



EMURGO Africa 2023 Annual Report:

# **EMURGO Africa's 2023 Key Contributions in Carbon Offset Trade, Lending, and Crypto On/Off Ramping**



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# Credit

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### Download the full report online:

<https://www.blog.emurgo.africa/emurgo-africa-2023-annual-report>



# Ch.1 Executive Summary

EMURGO Africa's vision is to strengthen and develop economic resilience in African nations and citizens and democratize access to basic needs through socially impactful web3 solutions. This EMURGO Africa 2023 Annual Report sheds light on three key web3 business areas in Africa with significant potential for social impact and contribution: carbon offset trading, lending, and crypto-on/off ramping. We also highlight EMURGO Africa's contributions to each sector in 2023.

**Chapter 2** shares **our vision, mission, and recent activities**. We publish a weekly newsletter, [THE Web 3.0 Connect](#), focusing on web3 investments and businesses in Africa. [State of Web 3.0 in Africa report, a collaborative piece of EMURGO Africa and PwC](#), showcases the exponential growth and expansion of Web 3.0 technology businesses in Africa. We also publish [quarterly and annual reports](#) related to contributions to African societies and blockchain technology. The end of 2023, we held two events in [Abuja, Nigeria](#), and [Cape Town, South Africa](#). You can feel the vibes of the events and consider this an invitation to join us for future events and initiatives.

**Chapter 3** explores **carbon offset trade**, emphasizing the critical challenges faced by the voluntary carbon market (VCM) in demonstrating and verifying the impact of carbon offsetting measures. **Blockchain emerges as a solution to address credibility issues, fragmentation, and low liquidity in carbon markets**. We introduce several existing blockchain-powered carbon trade platforms. [In August 2023, EMURGO Africa invested \\$250,000 in Changeblock, an environmental credit exchange company](#), aligning with our commitment to advancing climate change-fighting technologies.

**Chapter 4** focuses on **lending** in sub-Saharan African (SSA) countries, where less than 45% have access to any financial account. Over 80% of formal SMEs face unmet financing needs due to lack of collateral and poor credit history. **Blockchain-based lending lowers interest rates, introduces new collateralization methods, and attracts more SME borrowers**. Web3 lending typically offers 2-6% interest per year, compared to 2-6% monthly for digital lending. DeFi requires only a wallet, while digital finance demands a personal ID and credit history. [In February 2024, EMURGO Africa strategically invested in Fig Finance](#) to bring innovative financial solutions to underserved SMEs.





**Chapter 5** explores **the demand for cryptocurrencies and crypto on/off ramping solutions** in Africa. **Cryptocurrencies offer an attractive solution for preserving value in the face of currency decline, inflation, and rising debt in many African countries.** For SMEs and immigrants, **Africa's crypto trading platforms provide the more cost-effective means of sending money across borders than traditional bank transfer or money transfer agents.** While the cost of sending \$200 from Africa averages 8%, Africa's crypto trading platforms charge nearly 0 to at most 2 percent. The adoption of crypto assets is expected to persist as SMEs' cross-border payments and immigrants' remittances grow, driven by lower fees and faster transactions. We introduce the notable platforms providing on/off crypto ramping in Africa. In 2023, EMURGO Africa's Accelerator, Adaverse, invested in initiatives like [Fonbnk](#) and [Kotani Pay](#) to revolutionize cross-border payments and foster financial independence without traditional institutions.



# Ch.2 EMURGO Africa

## 2.1 About EMURGO Africa



**EMURGO Africa** invests and partners with Africa-focused enterprises, startups, and accelerators to **foster the development of socially impactful solutions on Cardano's** third-generation and environmentally-sustainable blockchain.

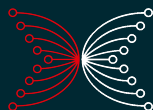
### ➤ Our Vision

Turning Africa's challenges into opportunities, **leveraging the power of Cardano's blockchain to strengthen and develop economic resilience in nations and its citizens, and democratizing access to basic needs** through socially impactful Web3 solutions.

### ➤ Our Mission

1. Support the **creation of blockchain solutions to promote businesses that solve social issues.**
2. **Promote Real-Fi, fusion of traditional finance and DeFi** (decentralized finance).
3. **Raise awareness of Cardano as a technological platform to build socially impactful solutions** and EMURGO's role in the Cardano ecosystem.

Cardano blockchain has the founding entities, **EMURGO, Input Output(IO),** and **Cardano Foundation**. EMURGO Africa is a regional entity of EMURGO, focusing on Africa and the Middle East.



INPUT | OUTPUT



Cardano  
Foundation



## 2.2 Our Newsletter and Reports

Get access to our exclusive newsletter and reports, providing in-depth insights into Web 3.0 enterprises and technologies, and their significant impact on the progress of African nations at the micro, meso, and macroeconomic levels.

➤ [\*\*SUBSCRIBE OUR NEWSLETTER AND REPORTS FROM HERE\*\*](#)

### 1. EMURGO Africa Newsletter: THE Web 3.0 Connect



THE Web 3.0 Connect is EMURGO Africa’s weekly newsletter delivered every Monday. Our newsletter brings the readers **the latest analysis about the African continent’s Web3 landscape**. We aim to lead on this prong in a captivating and inclusive manner.

- **Our 1st edition** takes you through **Africa’s Web3 lending landscape**.
- **2nd** and **6th editions** shed light on tokenized cross-border payment and **Africa’s payment space**.
- **3rd edition** overviews **Africa’s web3 market** and covers things you should know before market entry.
- **4th** and **5th editions** focus on **Nigeria, the fastest growing crypto market**, about crypto outlook, regulation, and VC money.

➤ [\*\*CHECK MORE NEWSLETTER EDITIONS FROM HERE\*\*](#)



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



**Emurgo Africa** and **PwC**, one of the leading global accounting firms, proudly unveiled the highly anticipated State of Web3.0 Report. This groundbreaking publication showcases the **exponential growth and expansion of Web 3.0 technology businesses in Africa**. Investors are keen to fund blockchain startups and companies, having injected approximately USD 88.5 million in Kenya, Nigeria and South Africa in 2021. It showcases the potential of Web 3.0 technology businesses to bring transformative change to various industries such as **trade and industry, financial services and lending, supply chain management and logistics** and **healthcare provision and accessibility**.

There are immense opportunities for the African continent through the adoption of Web 3.0 technologies, including **a staggering 1668% increase in investment in blockchain technology in Africa between 2021 and 2022**, signifying the crucial **importance of collaboration between industry stakeholders, policymakers, and regulators** in fostering an environment conducive to the growth of Web 3.0 technologies. The major case studies of blockchain & cryptocurrency adoption in the continent include financial services with Fingo Africa, trade, education & energy.

➤ **[DOWNLOAD STATE OF WEB 3.0 REPORT FROM HERE](#)**



### 3. EMURGO Africa Quarterly Reports



1. **2023 Q1 Report: Coin Market and Tokenized Projects**

This report analyzes the top 100 tokenized global projects (in terms of coin market capitalization), focusing on categories and highlighting strong performers. The token price growth and tokenization of 20 African tokenized projects revealed the performances of the price of tokens from African projects in the coin market.

2. **2023 Q2 Report: Effect and Effort of Financial Inclusion**

This report shows the evidence of the effect of financial inclusion on development measures in low income countries. It presents the growth of digital finance in Africa, with lending being the most lucrative service. It also explores the comparison of DeFi and digital finance services.

3. **2023 Q3 Report: Effect of Digital ID and Role of Decentralized ID in Africa**

This report explores the transformative impact of digital IDs and the crucial role of decentralized ID (DID) solutions in Africa. It highlights key players and initiatives across the continent, showcasing the influence of digital IDs and DIDs on financial inclusion and streamlined government services with emphasis on secure and inclusive implementation.

➤ **[CHECK MORE QUARTERLY REPORTS FROM HERE](#)**





## 2.3 Our Events in Africa

We showcase impactful gatherings dedicated to promoting Web3 communities, businesses, and investments in Africa. Explore past events and consider this an invitation to join us for future initiatives, engaging in the vibrant world of decentralized web possibilities within Africa.

➤ [EXPLORE OUR EVENTS AND NEWS FROM HERE](#)

 On October 27th 2023, we hosted "The State of Web 3.0 in Africa" event. It brought together the thriving Web 3.0 community in Abuja, Nigeria.



At the event, EMURGO Africa launched the ["State of Web 3.0 Report"](#) and hosted a compelling panel discussion featuring startups [Sytemap](#) by HouseAfrica and [Milsat](#), who shared their remarkable experiences and insights within the Web 3.0 arena.





In the spirit of nurturing talent and driving innovation, the event also played host to the NODO Grants pitch competition. The competition was fierce, and it was fantastic to see the winning project, CaaS Forensics, taking home the grant.

The Web 3.0 community in Nigeria is making great strides, and events like this are instrumental in propelling us towards a decentralized future. Let's keep pushing the boundaries of what's possible in the world of blockchain and decentralized technology!

➤ **CHECK OUT VIBES OF ABUJA EVENT FROM HERE** 🎉

👤 **On November 22nd 2023, we got excited to host our "State of Web 3.0 in Africa" event in Cape Town supported by CV Labs.**



Following the joint collaboration between EMURGO Africa and PwC in unveiling the "State of Web 3.0 Report," this event served as a forum for the local community to engage in a comprehensive discourse on the latest trends and advancements within the realm of Web 3.0.



Yosuke Yoshida, in his capacity as Co-CEO of EMURGO Africa and the Middle East, delivered a keynote address, imbuing the audience with profound insights into the nuanced development of web3.

The panel discussion, titled "Bridging the Gap: Web 3.0 Investments Transforming Africa," led by Monica Singer, South Africa Lead and Senior Strategy for Consensys, and Zachariah George, Managing Partner at Launch Africa Ventures, provided a compelling and insightful exploration into the transformative potential of web3 investments. The concluding panel discussion, "Blockchain-Powered Transformation: Africa's Journey to Web 3.0," featuring Rhurshail Ramhurry, Founder and CEO of W3OLABS, further enriched the discourse.

As we reflect on these invaluable discussions and insights, let us collectively strive to continuously push the boundaries of blockchain and decentralized technology, fostering innovation and progress in Africa's journey towards a decentralized future.

➤ [CHECK OUT VIBES OF CAPE TOWN EVENT FROM HERE 🦉](#)



## Ch.3 Carbon Offset Trade

### 3.1 Global Carbon Markets and Africa

With the Paris Agreement's goal of reducing global greenhouse gas (GHG) emissions set at COP21 in 2015, countries and organizations can no longer ignore decarbonization in their respective activities. This section provides an overview of the global carbon markets, which are growing in importance and presence over the years, their potential, and the movement in Africa.



[Photo: Financial growth concept by Canva](#)

### Fundamentals of Carbon Market

#### Context of carbon markets

The ultimate goal of the Paris Agreement was to limit global emissions and, more importantly, to impose accountability for countries' actions (and inactions) around reducing carbon emissions<sup>1</sup>. As a result, the Emissions Trading Scheme (ETS) became an important platform for trading carbon credits issued as part of the cap-and-trade system, which was established within the Kyoto Protocol and allows governments to set total carbon dioxide allowances and allocate these allowances to companies for trading. Participation in the compliance carbon market became





mandatory for countries and regions where these cap-and-trade schemes were introduced<sup>1</sup>. However, participation in the voluntary market remains voluntary<sup>1</sup>.

### **Carbon offsets vs. carbon credits**

Carbon offsets represent a reduction or removal of GHG emissions. Carbon offset is created when individuals or organizations decide to invest in projects that mitigate climate change, such as afforestation, renewable energy, or carbon capture and storage. Carbon credits are a measure of 'permitted emissions', and carbon offsets are considered compensation for 'removed emissions'.<sup>1</sup> Although the terms are often used interchangeably, carbon credits are primarily traded in compliance markets while carbon offsets are often traded in voluntary markets.

### **Avoidance offsets vs. removal offsets**

Avoidance offsets represent a decrease in carbon emissions compared to a baseline scenario such as financing a solar power plant in a region dominated by fossil fuel and limiting timber harvest levels by stopping the conversion of grasslands to croplands<sup>2</sup>. On the other hand, removal offsets represent a direct decrease in carbon stock in the atmosphere such as tree growth and direct-air-capture, which captures carbon dioxide (CO<sub>2</sub>) emissions with special filters, heats it, fixes it with water, and injects it underground for a long time<sup>3</sup>.



Photo: Ngong hill in Nairobi, Kenya taken by author



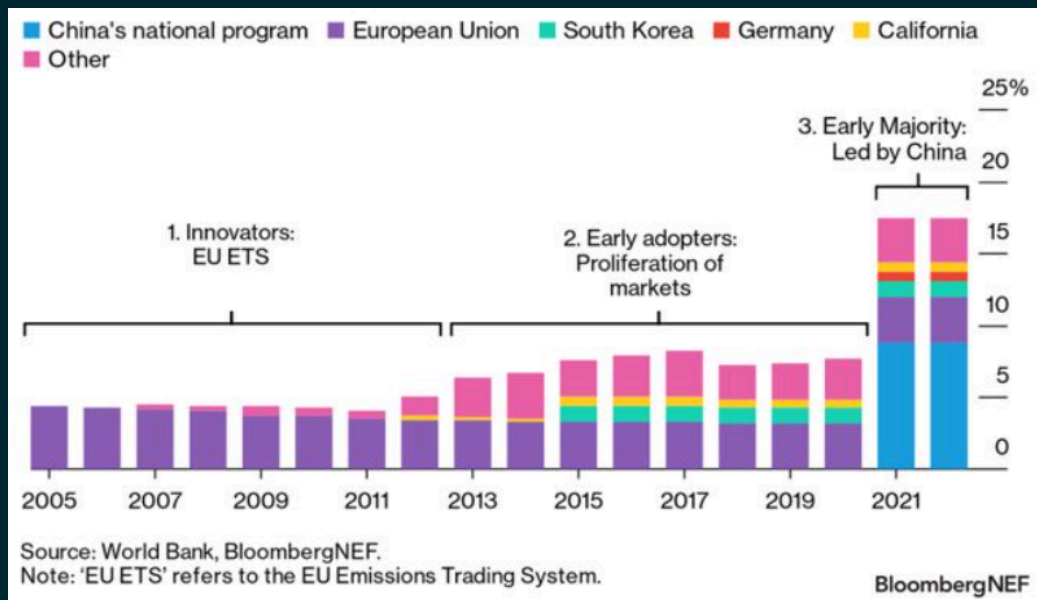
## Global Carbon Market Overview

Today there are around 30 compliance carbon markets and an untold number of voluntary carbon markets (VCM) in the world<sup>4</sup>. In spite of the hype of VCM, the compliance market is much larger than VCM, accounting for more than USD 850 billion in value, compared with USD 1 to 2 billion for VCM in 2021<sup>5</sup>.

### **Compliance carbon markets: volume, covered emission, and price**

EU Emissions Trading System (EU ETS), launched in 2005, is the world's first major carbon market and remains the biggest one in terms of trade volume<sup>6</sup>. In 2021, there was a momentum when China launched its national ETS. It became the world's largest in terms of covered emissions<sup>7</sup>. For now, China ETS applied to just 2000 companies from the power sector and is expected to expand to other sectors in the future<sup>7</sup>.

**Figure 3.1. Share of Global Greenhouse Gas (GHG) Emissions by ETS**



Source: Figure cited from [The Untapped Power of Carbon Markets in Five Charts](#) by BloombergNEF<sup>5</sup>

Overall, carbon prices need to rise in the longer term to drive investments into climate neutrality at the scale and pace required. Currently only the EU ETS and UK ETS have prices within or above USD 50–100 per metric ton of carbon dioxide, which is required by 2030 to meet the temperature goals of the Paris Agreement, with other major markets falling well short<sup>8</sup>.



**Figure 3.2. Carbon Price in Selected ETSs (2018–2023)**

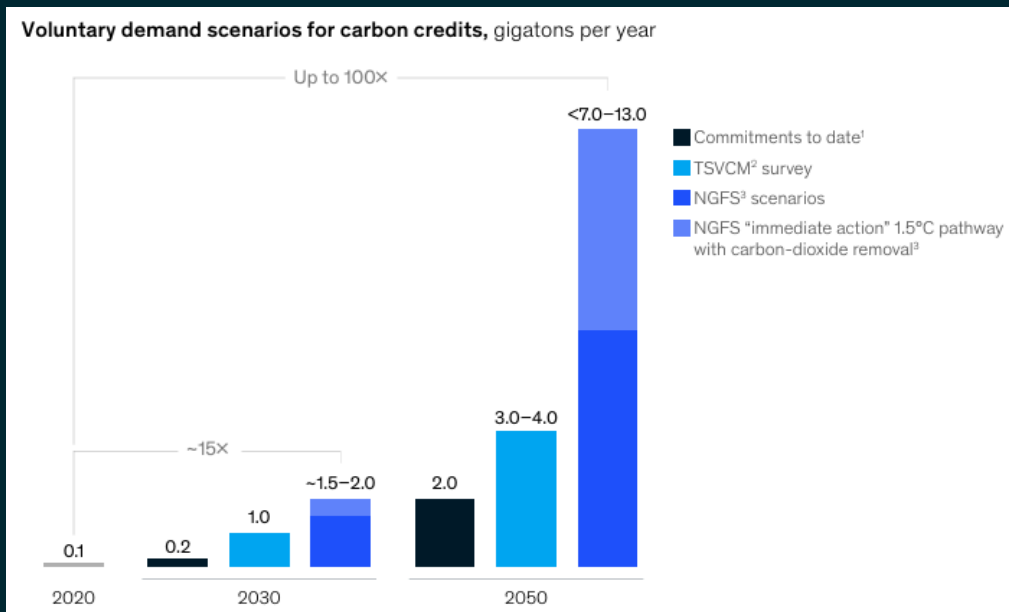


Source: Figure cited from [State and Trends of Carbon Pricing 2023](#) by World Bank<sup>8</sup>

**Voluntary carbon markets (VCM): demand, supply, and price**

Although the current market size of VCM is much smaller than the compliance carbon market, VCM has seen significant growth in recent years. As global decarbonization efforts intensify, demand for these credits is expected to rise. VCM is expected to grow from \$2 billion in 2020 to around \$250 billion by 2050<sup>10</sup>.

**Figure 3.3. Global Demand for Voluntary Carbon Credits**



Source: Figure cited from [Carbon credits: Scaling voluntary markets](#) by McKinsey<sup>9</sup>

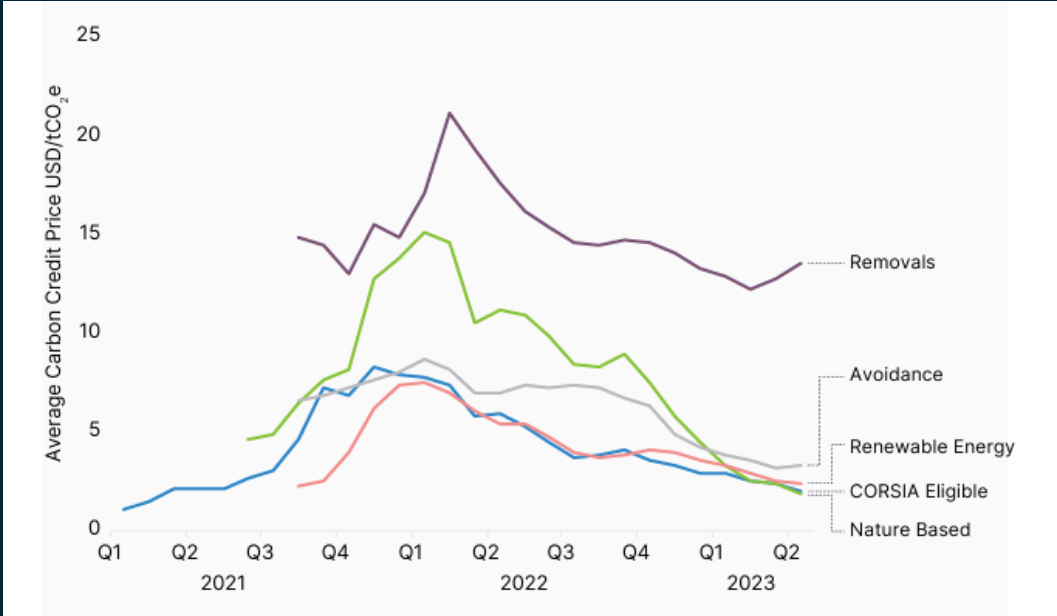




The supply of carbon credits has been shifting from renewable energy to nature-based activities. Due to significant cost reduction of renewable energy technologies, large-scale renewable energy projects may fail to meet the “financial additionality” requirement that emission reductions of the project should not be viable without the revenues from carbon credits<sup>8</sup>. As a result, there has been a growing focus on nature-based activities such as forestry, land use, and agriculture activities.

Prompted by Russia’s invasion of Ukraine, exchange-traded credit prices have been falling across categories. Nature-based credits saw a significant drop, from around USD 16 to under USD 5 by the end of 2022<sup>8</sup>. The use of standardized prices is noted as a factor driving down prices<sup>a</sup>, which resulted in the rise of over-the-counter (OTC) prices in 2022<sup>8</sup>. While 2022 saw convergence in prices, removal offsets credits are still traded at a clear price premium.

**Figure 3.4. Prices of Standardized Carbon Credit (2021–2023)**



Source: Figure cited from [State and Trends of Carbon Pricing 2023 by World Bank](#)<sup>8</sup>

Furthermore, activities which are newest and located in the least developed countries tend to present a higher price than similar activities<sup>8</sup>. The prices of futures products indicate a modest price increase in the next two years, with expectations for rising prices and a potential reemergence of the premium for exchange-traded, nature-based credits<sup>8</sup>.



## Carbon Market Movements in Africa

### Africa has huge potential, yet only 2% of its potential is used

Africa has a huge potential to produce carbon credits: Africa's forests absorb 600 million tons of CO<sub>2</sub> each year, more than any forest ecosystem on earth<sup>12</sup>. Demand for African-origin carbon credits has been growing too – at a compound annual rate of 36 percent between 2016 and 2021<sup>11</sup>.

However, out of total credits issued worldwide between 2016 and 2021, only about 11 percent stem from African countries, and the bulk of these come from a few large projects<sup>11</sup>. It is estimated that Africa currently generates only 2 percent of its maximum annual potential of carbon credits<sup>13</sup>.



Photo: Tea farm in Embu, Kenya taken by author

In the Middle East and Africa, the South Africa ETS is currently the sole compliance carbon market. Also, South Africa's carbon tax is the sole policy in effect<sup>8</sup>. However, Botswana, Côte d'Ivoire, Gabon, Morocco, Nigeria, and Senegal, are exploring the adoption of either a carbon tax or an ETS<sup>8</sup>.

### Africa carbon markets initiative (ACMI) aims to dramatically expand voluntary carbon market in Africa

At COP27 in 2022, the African Carbon Markets Initiative (ACMI) was launched by a group of sponsors<sup>b</sup>. ACMI aims to significantly expand African participation in voluntary carbon markets: producing 300 million carbon credits annually by 2030



and 1.5 billion credits annually by 2050, unlocking substantial revenue and supporting job creation and distributing revenue equitably and transparently with local communities<sup>11</sup>.

Countries including Kenya, Malawi, Gabon, Nigeria and Togo committed to scale the voluntary carbon market by developing comprehensive carbon market regulations with ACMI<sup>14</sup>. Together these countries have a maximum potential to generate over 300 MtCO<sub>2</sub>e<sup>14</sup>.

In September 2023 in Kenya, at the continent's first climate summit, UAE Carbon Alliance committed to buying \$450 million of carbon credits from ACMI<sup>16</sup>. Climate Asset Management, a joint venture of HSBC Asset Management and Pollination, also announced a \$200 million investment in projects that will produce ACMI credits<sup>16</sup>.



Photo: COP28 round table discussion in Dubai, UAE taken by EMURGO Africa

At COP28 in 2023, the High-Integrity Carbon Markets Initiative was launched by UNDP<sup>17</sup>. The initiative aims to support low-income countries' access to carbon markets, mitigate social and environmental risks, and promote accurate carbon accounting<sup>17</sup>.

#### Notes

- a. The mechanism of standardized prices' causing price decline is as follows. By grouping credits that meet certain minimum criteria, exchanges increase market liquidity and facilitate investments, but the specific attributes of the highest quality





projects, and consequently their value, can be lost to a “least common denominator” effect<sup>8</sup>.

- b. The group of sponsors include the Global Energy Alliance for People and Planet (GEAPP), Sustainable Energy for All (SEforALL), The Rockefeller Foundation, and UN Economic Commission for Africa, with support from the UN Climate Change High-Level Champions<sup>11</sup>.

## References

1. [Carbon Markets – Overview, History, Context, Tax | CFI](#)
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3. [Choosing Between Carbon Avoidance and Removal Offsets | Azzera](#)
4. [Carbon Markets: What They Are and How They Work | Investopedia](#)
5. [The Untapped Power of Carbon Markets in Five Charts | BloombergNEF](#)
6. [EU Emissions Trading System \(EU ETS\) | European Commission](#)
7. [China National ETS | ICAP](#)
8. [State and Trends of Carbon Pricing 2023 | World Bank](#)
9. [Carbon credits: Scaling voluntary markets | McKinsey](#)
10. [Where the Carbon Offset Market Is Poised to Surge | Morganstanley](#)
11. [Africa Carbon Markets Initiative \(ACMI\) Roadmap Report | ACMI](#)
12. [Africa hopes for starring role if carbon offsets market can overcome credibility crisis | Reuters](#)
13. [African initiative aims to bring transparency to carbon markets | Devex](#)
14. [Nigeria, others launch new Africa carbon markets initiative at COP 27 | The Guardian](#)
15. [ACMI's Narrative on African Carbon Markets | ACMI](#)
16. [Hundreds of millions of dollars pledged for African carbon credits at climate summit | Reuters](#)
17. [UN Development Programme launches plan to boost integrity in carbon markets and increase access to finance schemes for developing countries | UNDP](#)

## 3.2 Blockchain–Powered Carbon Offset Trade

### VCM's credibility risk is the most critical of its challenges

Because the voluntary carbon market (VCM) does not have an integrated and uniform marketplace and few companies participating in the marketplace have a government mandate to reduce their carbon footprint, the risk of fraud, manipulation, and misuse is extremely high in VCM<sup>1</sup>.

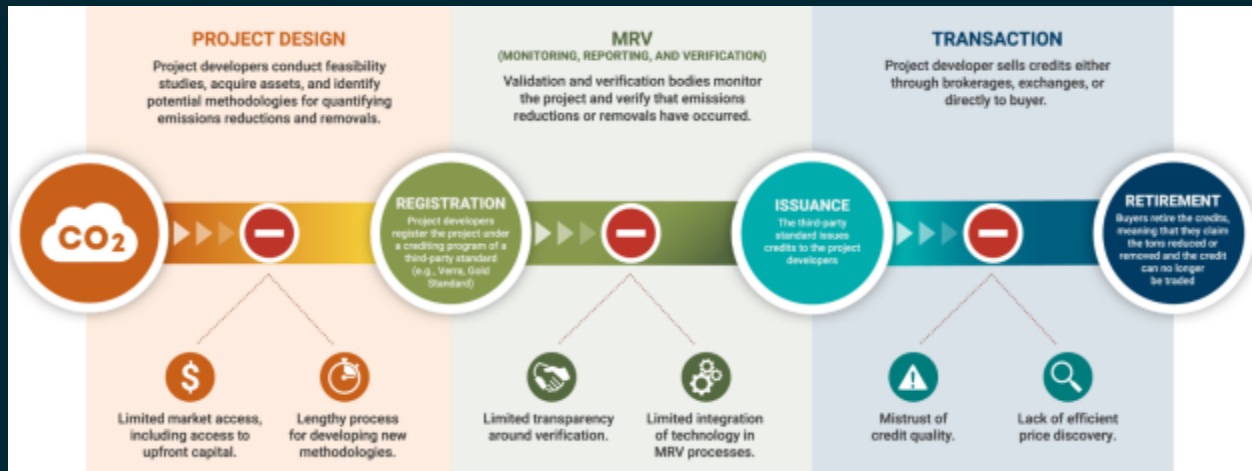
Indeed, in 2023, CEO of Verra, the world's leading carbon standard, stepped down<sup>2</sup> after the Guardian reported serious allegations that more than 90% of the Verra's certified rainforest offset credits, which are most widely used by companies, were not genuine carbon reductions<sup>3</sup>. Also, Corporate Accountability revealed that more than



90% of the carbon offsets Chevron, the US's second-largest fossil fuel company, bought and counted towards its climate targets from VCM between 2020 and 2022 were too environmentally problematic to be classified as anything other than worthless or junk<sup>4</sup>.

In addition to the problem of exaggerated or false offsets being traded, there is also the risk of double counting, where the same carbon credits or offsets are sold and resold to multiple entities. VCM's inability to credibly demonstrate and verify the impact of carbon offsetting measures is the most critical of its challenges and threat of its growth<sup>5</sup>.

**Figure 3.5. Barriers to Ensuring Trusted and Efficient VCM**



Source: [Carbon Markets Initiative by RMI](#)<sup>6</sup>

### **Blockchain brings credibility and opportunities to carbon markets**

Blockchain is one of the technologies that is expected to address the credibility risk of the carbon markets. Due to their public, accessible, and machine-readable format, blockchains provide the necessary foundation for a trustworthy and scalable VCM<sup>7</sup>.

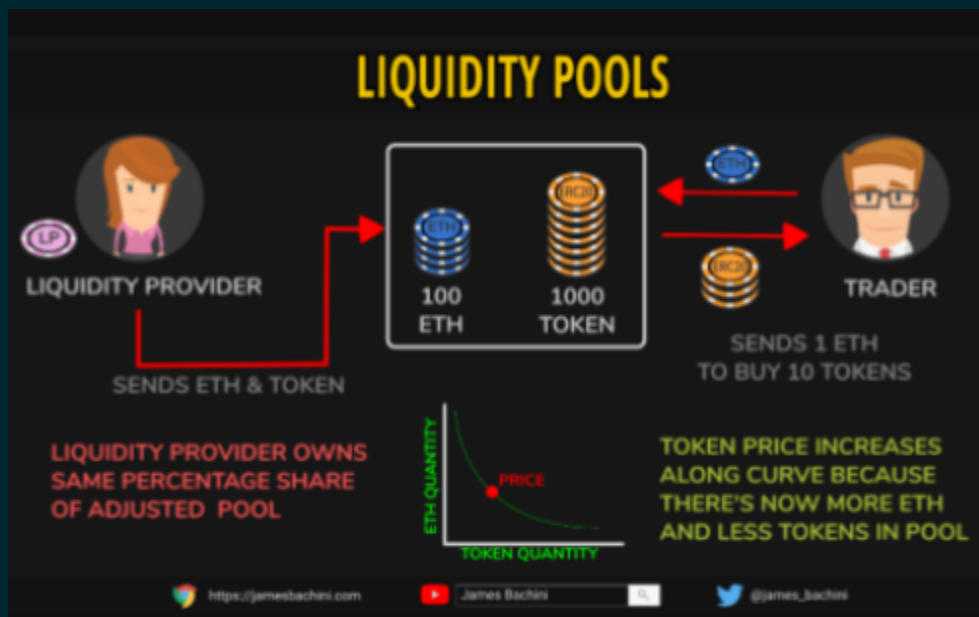
Once the carbon registry is built on the blockchain, market participants can view a transparent digital record of every credit across geographies and standards, allowing global price and supply coordination<sup>7</sup>. Furthermore, combined with digital tools for measurement, reporting, and verification (MRV) such as remote sensors, drone imagery, and artificial intelligence, digital environmental assets and carbon accounting systems can provide real-time visibility into the effectiveness of emission reduction and absorption efforts<sup>7</sup>.



In addition to credibility enhancement, blockchain can also expand the potential of the carbon market by integrating it into the decentralized finance (DeFi) ecosystem. In the traditional carbon markets, credits are not interchangeable between projects: a unit of credit from a project that is considered more effective is valued higher than the other projects<sup>8</sup>. As a result, carbon markets are fragmented and have very low liquidity<sup>8</sup>.

Liquidity through DeFi's "Liquidity Pool" concept facilitates a more accessible and efficient carbon market. By introducing liquidity, users contribute project-specific credits (tokens) to the pool containing a mix of project-specific tokens representing similar projects<sup>8</sup>. In return, users receive a new token, which represents a whole pool rather than one specific offsetting project, allowing them to trade in highly liquid tokens instead of illiquid individual project-specific credits (tokens)<sup>8</sup>. This approach is more accessible, efficient, and cost-effective.

**Figure 3.6. How Liquidity Pools Work in DeFi Ecosystem**



Source: Figure cited from [JamesBachini.com](https://jamesbachini.com)<sup>9</sup>

Note: In the figure above, liquidity pools used by popular automated market makers such as Uniswap and Sushiswap are explained. A pool contains a base asset such as ETH or USDT and a more volatile governance token such as UNI or SUSHI. Liquidity provider adds both assets to the pool, receiving LP (Liquidity Pool) tokens as a share of the pool. Traders use the pool to exchange assets. As assets ratio changes, assets prices are adjusted accordingly (the less, the higher price; the more, the lower price). For carbon credits, market makers can use the liquidity pool with project-specific tokens and tokens representing a whole pool to be traded with high liquidity.





In November 2023, Nasdaq launched new technology, which will utilize smart contracts, for secure digitization of carbon credit issuance, settlement, and custody<sup>10</sup>. Automation by smart contract is expected to enhance efficiency and transparency across trade processes, providing a comprehensive audit trail of credit ownership and retirement<sup>10</sup>. The service targets global market infrastructures and registry platforms, aiming to create a standardized, trusted ecosystem for attracting high-quality liquidity<sup>10</sup>.

### **Example of blockchain-powered carbon trade platform**

Blockchain technology has the potential to bring credibility and greater market opportunities to the carbon market, and indeed, blockchain-based carbon offset trading platforms already exist.

Below is the list of blockchain-powered carbon trade platforms. Note that the companies listed below are selected by their presence in the digital carbon trade space based on our own research. Tech & Service information is gathered from their websites and docs available online. Fund information is from publicly available data including [Crunchbase](#).



#### **1. ClimateTrade**

United States  
Founded in 2016

#### **Tech & Service**

The marketplace is built on Algorand blockchain<sup>11</sup>. It offers a broad range of verified carbon, plastic, and biodiversity credits. Other services include API, whitelabel carbon emission calculator, compliance assistance, carbon offset certificates, ESG reporting etc.

#### **Fund**

Raised €1M from Borderless Capital in their pre-seed round in 2019. Raised €1M from Algorand Europe Accelerator etc. in their seed round in 2020. Raised €7M from Borderless Capital, Algorand etc. in their pre-series A round in 2022.

<https://climatetrade.com/>

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## 2. GreenTrade

Germany  
Founded in 2022

### Tech & Service

The marketplace is built on Polygon Network<sup>12</sup>. It has functions including trading tokenized carbon credits, funding new projects through future tokens, retirement into GreenTrade vaults, offsetting dashboard and reporting API, tracking of project development, access & liquidity by fractionalizing assets.

### Fund

Raised funding from Cerulean Ventures, Flori Ventures etc. in their pre-seed round in 2022.

<https://greentrade.tech/>



## 3. KlimaDAO

United States  
Founded in 2021

### Tech & Service

KlimaDAO is run on Polygon Network<sup>13</sup>. It leverages a stack of DeFi technologies. The infrastructure developed by their partners, [Toucan Protocol](#) and [Moss.Earth](#), enables carbon credits that have been issued through robust processes developed by Carbon Standards to maintain their integrity on the blockchain. Once carbon credits have been transferred on-chain, they can begin to integrate with DeFi applications.

### Fund

Raised \$17M from PetRock Capital etc. in their seed round in 2021.

<https://www.klimadao.finance/>





## 4. Nori

United States  
Founded in 2017

### Tech & Service

The marketplace is built on both Polygon Network and Ethereum blockchain<sup>14</sup>. All their on-chain carbon removal credits issued to suppliers in the marketplace are represented by NFTs on-chain, which are traded and recorded in a publicly visible registry.

### Fund

Raised \$1.4M from Techstar etc. in their pre-seed round in 2019–2020. Raised \$4M from Placeholder etc. in their seed round in 2020, followed by \$7M series A round from M13 etc. in 2022. In 2023, Nori raised \$6.3M from Cargill, M13, Placeholder, Toyota Ventures etc.

<https://nori.com/>



## 5. Regen Network

United States  
Founded in 2017

### Tech & Service

The marketplace is built on Regen Ledger, a public proof of stake (POS) blockchain developed with Cosmos SDK<sup>15</sup>. Other services include verification of ecological credits including carbon and biodiversity for project developers and ecological accounting, claims, and credits development for stakeholders.

### Fund

Raised \$120k from Techstars in their pre-seed round in 2019. Raised funding by Initial Coin Offering (ICO) in 2021.

<https://www.regen.network/>





## 6. Senken

Germany  
Founded in 2022

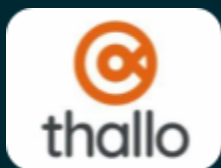
### Tech & Service

The marketplace provides easy and secure investment in individual carbon projects tokenized and brought onto the Celo blockchain by [Flowcarbon](#)<sup>16</sup>. It also offers carbon forwards, a new financial instrument, allowing pre-funding of climate projects that are still in development for a reduced price.

### Fund

Raised funding in their seed round in 2022-2023, followed by \$7.5M from Obvious Ventures, Kraken Ventures, Climate Capital etc. in 2023.

<https://www.senken.io/>



## 7. Thallo

United Kingdom  
Founded in 2021

### Tech & Service

The marketplace is deployed on Polygon Network while Ripple and Celo are Thallo's founding partners. Other services include carbon accounting consultancies and Carbon-as-a-Service (CAAS) API, allowing companies of all sizes to streamline their climate actions and offer carbon offsetting directly to their customers.

### Fund

Raised \$2.5M from Allegory Labs, Arcan Capital, Cerulean Ventures, Flori Ventures, Friendly Trading 2, Ripple in their seed round in 2022. In the same year, Thallo also received a grant from Climate Collective.

<https://www.thallo.io/>

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16. [Frequently Asked Questions | Flowcarbon](#)
17. [Three Questions to Choose the Right Blockchain for Your Purpose-Driven | Thallo](#)

### 3.3 EMURGO Africa Contribution

**In August 2023, EMURGO Africa invested \$250,000 in the environmental credit exchange company Changeblock.**



**EMURGO**  
AFRICA



**changeblock**  
TOGETHER, ANYTHING IS POSSIBLE

[EMURGO Africa Invests in ChangeBlock](#)





Changeblock utilizes blockchain technology to facilitate carbon credit trading, allowing companies exceeding emissions limits to offset their excesses by acquiring credits through emission-reduction projects.

The investment aligns with EMURGO Africa's commitment to advancing technologies that combat climate change, particularly in the carbon exchange market. We emphasize that the investment in Changeblock aims to foster the development of climate change reversal technologies and impactful solutions on Cardano's third generation and environmentally sustainable blockchain.

**On December 4th 2023, at COP28 in Dubai, UAE, EMURGO Africa participated in the roundtable discussion, “From Promise to Proof: Ensuring Credibility in Planet Repair and Protection”**



Our CEO, Ahmed Amer, joined a roundtable discussion co-hosted by Changeblock and Mubadala at COP28. Other key panel speakers are: Dr. Caspar Fithen, Co-founder of Martello Risk and former member of the UN Panel of Experts, Baroness Evans of Bowes Park, former Leader of the House of Lords, Wei Mei Hum, Head of APAC





& Global Head of Carbon and Environmental Products, Billy Richards, CEO of Changeblock moderated by Arlo Brady, CEO of Freuds and Chairman of the Blue Marine Foundation.

During the roundtable, Ahmed highlighted the revolutionary role of blockchain in climate finance. Drawing parallels to the revolutionary impact of Microsoft Windows, he emphasized blockchain's ability to address the inefficiencies in monetizing climate change and promote sustainable finance.

Ahmed specifically pointed to blockchain's capacity for transparency in climate finance through monitoring, recording, and verifying emission offsets, effectively reducing instances of greenwashing and fraud. His insights underscored blockchain's crucial role in building a resilient and accountable framework for climate-related financial initiatives.

➤ [WATCH FULL DISCUSSION FROM HERE](#) 



# Ch.4 Digital and Web3 Lending

## 4.1 Challenges in Access to Credits in Africa

In sub-Saharan African (SSA) countries, the freedom of money transaction has increased over the past decade with the spread of mobile phones and the expansion of mobile money. However, challenges persist in the financial sector, such as limited access to bank accounts including mobile money accounts, and high barriers to lending for small and medium-sized enterprises (SMEs). Understanding the current status of these issues is the first step in contemplating how to achieve financial inclusion, one of the central topics in development discussions.

### Only less than 45% has access to financial account

World Bank Global Findex data<sup>1</sup> shows that just 35 percent of people over the age of 14 in 28 countries in SSA had formal bank accounts in 2021<sup>d</sup>. Since this data includes higher income countries such as Mauritius (nearly 90%) and South Africa (85%), the average of low income countries in SSA is lower than 35 percent. For example, in Sierra Leone and Guinea, the percentage of respondents with a formal bank account is below 14 percent.

**Figure 4.1. Access to Financial Account (% age 15+, 2021)**



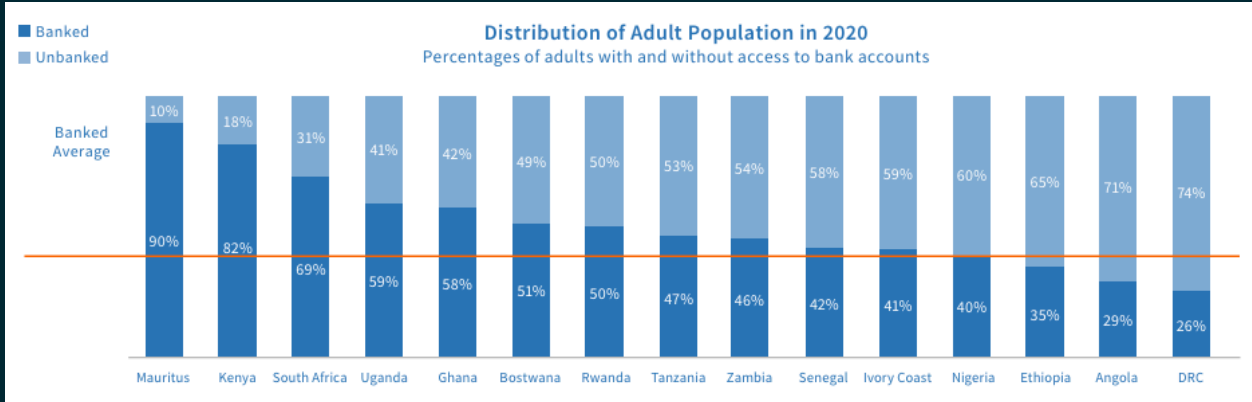
Source: Figure cited from [The Global Findex Database 2021 by World Bank](#)<sup>1</sup>



Compared to other regions, SSA has the lowest access to formal bank accounts (see Figure 4.1. above). Latin America, Southeast Asia, and the Middle East and North Africa (MENA) present the percentage of 57, 62, and 48 respectively, while the high-income regions of Europe and North America are at 92 percent and 58 percent respectively<sup>1</sup>.

The figure does not increase significantly by taking the mobile money accounts into account. In 2020, only 43 percent of Africans had any kind of bank account, including mobile money accounts<sup>2</sup>. For instance, Nigeria, Ethiopia, or the DRC continuously hold a low banking penetration, ranging from only 25 to 40 percent banked adults<sup>2</sup>. Overall, it is estimated that about 360 million adults in SSA do not have access to any form of a bank account including mobile money accounts<sup>2</sup>.

**Figure 4.2. Percentage of Adults with And without Access to Any Financial Accounts in 2020**



Source: Figure cited from [Digital Banking in sub-Saharan Africa report by BPC](#)<sup>2</sup>

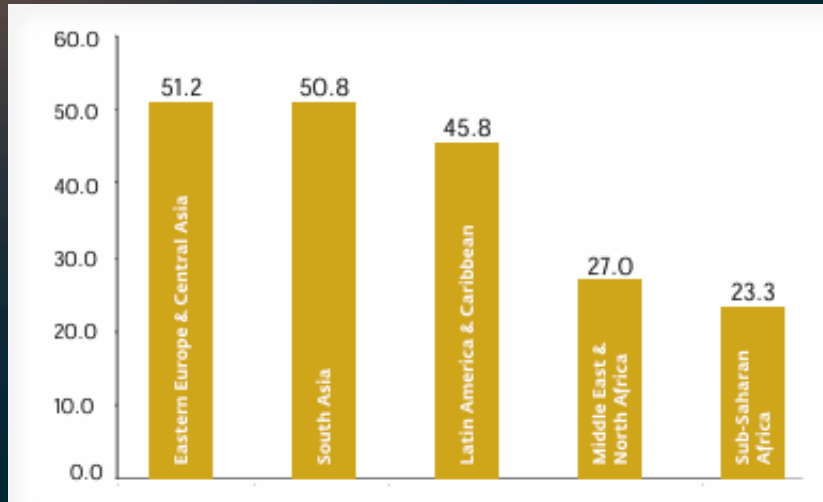
SSA remains predominantly cash-based, with about 90 percent of payments and transactions conducted in cash. SSA accounts for one of the lowest credit and debit card penetration rates with 3 and 18 percent respectively<sup>2</sup>. Therefore, there is significant room for improvement in financial inclusion through digital tools, such as establishing credit scores for lending purposes, with great potential positive impacts on social development.

**More than 80% of formal SMEs unmet financing needs**

Access to credit for firms is the engine for private sector development. However, SSA also lags behind other regions in access to finance for firms, with only around 20 percent of firms having a bank loan or line of credit in 2020. And 83 percent of formal SMEs in the region have unmet financing needs<sup>3</sup>.



**Figure 4.3. Access to Line of Credit or Loans from Financial Institution (% of Firms)**



Source: Figure cited from [Knowledge Guide by World Bank](#)<sup>4</sup>

SMEs in SSA face hurdles in borrowing money because of a lack of collateral and poor credit history. Inadequate collateral was considered a very severe, major or moderate constraint by 83 percent of banks lending to SMEs<sup>5</sup>. A similar percentage of banks cited poor credit history as a constraint when lending to the sector<sup>5</sup>.

**Figure 4.4. Factors Limiting Lending to Corporates and SMEs in The Last 12 Months (% of Responding Banks)**



Source: Figure cited from [Finance in Africa 2022 by European Investment Bank](#)<sup>5</sup>





In 2022, African banks are increasingly worried about asset quality, which emerged after the pandemic. Banks expect to tighten credit standards again for their customers<sup>5</sup>. Standard Bank, Africa's biggest lender by assets, reported that its loan losses for the first half ended June 30 2023 jumped by more than 40%<sup>6</sup>.

In the past five years, 9,400 businesses have been deregistered in Kenya<sup>7</sup> mainly because they could not access finances to run their normal operations<sup>8</sup>. The same reason led to the closure of over 600,000 MSMEs in Nigeria in 2022<sup>9</sup>. Yet, most SMEs in Nigeria are not registered at all, meaning they are not credit eligible due to lack of data<sup>8</sup>.

#### Notes

- a. The definition of access to formal bank accounts is percentage of respondents with an account (self or together with someone else) at a bank, credit union, another financial institution (e.g., cooperative, microfinance institution), or the post office (if applicable) including respondents who reported having a debit card (% age 15+).

#### References

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## 4.2 Digital and Web3 Lending in Africa

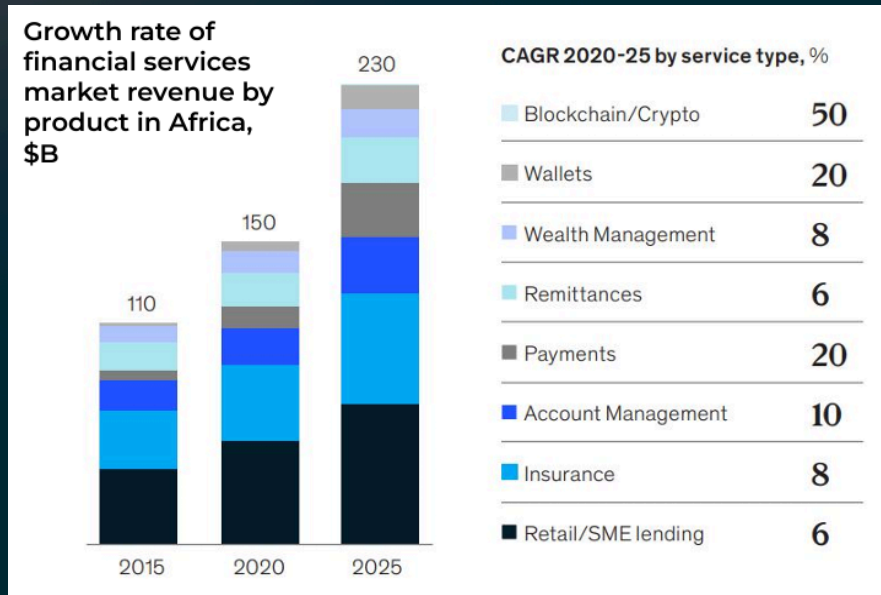
While challenges of access to finance remain significantly in SSA, driven by substantial capital investments<sup>1</sup>, digital lending and web3 lending services have emerged and are working to solve this problem. Tech giants such as Safaricom, Vodacom, and MTN are no exception.

In SSA, financial services revenues are expected to grow by 10 percent per annum, reaching an estimated \$230 billion in revenues by 2025 (excluding South Africa)<sup>2</sup>. The growth is led by increasing smartphone ownership, declining internet costs, expanded network coverage, and a young, fast-growing, and rapidly urbanizing



population. The nimble fintech players are rapidly gaining traction in this lucrative market<sup>2</sup>. It is projected that retail/SME lending will have been the largest share of revenue among all financial services<sup>2</sup>. Although the revenue share is still small compared to other digital finance businesses, blockchain finance is growing fastest<sup>2</sup>.

**Figure 4.5. Growth Rate of Financial Services Market Revenue by Product in Africa**

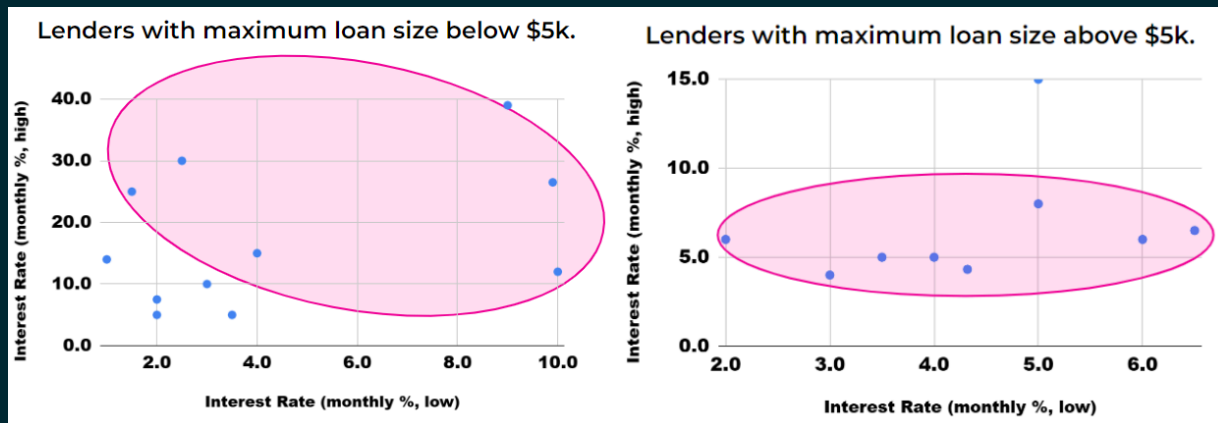


Source: Figure cited from [Fintech in Africa: The end of the beginning](#) by McKinsey<sup>2</sup>

### Digital lending starts from 2–6% monthly interest rate

We studied 39 digital lending providers in Africa<sup>3</sup>, among which 16 provide both businesses and individuals with loans, and 22 provide loans only for businesses<sup>3</sup>. Also 6 of them have offline agents while 33 do not have offline agents<sup>3</sup>.

**Figure 4.6. Monthly Interest Rate of Digital Lending Providers by Loan Size (%)**



Source: Figure cited from [EMURGO Africa 2023 Q2 Report](#) by EMURGO Africa<sup>3</sup>



According to our research<sup>a</sup>, for lenders with maximum loan size below USD 5,000, interest rate starts from 2–4 percent per month, and it goes larger than 10 percent and even 40 percent in some cases depending on the condition<sup>3</sup> (see Figure 4.6 above). For lenders with maximum loan size above USD 5,000, the minimum interest rate varies between 2–6 percent per month, and maximum interest rate is below 10 percent per month in most cases<sup>3</sup> (see Figure 4.6 above).

New and innovative products such as virtual savings and short-term credit supply products for individuals have popped up around the continent: M-Shwari by Safaricom in Kenya, M-Pawa by Vodacom in Tanzania, Mokash by MTN in Uganda and Rwanda. Table 4.1. below summarizes the products. In 2019 there were over 20 million virtual savings accounts that had been opened in the last five years compared to about 30 million deposit accounts in the banking sector<sup>4</sup>.

**Table 4.1. Virtual Savings and Short-Term Credit Supply Products for Individuals**

Product	Country	Launched	Number of accounts	Average savings	Average loan size	Average loan repayment period	Total loans disbursed	Non-performing loans (industry average is 5.3%)	Other notes
M-Shwari	Kenya	November 2012	20.4 million*	\$6.00	\$31.62	26 days	\$2.09 billion	2.30%	67% of users are under age 34
M-Pawa	Tanzania	May 2014	6.5 million (65% active)	\$1.51	\$16.60	28 days	\$63.7 million (2,612 loans per day)	7.4% for scored customers and at 17.2% for randomly selected customers	-
Mokash	Uganda	August 2016	2.71 million	\$0.41	\$7.75	19 days	\$9.2 million (2,761 loans per day)	-	-
Mokash	Rwanda	February 2017	556,202 (100,000 active)	-	\$10.25 with average loan fee of 9%	-	\$354,000 (1,004 loans per day)	7.7% for scored customers	Customers can borrow up to \$500 at an interest rate of 7%

Source: Figure cited from [Harnessing Africa's digital potential by Brookings](#)<sup>4</sup>

### **SMEs face implicitly high interest charges by fintech giants**

Fintech giants also expanded the lending products for SMEs. Table 4.2. below presents lending rates of those loan products. Many products offer a minimum interest rate of 5 percent per month, which is more expensive than commercial banks that offer double digit rates per annum<sup>5</sup>.



Actually, the rate is even more expensive than it appears. For instance, in the case of Flutterwave, failure for SMEs to refund the cash within 30 days, attracts further charges, and on average it could blow up to 60% per annum<sup>5</sup>. Also, while Safaricom’s Faraja for SMEs offers free business loans up to \$700 per business for 30 days via its mobile money platform, those that fail to pay up within the moratorium period are struck with a suspension from the platform, followed by a debt-collection agency to recover the amount in default<sup>5</sup>.

**Table 4.2. Lending Rates for SMEs by Big Fintech Companies**

Fintech Company	Country	SME Lending Rate p.m	Maximum Repayment Period	Maximum Loan Amount
Letshego	Botswana	17.5%	36 Months	\$104,000
Flutterwave Capital	Nigeria	5%	30 Days	90% of Monthly Earnings
MTN (MoMo)	Ghana	6.9%	270 Days	\$4,460
Safaricom (Faraja BNPL)	Kenya	0.00%	30 Days	\$700
PayFlex (BNPL)	South Africa	0.00%	45 Days	50% of Business Value

Source: Figure cited from [THE Web 3.0 Connect -September '23 by EMURGO Africa](#)<sup>5</sup>

**Web3 lending interest rate ranges 2–6% per YEAR**

Web3 lending platforms, on the other hand, provide credit at much lower rates (between 2 and 6 percent annually)<sup>5</sup>, and SMEs have been turning to seeking out loans with those services.

For example, widely known global DeFi platforms, AAVE and Compound, both provide loans of US dollar backed stable coins such as USDT, USDC, and DAI with the interest rate between 0.1–0.3 percent per month<sup>3</sup>. Such a low interest rate is achieved by





automating the secured loan process without the need for an intermediary through a smart contract, a piece of code stored on a blockchain that runs once predetermined conditions are met<sup>5</sup>.

Also, while DeFi does not require anything but having a wallet, digital finance requires a personal ID and certain credit history and score to access loans<sup>3</sup>. Lending on blockchain helps lower interest rates, creates a new way of collateralization, and attracts more SME borrowers<sup>5</sup>.

Globally, more than \$200 billion in loans was disbursed in 2021 from the largest Web3 lending platforms, and cumulative bad debt is currently roughly \$1 million, despite significant volatility<sup>6</sup>. This puts the default rate at an insignificant 0.000005%<sup>5</sup>. The global Web3 space was valued at \$934 billion in 2022<sup>7</sup>, while the global retail banking market size was estimated at \$1.9 trillion in the same year<sup>8</sup>.

While digital finance offers local currency loans, DeFi, in many cases, requires on- and off- crypto ramping costs in addition to transaction or gas fees<sup>3</sup>. In the next chapter, we look at the on- and off- crypto ramping solutions in Africa. New projects are expected to develop more convenient options for the web3 lending users in the region.

#### Notes

- a. The list of 39 digital lending providers in SSA is available on page 10 of [EMURGO Africa 2023 Q2 Report](#) by EMURGO Africa.

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1. [2022 Africa Tech Venture Capital Report | Partech](#)
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## 4.3 EMURGO Africa Contribution

**In February 2024, EMURGO Africa announced its strategic investment in Fig Finance, bringing innovative financial solutions to underserved small and medium-sized enterprises (SMEs).**



EMURGO Africa Invests in Fig Finance


Fig Finance, a company operating across Africa, the EU and US, allows any B2B platform to automate lending programmes for their trusted small-business customers.

Traditional banks in various African nations struggle to serve the credit needs of creditworthy small and medium-sized enterprises (SMEs) due to limited access to credit data and inadequate infrastructure. Fig's founders, leveraging their extensive networks, have demonstrated the ability to disburse loans instantly to hundreds of SMEs daily with zero defaults.

With support from EMURGO Africa, Fig aims to be the most efficient and transparent access point for real-world DeFi lending, empowering SMEs and fostering sustainable economic growth across the continent. Oscar Price, Fig's CEO, expresses excitement about the partnership, highlighting the opportunity to enable capital flow from DeFi to creditworthy businesses. Akinseye Akinola, Fig's CFO, emphasizes the technology's



ability to address the perennial underservice of SMEs by traditional lenders, streamlining processes for distribution partners without coding requirements.

 **On December 2nd and 19th 2023, EMURGO Africa presented the "Finnovating for Africa" podcast with DisruptAfrica.**



Facilitated by Disrupt Africa, EMURGO Africa joined AZA Finance, Revio, and MoneyHash to release a two-part deep-dive into African fintech's trends, opportunities, and challenges in two insightful episodes.

In episode one, Shogo Ishida, co-CEO of EMURGO MEA, looked at the challenges around financial inclusion in Africa, the origins of the fintech revolution on the continent, and how startups are innovating in various areas within the sector.

➤ [\*\*LISTEN FULL EPISODE #1 FROM HERE\*\*](#) 

In episode two, Ahmed Amer, co-CEO of EMURGO Africa, delved into the support available for fintechs on the continent – from investors, from incumbents, from governments – and looked at the future potential of fintech in Africa.

➤ [\*\*LISTEN FULL EPISODE #2 FROM HERE\*\*](#) 



# Ch.5 Crypto Trading and On/Off Ramping

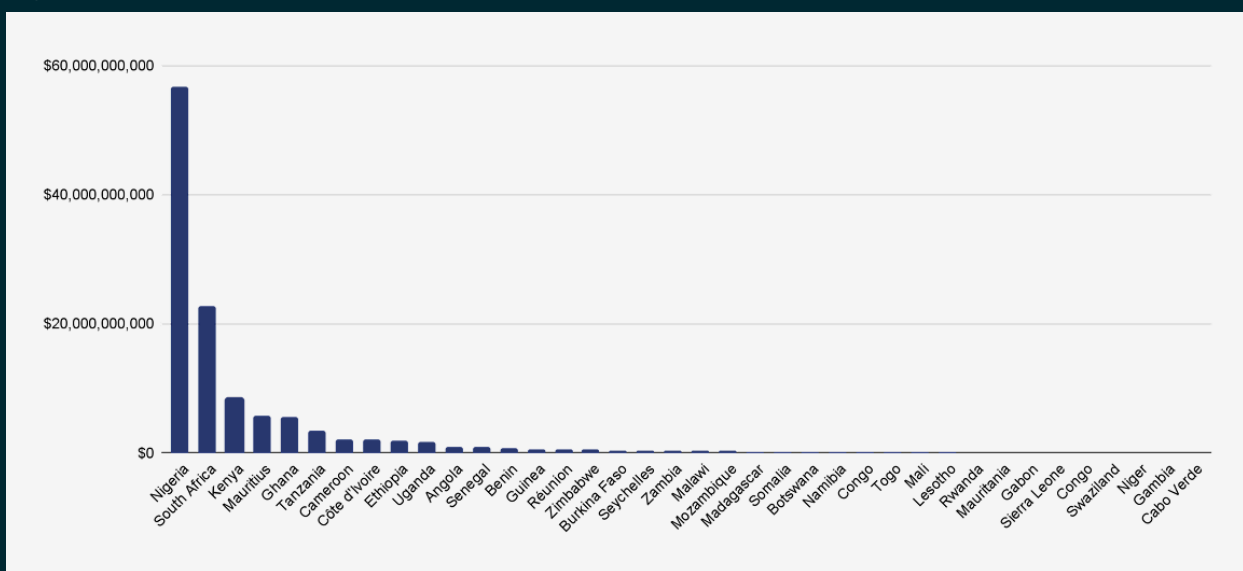
## 5.1 Crypto Demand in Africa

Among a wide range of applications of blockchain, the actual demand for the technology in Africa is centered on the use of cryptocurrencies for preservation of money value, cross-border remittance, and inter-continental payment for SMEs<sup>1</sup>.

### Nigeria ranks second overall on Global Crypto Adoption Index

Between July 2022 and June 2023, SSA accounted for 2.3% of global transaction volume, and the region received an estimated \$117B in on-chain value, among which Nigeria accounts for more than 50 percent of all value received in the region, followed by South Africa and Kenya<sup>1</sup>.

**Figure 5.1. SSA Countries by Cryptocurrency Value Received (July 2022–June 2023)**



Source: Figure cited from [The Chainalysis 2023 Geography of Cryptocurrency Report by Chainalysis](#)<sup>1</sup>

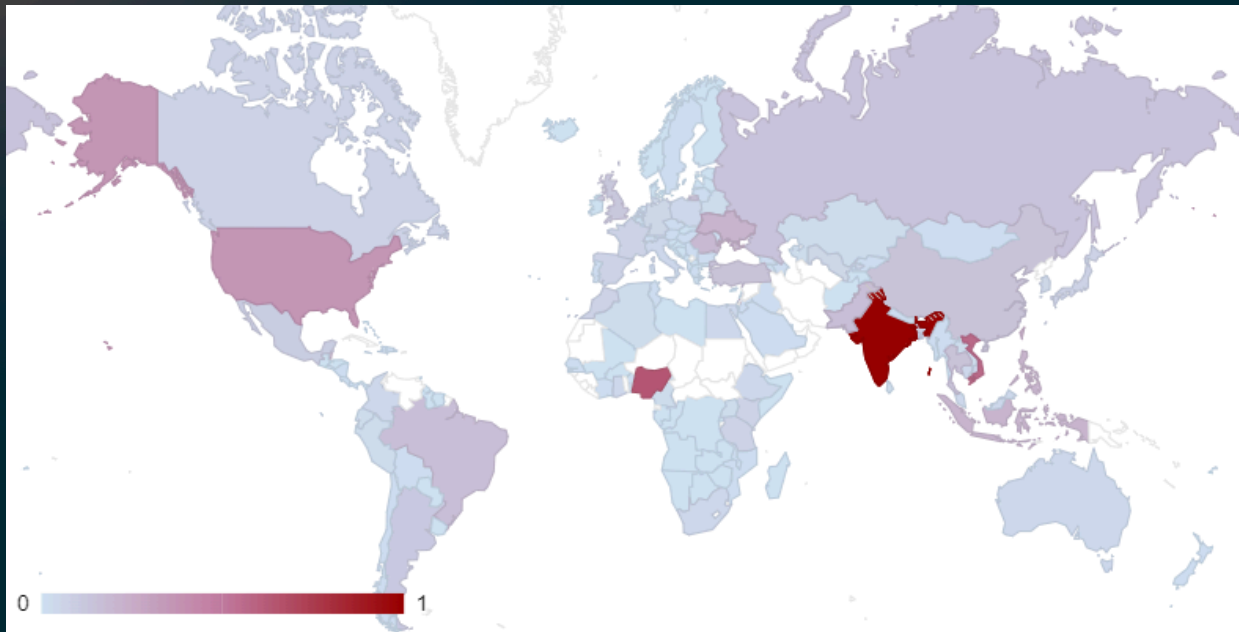
Nigeria is one of only six countries (Saudi Arabia, Vietnam, Nigeria, Spain, Taiwan, and Indonesia) whose crypto transaction volume grew during the last financial year ending June 2023<sup>1</sup>. Its year-over-year volume growth is 9 percent, placing it third following Saudi Arabia (12%) and Vietnam (11.6%)<sup>1</sup>. Overall, Nigeria ranks second on Global Crypto Adoption Index, which is calculated based on the trade volumes of centralized, decentralized (DeFi), and P2P exchanges<sup>1</sup>. Other countries in the region





ranking high on the index include Kenya (21), Tanzania (23), Ghana (29), South Africa (31), Egypt (34), Ethiopia (35), and Cameroon (41)<sup>1</sup>.

**Figure 5.2. Global Crypto Adoption Index**



Source: Figure created by author based on [The 2023 Global Crypto Adoption Index by Chainalysis](#)<sup>2</sup>

### **Local fiat depreciation making crypto an attractive means of storing value**

As many countries in the region suffer from a decline in the value of their currencies against the US dollar (see Figure 5.3), continued inflation (see Figure 5.4), and rising debt, cryptocurrencies have become an attractive means to preserve value, maintain savings, and gain greater economic freedom<sup>1</sup>.

In 2022, small-scale importers in Kenya were hit hard by a scarcity of forex that forced banks to impose \$1500 to \$2000 daily limits<sup>3</sup>. Under limited availability of US dollars in the countries, cryptocurrencies, especially stablecoins pegged by US dollars, which are generally less volatile in price than other cryptocurrencies, have been gaining more attention and importance<sup>1</sup>.

It is likely that when the stablecoins are fully reserved by currency deposits, more consumers have the confidence to employ this tokenized cash for cross-border payments and corporate transfers, giving them access to the benefits associated with cryptocurrencies: instant settlement, low-cost transactions, greater security, and increased transparency<sup>4</sup>.

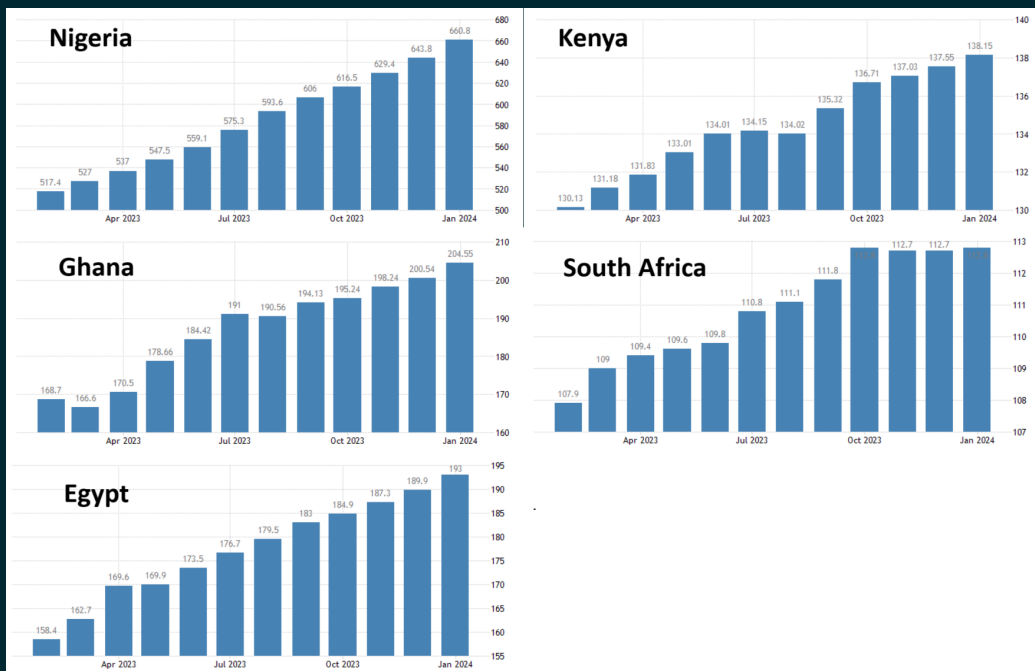


**Figure 5.3. US Dollar to Local Currency Chart (Feb. 2022–Feb. 2024)**



Source: charts cited from [Free Currency Charts - Historical Currency Rates by Xe](#)<sup>5</sup>

**Figure 5.4. Consumer Price Index (Feb. 2023–Jan. 2024)**



Source: [20 Million Indicators from 196 Countries by Trading Economics](#)<sup>6</sup>

Note: CPI base year is different across countries: November 2009 = 100 in Nigeria; February 2019 = 100 in Kenya; 2021 = 100 in Ghana; December 2021 = 100 in South Africa; 2018/2019 = 100 in Egypt.

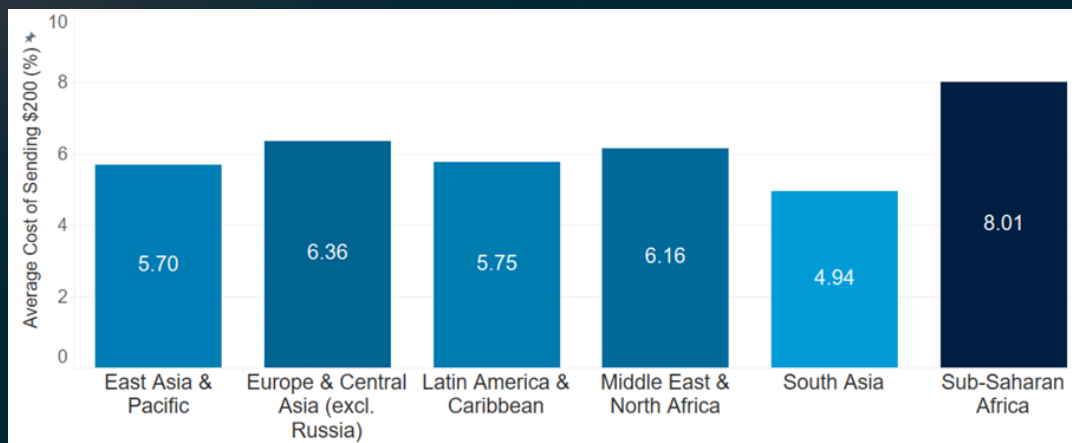
## Crypto's low cross-border transaction fee attracts immigrants and SMEs

The cost of sending money in Africa is the highest in the world. The average cost of sending \$200 from Africa is on average 8 percent, compared to the global average of 6.8 percent in 2022<sup>7</sup>. Some countries show even higher costs: Tanzania (27%),



Nigeria (19%), South Africa (14.7%), and Kenya (13.9%)<sup>8</sup>. The amount being transacted is subject to further reduction through low foreign currency exchange rates at the banks or remittance bureaus. Up to 5% of transaction value is lost during currency conversions<sup>8</sup>.

**Figure 5.5. Average Cost of Sending \$200 by Region**



Source: [Remittance Prices Worldwide Quarterly by World Bank](#)

Whereas international wire transfer fees cost an average 7 percent of the total amount sent and could take several days to clear, some cryptocurrencies are designed to support foreign exchange and money transfers for less than a U.S. penny and process payments in 3 to 5 seconds<sup>9</sup>.

**Figure 5.6. Cross-border Payment Fees on Africa's Popular Crypto Trading Platforms**

Web3 Platform	Cost of Sending \$200 Across Borders	Cost as Percentage of Transaction Value
<b>Binance</b>	<b>\$ 0.0005</b>	<b>0.0000025%</b>
<b>Coinbase</b>	<b>\$ 2.99</b>	<b>1.50%</b>
<b>Kraken</b>	<b>\$ 0.32</b>	<b>0.16%</b>
<b>Luno</b>	<b>\$ 4.00</b>	<b>2.00%</b>
<b>Yellow Card</b>	<b>\$ 0.00</b>	<b>0.00%</b>
<b>VALR</b>	<b>\$ 0.00</b>	<b>0.00%</b>
<b>Ovex</b>	<b>\$ 0.00</b>	<b>0.00%</b>

Source: Figure cited from [THE Web 3.0 Connect –November '23 by EMURGO Africa](#)<sup>8</sup>

In fact, Africa's popular crypto trading platforms charge nearly 0 to at most 2 percent of transaction fee for \$200 cross-border payment (see Figure 5.6). Even compared to



money transfer agents like Flutterwave, Western Union, and Moneygram, which usually provide lower transaction fees than traditional bank transfers, crypto trading platforms provide users with much cheaper means of cross-border payments (see Figure 5.7).

**Figure 5.7. Cross Border Remittance Cost of Web3 Services, Money Transfer Agents, and Banks in Africa**

Web3 Service	Cost of sending \$200	Money Transfer Agent	Cost of sending \$200	Bank	Cost of sending \$200
Luno	\$ 4.00	Skill	\$ 12.00	Standard Bank (South Africa)	\$ 19.68
Coinbase	\$ 2.99	Flutterwave	\$ 7.60	CBE (Ethiopia)	\$ 19.00
Kraken	\$ 0.32	Paypal	\$ 7.47	Equity Bank (Kenya)	\$ 11.43
Binance	\$ 0.00	Western Union	\$ 6.90	Access Bank (Nigeria)	\$ 10.80
Yellow Card	\$ 0.00	World Remit	\$ 6.40	Equity Bank (DRC)	\$ 9.43
VALR	\$ 0.00	Moneygram	\$ 4.99		
Ovex	\$ 0.00	M-Pesa Global	\$ 2.38		

Source: Figure cited from [THE Web 3.0 Connect -November '23 by EMURGO Africa](#)<sup>8</sup>

Cryptocurrency transfers associated with remittance payments have experienced rapid growth, both in terms of value and volume, since the start of the COVID-19<sup>9</sup>. Of the \$48 billion remitted to sub-Saharan Africa (SSA) in 2019<sup>10</sup>, Chainalysis estimates that up to \$562 million worth of payments were facilitated by cryptocurrencies<sup>9</sup>.

According to a survey conducted in Nigeria, Ghana, Kenya, and South Africa, 61% of businesses are engaged in cross-border payments, but 48.4% use local banking partners, and only 19.5% use fintech solutions for cross-border payments<sup>11</sup>. The African electronic payments market is projected to reach \$40 billion by 2025, growing at about 20% per year<sup>4</sup>.

Also, the number of immigrants from Africa residing outside the continent is expected to rise (9.5m by 2060), and there will be a continued demand for remittances<sup>8</sup>. As the SMES' cross-border payments and immigrants' remittances grow, the adoption of crypto assets is likely to persist. The appeal lies in its lower transfer fees and faster transactions than traditional methods<sup>8</sup>.

#### Notes

- a. This is an insight shared by Shigeru Sato, the former Editor in Chief at Coindesk Japan. The insight is based on over 50 interviews he conducted with African blockchain startup companies from January to April 2023.





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4. [The future of payments in Africa | McKinsey](#)
5. [Free Currency Charts - Historical Currency Rates | Xe](#)
6. [20 Million Indicators from 196 Countries | Trading Economics](#)
7. [Remittance Prices Worldwide Quarterly | World Bank](#)
8. [THE Web 3.0 Connect -November '23 | EMURGO Africa](#)
9. [Foresight Africa 2022 | Brookings](#)
10. [World Bank Predicts Sharpest Decline of Remittances in Recent History | World Bank](#)
11. [The cross-border payments opportunity for African small businesses | TechCabal](#)

## 5.2 Crypto On/Off Ramping Solutions in Africa



Photo: Bitcoins and u.s dollar bills by Pexel by Canva

On-ramp refers to the process of converting fiat currency into cryptocurrency. It currently typically includes services such as cryptocurrency exchanges and peer-to-peer platforms, where users purchase cryptocurrency via payment methods such as bank transfers, credit/debit cards, and more recently, mobile money.

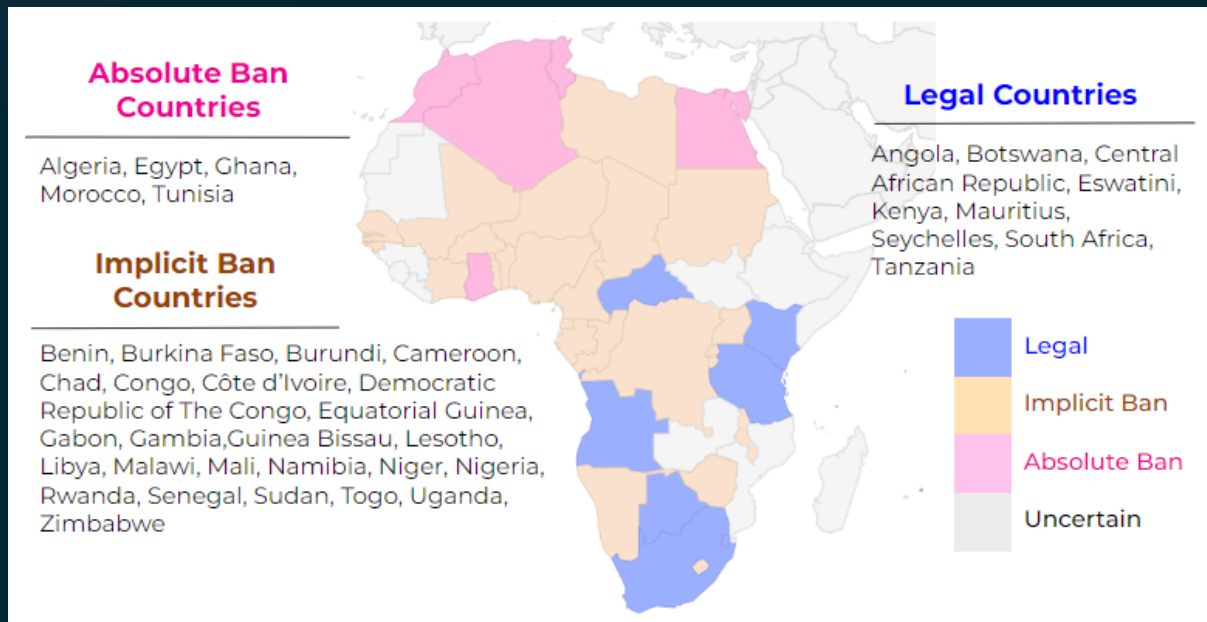
Off-ramping, on the other hand, refers to the process of converting cryptocurrency back into fiat currency. Users can use cryptocurrency exchanges and other services



to sell cryptocurrency to fiat, withdraw it to their bank account, or receive it as mobile money.

Although efficient on- and off-ramping services in Africa will play an important role in cryptocurrency adoption and diffusion, African local currencies currently face the challenges of limited coverage and high volatility compared to major fiat currencies on crypto exchanges. Regulatory uncertainties further impede the development of on/off ramping infrastructure.

**Figure 5.8. Cryptocurrency Regulation Status of African Countries**



Source: [Countries That Use Cryptocurrency 2024 by World Population Review](#)

However, there are some positive developments, such as the expansion of crypto exchanges in Africa, increased integration with mobile money, and the emergence of new services such as swap with airtime. More convenient, cheaper, and faster services will further increase the benefits of using cryptocurrencies for the purposes such as value storage, remittance, and cross-border payment and will trigger the widespread adoption of crypto assets in Africa.

Below is the list of on/off ramping solutions in Africa. Note that the services listed below are selected by their presence in the crypto space in Africa based on our own research. Available currencies are listed to our knowledge. Fund information is from publicly available data including [Crunchbase](#).





## 1. Bitmama

United States  
Founded in 2019

### On/Off Ramp Available Currencies

African FIAT: NGN, GHS, KES  
Cryptocurrencies: USDT, CUSD, USDC, BTC, ETH, CELO, XLM, XRP

### Fund

Raised \$2.5M from Adaverse, Launch Africa, Unicorn Growth Capital, Flori Ventures etc. in their pre-seed round in 2021-2022. Raised funding from Mercy Corps Ventures in their seed round in 2023.

<https://bitmama.io/>



## 2. Busha

Nigeria  
Founded in 2018

### On/Off Ramp Available Currencies

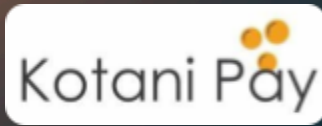
African FIAT: NGN  
Cryptocurrencies: USDT, USDC, NGNT, BTC, ETH, LTC, XRP, BNB, SOL, MATIC, ADA, XLM etc.

### Fund

Raised \$4.2M from Jump Capital in their seed round in 2021.

<https://www.busha.co/>





### 3. Kotani Pay

Kenya

Founded in 2020

#### On/Off Ramp Available Currencies

African FIAT: KES, GHS, XAF, ZMW, ZAR, XOF, UGX, NGN, ETB, AED

Cryptocurrencies: USDT, USDC, CUSD etc.

#### Fund

Granted \$161k from UNICEF Innovation Fund etc. in 2021, followed by \$1.3M from PI Ventures etc. in their pre-seed round in 2021-2022. Granted \$150k from Financial Solutions for Migrants program in 2022-2023. Raised \$2.5M from Adaverse, PI Ventures, Luno, Flori Ventures etc. in their pre-seed round in 2023.

<https://kotanipay.com/>



### 4. Ovex

South Africa

Founded in 2017

#### On/Off Ramp Available Currencies

African FIAT: ZAR, GHS, KES, NGN, TZS, UGX, XOF, BWP

Cryptocurrencies: USDT, USDC, ZARP, BTC, ETH, ADA, BNB, LTC, MATIC, SOL, XRP etc.

#### Fund

Raised funding from Newton Partners, Invictus Capital etc. in their seed round in 2019. Raised \$9M from Alameda Research etc. in 2021-2022.

<https://ovex.com/>







## 5. Paychant

United Kingdom  
Founded in 2019

### On/Off Ramp Available Currencies

African FIAT: NGN, KES, GHS, UGX, ZMW  
Cryptocurrencies: USDT, USDC, CUSD, DAI, CEUR, ETH, BNB, MATIC, XLM, SOL, LTC etc.

### Fund

Raised \$500k from Flori Ventures etc. in their pre-seed round in 2020–2021. In 2022, received funding from CoinList Seed.

<https://paychant.com/>

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## 6. Quidax

Malta  
Founded in 2017

### On/Off Ramp Available Currencies

African FIAT: NGN  
Cryptocurrencies: BTC, ETH, LTC, DASH, TRX, XRP

### Fund

Raised \$620k from Techstars etc. in their seed round in 2018 and 2020. Raised \$3M in their initial coin offering (ICO) in 2021.

<https://www.quidax.com/>

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## 7. Yellow Card

United States  
Founded in 2016

### On/Off Ramp Available Currencies

African FIAT: all major FIAT  
Cryptocurrencies: USDT, USDC, CUSD, BTC, ETH, ADA, SOL, Matic, XAUt

### Fund

Raised \$1.5M from Metal VC etc. in their seed round in 2019–2020. Raised \$15M from Castle Island Ventures, Third Prime, Valar Ventures etc. in their series A round in 2021. Raised \$40M from Polychain etc. in their series B round in 2022.

<https://yellowcard.io/>

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## 5.3 EMURGO Africa Contribution

In May 2023, EMURGO Africa Accelerator, Adaverse, Backed Fonbnk To Integrate Cardano On Its DeFi Platform Revolutionising Cross Border Payments Through Prepaid Airtime.



Adaverse invests in Fonbnk

Fonbnk, web3 payment platform, allows users to exchange mobile airtime for crypto assets and make payments through their SIM cards.

The daily value of mobile money transactions in Africa and the Middle East reached an impressive USD 1.94 billion in 2021. However, the involvement of merchant middlemen and exorbitant processing fees have hindered the progress of financial inclusion.

Fonbnk is aiming to change this with its innovative on-ramp and off-ramp services. By enabling people to convert prepaid airtime into digital money and access virtual debit cards to process fund transfers and cross-border payments, Fonbnk provides a more accessible and affordable option for financial transactions.

Co-CEO of EMURGO Middle East and Africa, Shogo Ishida, commented, "Fonbnk's unique use of airtime as an on-ramp solution has the potential to revolutionize the payment landscape and empower millions of young entrepreneurs worldwide. EMURGO Africa's vision is to empower individuals to achieve financial independence



without the need for traditional financial institutions. Fonbnk shares this vision, and we are enthusiastic about providing the support and resources necessary to scale this solution.”

**In September 2023, EMURGO Africa’s Accelerator, Adaverse, Funds Kotani Pay Financial Gateway to Improve Seamless Dapp Interaction In Africa with Cardano Onboarding**



Adverse invests in Kotani Pay

Kotani Pay facilitates on-ramp and off-ramp processes that enable businesses to connect Web3 payments to local merchants, making transactions smooth through stablecoin-to-fiat conversions. With its innovative use of USSD codes, even individuals without internet access can be part of this financial transformation.

Nearly 500 million Africans rely on basic phones, often hindering their access to blockchain's financial advantages due to limited internet connectivity. Kotani Pay fills this void, allowing both basic and smartphone users to interact with blockchain assets using ubiquitous USSD codes in Africa. Transactions don't need internet access, facilitating smooth digital asset conversions to local currencies, such as the Kenyan shilling.



Kotani Pay has facilitated \$23 million in transfers, largely inbound, with an impressive average transaction size of \$150,000, benefiting over 15,000 users, including refugees and freelance workers. Kotani Pay has also facilitated financial inclusion across diverse groups, from refugees in UNHCR camps receiving basic income from crypto benefactors to unemployed youth who can now work on global platforms, cashing out their digital earnings directly to mobile money wallets.

**🌐 In November 2023 in Dubai, EMURGO Africa joined the global blockchain community at the Cardano Summit 2023!**



Highlights included a keynote by Charles Hoskinson, Co-founder of Cardano blockchain, a panel on Web 3.0 in Africa by EMURGO MEA Co-CEO Yosuke Yoshida, and networking with fellow enthusiasts.





Yosuke shared key insights into the current state of Web3 in Africa. He said that Africa's 1.4 billion population, youth age group of around 20 years old, and in the past 6 years, the VC sector in Africa has grown 18-fold and Web3's VC funding has increased 11-fold, which accounts for the great potential for growth in the African market. He also emphasized that crypto assets are seen as a practical solution to financial problems in Africa, especially stablecoin, which has emerged as a practical solution, and blockchain is revolutionizing the interbank settlement system.

EMERGO Middle East and Africa has invested in more than 40 companies on the African continent, many of which are eager to make Cardano their base, and will continue to contribute to Africa through blockchain technology.

➤ [CHECK HIGHLIGHTS OF CARDANO SUMMIT 2023 FROM HERE](#) 



# Appendix. EMURGO Africa Portfolio



## Nigeria















  






## Kenya



## South Africa





## Cameroon



## Ghana



## Zimbabwe




## Egypt



## UAE






## Switzerland



## USA





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### 1. 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.

<https://www.afriblocks.com/>

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### 2. Afriex

Nigeria  
Founded in 2019



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

<https://www.afriexapp.com/>

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### 3. Afropolitan

USA/Nigeria  
Founded in 2016



Afropolitan 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.

<https://www.afropolitan.io/>

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### 4. Amini

Kenya  
Founded in 2022



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

<https://www.amini.ai/>



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## 5. Awujo

Nigeria

Founded in 2021



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.co/>

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## 6. BellBank

Nigeria

Founded in 2022



BellBank is an agent and microfinance bank, which offers a variety of **digital payment solutions**, including convenient **point of service (POS)** machines and **QR code payment** systems, while utilizing the advantages of **both Mobile Money (MOMO) and agency banking**.

<https://bellmfb.com/>

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## 7. Bitgrit

UAE/Japan

Founded in 2017



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.

<https://bitgrit.net/>

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## 8. Bitmama

Nigeria

Founded in 2016



Bitmama 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. Individuals can trade and manage cryptocurrencies, and digital assets conveniently on its platform.

<https://bitmama.io/>

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## 9. BitSport

Nigeria/USA  
Founded in 2016



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.

<https://bitsport.gg/>

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## 10. Bit2Me

Spain  
Founded in 2015



Bit2Me is a **financial services** company offering B2C and B2B services tailored to consumers and businesses, including a **centralized crypto exchange**. It is registered by the Bank of Spain as a cryptocurrency exchange and has also achieved AML/KYC compliance through its partnership with Jumio.

<https://bit2me.com/>

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## 11. BoundlessPay

Nigeria  
Founded in 2021



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**.

<https://www.boundlesspay.com/>

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## 12. Busha

Nigeria  
Founded in 2018



Busha is a trusted platform that helps to **buy, sell, and manage your cryptocurrency portfolio** in the simplest, safest, and most reliable way.

<https://www.busha.co/>

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### 13. BuuPass

Kenya

Founded in 2016



BuuPass is a **digital marketplace for urban travelers 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.

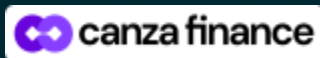
<https://buupass.com/>

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### 14. Canza Finance

Nigeria

Founded in 2020



Canza Finance is providing access to **financial services** to the financially underserved masses in Africa and around the world through the use of Cryptocurrencies, Blockchains, and services such as DEX, DAPPS, and DeFi.

<https://canza.io/>

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### 15. Cassava Network

Nigeria

Founded in 2021



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.

<https://www.cassava.network/>

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### 16. Changeblock

Canada

Founded in 2021



Changeblock is an **environmental market technology provider and certification platform** that enables tokenization and trading of environmental attributes. It provides spot trading of environmental assets on exchanges and ESG services for clean technology developers (environmental token sellers).

<https://www.changeblock.com/>

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### 17. Chekkit

Nigeria  
Founded in 2018



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

<https://chekkitapp.com/>

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### 18. Credable

UAE  
Founded in 2021



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.

<https://www.credable.io/>

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### 19. Diagon Studios

Nigeria  
Founded in 2019



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.

<https://www.diagon.io/>

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### 20. Ejara

Cameroon  
Founded in 2019



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

<https://www.ejara.io/>



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## 21. FanBants

Nigeria

Founded in 2022



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/>

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## 22. Fonbnk

Kenya/USA

Founded in 2019



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 Philippines, Jamaica, and Ukraine.

<https://fonbnk.com/>

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## 23. Goodwall

Switzerland

Founded in 2014



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/>

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## 24. HouseAfrica

Nigeria

Founded in 2019



House Africa is leveraging blockchain technology to **build trust in property transactions across Africa**.

<https://houseafrica.io/>

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## 25. Hustle Sasa

Kenya

Founded in 2021



Hustle Sasa 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.

<https://hustlesasa.com/>

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## 26. KabuK Style

UAE

Founded in 2019



KabuK provides a **new value proposition, "Save Now, Buy Later," through a travel subscription service** that offers an easy booking experience. This enables one to enjoy a more economical experience without the hassle of price fluctuations.

<https://kabuk.com/>

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## 27. Kotani Pay

Kenya

Founded in 2020



Kotani Pay is a tech stack that **enables connectivity to last-mile payment solutions (especially mobile money) in Africa, with Stablecoin and Fiat on/off-ramp services** at its core, operated through both API and USSD.

<https://kotanipay.com/>

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## 28. Mazzuma

Ghana

Founded in 2015



Mazzuma 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 is regulated by the Bank of Ghana.

<https://mazzuma.com/>



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### 29. Melanin Kapital

Kenya

Founded in 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.

<https://www.melaninkapital.com/>

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### 30. Midchains

UAE

Founded 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.

<https://www.midchains.com/>

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### 31. Momint

South Africa

Founded in 2021



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

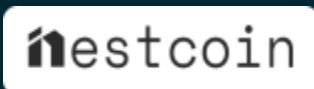
<https://www.momint.so/>

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### 32. Nestcoin

Nigeria

Founded in 2021



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

<https://nestcoin.com/>

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### 33. Nuzo

USA

Founded in 2022



Nuzo is a **blockchain-powered e-commerce platform tailored to the African market**, which can reward both buyers and sellers on the platform through loyalty points called Nuzo coins.

<https://nuzo.co/>

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### 34. Pravica

Egypt

Founded in 2019



Pravica is a **unified secure digital communication suite** that meets Web 3.0 standards and uses blockchain 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/>

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### 35. Revix

South Africa/UK

Founded in 2018



Revix is an **investment platform** offering a range of **alternative financial products (including split and tokenized real estate and VC funds)** with a focus on a group of digital assets.

<https://revix.com/>

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### 36. Scalex

Nigeria

Founded in 2021



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**.

<https://www.scalex.africa/>



### 37. Seso Global

Nigeria/USA  
Founded in 2019



Seso Global is an **all-inclusive proptech platform**. 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.

<https://app.seso.global/properties/home>

### 38. Simulon

South Africa  
Founded in 2019



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.

<https://www.simulon.com/>

### 39. Skrmiish

South Africa  
Founded in 2018



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 through MoneyMatch, a feature created by Skrmiish.

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

### 40. Snowstorm

USA  
Founded in 2022



Snowstorm offers a VPN that will disrupt conventional VPNs. At its core, it offers **a VPN that can never be broken by decentralizing servers and allowing everyone to contribute to the VPN network**.

<https://snowstorm.net/>





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#### 41. StakeFair

Nigeria  
Founded in 2021



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

<https://www.stakefair.io/>

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#### 42. Talksay

Kenya/USA  
Founded in 2021



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

<https://www.talksay.io/>

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#### 43. TBTM

UAE  
Founded in 2015



TBTM (Take Back the Mic) Studios has built the **world's first blockchain-based Media Fintech**, turning Culture into Currency by rewarding fans and compensating creators for building communities around great content.

<https://tbtm.app/>

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#### 44. Versus Africa

Nigeria  
Founded in 2018



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

<https://versus.africa/>

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