic would take years to repair.² Labour market recovery was fastest in high-income countries, where a higher proportion of populations have been vaccinated, while lower to middle-income countries fared the worst during the pandemic.



GLOBAL DECLINE IN TRADE

The decline in global trade in 2020 was comparable to the 2008/09 global financial crisis and significantly worse than the 2015 recession.³ Global trade fell by approximately USD 2.5 trillion in 2020 (or by about 9 percent compared with global trade in 2019).⁴ According to UNCTAD data, as economic conditions improved in 2021, the value of global trade rebounded strongly, reaching a record high of approximately USD 28.5 trillion, equivalent to an increase of about 13 percent when compared with pre-pandemic levels.⁴

¹ Binici, M., Centorrino, S., Cevik, S., & Gwon, G. (2022). *Here Comes the Change: The Role of Global and Domestic Factors in Post-Pandemic Inflation in Europe*. IMF. 09 Dec 2022.

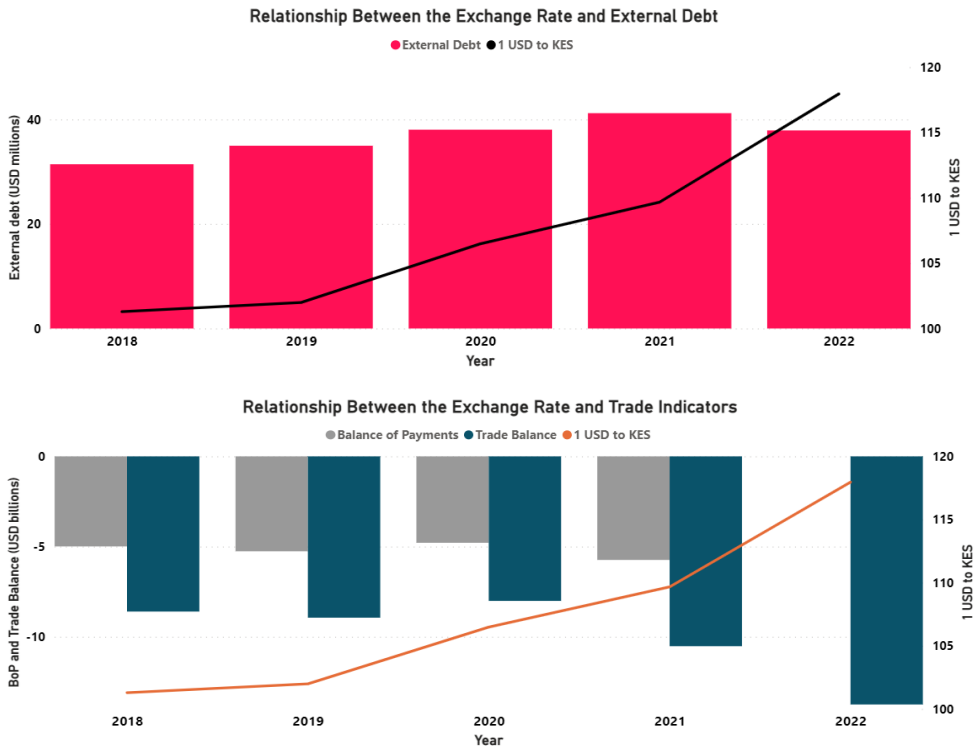
² ILO. (2022). *World Employment and Social Outlook: Trends 2022*. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_834067.pdf

³ World Bank Group. (2021). *Lessons from Evaluations on Supporting Trade Facilitation and Trade Finance in Response to COVID-19*. https://ieg.worldbankgroup.org/sites/default/files/Data/Topic/COVID19Lessons_TradeFacilitation.pdf

⁴ UNCTAD. (2022a, February 17). *Global Trade Update (February 2022)*. <https://unctad.org/publication/global-trade-update-february-2022>

The below charts illustrate the effect of the average exchange rate (vs. the USD) on External Debt, Balance of Payments, and Trade Balance in Kenya, Nigeria, South Africa, Egypt, Tanzania and Ethiopia before the Pandemic and during the war on Ukraine, using data from the respective countries' Central Banks.⁵

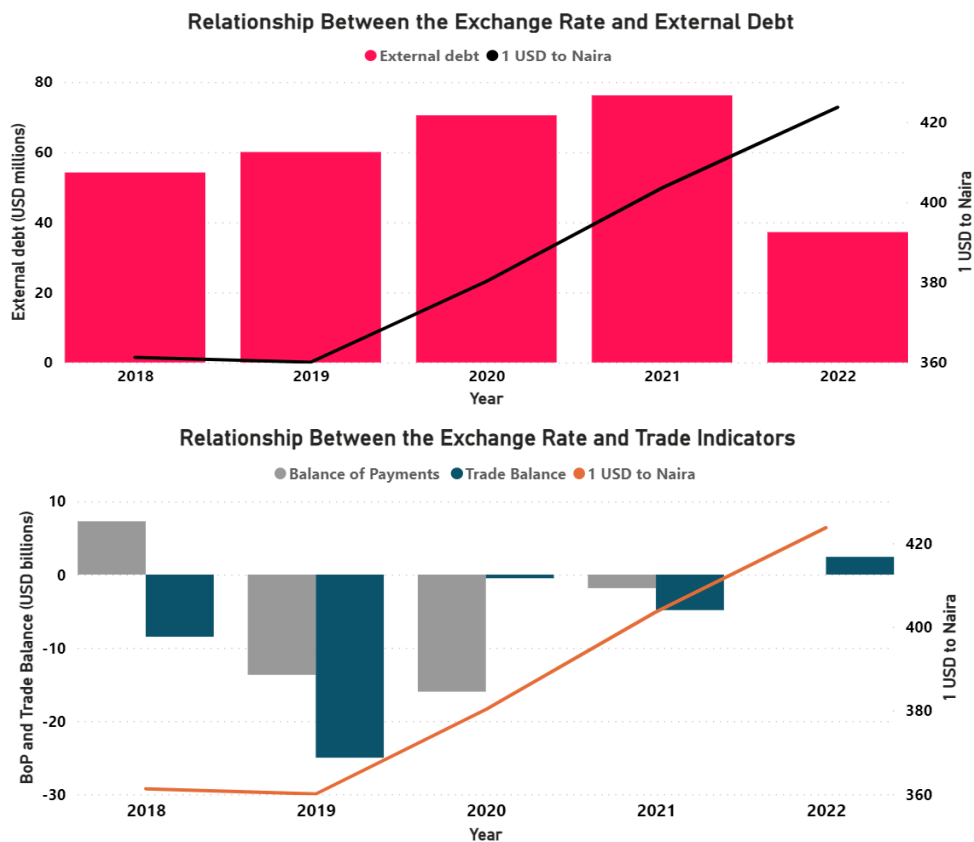
Kenya



The KES has been depreciating throughout at varying degrees, consequently the external debt has continued to increase except for 2022 where it declined marginally owing to the restructuring of the external debt.

As the KES continued to depreciate, Kenya's BoP and Trade Balance worsened except for 2020 where it marginally improved and this is attributed to reduced imports as a result of the Covid-19 pandemic.

Nigeria



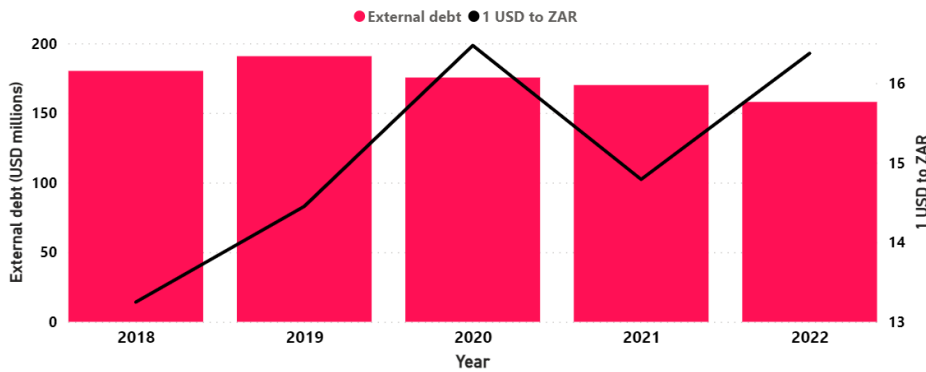
The Naira experienced continued depreciation from 2019-2022 which resulted in external debt rising concurrently except for 2022 where it declined.

As the Naira slightly appreciated between 2018-2019, Nigeria's BoP and Trade Balance deficit grew, however from 2020 onwards the deficits were drastically reduced despite the continued depreciation of the Naira. This is linked in part to the stabilisation of global crude oil prices.

⁵ Exchange Rates UK. (2023). Exchange Rates UK - Compare Live Foreign Currency Exchange Rates. Exchangerates.org.uk. <https://www.exchangerates.org.uk/>

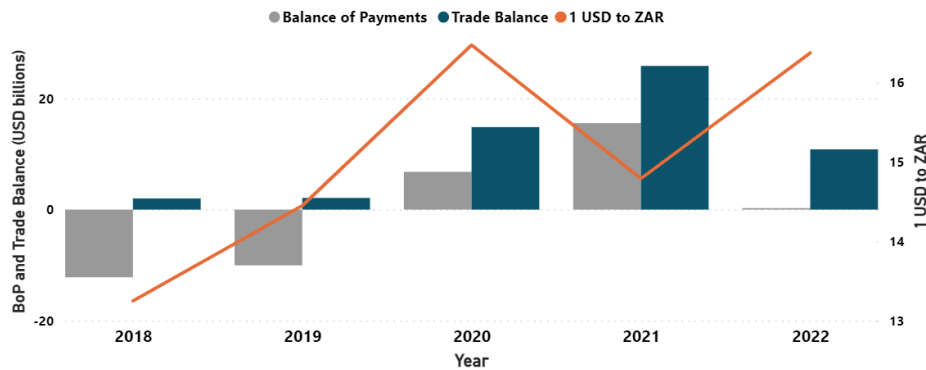
South Africa

Relationship Between the Exchange Rate and External Debt



The Rand experienced depreciation from 2018-2020 after which it began appreciating and then depreciated once again from 2021. The external debt consequently increased from 2018 -2019 but has continuously declined since then at a time the country's revenues increased from becoming a leading exporter of rare metals.

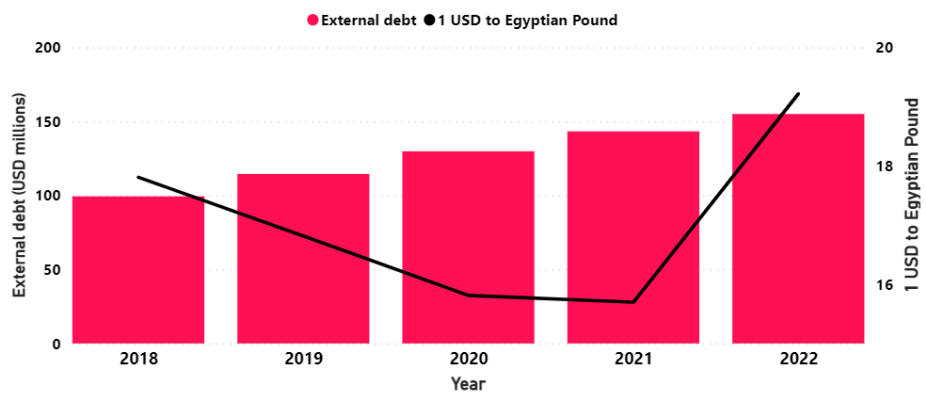
Relationship Between the Exchange Rate and Trade Indicators



Despite the currency fluctuations, South Africa's BoP and Trade Balance continued to improve and move from a deficit to a surplus as they become the world's leading exporter of various rare metals.

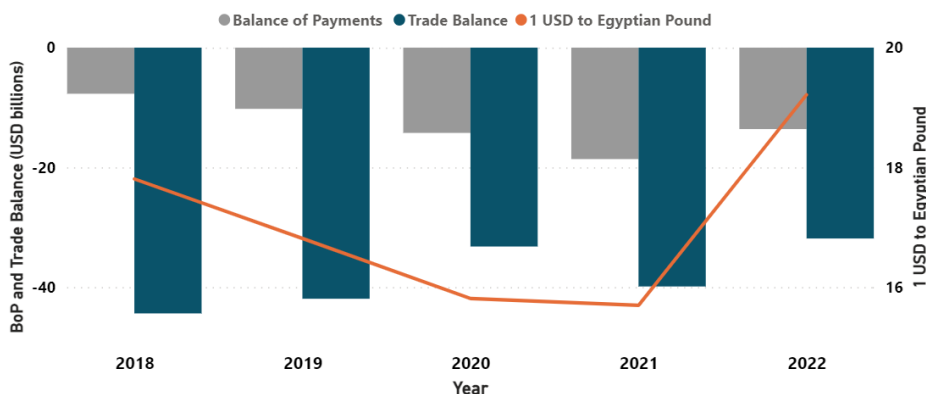
Egypt

Relationship Between the Exchange Rate and External Debt



The Egyptian Pound appreciated between 2018-2021 following which it sharply depreciated in 2022. Despite Egyptian Pound appreciating, the external debt continued to rise all through due to an overall increase in money borrowed by the government.

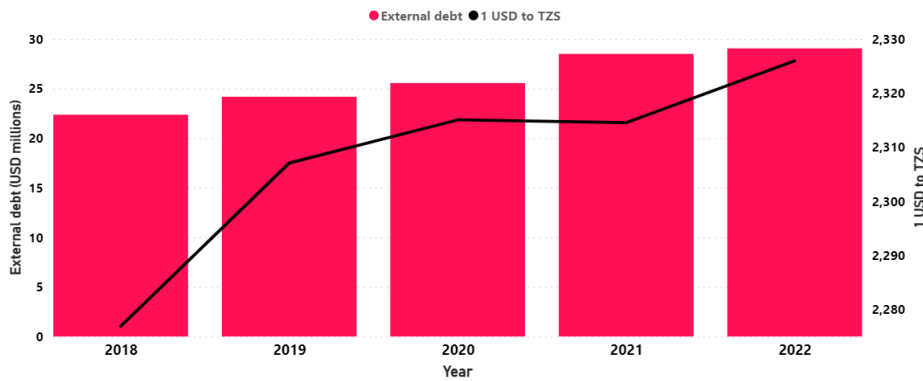
Relationship Between the Exchange Rate and Trade Indicators



Egypt's BoP deficit continuously grew between 2018-2021 and declined in 2022. Meanwhile, the Trade Balance deficit continuously improved due to increased value of exports except in 2021 where it worsened at the same time the Pound began to depreciate

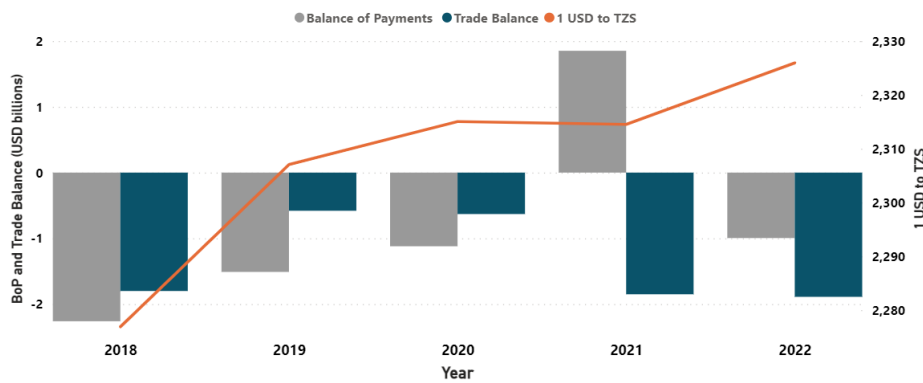
Tanzania

Relationship Between the Exchange Rate and External Debt



The Tanzanian Shilling depreciated from 2018-2020, stabilised between 2020 and 2021, after which it depreciated. The external debt constantly increased across the years due to the aftermath of the global pandemic in relation to the export industry.

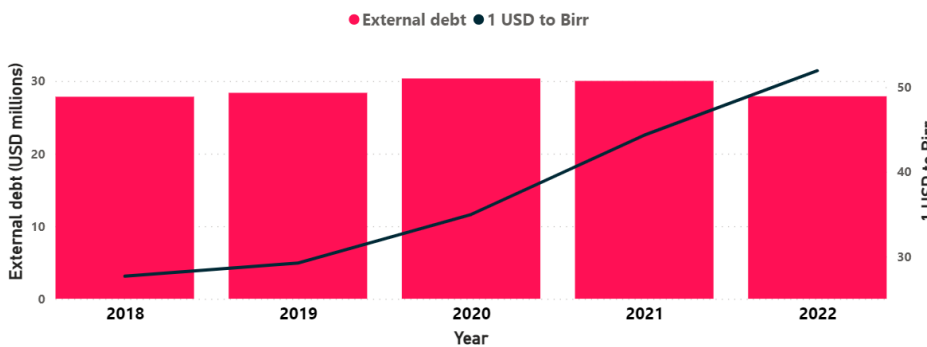
Relationship Between the Exchange Rate and Trade Indicators



The BoP decreased from 2018, attaining surplus in 2021, and then decreased to a deficit in 2022 since the value of goods imported overshadows the value of exports. The trade balance improved steadily from 2018 to 2020, then worsened to a record deficiency in 2022 as the Tanzanian Shilling experienced a net depreciation.

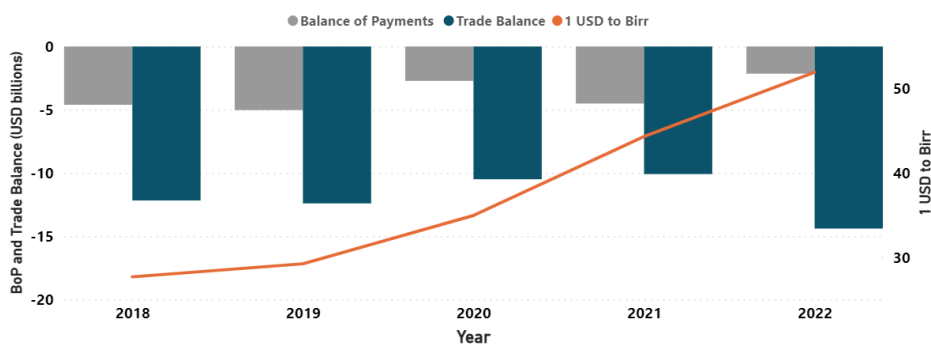
Ethiopia

Relationship Between the Exchange Rate and External Debt



The value of the Birr depreciated against the USD across the years, consequently increasing the external debt which peaked in 2020 and began dropping in the financial years 2021-2022 as the strength of the dollar increased against other currencies.

Relationship Between the Exchange Rate and Trade Indicators



As the Birr depreciated, Ethiopia's trade balance gradually improved between 2019 and 2021, then significantly worsened in 2022 due to increased importation of high value goods. The BoP exhibits a characteristic decrease then increase in deficit across the years.

The Power of Digital Currencies and Stablecoins

First-generation cryptocurrencies display significant volatility, which restricts their use as a medium of exchange and a unit of account. Stablecoins and central bank digital currencies were created particularly to address this issue. They therefore possess a number of benefits:⁶



Stablecoins aim to maintain a constant value - Stablecoins, as the name suggests, seek to maintain stable value by tying the digital currency to an asset or basket of assets such as commercial bank deposits or government-issued bonds.⁶ Stablecoins differ from the original set of cryptocurrencies in that they may be issued by a central entity and rely on third-party institutions for certain aspects.



Faster transactions - both digital currencies and stablecoins are maintained by blockchain technology, are cheaper and able to conduct international transactions in a shorter time frame than fiat currencies. The fast settlement times make these currencies an excellent, cross-border medium of exchange.



Support for the unbanked and underbanked - Stablecoins and digital currencies promise to bring fast and cheap services within reach of those who need it most: the unbanked and underbanked.

In order to realise the benefits of stablecoins, the following must be considered:



Compliance with know-your-customer rules and regulations is critical to preventing stablecoins from being used for illegal activities and illicit finance.



Issuers of stablecoins designed to facilitate consumer payments must demonstrate clearly how consumer protections will be ensured. Customers will need to be educated on how their rights differ between digital wallets and bank accounts.



The widespread adoption of stablecoins may have implications for central banks' roles and monetary policy.⁶ If a large proportion of domestic households and businesses begin to rely on stablecoin not only as a means of payment but also as a store of value, demand for physical cash may fall and the central bank's balance sheet may shrink.

⁶ Brainard, L. (2019, October 16). Speech by Governor Brainard on digital currencies, stablecoins, and the evolving payments landscape. Board of Governors of the Federal Reserve System. <https://www.federalreserve.gov/newsevents/speech/brainard20191016a.htm>

Global Crypto Regulation

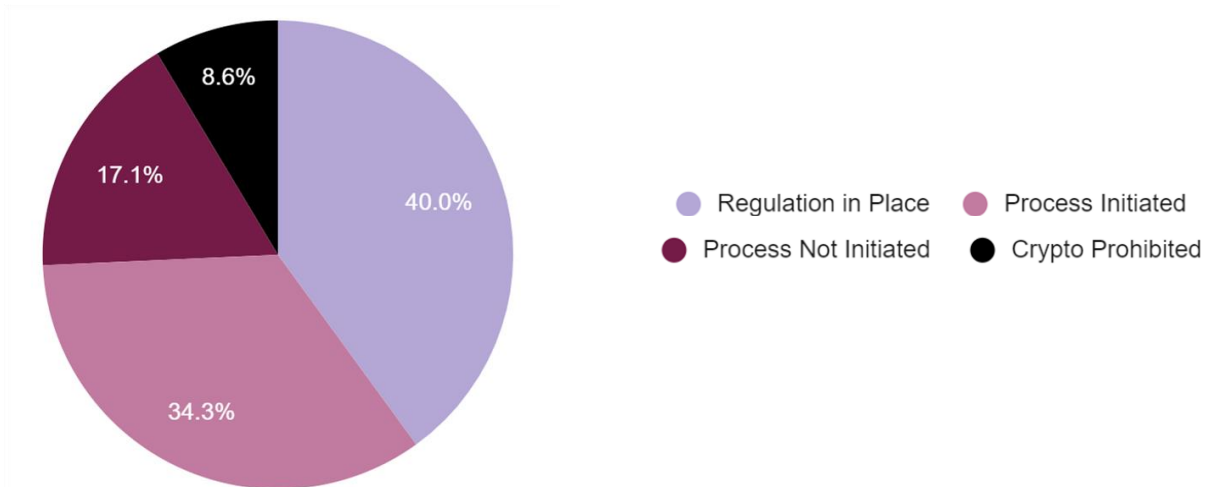
In the past few years, there has been a significant increase in regulatory attention towards digital assets, and this trend is expected to continue as the use of these assets becomes more widespread.

The surge in both individual and institutional adoption has led to a rapid increase in market capitalization and extreme volatility. However, due to recent high-profile crypto firm incidents involving fraud, scams, and mismanagement of customer funds, consumer skepticism has risen, prompting regulators to take action. Global standard-setters are pushing for international cooperation, and many local authorities have expressed their desire to become hubs for digital assets, technology, and innovation.

As a result, numerous countries are researching, defining, consulting, negotiating, and legislating to incorporate digital assets into existing financial frameworks.

Regulatory Frameworks

Summary of 35 Countries' Cryptocurrency Regulatory Frameworks



Out of a sample size of 35 countries across Europe, Asia, the Middle East, Africa, North America and Oceania, 40% had regulatory frameworks for crypto in place; 34% had started the process of developing regulatory frameworks; 17% had not started this process; and 9% explicitly prohibit cryptocurrencies.⁷ See Appendix for detailed table.

More specifically, the European Union is at advanced stages of finalising the new Markets in Crypto-Assets Regulation. In the United Arab Emirates, Dubai authorities are setting up the world's first authority solely focussing on virtual assets. Switzerland has integrated one of the most mature regulatory framework for digital assets, allowing market participants to gain certainty on the legal and regulatory treatment of their projects and intended activities.

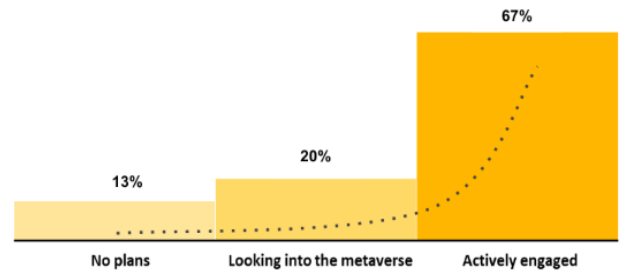
⁷PwC. PwC Global Crypto Regulation Report 2023. 19 Dec 2022.

Metaverse Engagement

METaverse ENGAGEMENT AMONGST BUSINESSES (% of survey respondents)

The demand amongst businesses to deliver metaverse transformation is swiftly increasing. 67% of the respondents are already engaged with the metaverse, including:

- Building proofs of concepts
- Implementing use cases
- Generating revenue from transactions



Women make up 45% of US gamers and 40–45% of Chinese gamers at the moment, with China being the gaming industry's largest market. The metaverse experience appears to be consistent with this, with women displaying lower levels of curiosity than men.

METaverse ENGAGEMENT AMONGST CONSUMERS

Archetypes

Interest in metaverse

10% **Meta-adopters**
Consumers who have been actively engaged with metaverse activities.

58% **Meta-learners**
Consumers who have not engaged with metaverse but interested to get involved in.

14% **Meta-questioners**
Consumers who have not engaged with metaverse and are unsure of their interest.

18% **Meta-phobes**
Consumers who have not engaged and are not interested in the metaverse.

Average profile

35 **\$77k**
Age Household income

43 **\$68k**
Age Household income

47 **\$61k**
Age Household income

52 **\$65k**
Age Household income

Consumers are increasingly more engaged with metaverse activities.

68% of consumers in urban areas are interested in engaging with the metaverse and are made up of:

- Mostly Generation Z (18-25 y.o.) & Millennials (25-40 y.o.)
- Slightly more affluent consumers (>\$65k household income)

Middle East and Africa - Yearly Growth 2021-2026 in %

Year	2022	2023	2024	2025	2026
Yearly Growth	15.05 %	15.47 %	15.79 %	16.10 %	16.42 %



Blockchain and Cryptocurrency in Africa

Demographics

Sub-Saharan Africa



Population

Sub-Saharan Africa is home to approximately **1.17 billion** people.

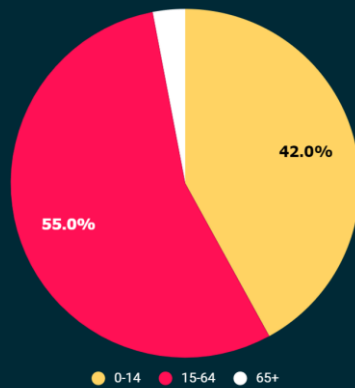
Gender Split

The gender split in Sub-Saharan Africa is almost equal. Females represented 50.1% of the population in 2021, and males represented 49.9% of the population.

50.1%
female
49.9%
male

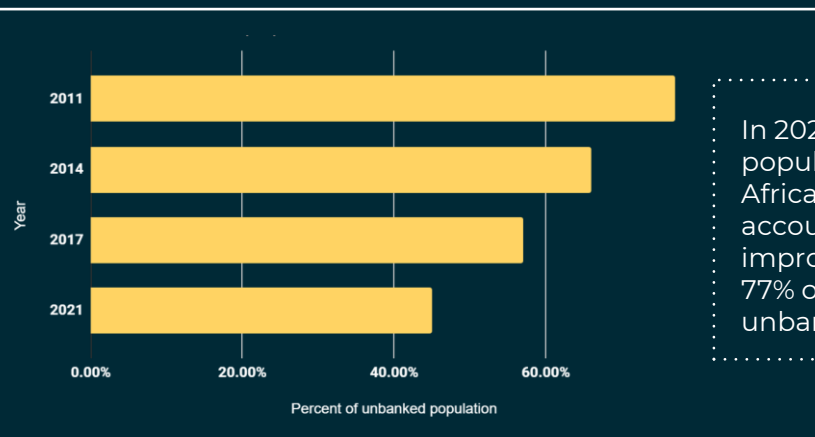


Population Split by Age Group



Sub-Saharan Africa is home to a young population. 97% of the population is aged below 65.

Distribution of unbanked population



In 2021, 45 percent of the population in Sub-Saharan Africa did not have a bank account. This number has improved from 2011, where 77% of the population were unbanked

Mobile Penetration

The mobile penetration rate in SSA was 46% in 2021.

Blockchain and Cryptocurrency in Africa

Summary

Blockchain and Crypto Assets are increasing in popularity across the African continent: the adoption of blockchain technology is slow but progressive, while the cryptocurrency market is growing significantly. According to Chainalysis, Africa's cryptocurrency market grew by over 1200% between 2020 and 2021, with Kenya, Nigeria, South Africa and Tanzania ranking in the global top 20 for crypto adoption.⁸

Although the increasing adoption of cryptocurrency has its advantages, the widespread use of unregulated digital currencies poses a threat to the continent's financial system.

On the other hand, transparency and decentralisation, some of the inherent properties of Blockchain technology, give Blockchain the potential to solve challenges that are widespread across the African continent. Such challenges include: international remittance, financial inclusion, and land registration.

Funding Landscape

Blockchain funding in Kenya, Nigeria and South Africa



Kenya, Nigeria and South Africa received a total of USD 88.5 million (70%) of blockchain funding in Africa in 2021.⁹

Blockchain venture funding growth in Africa



Compared to general funding growth, African blockchain venture funding growth was 11 times more when considering 2021 and 2022 Q1.⁹

Investors continue to increase the capital injected into African companies creating solutions involving Web 3.0 technologies.

Despite this continued investment in such companies, Standard Bank noted that Africa received only 0.5% of total global blockchain funding.⁹ This figure is expected to grow as more companies aim to solve problems faced by the continent's inhabitants.

One such challenge is a largely unbanked population (approx. 57%), with cryptocurrency companies such as Canza Finance providing solutions to this end.

⁸ Chainalysis. "P2P Platforms, Remittances, and Savings Needs Power Africa's Grassroots Cryptocurrency Adoption." *Chainalysis*, 14 Oct. 2021. blog.chainalysis.com/reports/africas-grassroots-cryptocurrency-adoption/.

⁹ Standard Bank. *The African Blockchain Report 2021*. 2021.

The Adoption of Blockchain in Africa

DIGITAL UPTAKE

Despite a slow macroeconomic outlook as a result of COVID-19, the African Internet economy is expected to be resilient.

10%
of financial transactions in Africa are digital

South Africa, Nigeria, Kenya and Egypt account for
66%
of the digital revolution

FINTECH SOLUTIONS

Emerging Studios in countries such as Egypt, Kenya, Nigeria, Uganda, and South Africa are raising the bar for African games development.

It is projected that in Africa, Fintech revenues could grow by **8 times** to reach a value of
USD 30 billion
by 2025

BLOCKCHAIN

The adoption of Blockchain by African countries is reported to be the fastest in the world.

Blockchain funding across Africa increased by
1,668%
between 2021 and 2022. USD 5.165 million was raised in 2021, compared to USD 91 million in 2022.

Overall Web 3.0 technologies are demonstrating a rising uptake in the African continent. Even with the optimistic trend, there are specific challenges that need to be addressed to support companies that are willing to invest in Web 3.0 technologies. These are:

- Navigating an uncertain regulatory environment
- PPP engagement within the fintech space
- Customer/stakeholder awareness
- Reaching scale and profitability

Potential Areas of Application for Blockchain in Africa

SME Financing

Alternative financing options and payments infrastructure run on blockchain applications, facilitating expansion of SME financing in the continent. The use of AI and Big Data Analytics lowers the cost of analysing SMEs' financial data and making credit decisions without requiring otherwise strenuous formal documentation.

Smart Contracts for Informal Labour Markets

Blockchains have the ability to form the basis of smart contracts whereby the fulfilment of obligations by contracting parties is embedded and executed automatically, thus ensuring contract enforceability by precluding the ability of contracting agents to renege on their promises at a future date.

Digitising Trade Infrastructure

Immutable and verifiable transactions recorded in a blockchain can allow the elimination of paper in areas where today it is still required. Blockchain enables automated and immediate reconciliation algorithms that can facilitate faster payments, therefore making trade more efficient, transparent and secure.

Verification of Education Credentials

Blockchain-based systems can be used for the verification of digital documents in order to increase trust in educational certificates. In addition, blockchain identity management systems have the potential to address current identity issues such as inaccessibility, data insecurity and fraudulent identities.

Supply Chain

The traceability aspect of blockchain has contributed to its adoption in industry to ease the complexity and opacity of processes within supply and value chains, thereby improving logistical efficiencies. Blockchain also allows for the secure sharing of data between key stakeholders, improving collaboration and coordination.

Governance

Blockchain can help improve governance by enhancing the transparency of legal and judicial processes, thereby improving the accountability of public officials. This can help speed up the improvement of governance across the continent, where there is a need to improve the quality of institutions and enforce the rule of law.

Title Deed Registration



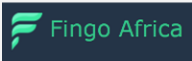







Blockchain technology can increase the transparency of ownership changes, reducing the possibility of manipulation of existing titles. A centralized server for land record data would also address potential challenges pertaining to traditional land records such as loss of data due to natural hazards, and the forging of records.

Mobility

Blockchain would enable the verification of a vehicle's history, improved supply chain tracking, automated transactions, seamless ridesharing and the support of fairer insurance. The extra layer of traceability and thus transparency has the potential to reduce fraud and significantly increase confidence in the mobility sector.

Blockchain and Cryptocurrency in Africa

Use Cases

Organisation	Country	Relevant Industry	Description
 HouseAfrica	 Nigeria	Real Estate	HouseAfrica is the continent's first Blockchain-based land and property registry.
 Fingo Africa	 Kenya	Financial Services	Fingo Africa utilises blockchain to provide digital banking services, with the aim to build a Pan-African digital bank.
 NAFEZA	 Egypt	Trade	In 2021, the Government of Egypt launched an initiative named NAFEZA. NAFEZA is an Advanced Cargo Information (ACI) platform that facilitates the transfer of data, allowing importers to transmit shipment and customs data electronically. The aim of the new system is to enable faster entry and clearance of imports to Egypt.
 Cardano & Ethiopian Government	 Ethiopia	Education	The Ethiopian government engaged Cardano to develop a blockchain-based system to enable the verification of student credentials across the country.
 Sinan Energy	 South Africa	Energy	Sinan Energy developed a blockchain platform that is used to tokenize, record and verify carbon credits that are generated from its own renewable energy plants.

Around 20% of Sub-Saharan African countries have banned crypto-assets

While Blockchain and Cryptocurrencies are nascent technologies, there is an increasing need for the development of robust regulatory frameworks as the adoption and utilisation of crypto-assets across the continent increases. The declaration of bankruptcy by FTX, the fourth largest crypto exchange in the world, in November 2022 is a testament to this. The failure by the American regulator Commodity Futures Trading Commission (CFTC) to regulate and supervise FTX has resulted in tremendous ripple effects across Africa, resulting in the IMF calling for greater regulation and threatening the momentum of crypto adoption. Companies such as Nestcoin, a Nigerian startup whose assets were largely held in FTX, made at least half their employees redundant and offered the remaining staff a furlough scheme lasting eight to ten weeks.¹⁰

Governments and regulators in Africa therefore need to expedite the development of regulatory frameworks to protect key stakeholders.

Around 20% of Sub-Saharan African countries have banned crypto-assets¹¹

Central African Republic

The Central African Republic is the first country in Africa and the second in the world, after El Salvador, to designate Bitcoin as a legal tender.

Kenya

In November 2022, a proposed amendment was made to the Capital Markets Bill, with this amendment seeking to require those with or dealing with cryptocurrencies to provide information to the country's CMA about their activities for tax purposes.

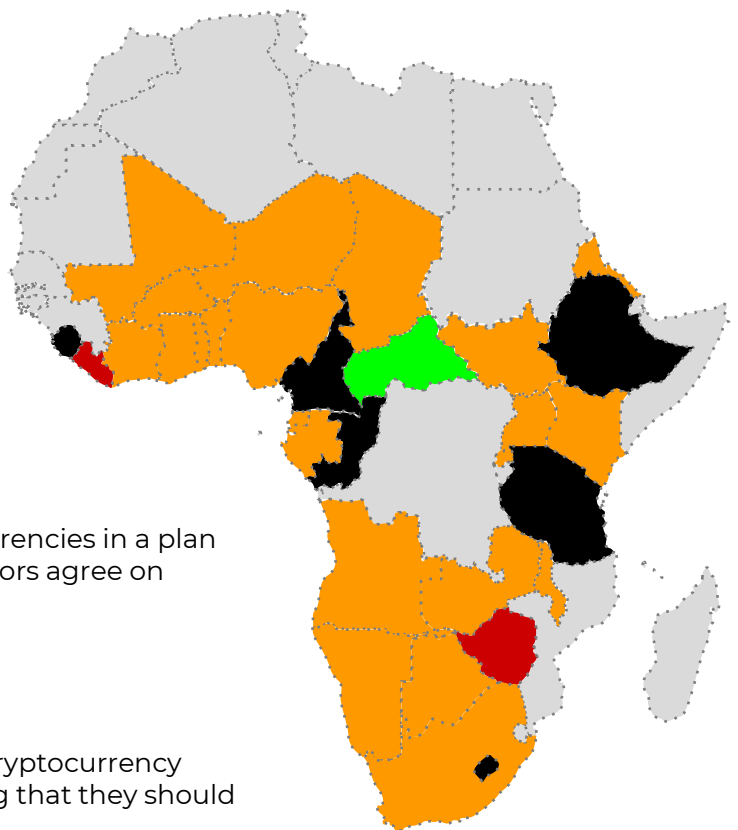
Nigeria

Nigeria's SEC does not plan to include cryptocurrencies in a plan to improve trading in digital assets, until regulators agree on standards that protect investors.

South Africa

In October 2022, South Africa's FSCA classified cryptocurrency assets as financial products, therefore stipulating that they should be regulated.

Legend:  Legally allowed  Some restrictions  Implicit ban  Explicit ban



¹⁰ Adeoye, Aanu. "Nigeria's Nestcoin Held Funds from Its Investors on Stricken FTX Exchange." *Financial Times*, 14 Nov. 2022. www.ft.com/content/d45310c9-4f8c-4349-b9bb-c8edb5d2863f.

¹¹ Fuje, Habtamu, et al. "Africa's Growing Crypto Market Needs Better Regulations." *IMF*, 22 Nov. 2022. www.imf.org/en/Blogs/Articles/2022/11/22/africas-growing-crypto-market-needs-better-regulations.

The Regulation of Blockchain and Cryptocurrency in Africa

Pan-African Regulation

Development agencies such as GIZ advocate for the development of Pan-African data protection harmonization and Pan-African financial regulation to aid with the challenge of a lack of regulation.¹² The success of these frameworks would be dependent on the level of cooperation between various African countries, as well as their ability to reach a consensus regarding their desired regulatory outcomes. In addition, adequate enforcement mechanisms must be put in place in order for the frameworks to be effective. This includes the training of relevant law enforcement officials to better understand these emerging technologies, and the deployment of resources to ensure their implementation.

Data Protection

Data protection laws are more common across the continent, with countries such as Kenya, Nigeria, Egypt, and South Africa, among others, having laws in place that outline the principles relating to the processing of personal data, and obligations on entities to ensure the privacy and protection of personal data.¹³ As data privacy and protection plays a major role in innumerable blockchain-based projects, such as the aforementioned National ID Program by the Ethiopian Government in partnership with Cardano, these laws provide a foundation for the drafting of future regulations. It can be argued that traditional data protection frameworks challenge decentralized technologies like Blockchain. However, organizations that are looking to implement Blockchain technology still need to understand the scope of data protection laws in the countries they operate in, or wish to operate in, to ensure regulatory compliance.

Principles of Good Regulation¹⁴



¹² GIZ. *Blockchain in Africa: Opportunities and Challenges for the Next Decade*. 2020.

¹³ Baker McKenzie. *Africa Data Security and Privacy Guide*. 2022.

¹⁴ FCA. "Principles of Good Regulation." FCA, 30 Mar. 2016. www.fca.org.uk/about/how-we-regulate/handbook/principles-good-regulation.

Case Study



***Ethiopian
Government, in
Partnership with
Cardano***

National ID Program

In 2021, the Ethiopian government partnered with Cardano to develop a national blockchain-based student credentialing system.

The project aims to provide blockchain IDs to 5 million students and 750,000 teachers across 3,680 schools in Ethiopia.

The partnership is part of a broader initiative by the Cardano Foundation to support the development of blockchain technology in Africa and to promote the use of blockchain in sectors such as education, healthcare and government.

Overall, the partnership with Cardano is expected to have a significant impact on the education system in Ethiopia.



Country Focus

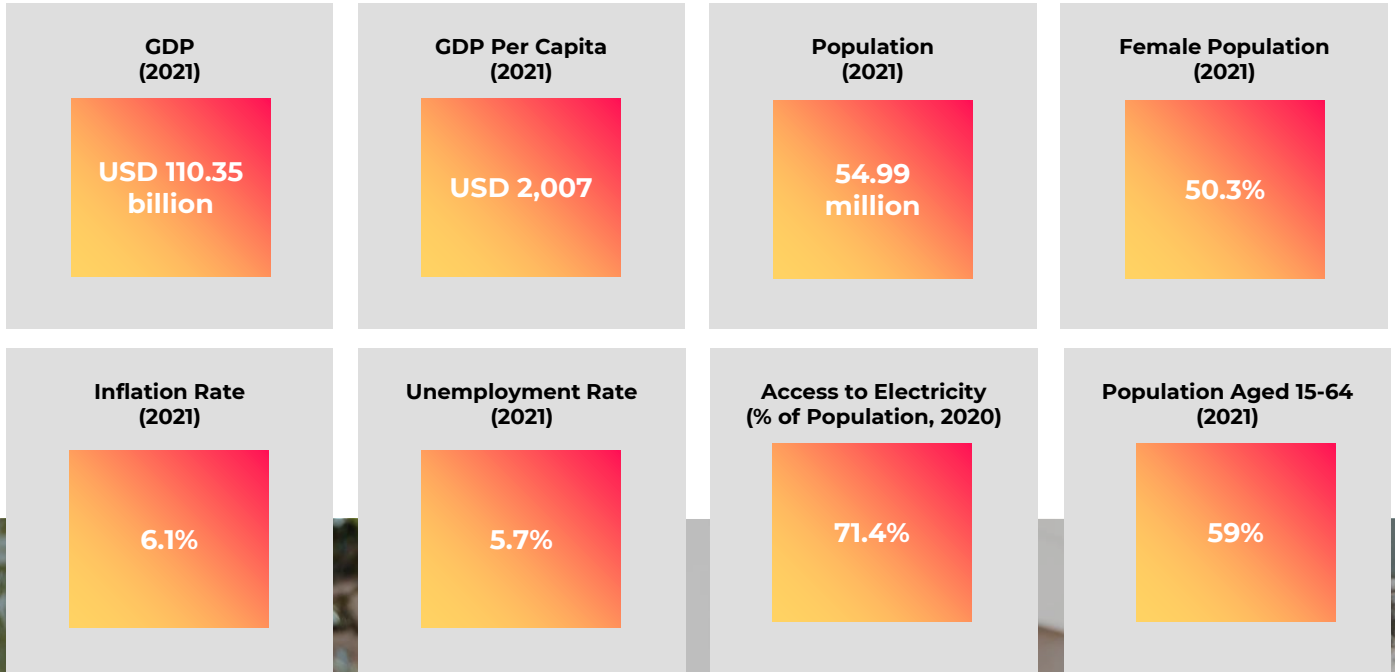
Kenya



At 580,367 square kilometres (224,081 square miles), Kenya is the world's 48th largest country by area.

Demographics

Kenya 



Demographics

Kenya 

Urbanisation

Kenya's urban population has steadily increased over the years, as illustrated in the chart below. The rise in the urban population can be attributed to people seeking better job opportunities and a perceived better quality of life in urban areas. Other factors include better infrastructure and access to better healthcare.

The distribution of Kenya's population by major towns and cities is as follows:¹⁵

- Nairobi** - 2.75 million
- Mombasa** - 0.8 million
- Nakuru** - 0.3 million
- Eldoret** - 0.2 million
- Kisumu** - 0.2 million

Mobile and Internet Penetration

42% Internet Penetration Rate

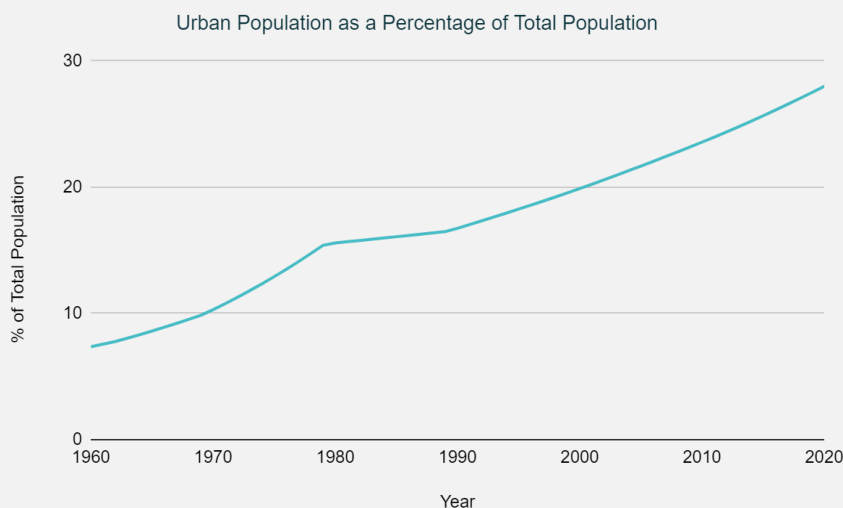
There were 23.35 million internet users in Kenya in January 2022.¹⁶

88% Financial Inclusion Rate

88.4% of the population had access to financial services and products in 2021, with 83.7% having access to formal financial services and 4.7% with access to informal financial services.¹⁷

123% Mobile Cellular Subscriptions Rate

In 2021, there were 123 mobile cellular subscriptions for every 100 people in Kenya.¹⁸



¹⁵ Statista. "Kenya: Largest Cities 2021." Statista, Mar. 2022, www.statista.com/statistics/1199593/population-of-kenya-by-largest-cities/.
¹⁶ Statista. "Share of internet users in Africa as of January 2022, by country." Statista, Jan. 2022, <https://www.statista.com/statistics/1124283/internet-penetration-in-africa-by-country/>.
¹⁷ Statista. "Access to financial services and products in Kenya from 2006 to 2021." Statista, Dec. 2021, <https://www.statista.com/statistics/1219362/access-to-financial-services-and-products-in-kenya/>.
¹⁸ The World Bank. "Mobile cellular subscriptions (per 100 people) - Kenya." Data.worldbank.org, <https://data.worldbank.org/indicator/IT.CEL.SETS.P2?locations=KE>.



Web 3.0 in Kenya

Summary

The Web 3.0 environment in Kenya is still developing and evolving. As of January 2022, only 42% of the population had access to the internet, which indicates a significant digital divide and limited access to Web 3.0 technologies such as the semantic web.

However, there are some signs of Web 3.0 growth and progress. The number of internet users has been steadily increasing and there has been growth in the use of mobile devices and broadband connectivity, which has been fueled by the proliferation of affordable smartphones and the expansion of mobile networks and internet infrastructure across the country. This has enabled more people to access Web 3.0 technologies and services, such as online shopping and e-commerce platforms.

In addition, the Kenyan government has been implementing various initiatives to improve internet connectivity and access, including the deployment of fiber optic cables and satellite networks. These efforts are expected to increase access to Web 3.0 technologies and enhance the overall Web 3.0 environment in the country.

Overall, the Web 3.0 environment in Kenya is vibrant and dynamic, with a growing number of users and businesses adopting new technologies to drive innovation and development.

Regulatory Landscape

Currently, there are no specific regulations or laws governing the use of blockchain technology in Kenya.

In terms of cryptocurrencies, the CBK Governor, Dr. Patrick Njoroge, revealed in September 2022 that Kenya will explore introducing a regulatory framework for cryptocurrencies. This was followed by the proposed amendment of the Capital Markets Bill in November 2022, which seeks to require those with or dealing with cryptocurrencies to provide information to the country's CMA about their activities for tax purposes.¹⁹ The amendment will also outline responsibilities of persons or businesses trading in digital currencies, ownership, and provide for promotion of innovation in this area. If Kenya's Members of Parliament approve this Bill, the sector will be made less attractive due to the increased barriers to entry for businesses, and higher costs for both businesses and users of cryptocurrencies.

Companies dealing with cryptocurrencies as part of their product offering note the challenges faced surrounding regulation. The ongoing conversations regarding the desire to regulate crypto result in a grey area in terms of permissible services. This leaves companies vulnerable as they are unsure of when these regulations will be enforced, what they would entail, and how they would affect companies' operations. Some companies mitigate this by working closely with the CMA, who are relatively more receptive of these technologies.

¹⁹ Business Daily, "Bill Sets up KRA Tax Dragnet for 4m Cryptocurrency Users." *Business Daily*, 20 Nov. 2022. www.businessdailyafrica.com/bd/economy/bill-sets-up-kra-tax-dragnet-4m-cryptocurrency-users-4026868.



Web 3.0 in Kenya

Cryptocurrencies and Crypto Exchanges

According to a report by the United Nations Conference on Trade and Development (UNCTAD), Kenya has a high cryptocurrency adoption rate, placing fifth globally in terms of crypto ownership as a share of the total population in 2021 (8.5%; 4.25 million people).²⁰ UNCTAD attributes Kenya's growing use of digital currencies to low fees charged by crypto exchanges, the speed with which remittances are sent, and increasing internet access.

Gitari Tirima, Co-Founder of Fingo Africa, notes that decentralised finance allows Kenyans to invest and grow wealth quickly, with fewer barriers than traditional investment vehicles such as bonds and real estate. Businesses also benefit by being able to make transactions faster compared to more traditional methods such as SWIFT.

Non-Fungible Tokens

Artists are drawn to the security of NFTs. As these digital assets cannot be replicated due to the nature of blockchain, the risk of producing counterfeit pieces is significantly reduced. Their value is therefore drawn from their rarity and provenance, resulting in the increased purchase of NFTs by Kenyans.

NFTs are typically purchased using cryptocurrencies but HoneyCoin contextualised their product offering and made it possible for Kenyans to purchase them directly through M-Pesa. Using the HoneyCoin app, clients purchase NFTs through M-Pesa, and HoneyCoin creates a crypto wallet for the client and sends them a wallet address with the NFT they purchased in it. David Nandwa, HoneyCoin Founder and CEO, worked alongside Octopizzo, a Kenyan rapper, to create fractional NFTs for five songs in the artist's album, allowing buyers to access a share of streaming royalties for the listed songs.

As the music industry in Kenya grows, NFTs will provide artists the opportunity to be better and more fairly compensated for their work.

Real Estate Tokenization

Blockchain technology has the ability to drive the vision of fractional ownership in Kenya, through which individuals can own part of a valuable asset rather than buying it outright.

This concept has been prevalent in the real estate market in Kenya, albeit not using blockchain, where buyers have the opportunity to participate in fractional ownership of properties in areas such as Nairobi, Mombasa and Nakuru.

As the allure of fractional asset ownership grows, real estate tokenization would help improve the transparency and security of the real estate sector. Buyers would benefit from reduced costs due to the removal of the 'middleman', the ability to have a diversified real estate investment portfolio, and access to proof of ownership.

²⁰ UNCTAD, *Policy Brief No. 100*, June 2022.

Case Studies



**Mélanie Keita,
Melanin Kapital Co-
Founder**

Melanin Kapital

Founded in April 2020, Melanin Kapital is a collaborative financial platform connecting social impact projects in Africa with international investors. In 2021, Melanin Kapital started disbursing loans to SMEs, using M-Pesa statements to generate credit scores for these companies and determine the loan amounts SMEs would be able to comfortably repay.

With the help of EMURGO Africa, Melanin Kapital is planning to migrate from Web 2.0 to Web 3.0 in order to better inform their disbursements of loans. The use of blockchain technology will enable Melanin Kapital to build a platform that allows for better credit scoring and is expected to provide more elaborate insights on SMEs' environmental impact.

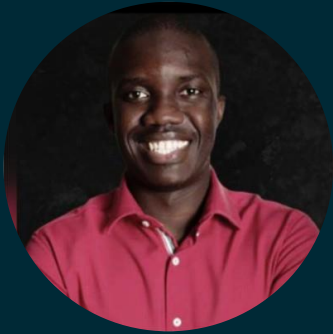


**Gitari Tirima,
Fingo Africa Co-
Founder & CPO**

Fingo Africa

Fingo is a digital bank built for young Africans. Their mission is to empower our youth to create a wealthier Africa with distinctly designed financial products. Fingo has partnered with Ecobank, the largest footprint bank in Africa, providing Fingo market access to Ecobank's 33+ markets. Fingo and Ecobank are planning a pan-African roll out beginning in Kenya where they are the first digital-only bank in the country.

Case Studies



**Wyclife Omondi,
BuuPass Co-Founder**

BuuPass

Founded in 2016, BuuPass is a digital marketplace for urban travellers to book their travel tickets. It provides solutions to both operators and end users in the mobility ecosystem, thus playing a key role in the digitisation of the mobility space with its technology across Africa.

BuuPass' mission is to provide simple transport solutions. They challenge themselves to make simpler, smarter, and more sustainable solutions that positively impact daily lives. The platform currently has over 1,000,000 bus users, more than 920 buses in operation, over 800 locations covered in Kenya and Uganda, and processes over 10,000 bookings daily.



**John Kamara,
Afya Rekod Founder
& CEO**

Afya Rekod

Launched in April 2020, Afya Rekod is a health data platform that allows both patients and health facilities to capture, store and access the mobility of the patients health data. The startup has over 150,000 users in five countries.

Developed as a patient driven platform, the patient maintains the sovereign right of ownership to their health data. Using AI and various blockchain modules, AfyaRekod allows health institutions, partners and patients to make insightful data driven decisions that allows doctors to provide better healthcare for patients.

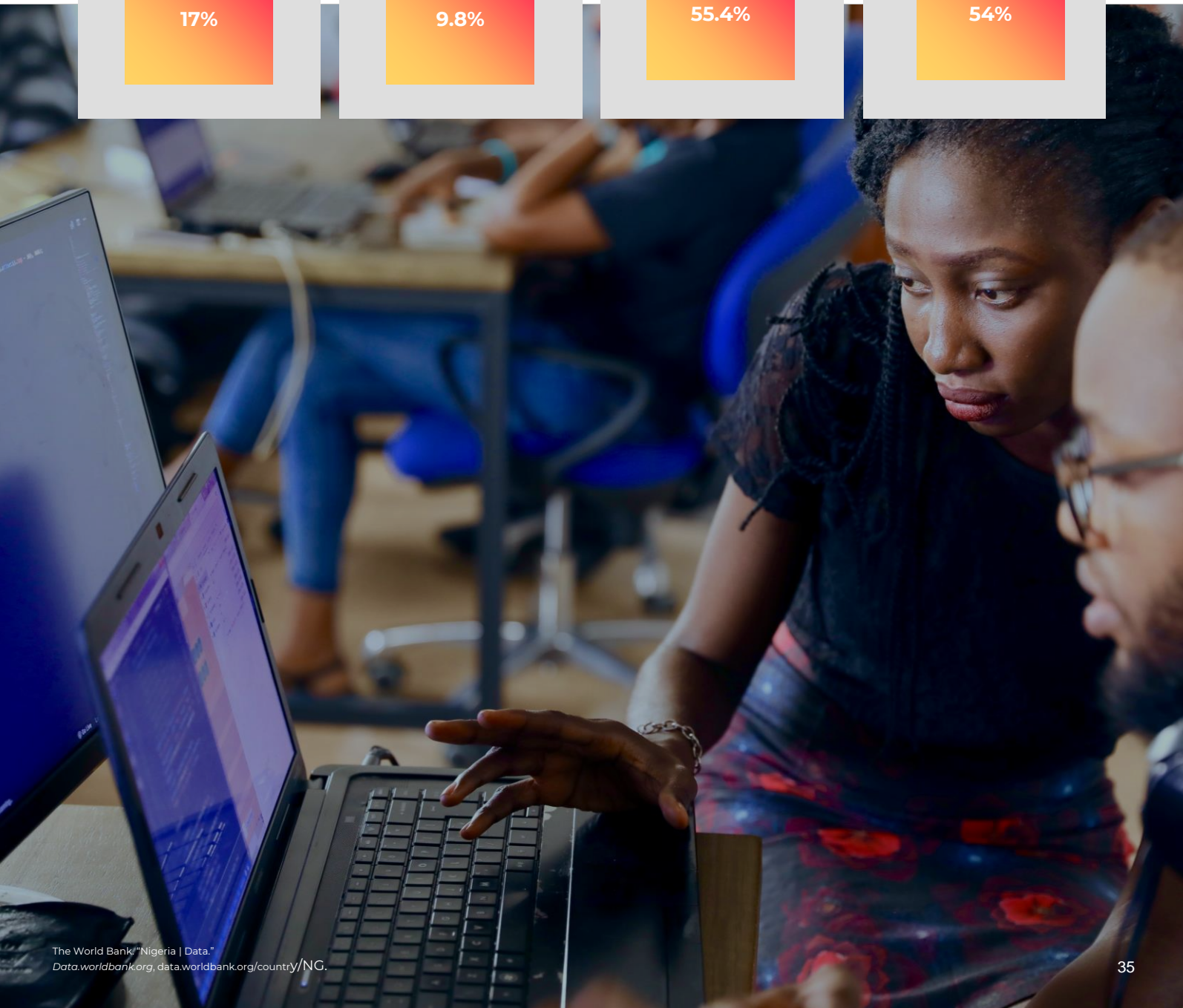
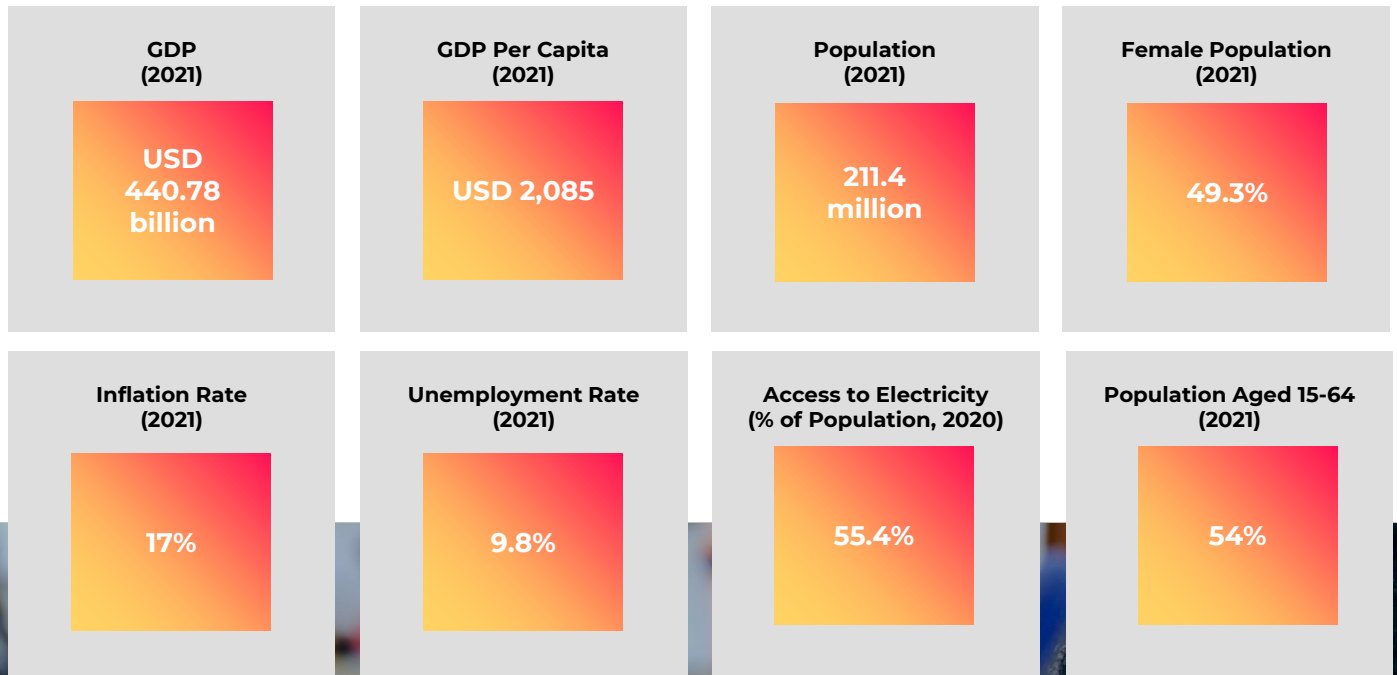
Nigeria



At 923,769 square kilometres (356,669 square miles), Nigeria is the world's 32nd largest country by area.

Demographics

Nigeria 



Demographics

Nigeria

Urbanisation

The urban population in Nigeria has been experiencing a rapid rise since 2010 and is expected to grow to almost 300 million inhabitants in Nigerian cities by 2037.

The population of the city of Lagos is expected to reach a population of 20.6 million inhabitants by 2030.

The distribution of Nigeria's population by major cities is as follows:²¹

- Lagos** - 15.4 million
- Kano** - 4.1 million
- Ibadan** - 3.6 million
- Port Harcourt** - 1.9 million
- Benin City** - 1.8 million

Mobile and Internet Penetration

51% **Internet Penetration Rate**

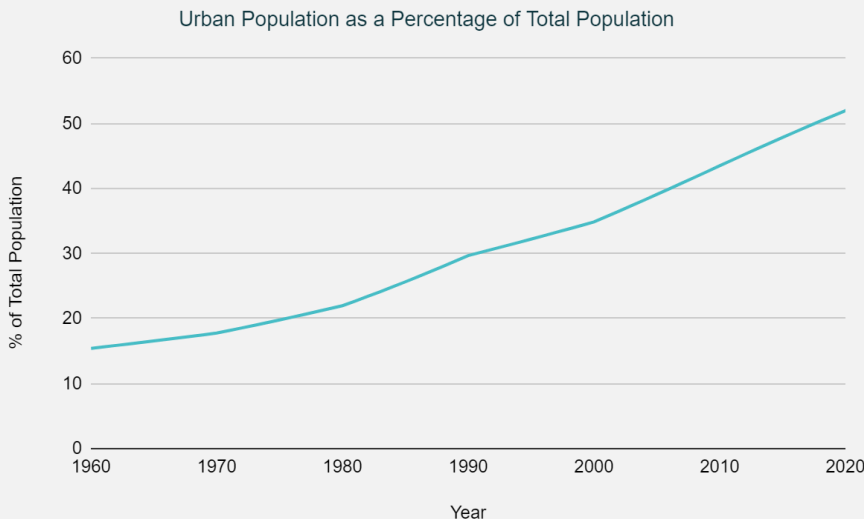
There were 109.2 million internet users in Nigeria in January 2022.²²

64% **Financial Inclusion Rate**

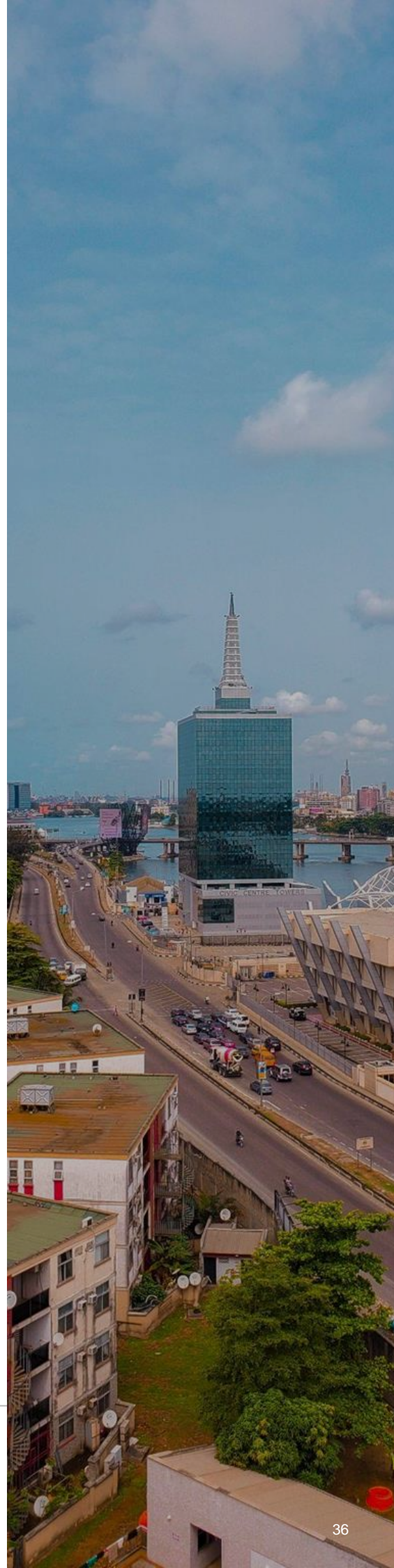
In 2020, 44.8% of Nigerians were banked, while 5.7% and 13.6% were served by other formal channels and informal financial service providers.²³

91% **Mobile Cellular Subscriptions Rate**

In 2021, there were 91 mobile cellular subscriptions registered for every 100 people.²⁴



²¹ Statista. "Largest cities in Nigeria in 2022." *Statista*, 2022, <https://www.statista.com/statistics/1121444/largest-cities-in-nigeria/>
²² Statista. "Share of internet users in Africa as of January 2022, by country." *Statista*, Jan. 2022, <https://www.statista.com/statistics/1124283/internet-penetration-in-africa-by-country/>.
²³ KPMG. "Nigeria's Financial Inclusion: The Way Forward." *KPMG*, <https://assets.kpmg.com/content/dam/kpmg/ng/pdf/nigerias-financial-inclusion-the-way-forward.pdf>
²⁴ The World Bank. "Mobile cellular subscriptions (per 100 people) - Nigeria." *Data.worldbank.org*, <https://data.worldbank.org/indicator/IT.CEL.SETS.P2?locations=NG>





Web 3.0 in Nigeria

Summary

Nigeria has a growing number of blockchain startups and organisations, such as the Stakeholders in Blockchain Technology Association of Nigeria (SIBAN). A report by the CBN, 'Nigeria Payments Systems Vision 2025', noted that the CBN seeking to engage relevant stakeholders to utilise blockchain technology for the review and implementation of remittance solutions.²⁵ The blockchain landscape in Nigeria is therefore growing and evolving, with more businesses and organisations, both in the private and public sphere, exploring the potential of this technology.

Some notable examples of blockchain adoption and developments in Nigeria include:

- ❖ The National Information Technology Development Agency (NITDA) launched a 2022 Blockchain Scholarship Scheme to train 30,000 Nigerians on blockchain technology
- ❖ HouseAfrica, a Nigerian proptech startup, developed Africa's first blockchain-based land and property registry
- ❖ The Nigerian Identity Management Commission partnered with the International Institute of Tropical Agriculture to develop a blockchain-based platform for tracking and verifying agricultural products

Regulatory Landscape

The Nigerian government has been cautious regarding the regulation of the crypto market, with the Central Bank of Nigeria (CBN) issuing a circular in 2017 warning banks and other financial institutions against dealing with virtual currencies.²⁶ The circular explicitly banned banks and other financial institutions from using, holding, trading or transacting virtual currencies in any capacity. For existing customers that are virtual currency exchanges, guidance was provided on how to approach such entities, including ensuring that effective AML/CTF controls are in place.

However, in 2021, Nigeria's SEC announced the launch of a regulatory framework for digital assets and the creation of a Digital Assets and Blockchain Office. This indicates a shift towards more favourable regulations for the crypto market in Nigeria.

In addition, in 2022 the SEC released a set of new regulations guiding the issuance, exchange and custody of digital assets in Nigeria.²⁷ The SEC defines digital assets as a digital token that represents assets such as a debt or equity claim on the issuer; and 'Digital Asset Offering' shall include ICOs and other Distributed Ledger Technology (DLT) offers of digital assets. The rules cover: Issuance of Digital Assets as Securities; Registration Requirements for Digital Assets Offering; Platforms (DAOPs); Registration Requirements for Digital Asset Custodians; Virtual Assets Service Providers (VASPs); and Digital Assets Exchange (DAX).²⁷

²⁵ CBN. "Nigeria Payments System Vision 2025."

²⁶ CBN. *Circular to Banks and Other Financial Institutions on Virtual Currency Operations in Nigeria*. 12 Jan. 2017, www.cbn.gov.ng/Out/2017/FPRD/AML%20January%202017%20Circular%20to%20FIs%20on%20Virtual%20Currency.pdf.

²⁷ SEC Nigeria. "Rules on Issuance Offering and Custody of Digital Assets." *The Securities and Exchange Commission, Nigeria*, 13 May 2022, sec.gov.ng/rules-on-issuance-offering-and-custody-of-digital-assets_sec-nigeria-11-may-2022/.



Web 3.0 in Nigeria

Cryptocurrencies and Crypto Exchanges

In Nigeria, the allure of cryptocurrencies comes from numerous factors, including the uncertainty surrounding the devaluation of the Naira, the promoted promise of financial freedom by earning a passive income, and a lack of job opportunities. According to UNCTAD, Nigeria ranks in the top 10 of countries worldwide in terms of crypto adoption, with a 6.3% digital currency ownership as share of population in 2021.²⁸

In 2021, the Nigerian government launched the eNaira: a digital currency denominated in Naira (₦). The CBN governor, Godwin Emeiele, noted that 'since the launch of this great initiative, the eNaira has reached 840,000 downloads, with about 270,000 active wallets comprising over 252,000 consumer wallets and 17,000 merchant wallets. In addition, the volume and value of transactions on the platform have been remarkable, reaching above 200,000 and ₦4 billion (USD 9 million), respectively.'²⁹

Beyond financial inclusion, the eNaira can be used for cross-border payments and transfers, with remittances being one of the most compelling applications of digital currencies. Through eliminating intermediaries, the eNaira could serve as a dependable low-cost payment solution for consumers and businesses.

Non-Fungible Tokens

In Nigeria, NFTs are being used in various fields such as art, music, fashion and real estate. Several trends pertaining to NFTs have emerged in the country; one such trend is the use of NFTs to sell digital artworks, with artists such as Victor Ehikamenor selling NFTs up to the value of USD 100,000.³⁰

Another trend is the growing and vibrant community of artists seeking to establish forums where they can showcase their NFT collections. For example, in 2021 a group of Nigerian artists part of the Naija NFT Collective launched the first-ever NFT art show in Nigeria, featuring the work of over 20 artists. In addition, Chuma Anagbado, a pioneer in the Nigerian NFT space, co-founded a Nigerian NFT community and has played a key role in promoting the use and benefits of NFTs in the country.

Real Estate Tokenization

The real estate tokenization landscape in Nigeria is still in its infancy, but there are promising developments and projects that could help unlock the potential of blockchain technology in the real estate sector.

One such development is Ellamediate, a Nigerian startup that gives individuals the opportunity to own fractions of real estate in Nigeria, the United Kingdom, the United States of America and the UAE, with as little as USD 100. This platform has enabled the democratization of property ownership by providing access to real estate opportunities.

²⁸ UNCTAD. *Policy Brief No. 100*. June 2022.

²⁹ Ujah, Emma. "Nigeria: eNaira Transactions Hit N4bn - Emeiele." *AllAfrica.com*, 19 Aug. 2022. allafrica.com/stories/202208190256.html.

³⁰ Nasdaq. "Nigerian NFT Artists Are Making Their Global Mark in \$200 Billion Market." *Nasdaq.com*, 17 Jan. 2023. www.nasdaq.com/articles/nigerian-nft-artists-are-making-their-global-mark-in-%24200-billion-market.

Case Studies



**Mouloukou Sanoh,
Cassava Network
Co-Founder**



**Daniel Bloch,
Seso Global Founder**



**Ruth Iselema,
BitMama Founder
and CEO**

Cassava Network

Cassava aims to bring the benefits of crypto to Africa and to help app developers and their users make the most out of blockchain technology, while giving them access to one of the most populous continents in the world. Built on the Flow blockchain, Cassava turns any online application into a crypto-enabled app able to reward users with CSV tokens for their attention.

Seso Global

Seso Global is an all-inclusive proptech platform redefining the African real estate business by providing a streamlined and trustworthy property buying experience. Using blockchain technology, Seso provides a marketplace that supports secure and risk-free digital land transactions between property owners, buyers, land agencies, financial institutions, and professionals that service the real estate value chain.

On the Seso platform, property buyers around the world can access a verified database of African landed properties and service companies that includes mortgage providers and legal consultants. Furthermore, the Customer Relationship Management (CRM) feature simplifies portfolio management for property owners, developers, estate agents, and investors with easy uploads of properties and payment options that transcend regional limitations.

BitMama

Founded in 2019, Bitmama is a highly-secured and fast-growing crypto platform to buy, sell or trade Bitcoin,

Bitmama started as a P2P digital currency exchange. It quickly grew into a platform where individuals can trade and manage cryptocurrencies, and digital assets conveniently. BitMama offer a trusted platform for cryptocurrency transactions while redefining the way people do financial transactions through blockchain technology.

Spotlight: Game-Fi Companies in Nigeria

Afri-Guild

AfriGuild is a decentralized autonomous organization (DAO) that provides chances through gaming, education, and community building.



Afriguilid wants to make the possibilities of Web 3.0 accessible to everyone, by creating entry-level opportunities into Web 3.0 through empowering people to become participants and contributors in the global web 3.0 revolution via Education, Gaming and Community Building.

The company received an undisclosed investment amount from Adaverse in 2022. Currently, the company has 3000 members on its discord and is actively creating communities in tertiary communities across Africa. It has presence in 9 Nigerian cities and seeks to expand to 4 countries.

Diagon Studios

Diagon is a play-to-earn gaming platform that allows users to earn money while having the best gaming experience possible. They are developing a crypto-powered Casual Gaming, Utility, and NFT platform that will benefit a global mass audience in the long run.



Diagon's gaming platform features a wide range of casual games that almost anyone can enjoy. As a result, gamers are not required to understand traditional hardcore game mechanics, controls, or clichés.

Diagon Studios raised an undisclosed amount of seed funding from Adaverse in September 2022. It aims to use the Cardano blockchain to offer a better approach to securing transactions for the Diagon project with its eco-friendly platform and large global community.

FanBants



FanBants is a fantasy football game where players pick a team of 11 players and earn points based on how their players perform in real life. The better their player performs in real life, the higher their fantasy points.

The platform aims to build the ultimate fan destination, therefore connecting Africans through competition and community.

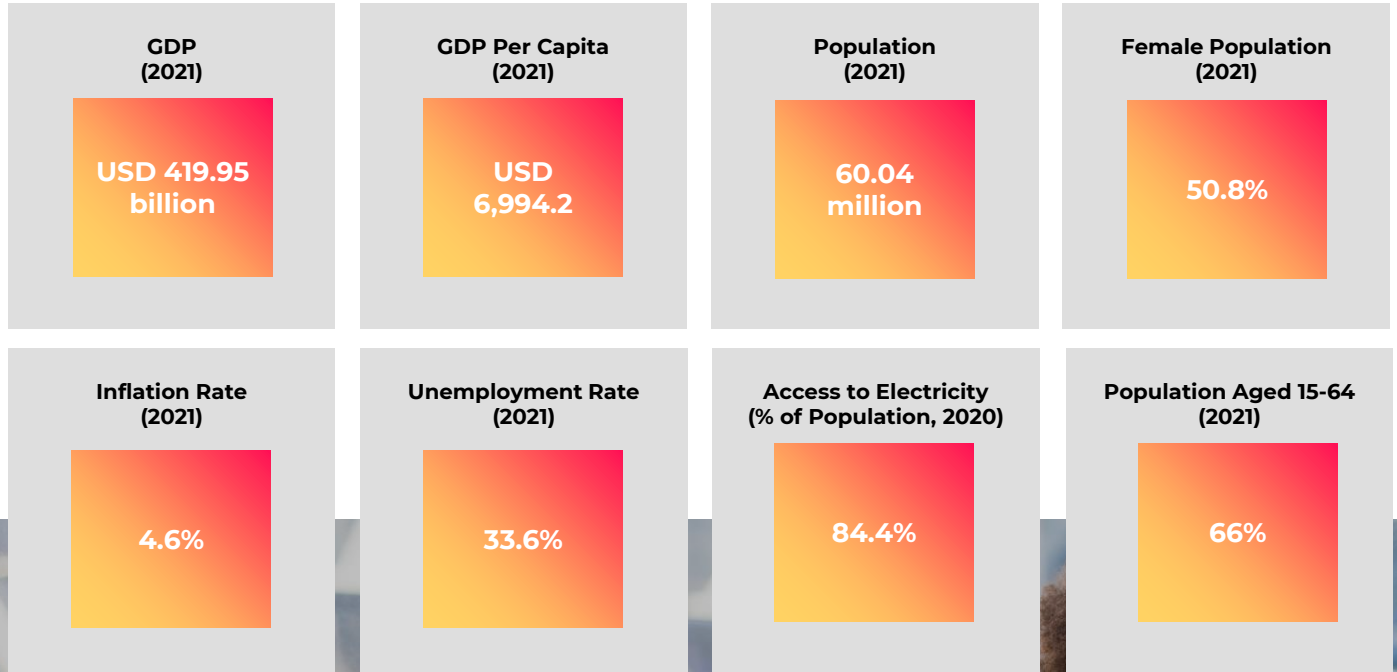
South Africa



At 1,221,037 square kilometres (471,445 square miles), South Africa is the world's 25th largest country by area.

Demographics

South Africa 



Demographics

South Africa

Urbanisation

South Africa is one of the most urbanised countries in Africa, with around 67% of its population living in urban areas. This figure is projected to increase to around 80% by 2050.³¹ The high rate of urbanisation results in challenges such as unemployment, poor living conditions, congestion, increased crime etc; the government has developed an Integrated Urban Development Framework to address these.

The distribution of South Africa’s population by major cities is as follows:³¹

- Cape Town** - 3.4 million
- Durban** - 3.1 million
- Johannesburg** - 2.0 million
- Soweto** - 1.7 million
- Pretoria** - 1.6 million

Mobile and Internet Penetration

80% **Internet Penetration Rate**

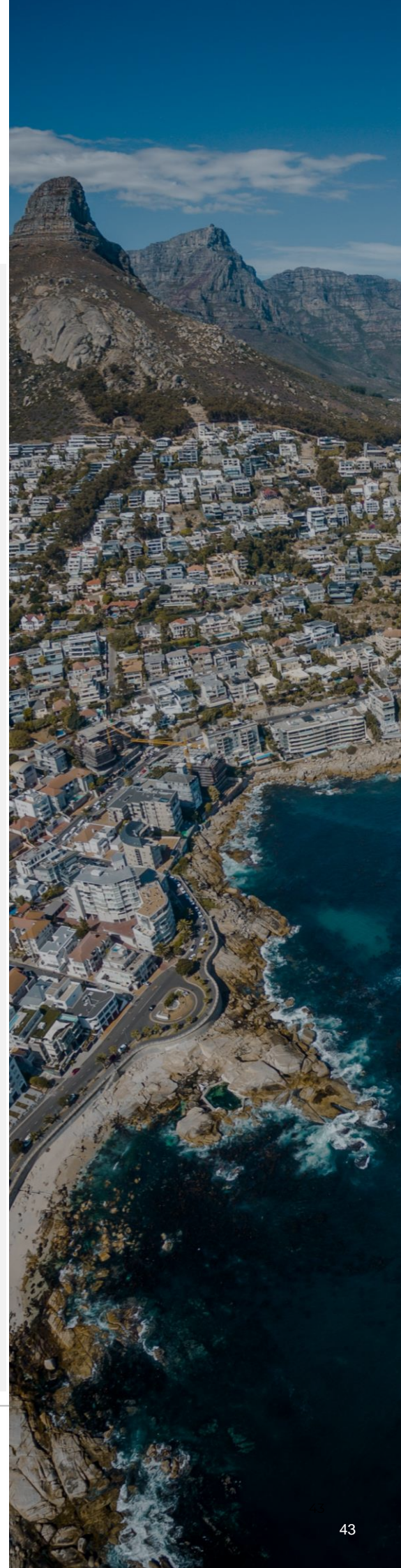
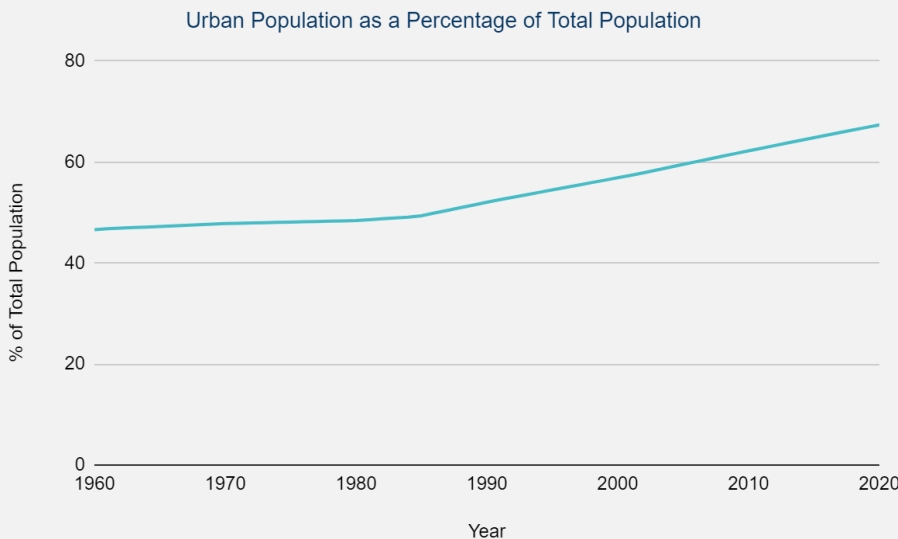
There were around 41.2 million active internet users in South Africa at the beginning of 2022.³²

79% **Banked Population Rate**

In 2020, the penetration rate of bank accounts in South Africa increased by two percent to 79 percent.³³

169% **Mobile Cellular Subscriptions Rate**

There were 169 mobile cellular subscriptions registered for every 100 people in 2021.³⁴



³¹ Statista. "Largest cities in South Africa in 2022, by number of inhabitants." Statista, 2022. <https://www.statista.com/statistics/1127496/largest-cities-in-south-africa/>

³² Statista. "Internet usage in South Africa - statistics & facts." Statista, Jan. 2022. <https://www.statista.com/statistics/1124283/internet-penetration-in-africa-by-country/>.

³³ Statista. "Bank account penetration in South Africa from 2010 to 2025." Statista, Sep. 2021. <https://www.statista.com/forecasts/1263879/south-africa-bank-account-penetration>

³⁴ The World Bank. "Mobile cellular subscriptions (per 100 people) - South Africa." Data.worldbank.org, <https://data.worldbank.org/indicator/IT.CEL.SETS.P2?locations=ZA>



Web 3.0 in South Africa

Summary

Web 3.0 in South Africa is characterised by the increasing use of AI and machine learning technologies to enhance user experiences and automate process.

One key trend is the rise of dApps and blockchain technology, which are being utilised by a variety of industries in South Africa for secure and transparent data management and transactions. For instance, the agricultural sector is using blockchain technology to track and trace the origins of produce, ensuring food safety and supply chain transparency. Additionally, South Africa is seeing a growing trend of personalisation and customisation of online experiences, with companies using data analytics and AI to tailor their products and services to individual user preferences. This is evident in the rise of personalised e-commerce platforms and personalised content recommendations on social media platforms.

Overall, Web 3.0 in South Africa is driving the adoption of advanced technologies to improve user experiences and enhance efficiency in various industries.

Regulatory Landscape

The regulatory environment for blockchain technology in South Africa is still in its early stages, with various government agencies and organisations working to develop clear guidelines and regulations for its use. Advancements in the regulation of crypto assets are, however, rapidly evolving.

In 2019, the South African Government established the Crypto-Asset Regulatory Working Group in order to investigate all aspects of crypto assets and related blockchain concepts, with the aim of developing a cohesive government response.³⁵ The group made a number of key recommendations, including: developing and adopting a framework for the monitoring of cross-border crypto asset transactions, implementing AML and KYC frameworks, and applying relevant financial sector laws to crypto assets. These recommendations have been instrumental in the development of regulation pertaining to crypto assets.

Furthermore, in October 2022 the Financial Sector Conduct Authority (FSCA) classified cryptocurrency assets as financial products, therefore stipulating that they should be regulated.³⁶ Non-Fungible Tokens (NFTs), however, are not be classified as financial products, according to the FSCA, so will not be regulated. It is important to note that the underpinning reason for the regulation of crypto assets was not the FSCA's belief in their qualification as currencies, but rather the increasing need to curb crypto scams and protect customers as the use of crypto assets becomes more widespread in South Africa.

Risks Highlighted and Key Observations

Despite broad warnings from the SARB and SARS about the risk of fraud in bitcoin transactions, many South Africans are said to have fallen for a scam involving BTC Global, Steve Twain. The Hawks claim that more than 27,500 persons deposited between ZAR 16,000 and ZAR 1.4 million with BTC Global after being promised monthly interest rates of up to 50%.³⁵

The National Payment Systems Act, 78 of 1998 was reviewed by the SARB and made available for public comment in December 2018. The systems used by South Africans for payment settlement are governed by this legislation. It's interesting to note that the SARB appears to recognize that domestic and international payments may soon become almost identical and anticipates that similar digital currencies may eventually form the backbone of the country's payment infrastructure. This may open the door to lessening the monopoly of commercial banks over the processing of payments and, in the future, the potential for a digital South African fiat currency.³⁵

³⁵ PwC, *PwC Global Crypto Regulation Report 2023*, 19 Dec 2022.

³⁶ FSCA, (2022, October 20). DECLARATION OF CRYPTO ASSETS AS A FINANCIAL PRODUCT. Financial Sector Conduct Authority.



Web 3.0 in South Africa

Cryptocurrencies and Crypto Exchanges

The cryptocurrency ecosystem in South Africa is growing rapidly. An increasing number of brands and businesses are moving into the realm of accepting cryptocurrencies for their goods and services and setting up payment systems that allow Bitcoin transactions.

As a whole, South Africa ranks 7th globally in terms of crypto ownership as a share of the population: 7.1% of the population.³⁷ The majority of cryptocurrency traders in the country are under the age of 50, and approximately 40% of transactions are carried out by those under the age of 29. As more people of various ages enter the crypto-sphere, though, that will change. This trend is not unusual as, typically, change is brought about by younger generations.

South African regulators have recently taken a more tolerant stance on cryptocurrencies, which could lead to a surge in cryptocurrency adoption in the country. Binance, the world's largest cryptocurrency exchange by trading volume, announced in January 2023 that users can now withdraw ZAR from their Binance wallets to their bank accounts.³⁸ This was actioned as part of Binance's mission to increase the adoption and mainstream accessibility of crypto.

In 2018 SafCoin, a South-African cryptocurrency, launched exclusively to South Africans. It was then launched globally in 2021, making it the first South African cryptocurrency to do so.

Non-Fungible Tokens

In South Africa, NFTs have gained popularity in the art and collectibles market, with artists and collectors using the technology to create and trade unique digital artworks. Momint, an EMURGO Africa portfolio company, hosted Africa's largest NFT auction in Cape Town in 2021, auctioning off works from artists such as Lucas Radebe, Bryan Habana and Arno Carstens.

South Africa's vibrant art and tech communities have therefore led to the development of local NFT marketplaces and platforms, such as the aforementioned Momint, which aim to bring like-minded people together and form online communities.

Overall, the adoption of NFTs in South Africa is still in its early stages, but there is a growing interest and recognition of their potential as a tool for authenticating digital ownership.

Real Estate Tokenization

Tokenization in the real estate market is a relatively new concept in South Africa that is still being explored and developed.

One of the key developments in the South African real estate tokenisation market is the establishment of the country's first real estate tokenization platform, Flyt Property Investment. This platform allows investors to subscribe for, redeem and transfer shares in the Flyt Hospitality Fund, a South African Section 12J fund investing in hospitality property and apart-hotels. The platform has the aim of making real estate investments more accessible and transparent.

The future of real estate tokenization in South Africa is promising, with the potential for increased liquidity, accessibility and transparency in the market. However, there are still some challenges to overcome, such as the need for regulatory clarity and the adoption of blockchain technology by the real estate industry.

³⁷ UNCTAD, *Policy Brief No. 100*, June 2022.

³⁸ Binance, (2023, January 16). *Binance Introduces Express South African Rand (ZAR) Withdrawals*. [www.binance.com](https://www.binance.com/en-ZA/support/announcement/binance-introduces-express-south-african-rand-zar-withdrawals-1a28ebb9c98148f9a92cb23c43e0dccc4).
<https://www.binance.com/en-ZA/support/announcement/binance-introduces-express-south-african-rand-zar-withdrawals-1a28ebb9c98148f9a92cb23c43e0dccc4>

Case Studies



**Ahren
Posthumous,
Momint Founder**

Momint

Momint, a Cape Town-based blockchain start-up, has developed a blockchain-based offering that aims to help ease South Africa's energy crisis by allowing anyone to invest in solar power and resell it to institutions.

The project is premised on a crowdfunding model, allowing multiple investors to fund a single project, while raising money to fund the institution's solar project. The process leverages blockchain technology to increase transparency, while reducing the cost of transactions.



**Chris Heaton,
Skrmiish Founder &
Managing Director**

Skrmiish

Skrmiish is a mobile "play-to-earn" app that enables gamers of every level to earn cash in every match they play across the AAA+ games. It is based in South Africa, Isle of Man and USA.

MoneyMatch, a feature created by Skrmiish and released in 2021, enables users to earn real money in every match they participate in without having to wait for a tournament or locate a peer to challenge them.

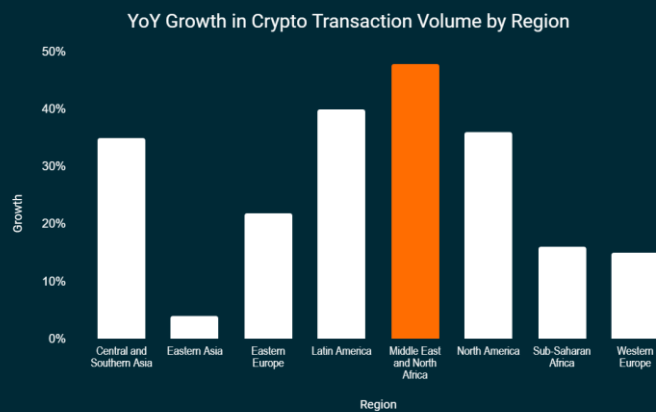
MoneyMatch blends a conventional sportsbook method with conventional AAA+ game play and offers it live throughout the UK and Europe. After syncing Skrmiish with their game accounts, players receive their MoneyMatch Rating (MMR), which is based on their performance data.

Egypt



At 1,010,408 square kilometres (390,121 square miles), Egypt is the world's 29th largest country by area.

The Middle East and North Africa (MENA) region was the fastest growing crypto market between 2021 and 2022.³⁹



³⁹Chainalysis. The 2022 Geography of Cryptocurrency Report. 2022.

Egypt's Regulatory Environment

The blockchain regulatory landscape in Egypt is currently in a state of development and evolution. However, the trading of cryptocurrencies is explicitly banned.

Highlights of Regulatory Developments:

In 2017 the Egypt's Financial Regulatory Authority (FRA) issued a statement warning against the risks of investing in cryptocurrencies and ICOs, and advised investors to exercise caution when considering such investments.⁴⁰

The trading of cryptocurrencies in Egypt was banned in 2018 due to religious decrees under Islamic law.⁴¹ This ban is enforced by article 206 of the Central Bank and Banking System Law promulgated by Law No. 194 of 2020, which prohibits the issuance, trading, promotion, platforms, and other activities related to cryptos. Those who violate the ban may be imprisoned and fined up to LE10 million (approx. USD 400,000). However, the use of cryptocurrencies in the nation is on the rise, signaling increasing demand.

The Egyptian Parliament passed Law No.194 of the Central Bank and Banking Sector in 2020.⁴¹ This law established a number of technological and digital tools to aid Egypt's banking and financial sector in its digital transformation, including digital finance, digital cheque settlement, E-Money, cryptocurrency, FinTech, and RegTech. The new CBE Law also set forth definitions and licensing instructions with regards to 'Digital Banks'.

⁴⁰ Ahrām Online. "Egypt's Financial Regulatory Authority Issues Cryptocurrency Warning." *Ahrām Online*, 19 Dec. 2017, english.ahrām.org.eg/News/285677.aspx.

⁴¹ Freeman Law. "Egypt and Cryptocurrency." *Freeman Law*, freemanlaw.com/cryptocurrency/egypt/.

Case Study



***Mohamed Abdou,
Pravica Founder and
CEO***

Pravica

Pravica is a unified secure digital communication suite that meets Web 3.0 standards and uses Blockchain technology to empower user privacy and security.

Pravica enables businesses and people to create their own cryptographically sealed identities and preserve their own data without the need for third parties to retain it, Pravica is redefining digital communications. The Bitcoin network secures tamper-proof identity keys, and users are in charge of their own cloud-based data storage without Pravica or any other third party keeping any of it.

This company has built a user-owned internet by innovating messenger applications on the Blockchain platform. In this internet, your identity is extremely secure, owned, and controlled solely by you. These products are based on decentralized identities secured on the Bitcoin network.

The United Arab Emirates (UAE)



At 83,600 square kilometers (32,300 square miles), the UAE is the world's 116th largest country by area.

UAE Regulatory Environment

The UAE has a relatively favourable regulatory environment for blockchain technology.

The government has implemented a number of initiatives to support the growth of the blockchain in the country. For example, in 2018 the Emirates Blockchain Strategy 2021 was launched, with the aim to adopt blockchain technology in 50% of government transactions by 2021 thereby saving AED 11 billion (approx. USD 3 billion) in transactions and documents processed routinely.⁴²

In addition, the Blockchain Committee was established in 2018 with the aim to develop and implement a comprehensive national strategy for blockchain technology. The UAE also established the Global Blockchain Council, which works to promote the use of blockchain technology in various industries.⁴³ The Council consists of 46 members and helps to facilitate transactions within the various sectors of financial and non-financial sectors as well as increase efficiency and reliability levels of blockchain.

UAE Crypto Regulatory Trends:⁴⁴

Financial crime - UAE law provides for AML regulations aligned with the FATF and Middle East and North Africa FATF.

Sales and promotion - VARA has published guidelines on marketing, advertising and promoting virtual assets.

Stablecoins and other digital assets - Authorities are assessing their approach to other areas of digital assets, including stablecoins and wider DeFi.

Central Bank Digital Currency (CBDC) - The CBUAE continues to explore and test the possibility of issuing a wholesale CBDC through international projects.



⁴² U.ae, "Blockchain in the UAE Government." U.ae, 24 May 2022, [u.ae/en/about-the-uae/digital-uae/blockchain-in-the-uae-government](https://www.u.ae/en/about-the-uae/digital-uae/blockchain-in-the-uae-government).

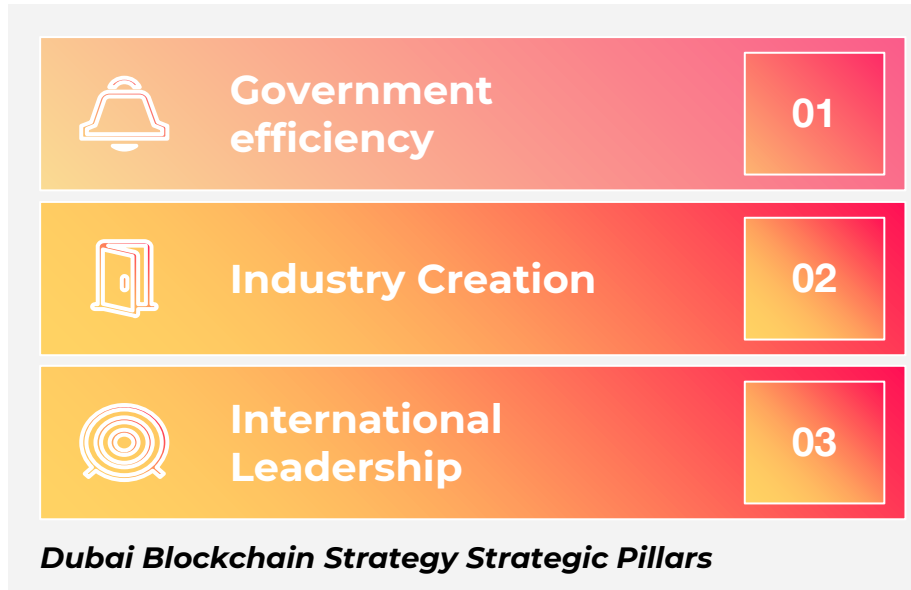
⁴³ DMCC, "Global Blockchain Council." DMCC, www.dmcc.ae/about-us/global-blockchain-council.

⁴⁴ PwC, PwC Global Crypto Regulation Report 2023, 19 Dec 2022.

Spotlight: Dubai Blockchain Strategy

Launched in 2016 by His Highness Sheikh Hamdan, the Crown Prince of Dubai, the Dubai Blockchain Strategy is a collaboration between the Smart Dubai Office and the Dubai Future Foundation that aims to transform Dubai through Blockchain.⁴⁵ The ultimate goal was for Dubai to be the first city fully powered by Blockchain in 2020.

The strategy establishes a roadmap for Dubai to use in order to integrate blockchain into everyday life, and focuses on three strategic pillars: government efficiency, industry creation, international leadership.



Objectives

The main objectives behind developing the blockchain strategy are as follows:

- Facilitate the resolution of Blockchain implementation challenges through guidance and policy directives
- Govern the creation, management, and expansion of value-creating Blockchain networks across Dubai and the UAE
- Support and drive the adoption of Blockchain technology especially for government entities
- Minimize security and privacy risks associated with Blockchain implementation and distributed ledger
- Provide a legal foundation for supporting digital services and dispute resolution

Key Figures

100%

Powered by Blockchain

One of the aims of the Dubai Blockchain Strategy is to utilise Blockchain to fully power the city of Dubai.⁴⁵

5.5 billion

Annual Savings (Dirham)

"Adopting Blockchain technology Dubai stands to unlock 5.5 billion Dirham (approx. USD 1.5 billion) in savings annually in document processing alone - equal to the one Burj Khalifa's worth of value every year."⁴⁵

⁴⁵ Digital Dubai. "Dubai Blockchain Strategy." www.digitaldubai.ae, www.digitaldubai.ae/initiatives/blockchain.

Case Study

Dubai Multi Commodities Centre (DMCC)

DMCC is Championing Cryptographic and Blockchain Technologies in Dubai. Located in the state-of-the-art Almas Tower, the DMCC Crypto Centre is a thriving cryptocurrency ecosystem.

DMCC provides a range of crypto licences including: Mining Facilities Operator, Metaverse Service Provider, Proprietary Trading in Crypto-Commodities, Distributed Ledger Technology Services, Proprietary Crypto Mining, NFT's E-Marketplace Provider.

According to DMCC, they will soon be adding more licence activities regulated by Dubai's Virtual Asset Regulatory Authority (VARA), such as Virtual Exchange, Issuance, Custodial, Broker, Lending and Advisory Services.

"Trading will always be central to Dubai's vision of being a dynamic, diverse economy and gateway between established and emerging markets. As a leading global commodities centre, DMCC is playing a vital role to drive the continued evolution and economic growth of Dubai", says Ahmed Bin Sulayem, Executive chairman and CEO.

In 2022, DMCC has been named the 'Global Free Zone of the Year' by The Financial Times fDi Magazine, for a record eighth consecutive year.



**Ahmed Bin Sulayem,
DMCC Executive
Chairman and CEO**

Spotlight: Abu Dhabi Blockchain Ecosystem

The advanced blockchain ecosystem in Abu Dhabi, and the UAE at large, is driven primarily by governmental adoption, partnerships with blockchain providers, and maturing regulatory frameworks.

In November 2022, the Abu Dhabi government held the first Middle East Blockchain Awards (MEBA) to recognise those who have made significant contributions to the development of the emerging technology.

A full virtual asset framework for the trade of virtual assets by businesses was also introduced in 2018 by the Financial Services Regulatory Authority (FSRA), which oversees the Abu Dhabi Global Market (ADGM), and includes multilateral trading facilities, custodians, and brokers.

Companies and Organisations Utilising Blockchain in Abu Dhabi

Finance

Bonds Without Borders is social fintech providing a unique global e-money solution using Bondcoins cash, an alternative to cryptocurrencies, to save, spend, and send



First Abu Dhabi Bank was the first Middle East Bank to introduce real-time cross border payments using Blockchain technology



Abu Dhabi Commercial Bank (ADCB) utilises its blockchain platform to help de-risk trade finance



The Abu Dhabi Islamic Bank launched a tokenized contactless payment system



Legal Services

Abu Dhabi Global Market Courts launched a blockchain-based system to digitally certify judgments and make them available and enforceable anywhere in the world



Municipal Services

Smarthub is a blockchain-based digital platform that offers different Municipal services in Abu Dhabi



Case Studies



**Basil Al Askari,
MidChains Co-Founder &
CEO**



**Tetsuro Masunaga,
Bitgrit Director and
Founder**



**Dhaher bin Dhaher Al
Mheiri,
ADGM CEO**

MidChains

Established in 2017, MidChains is an institutional cryptocurrency asset trading platform based in the Abu Dhabi Global Market (ADGM) and regulated by the FRSA.

The platform aims to offer one of the first completely supervised and regulated ecosystem infrastructures in the world for trading and investing in digital assets (cryptoassets, security tokens and stable coins).

In an effort to hasten its integration with the supplier of payment services, MidChains joined Visa's Fintech Fast Track initiative. By joining the program, the virtual asset trading platform will be better able to take advantage of VisaNet, the company's worldwide payment network, and its reach, capabilities, and security.

Bitgrit

Based in Japan and the UAE, Bitgrit is a platform offering a global network and community for data scientists to interact with each other. They aim to establish an AI marketplace where transactions and interactions are based on smart contract and blockchain technologies. Their own coin is used to execute incentive transfers, building a self-sustaining web3 ecosystem.

It uses cutting-edge tools such as serverless microservices and federated learning to level the playing field for all parties involved, and connects data scientists with businesses in need of AI solutions.

The Abu Dhabi Global Market (ADGM)

ADGM is one of the world's premier International Financial Centres and free zone located on Al Maryah Island, Abu Dhabi. The financial centre was established in 2013 and became fully operational in 2015. It consists of three independent authorities – the Registration Authority (RA), the FSRA and ADGM Courts.

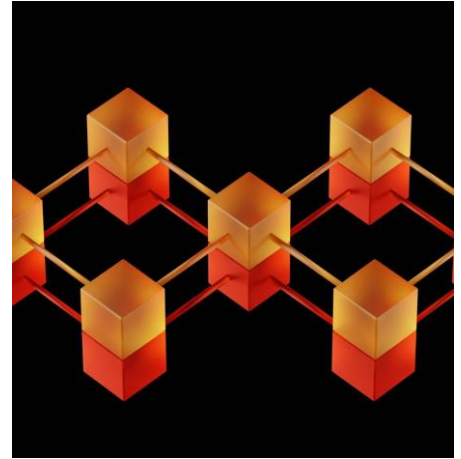
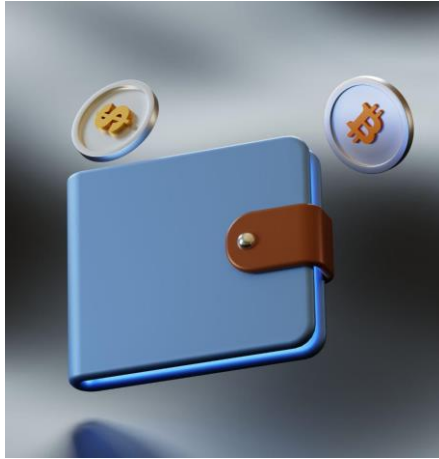
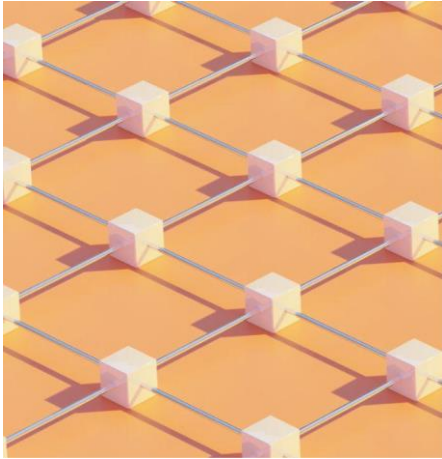
Recently, Emirates Development Bank (EDB) and Abu Dhabi Global Market (ADGM) collaborated to find business prospects that would help organizations wishing to establish operations in ADGM. ED will assist ADGM-licensed organizations, such as SMEs and corporations, by offering preferred banking services, such as quick and easy bank opening using EDB's digital solutions.

The background of the slide is a dark blue gradient with intricate, glowing blue line art. The lines are thin and form various loops, swirls, and abstract shapes, creating a sense of movement and complexity. The overall aesthetic is modern and artistic.

Key Takeaways

Key Takeaways

Web 3.0 presents a plethora of opportunities for the African continent



Web 3.0 presents a plethora of opportunities for the African continent

Blockchain, in particular, possesses the qualities of transparency and decentralization, allowing for this technology to solve challenges such as international remittance, financial inclusion, and land registration.

Potential areas of application for Blockchain in Africa include: SME Financing, Supply Chain, Smart Contracts for Informal Labour Markets, Governance, Digitising Trade Infrastructure, Title Deed Registration, Verification of Education Credentials, and Mobility.

There is an increasing need for key stakeholders to work closely with regulators

Blockchain and Crypto Assets are increasing in popularity across the African continent: the adoption of blockchain technology is slow but progressive, while the cryptocurrency market is growing significantly. Africa's cryptocurrency market grew by over 1200% between 2020 and 2021, with Kenya, Nigeria, South Africa and Tanzania ranking in the global top 20 for crypto adoption.

As the need for the regulation of Blockchain and cryptocurrencies increases, key stakeholders need to work closely with regulators. This will ensure that risks that may arise as a result of regulatory changes are adequately mitigated.

The Blockchain industry is growing exponentially and will continue to do so

Investors are keen to fund blockchain startups and companies, having injected approximately USD 88.5 million in Kenya, Nigeria and South Africa in 2021. This figure is expected to grow significantly in the next few years.

Compared to general funding growth, African blockchain venture funding growth was 11 times more when considering 2021 and 2022 Q1.

Considerations for the Way Forward



Web 3 is developing extremely fast, and there are many issues that any project promising positive social impact must address:



Creating equitable wealth and power structures – a key selling point of Web 3.0 technologies is decentralization, or shared ownership of web infrastructure. Uneven, centralized power structures can quickly become the norm if plans for equitable ownership are not in place from the beginning of a project.



Exploitive business models – a major concern of blockchain technology is its impact on our climate, environment, and energy-poor communities. Companies building in Web 3.0 must address any environmental impact in an appropriate, credible way in order to build trust with their communities, customers, and other important stakeholders.



Avoiding abuse in communities – there are inherent risks to building decentralized communities. Bad actors can take advantage of the promises of anonymity and immutability to harass and abuse other members, especially when there are no systems of accountability or protection against such threats.

Any approach to regulate blockchain technology should commence with a clear consensus on regulatory objectives that are based on the particular positions of the governments involved.

We conclude this report with the following proposed recommendations:

- 1. Strategy:** Having a blockchain strategy in accordance with the African Union digital strategy.
- 2. Data protection harmonisation:** Seek pan-African harmonisation of data protection by negotiating consensus on the regulatory goals.
- 3. Blockchain-specific consideration for data protection:** Decide about policy options at the intersection of data protection and blockchain technology according to the values and policy goals of individual countries and the African Community.
- 4. Financial regulation:** Develop a pan-African concept for token classification, including security tokens, tokens, representing financial instruments such as e-money and unregulated tokens.
- 5. Capacity building:** Support research and education about blockchain technology.
- 6. Push for interoperability and harmonized standards:** Specifically to enable interconnectivity between different blockchains.

Web3 Soft Power Toward the New Era of African Revolution

The advent of Web3 technology is not only revolutionizing the digital landscape in Africa but also unlocking the continent's untapped potential as a hub of soft power influence. While the concept of leapfrogging technology is often associated with Africa, the notion of Web3 Soft Power goes beyond mere technological advancements. It encompasses the transformative impact of Africa's Web3 services and innovations, not only on its own underdeveloped infrastructure but also on the global stage.

Venture capitalists have taken notice, with our experience of over 40 investments executed in Africa, reflecting the rapid growth of the tech industry on the continent. The emergence of two Web3 unicorns recently is a testament to Africa's expanding influence, further fueled by a remarkable increase in venture capital inflows, 1.8% of the global total, from a meager 0.3% in 2021. This staggering growth rate of 429% demonstrates the growing recognition of Africa's potential as a driving force behind Web3 innovations and the Web3 funding across Africa from 2021 to 2022 recorded 1,668% growth.



The impact of Africa's Web3 businesses, characterized by decentralization and diversity, is extending far beyond its borders. The proliferation of Web3 services that bridge the gap between the African diaspora and their ancestral homeland, particularly in the United States and the United Kingdom, is a testament to this global reach. As Africa's Web3 ecosystem flourishes, it is reshaping the world and becoming an integral element of Soft Power, drawing attention from other continents.

The allure of Africa lies not only in its booming population growth and youth demographics but also in its cultural elements, such as Afrobeat music and unique fashion trends. Additionally, the continent's rich diversity, with over 1,500 ethnic groups and 2,000 languages, presents a fertile ground for Web3 products and services that cater to specific cultural backgrounds. The interconnectedness fostered by shared ethnic groups and languages across borders has made cross-border markets the norm, providing significant opportunities for projects targeting these culturally aligned markets.

Africa's Web3 ecosystem extends beyond its geographical boundaries, actively connecting Africans across the globe and facilitating the flow of products and services. Numerous our investment projects focus on providing or considering cross-border services, amplifying cultural understanding and strengthening the foundation of Web3 Soft Power from Africa. Through investment, acceleration, and support for the expansion of product use cases by us, I strongly believe that the potential for Africa's Web3 Soft Power to have a positive impact on the world is immense.

Catalytic platforms like NODO Discovery, founded by EMURGO Africa recently, play a pivotal role in fueling this movement, fostering collaborations and connections that further accelerate Africa's ascent as a Web3 powerhouse. As Africa's Web3 Soft Power continues to gain momentum, the continent's influence and transformative potential are poised to reshape the global landscape, creating a more connected and inclusive digital future for all.

We believe Africa's further growth and it is the center of Web3 Soft Power.

Shogo Ishida

Co-CEO of EMURGO Middle East & Africa
Director of Adaverse and Executive Director of NODO

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Appendices

Appendices

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EMURGO AFRICA Portfolio

Adanian Labs

Kenya, Zambia, UK,
South Africa, Nigeria
Tanzania



Adanian Labs mission is to provide a platform where African Tech startups can thrive and access all key resources that allows them to launch and grow sustainably. From access to funding, developing the technology, support from technical teams, go to market strategies and to scale.

www.adanianlabs.io

AfriBlocks

Zimbabwe



Founded in 2020, AfriBlocks is a Global Pan-African Freelance Digital Marketplace. Building The Tech-Infrastructure for Africa's Future of Work. AfriBlocks aims to create a diverse network of qualified & skilled African Professionals; & to connect them with remote jobs from across the world.

www.afriguild.com

Afriex

Nigeria



Afriex, founded in 2019, is a blockchain-based money transfer application that is working to build a payment experience that's simple, delightful and fast.

www.afropolitan.io

AfriGuild

Zimbabwe



Afriguild wants to make the possibilities of Web3 accessible to everyone, by creating entry-level opportunities into Web 3 through empowering people to become participants and contributors in the global web 3 revolution through Education, Gaming and Community Building.

www.afriguild.com

Afropolitan

USA/Nigeria



Afropolitan, founded in 2016, is creating a Digital Nation to enable all Africans to build abundant lives. Afropolitan is building a network comprising the best that Africa and the diaspora offer across art, finance, tech, health, energy, sports, and media.

www.afropolitan.io

EMURGO AFRICA Portfolio

amini
Kenya



Amini is a climate tech business that uses artificial intelligence and satellite technology to bridge Africa's environmental data.

<https://www.amini.ai>

Awujo
Nigeria



Awujo is a blockchain gaming guild-turned DAO (decentralized autonomous organization) providing opportunities for Africans through gaming, education and community building. They started as a social gaming enterprise that ensures top-rated Web3 games are accessible and profitable for Africans.

<https://www.awujo.gg/>

Bitgrit
UAE



Bitgrit, based in Japan and the UAE, is a platform offering a global network and community for data scientists to interact with each other. They aim to establish an AI marketplace where transactions and interactions are based on smart contract and blockchain technologies.

<https://bitgrit.net>

Bitmama
Nigeria



Bitmama, founded in 2016, is a highly-secured and fast-growing crypto platform to buy, sell or trade Bitcoin, Ethereum, Ripple, Celo and other cryptocurrencies at the best rates. It is a Blockchain based platform where individuals can trade and manage cryptocurrencies, and digital assets conveniently.

www.bitmama.io

BitSport
Nigeria/USA



BitSport is a blockchain driven, competitive gaming ecosystem reinventing the Gaming, eSports, & NFT space by creating mass market adoption via Incentivisation & onboarding of traditional gamers playing their favorite games to the MetaVerse.

www.bitsport.gg

EMURGO AFRICA Portfolio

BoundlessPay

Nigeria



Boundlesspay is a secure application that turns your cell-phone into a mobile bank. Its pre-installed digital wallet and debit card enables storing and spending of digital currencies across merchants globally.

www.boundlesspay.com

BuuPass

Kenya



BuuPass, founded in 2016, is a digital marketplace for urban travellers to book their travel tickets. It provides solutions to both operators and end users in the mobility ecosystem, thus playing a key role in the digitisation of the mobility space with its technology across Africa.

<https://buupass.com>

Canza Finance

Nigeria



Canza Finance is providing access to financial services to the financially underserved masses in Africa and around the world through the use of Web 3.0 assets (Cryptocurrencies), networks (Blockchains), and services (DEX, DAPPS, DeFi).

www.canza.io

Cassava Network

Nigeria



Cassava Network is a blockchain infrastructure that connects developers and users to Web3. Through its native token CSV, Cassava transforms any web application into a crypto-enabled app that can reward contributors and end-users alike.

www.cassava.network

Chekkit

Nigeria



Chekkit Technologies develops the fabric for end-2-end traceability for the food and drug supply chain tracking, leveraging the blockchain.

<https://chekkitapp.com>

EMURGO AFRICA Portfolio

Credable
UAE



Credable is a Digital Banking Platform enabling Digital Banking products for Businesses and connecting them to Financial Institutions to better serve the underbanked populations with products they need.

www.credable.io

Diagon Studios
Nigeria



Diagon is a play-to-earn gaming platform that allows users to earn money while having the best gaming experience possible. They are developing a crypto-powered Casual Gaming, Utility, and NFT platform that will benefit a global mass audience in the long run.

www.diagon.io

Ejara
Cameroon



Ejara is a platform for French-speaking Africa to access various affordable investment offerings: fractional shares, crypto and more.

www.ejara.io

FanBants
Nigeria



FanBants is a fantasy football game where players pick a team of 11 players and earn points based on how their players perform in real life. The platform aims to build the ultimate fan destination, therefore connecting Africans through competition and community.

<https://www.fanbants.com>

Fonbnk
Kenya/USA



Fonbnk is a new distributed finance company enabling a frictionless, financial onramp for emerging markets. Currently available to users across eight African countries (Kenya, Nigeria, South Africa, Ethiopia, Uganda, Ghana, Tanzania, and Mozambique), as well as those in India, the Philipines, Jamaica, and Ukraine.

www.fonbnk.com

EMURGO AFRICA Portfolio

Goodwall
Switzerland



Goodwall is a social development platform for young people to connect over shared interests and discover opportunities. Young people can interact on Goodwall's social development platform to find opportunities and exchange interests.

<https://www.goodwall.io>

HouseAfrica
Nigeria



House Africa, founded in 2019, is leveraging blockchain technology to build trust in property transactions across Africa.

www.houseafrica.io

Hustle Sasa
Kenya



HustleSasa is a mobile app for creators to sell directly to their fans. The app makes it easy to create storefronts, manage orders, accept payments, and handle delivery. There are no set-up costs or monthly fees.

www.hustlesasa.com

KabuK Style
UAE



KabuK provides a new value proposition, "Save Now, Buy Later," through a travel subscription service that offers an easy booking experience. HafH charges a fixed monthly fee and converts it into a unique points program. This enables you to enjoy a more economical experience without the hassle of price fluctuations.

<https://kabuk.com>

Mazzuma
Ghana



Mazzuma is a mobile money payment system that utilizes secure infrastructure and cryptocurrency to enable seamless payments. The company focuses on the global remittances market through last-mile distribution into local mobile money accounts and are regulated by the Bank of Ghana.

www.mazzuma.com

EMURGO AFRICA Portfolio

Melanin Kapital

Kenya



Melanin Kapital is a collaborative financial platform connecting social impact projects in Africa with international investors. In 2021, Melanin Kapital started disbursing loans to SMEs, using M-Pesa statements to generate credit scores for these companies.

<https://www.melaninkapital.com>

Midchain

UAE



MidChains is an institutional cryptocurrency asset trading platform based in the Abu Dhabi Global Market (ADGM) and regulated by the FRSA. The platform aims to offer one of the first completely supervised and regulated ecosystem infrastructures in the world for trading and investing in digital assets.

<https://www.midchains.com>

Momint

South Africa



Momint is a South African online marketplace which allows artists to auction, sell, trade, and display their art as non-fungible tokens (NFTs).

www.momint.so

Nestcoin

Nigeria



Nestcoin, founded in 2021, is a web3 application company that builds, operates, and invests in crypto-native products.

<https://nestcoin.com>

Pravica

Egypt



Pravica is a unified secure digital communication suite that meets Web 3.0 standards and uses Blockchain technology to empower user privacy and security. Pravica enables businesses and people to create their own cryptographically sealed identities and preserve their own data without the need for third parties to retain it.

<https://pravica.io>

EMURGO AFRICA Portfolio

Scalex
Nigeria



Scalex through blockchain technology has built financial solutions that use cryptocurrencies to facilitate financial transactions. It has 2 Products: A secure P2P platform to facilitate remittance and transfer of value through cryptocurrencies across borders.

www.scalex.africa

Seso Global
Nigeria/USA



Seso Global, founded in 2019, is an all-inclusive proptech platform redefining the African real estate business by providing a streamlined and trustworthy property buying experience. It is based on blockchain technology, which provides a marketplace that supports secure and risk-free digital land transactions between property owners, buyers, land agencies, financial institutions, and professionals that service the real estate value chain.

www.app.seso.global/properties/home

Simulon
South Africa



Simulon is the first 3D platform to bring studio-quality VFX content creation to mobile. It offers a seamless experience using 3D assets and environments with cloud rendering and Stable Diffusion.

www.simulon.com

Skrmiish
South Africa



Skrmiish is a mobile “play-to-earn” app that enables gamers of every level to earn cash in every match they play across the AAA+ games. MoneyMatch, a feature created by Skrmiish, enables users to earn real money in every match they participate in.

<https://skrmiish.gg>

StakeFair
Nigeria



Stakefair is an ecosystem of blockchain, crypto and DeFi products. StakeFair aims to build staking Infrastructure for the new web.

www.stakefair.io

EMURGO AFRICA Portfolio

Talksay
Kenya/USA

TalkSay is a networking application that allows users to make friends and host live sessions in one's local language.



www.talksay.io

Versus Africa
Nigeria

Versus is a tool that combines online and offline consumer data to give brands actionable and competitive insight for the African market.



www.versus.africa

Reference Companies

AIDtech
Ireland



AID:Tech enables people to own, control and manage their Identity. Our technology enables users to build an Onchain reputation and get rewarded for their social efforts.

www.aid.technology/

API3
Cayman Islands



API3 is leading the movement from legacy third-party oracle networks to first-party oracle solutions that deliver more security, efficiency, regulatory compliance, and simplicity.

www.api3.org

BellBank
Nigeria



BellBank is a financial services company that enables transfer of bank account, send money to anyone, direct salary deposits, retail operators.

www.bellmfb.com

Blockpower Capital
USA



BlockTower is an institutional investment firm, applying professional trading, venture investing, credit underwriting, and portfolio management to digital and traditional assets.

www.blocktower.com

CALEND
Singapore



Calend is a one-stop DeFi solution on the high-performance Cardano blockchain. It is designed to capture the rapid growth in cryptocurrencies and the huge total asset value to be deployed and benefitted from.

www.calend.fi

Reference Companies

CATALLACT

Ireland



CATALLACT is a next generation analytics for Blockchain. We see a future where crypto asset markets demand rigorous scientific analysis. So, we're taking steps in that direction, creating products that make blockchain data accessible, allowing interactive access to the insights and information.

www.catallact.com

CRAYONIC

Netherlands/USA



Crayonic develops worlds most sophisticated embedded crypto-biometric technology used in the most sensitive markets to protect core digital identity of people and assets.

www.crayonic.com

CREDMARK

Singapore



Credmark is a financial modeling platform for DeFi, powered by verifiable on-chain data. It provides the infrastructure necessary to build models, and an API to consume the output of these models.

www.credmark.com

Diwala

Norway



Diwala is a SaaS platform that allows our customers to hold, verify, and issue any digital credential in the world. Built to enable access and optimize data integrity.

Fully remote, diverse, and skilled team, with members from Uganda, Kenya, Nigeria, Congo Brazzaville, Norway, Egypt, Trinidad and Tobago, Sri Lanka, and India, 9 nationalities altogether.

www.diwala.io

EVM for Cardano

Japan



Fourier Labs vision is to support a decentralized, permissionless and open economy, empowered by integrated blockchain ecosystem.

www.fourierlabs.io

Reference Companies

GamesPad
Britain



GamesPad is the world's first holistic gaming, NFT, and metaverse ecosystem aimed to support and incubate game entrepreneurs, offering them mentorship, advisory, and network connections in the gaming and crypto space.

www.gamespad.io

Goblin
USA



Get paid for your content with your readers' computer power.

www.goblinpay.com

Helixworks
Ireland



Helixworks is a team of scientists, designers and engineers dedicated to democratise the power of DNA. Their programmable DNA data storage material can either be applied as a coating or integrated with other materials to encode data files or small applications directly into an object's molecular structure.

www.helix.works

HONEYCOMB
USA



HONEYCOMB: Connecting the next generation of the Internet to the outside world.

www.honeycomb.io

INFORICH
Japan



A Japanese service provider specializing on mobile battery sharing, social media photo printing.

www.inforich.net

Reference Companies

Milkomeda
Canada



Milkomeda delivers rollup technologies to leading Layer 1 ecosystems by offering the most popular smart contracting language, Solidity, while enhancing inter-blockchain interoperability, user experience, and developer traction all at the Layer 2 level.

www.milkomeda.com/

Occam Association
Switzerland



OccamDAO is a decentralized community middleware between the Foundations of leading L1/L2s and their project pipelines. It is a suite of DeFi solutions tailored for Cardano. Designed to deliver market leading launchpad capabilities, DEX tools, and liquidity pools, Occam.fi is the first and most significant addition to Cardano's rapidly expanding DeFi landscape.

www.occam.fi

Partisia Blockchain
Switzerland



Partisia Blockchain is an advanced layer 1 blockchain which delivers industry leading technology that solves the blockchain trilemma, by using advanced MultiParty Computation (MPC) cryptography to bring privacy to public blockchains, scalability via built in sharding at both the protocol and smart contract layer, and the industry's most secure interoperable token and data bridge using advanced security measures like proprietary MPC threshold key signature management.

www.partisiablockchain.com

QUILDI
USA



Quidli is building micro on-ramps from Web 2.0 to web3. Today we enable communities to share crypto as incentives and rewards with their contributors directly from the apps we use today (web browser, Slack, Discord, etc.).

www.quid.li

SBI Investment
Japan



SBI INVESTMENT: Supports the business development and growth of private venture companies through fund investment.

www.sbinvestment.co.jp

Reference Companies

SEMPO
Australia



At Sempo there's a simple, but radical idea that we find particularly inspiring: one of the best ways to help vulnerable communities is to just give them money, no strings attached. Cash Transfers bring dignity to affected people, and solve a fundamental problem with humanitarian relief - too often, we spend millions of dollars on the wrong kind of aid:

www.withsempo.com

Tesseract
USA, Israel, Czech Republic, Ukraine



TESSERACT is a platform to build decentralised applications without adoption barriers.

www.tesseract.one

Wave Financial
USA



Wave Financial Group is a digital asset management firm with a unique combination of venture capital, fund and wealth management competencies investing in crypto since 2016.

www.wavegp.com

WindRiders
Ireland/Britain



WingRiders provide a decentralized set of smart contracts and a web application (our "Services") to users of the service ("you"). It is a decentralized exchange on top of Cardano eUTxO model.

www.wingriders.com

Y2X
USA



Y2X is a technology-driven investment platform financing and building the next generation of leading companies.

www.y2x.io

Global Crypto Regulation

Region	Jurisdiction	Regulatory framework	AML / CTF	Travel rule*	Stablecoins (used for payments)
Africa	Mauritius	✓	✓	✓	✓
	South Africa	🔄	✓	🔄	🔄
Asia	China (Mainland)	✗	✗	✗	✗
	Hong Kong	✓	✓	⚠️	🔄
	India	⚠️	🔄	⚠️	⚠️
	Japan	✓	✓	✓	✓
	Malaysia	✓	✓	✓	⚠️
	Singapore	✓	✓	✓	🔄
	Taiwan	⚠️	✓	✓	⚠️
Europe	Austria	🔄	✓	🔄	🔄
	Denmark	🔄	✓	⚠️	⚠️
	Estonia	✓	✓	🔄	⚠️
	France	✓	✓	✓	⚠️
	Germany	✓	✓	✓	⚠️
	Gibraltar	✓	✓	✓	✓
	Hungary	🔄	✓	⚠️	⚠️
	Italy	🔄	⚠️	🔄	🔄
	Luxembourg	🔄	✓	🔄	🔄
	Switzerland	✓	✓	✓	✓
	United Kingdom	🔄	✓	✓	✍️

Global Crypto Regulation

Region	Jurisdiction	Regulatory framework	AML / CTF	Travel rule*	Stablecoins (used for payments)
Eurasia	Turkey				
The Middle East	Bahrain				
	Jordan				
	Kuwait				
	Oman				
	Qatar				
	Saudi Arabia				
	United Arab Emirates				
North America	Bahamas				
	Canada				
	Cayman Islands				
	United States of America				
Oceania	Australia				
	New Zealand				
South America	Panama				

*The Travel Rule refers to the regulatory requirement to provide additional information for transactions, such as the address of the recipient and the purpose of the transaction.

Key:

- Legislation / Regulation in place
- Regulatory process not initiated
- Pending final legislation
- The country prohibits cryptocurrencies
- Process initiated or plans communicated

Case Study



**Taha Bawa,
Goodwall Co-Founder
& CEO**

Goodwall

Goodwall is a social development platform for young people to connect over shared interests and discover opportunities. It is based in Switzerland.

Young people can interact on Goodwall's social development platform to find opportunities and exchange interests. It has a database of more than 5 million job and internship openings, \$1 million or more in scholarships and awards, thousands of volunteer opportunities, and is especially designed to cater to the needs of Gen Z and millennials.

Throughout the course of 8 rounds, Goodwall has raised a total of \$16.3M in investment.

Case Study



**FIFA WORLD CUP
Qatar2022**

The highly anticipated 2022 FIFA World Cup exposed billions of viewers to Web 3.0 technologies in a number of ways, including but not limited to:

Web 3.0 Games and Interactive Experiences

FIFA unveiled a portfolio of four games (AI League, Matchday, Upland and Phygtl) utilizing Web 3.0 technology, with the games playable throughout the sporting tournament.

- *AI League* and *Matchday Challenge* allow fans to simulate real-life matches by managing AI teams and predicting the games' outcomes
- *Upland* is the largest blockchain-based metaverse attached to the real world, where fans are able to collect official FIFA World Cup digital assets
- *Phygtl* allows fans to attach augmented NFTs to their media

Partnerships with Web 3.0 Platforms

FIFA endorsed the green blockchain technology company named Algorand as its official blockchain partner and sponsor. Crypto.com, the world's fastest-growing cryptocurrency platform, was also announced as an official sponsor of the FIFA World Cup 2022. Together, these two sponsorships brought Web 3.0 technologies into the mainstream, thus allowing viewers to learn more about them and use the respective platforms.

During the World Cup, Coca Cola and Crypto.com partnered to leverage Web 3.0 technology through launching a FIFA World Cup-inspired NFT collection. The combined effect of a partnership with world's largest beverage company and the exposure gained through the sponsorship with FIFA solidified Crypto.com's status as the fastest growing cryptocurrency platform in the world.

Betting Partnerships

It was estimated that more than USD 160 billion would be wagered on the tournaments' matches. FIFA and platforms such as the first FIFA sports betting partner, Betano, have a shared ethos of using technology to enhance the fan experience.

**FIFA WORLD CUP
Qatar2022**

