

Agpaytech's Research
30th October, 2023

The State of Central Bank Digital Currency 2023

Focus on Africa





Executive Summary

- ▶ Central bank digital currencies (CBDCs) have presented an excellent opportunity for central banks in Africa to pay much attention to financial technology innovations around money usage in the wholesale and retail markets. CBDC has motivated FinTech developers, innovators, and blockchain enthusiasts to showcase their creativity by discovering the many possibilities of CBDC technology and contributing to the future of Africa's digital financial ecosystem.
- ▶ Globally, Africa represents 8.5% of central banks that have announced issuing CBDC, which is in different stages. In the African region, 32.7% (17 countries) of the central banks have publicly announced their intention to issue CBDC, whereas 67.3% of central banks have not shown interest or are yet to make pronouncements on their intent to explore CBDC.
- ▶ Currently, Nigeria is the first and only country that has launched its eNaira, whereas Ghana's eCedi is at the piloting stage as of October 2023. In terms of technology service providers (TSP), Nigeria partnered with Bitt Inc. and Ghana is working with Giesecke+Devrient (G+D). The Central Bank of Kenya (CBK) has deferred the decision on the adoption of CBDC intending to prioritize strengthening innovations around the existing payment ecosystem.
- ▶ The majority of the central banks researching CBDC focus on the hybrid CBDC model, offline and online versions of digital currency which will co-exist with the various existing payment systems.

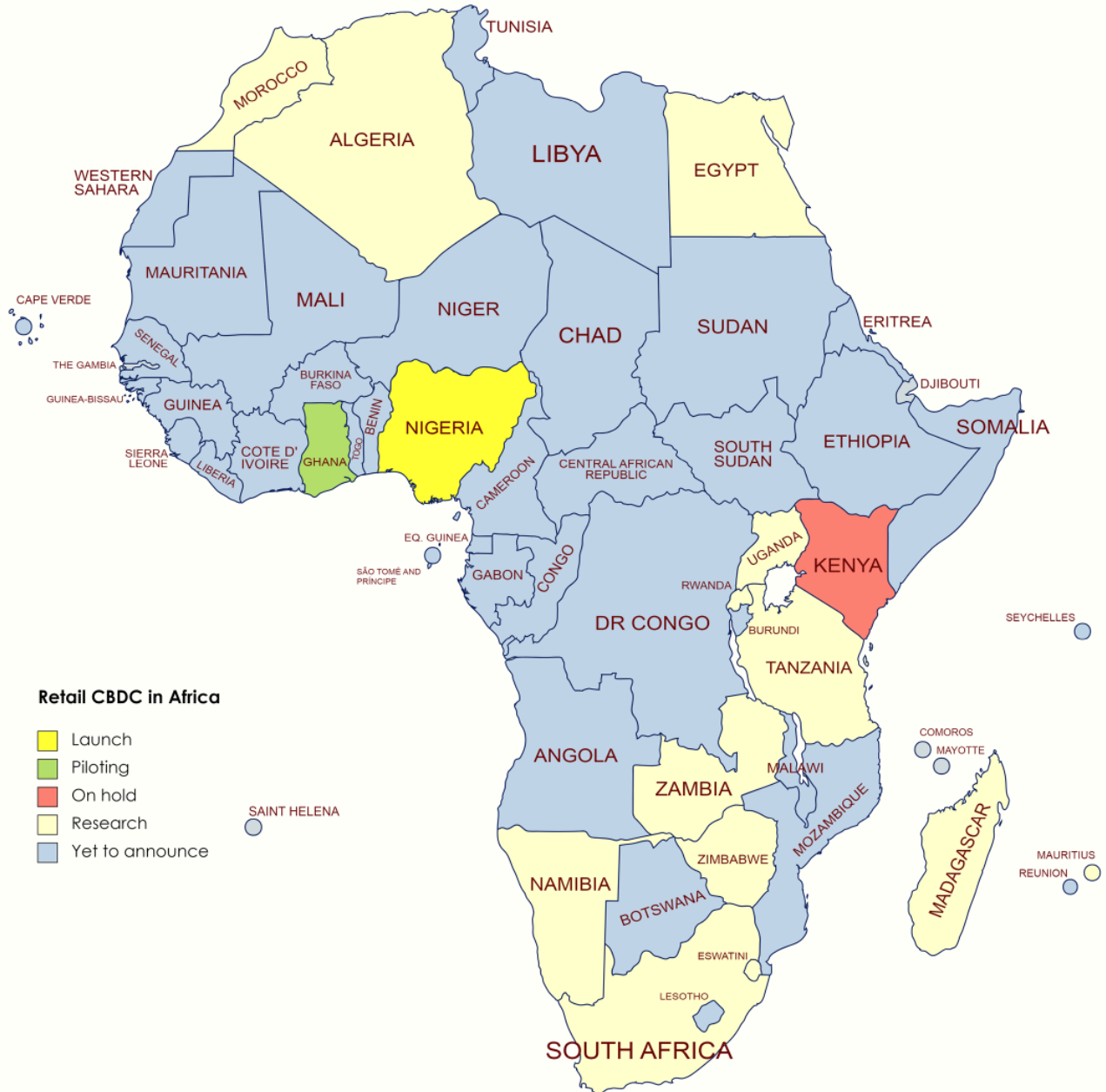


By the end of 2027, there will be about four launched retail CBDCs in Africa

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Development of Retail CBDCs in Africa



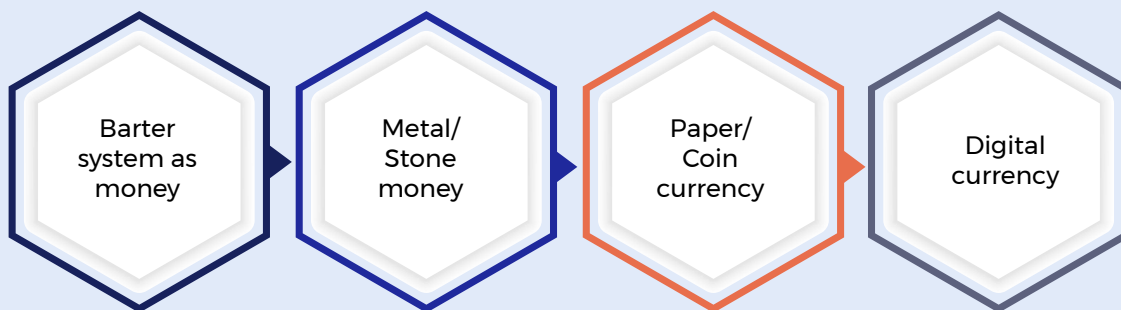
Source: Agpaytech



Digital Payments Transformation in Africa

In Africa, the history of money is still being written. The barter trade system has moved from swapping animal skins (objects) to metal minting coins to printing paper money. Today, there is a crossover of a massive shift to electronic transactions and digital currencies like central bank digital currency, and cryptocurrency. In recent years, there has been a generalized progress in most regions, and more payments are being made with instruments other than cash, reflecting a safer, more efficient, and more inclusive provision of payment and settlement services in Africa.

Figure 1: Currency transformation



Source: Agpaytech

Today, digital payment services and infrastructure in Africa have developed rapidly to meet the financial demand and needs of governments, corporate firms and individuals. Digital financial services in Africa include online processed payment transactions, mobile payments, point of sale, credit card, cross-border payments and remittance sending, electronic banking, payment via social networks, mobile apps and many others.

Table 1: Digital payment methods in Africa

Method	Details
USSD payment	Mobile money services, such as M-Pesa (Kenya), MTN Mobile Money (in various African countries), and Orange Money (in various African countries), were widely adopted. Users could create accounts linked to their mobile phone numbers and use them to send and receive money, pay bills, buy airtime, and access basic financial services.
Mobile Banking Apps	Many African banks and financial institutions have developed mobile banking apps that allow customers to check account balances, transfer funds, pay bills, and even apply for loans using their smartphones.
Digital Wallets	Digital wallets, such as Paga (Nigeria), Flutterwave (Nigeria), and PesaLink (Kenya), offer users a convenient way to make payments and send money to others. These wallets could be linked to bank accounts or funded separately.
Online Payment Gateways	E-commerce platforms and businesses across Africa integrated with online payment gateways like Paystack (Nigeria), CHIPSS gh-link, and DPO Group (multiple African countries) to enable customers to make online purchases using debit cards, credit cards, and other digital payment methods.
QR Code Payments	QR code-based payment solutions, like Scan to Pay, became increasingly popular, allowing users to make payments by scanning QR codes displayed at merchants' locations. Countries like South Africa, Ghana, Nigeria, Kenya, etc, have all introduced QR code payment method.
Card Payments	Debit and credit card usage was growing in urban areas, and point-of-sale (POS) terminals were becoming more common in retail establishments. South Africa dominates the card payment market in Africa.
Private digital currency	Cryptocurrencies and stablecoins like Bitcoin, Ethereum, Stellar, etc, are gaining some adoption in Africa (e.g. Central Africa Republic and South Africa). Although there is skepticism on the regulatory and risk concerns surrounding the private digital currencies.
Central Bank Digital Currency	Central banks are getting involved in the retail money market by issuing retail or wholesale CBDC, which is the digital currency version of the paper currency. Nigeria launched eNaira whilst Ghana is piloting eCedi. Other African central banks are researching the feasibility of issuing CBDCs.

Source: Agpaytech



The Central Bank Digital Currency (CBDC)

The Central Bank Digital Currency (CBDC)

The CBDC is becoming a new important project for central banks, and there is at least one CBDC project ongoing in each of the continents worldwide. Digital central bank money is being used as a complement to paper/coin money, and it has the same value and purpose as physical cash. CBDC is a new form of electronic money that, unlike well-known cryptocurrencies, e.g. Bitcoin or Ether, is issued by the central bank of a country. It is a digital version of state money or banknote/coin also known as fiat currency, which is different from private or community-based digital currency due to its legality within a jurisdiction or collaborative usage as in the case of multi-CBDC projects.



According to the 2021 BIS survey of central banks, 86% of central banks are actively researching the potential for CBDCs, 60% are experimenting with the technology and 14% are deploying pilot projects.

The interest in CBDC has grown due to some successful implementation of CBDC projects like the Chinese digital yuan (e-CNY), the Bahamas Sand Dollar, and the eNaira from Nigeria. According to the 2021 BIS survey of central banks, 86% of central banks are actively researching the potential for CBDCs, 60% are experimenting with the technology and 14% are deploying pilot projects. Also, the Payment Benchmark Report (2023) found that 83% of central banks are working on projects investigating CBDC for retail payment purposes. The earliest digital currencies include the Bahamian Sand Dollar, Jamaica's JAM-DEX, the Caribbean Islands, and Nigeria's eNaira.

The issuance of CBDC could have implications for the banking and other payment services providers in the payment industry, yet the policy goal has been financial inclusion, access to payments, improving monetary sovereignty and payment efficiency (Soderberg et al., 2022; Mancini-Griffoli et al., 2018). Recent CBDC scholars have debunked the negative effects of competition such as the disintermediation of commercial banks, and argued for the hybrid model of CBDC such that banks and payment service providers still hold the market power to distribute to individuals (Chiu et al. (2019).

CBDC Features in Consideration

CBDC represents a digital form of a country's official currency, issued and regulated by its central bank. While the specific features of CBDC can vary from one country to another, there are several global features or characteristics commonly associated with CBDCs.

Table 2: General characteristics of CBDCs

Key features	Insight
Philosophy	<ul style="list-style-type: none"> ▶ Gain state control of digital money ▶ Coexist with all payment systems ▶ Promote financial inclusion ▶ Wider digitalization and online business
Purpose	<ul style="list-style-type: none"> ▶ prove financial accessibility ▶ Enhance payment efficiency ▶ Reduce illicit use of money
International cooperation	<ul style="list-style-type: none"> ▶ Potential for cross-border interoperability and payment settlement ▶ Improve international trade and business
Types	<ul style="list-style-type: none"> ▶ Wholesale CBDC ▶ Retail CBDC
Design Model	<ul style="list-style-type: none"> ▶ Hybrid or intermediated ▶ Direct
Issuance approach	<ul style="list-style-type: none"> ▶ Online ▶ Offline
Design and technology	<ul style="list-style-type: none"> ▶ DLT ▶ Non-DLT
Operational considerations	<ul style="list-style-type: none"> ▶ Account and token-based ▶ Interoperable/ Cross-border CBDC ▶ Compatibility with existing payment systems ▶ Security and Privacy concerns ▶ Interest and non-interest-bearing ▶ Wallet limit ▶ Diaspora remittance

Source: Agpaytech



Like in the other continents, many central banks in Africa are exploring the possibility of issuing CBDC that will be minted, controlled, and issued by the state. Although many African nations have announced their interest in issuing CBDC, few have released the proof-of-concept or plan, while others are researching the feasibility of the project. About 67.3% of central banks in Africa have not shown interest or are yet to make pronouncements on their intent to issue CBDC. Also, 32.7% which represent seventeen (17) countries in Africa are in different stages of CBDC development (research, pilot, or launch). Nigeria and Ghana are in the advanced stages of the CBDC exploitation. For instance, Nigeria is the first and only country that has launched its eNaira in Africa as of October 2023, whereas Ghana's eCedi is in the piloting stage. Nigeria partnered with Bitt Inc. and Ghana contracted Giesecke+Devrient (G+D) as the technology service provider. Both countries are exploring the offline and online versions of digital currency which will co-exist with the various existing payment systems. Some countries have withheld their plans to issue CBDCs in the short and medium periods. For example, on 2 June 2023, Kenya released a discussion paper on their CBDC which prioritized strengthening innovations around the existing payment ecosystem, and therefore the implementation of a CBDC may not be a priority in Kenya in the short to medium term. In terms of wholesale CBDC and CBDC projects, only the South African Reserve Bank has introduced a wholesale CBDC known as "Project Khokha" and "Project Dunbar". The Project Dunbar brings together the Reserve Bank of Australia, Bank Negara Malaysia, the Monetary Authority of Singapore, and the South African Reserve Bank with the BIS to experiment and facilitate direct cross-border transactions between financial institutions in different currencies. Table 3 exhibits the list of African countries, central banks and status in the quest to issue digital currency.

Table 3: CBDC in Africa

SN	Country	Central Bank	Status	Type	Technology Provider
1	Nigeria (e-Naira)	Central Bank of Nigeria	Launched	Retail	Bitt Inc. Hyperledger Fabric
2	Ghana (eCedi)	Bank of Ghana	Pilot	Retail	(G+D) Filia
3	Kenya	Central Bank of Kenya	Suspended	Retail	N/A
4	Madagascar (e-Ariary)	Banky Foiben'i Madagasikara	Research	Retail	
5	Mauritius	Bank of Mauritius	Research	Retail	
6	Morocco	Bank-Al-Maghrib	Research	Retail	
7	Namibia	Bank of Namibia	Research	Retail	
8	Egypt	Central Bank of Egypt	Research	Retail	
9	Rwanda	National Bank of Rwanda	Research	Retail, Wholesale	
10	South Africa (Project Khokha)	South African Reserve Bank	Piloting	Wholesale	
11	Tanzania	Bank of Tanzania	Research	Retail	
12	Tunisia	Central Bank of Tunisia	Research	Retail	
13	Zimbabwe	Reserve Bank of Zimbabwe	Research	Retail	
14	Eswatini	Central Bank of Eswatini	Research	Retail	
15	Uganda	Bank of Uganda	Research	Retail	
16	Zambia	Bank of Zambia	Research	Retail	
17	Algeria	Bank of Algeria	Research	Retail	

Source: Agpaytech

While several central banks in Africa have announced interest in potential CBDC projects, others are yet to make a public pronouncement. The majority of them are in the Northern and Central African part of the African region like the francophone countries. They constitute 67.3%. Table 4 shows countries that have not announced their interest in CBDC publicly.

Table 4: African countries yet to announce their CBDC stand

SN	Country	Currency	ISO-4217	Status
1	Angola	Angolan kwanza	AOA	Not yet
2	Benin	West African CFA franc	XOF	Not yet
3	Botswana	Botswana pula	BWP	Not yet
4	Burkina Faso	West African CFA franc	XOF	Not yet
5	Burundi	Burundi franc	BIF	Not yet
6	Cabo Verde	Cabo Verdean escudo	CVE	Not yet
7	Cameroon	Central African CFA franc	XAF	Not yet
8	Central African Republic	Central African CFA franc	XAF	Not yet
9	Chad	Central African CFA franc	XAF	Not yet
10	Comoros	Comorian franc	KMF	Not yet
11	Congo, Democratic Republic of the	Congolese franc	CDF	Not yet
12	Congo, Republic of the	Central African CFA franc	XAF	Not yet
13	Cote d'Ivoire	West African CFA franc	XOF	Not yet
14	Djibouti	Djiboutian franc	DJF	Not yet
15	Equatorial Guinea	Central African CFA franc	XAF	Not yet
16	Eritrea	Eritrean nakfa	ERN	Not yet
17	Ethiopia	Ethiopian birr	ETB	Not yet
18	Gabon	Central African CFA franc	XAF	Not yet
19	Gambia	Gambian dalasi	GMD	Not yet

SN	Country	Currency	ISO-4217	Status
20	Guinea	Guinean franc	GNF	Not yet
21	Guinea-Bissau	West African CFA franc	XOF	Not yet
23	Lesotho	Lesotho loti	LSL	Not yet
24	Libya	Libyan dinar	LYD	Not yet
25	Malawi	Malawian kwacha	MWK	Not yet
26	Mali	West African CFA franc	XOF	Not yet
27	Mauritania	Mauritanian ouguiya	MRU	Not yet
28	Mozambique	Mozambican metical	MZN	Not yet
29	Niger	West African CFA franc	XOF	Not yet
30	Sao Tome and Principe	Sao Tome and Principe dobra	STN	Not yet
31	Senegal	West African CFA franc	XOF	Not yet
32	Seychelles	Seychellois rupee	SCR	Not yet
33	Sierra Leone	Sierra Leonean leone	SLL	Not yet
34	Somalia	Somali shilling	SOS	Not yet
35	South Sudan	South Sudanese pound	SSP	Not yet
36	Sudan	Sudanese pound	SDG	Not yet
37	Togo	West African CFA franc	XOF	Not yet

Source: Agpaytech



CBDC by Country Adoption

The Central Bank Digital Currency (CBDC)

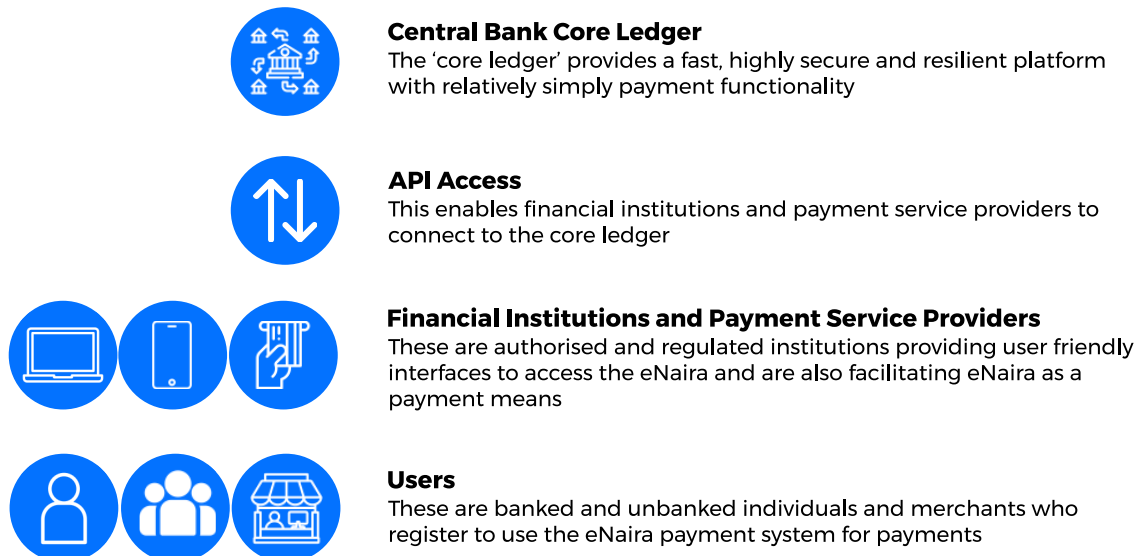
NIGERIA

The Central Bank of Nigeria (CBN) began its CBDC journey in 2017, with extensive study, consultations, identification of use cases and the testing of the CBDC concept in a Sandbox environment. eNaira is a central bank digital currency (CBDC) backed by law, the full sovereignty of Nigeria, issued by the Central Bank of Nigeria as a legal tender. The eNaira is like the physical Naira, which is the official tender of Nigeria and is a liability of the CBN. The eNaira and Naira are always exchanged 1:1. It is the digital form of the Naira and is used just like cash. The eNaira wallet is a digital storage that holds the eNaira. The eNaira wallet is required to access, hold and use eNaira. eNaira is a unit of account, store of value and medium of exchange. The eNaira was launched and activated on 25 October 2021 by President Muhammad Buhari, under the slogan: "Same Naira, More Possibilities". It became Africa's first CBDC.

The core influence of the eNaira adoption was the shift from the use of cash to digital payments to a record of 2.7 billion transactions valued at NGN 162.9 trillion as of 2020. The eNaira is a two-tiered (hybrid) CBDC. CBN is responsible for issuing the eNaira while it leverages the existing financial system and actors such as the financial institutions in directing engagement with users for distribution of the CBDC, payment facilitation, dispute resolution and other roles. eNaira transactions are executed using a proprietary software platform called "Digital Currency Management System (DCMS)" developed by Bitt Inc., the technology service provider of eNaira. The software uses Hyperledger Fabric as the underlying transaction network or ledger, a variant of distributed ledger technology (DLT). As transactions are executed through the applications or APIs provided through the DCMS, the DCMS Numa queues and submits to the Hyperledger Fabric, the underlying transaction network, to be settled in real-time

In terms of the eNaira functionalities, it complements existing payment options available via mobile banking apps, point of sale terminals, USSD, quick response codes, and Internet banking amongst others. channels. Using the wallet tier and limit based on the KYC, the Bank Verification Number (BVN) and the National Identity Number (NIN) are the unique identifiers for onboarding bank and non-bank account holders.

Figure 2 eNaira design structure

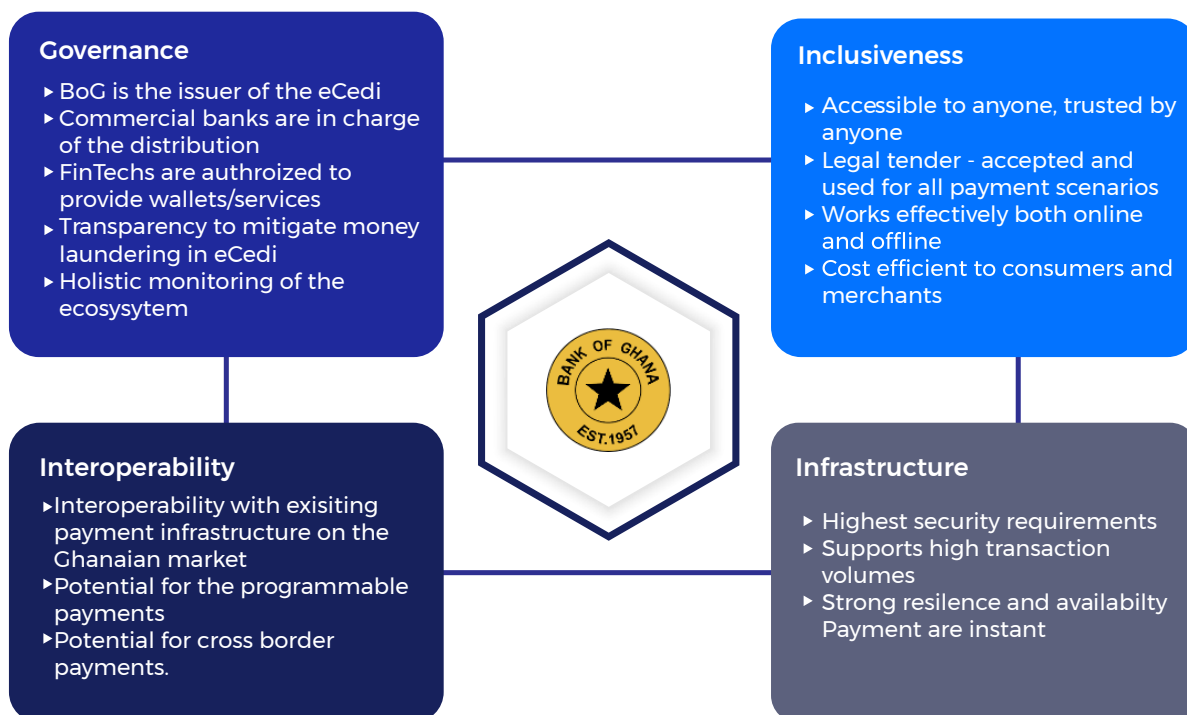


Ghana

Apart from the eNaira, the second most advanced CBDC is Ghana's eCedi. The Bank of Ghana to meet the strategic goals of digitization of the Ghanaian economy, foster financial inclusion and consumer adoption of digital payments as well as address the risk of unregulated private virtual assets has declared to issue digital Cedi (eCedi). According to the Bank of Ghana, the eCedi will be under the full control of BoG, which is the only entity to create and destroy digital cash. From the point of the CBDC taxonomy, the eCedi is a retail token-based CBDC, designed to meet both merchant and client needs.

In terms of payment, the eCedi is dependent on public acceptance and must provide real benefits for the users. Bank of Ghana has therefore piloted both the online and offline payment scenarios of the digital Cedi. The pilot saw the testing of online and offline versions of the eCedi in Accra, Tarkwa, and Sefwi Asafo. The pilot has unearthed useful insights on the impact of the initiative of the Bank which will prove instrumental in the event of a full-scale deployment of the eCedi. Bank of Ghana anticipates the existing universal QR codes to be integrated into the eCedi ecosystem and ensures its interoperability with other digital financial systems/products within the national payment ecosystem.

Figure 3: eCedi policy strategy



Source: Bank of Ghana

South Africa

On 25 May 2021, the South African Reserve Bank (SARB) embarked on a study to investigate the feasibility, desirability and appropriateness of a central bank digital currency (CBDC) as electronic legal tender, for general-purpose retail use, complementary to cash. This is different from Project Khokha which focuses on the settlement of high-value transactions between commercial banks and other stakeholders at the wholesale level. SARB retail CBDC feasibility study focuses on practical experimentation across different emerging technology platforms, taking into account a variety of factors, including policy, regulatory, security, and risk management implications.

Zambia

The Reserve Bank of Zimbabwe (RBZ) is preparing to issue RBZ Gold-Backed Digital Tokens. The RBZ Gold-backed Digital Tokens are being issued to expand the value-preserving instruments available in the economy, enhance the divisibility of the investment instruments and widen their access and usage by the public. The digital tokens will be available for sale, through banks, in both foreign and local currency. Banks will create dedicated or specific accounts for the holding of the gold-backed digital tokens (e-gold wallets or e-gold cards). Holders of physical gold coins, at their discretion, will be able to exchange or convert, through the banking system, the physical gold coins into gold-backed digital tokens. The digital tokens held in either e-gold wallets or e-gold cards will be tradable and capable of facilitating Person-to-Person (P2P) and Person-to-Business (P2B) transactions and settlements.

Namibia

In October 2022, the Bank of Namibia published a Consultation Paper on Central Bank Digital Currencies (CBDCs) to demonstrate its commitment, continued cooperation and dialogue with the industry, private sector innovators, the FinTech community, and other stakeholders in transforming the financial sector for the prosperity of all Namibians.

Mauritius

The Bank of Mauritius (Bank) on 2 June 2023 released a public consultation paper on the issuance of a Central Bank Digital Currency (CBDC), the Digital Rupee. The Bank intends to provide the public with a Digital Rupee that is safe and convenient to use in everyday life. In that regard, since the inception of the project in 2020, the Bank has adopted a prudent approach in its study of the benefits of a CBDC and the design of the Digital Rupee.

Other countries at the research stage

Except for Nigeria and Ghana which are at the implementation and piloting stages respectively, the following African nations have made public pronouncements or shown interest through press releases; Madagascar, Mauritius, Morocco, Namibia, Egypt, Rwanda, Tanzania, Tunisia, Zimbabwe, Eswatini, Uganda, Zambia, and Algeria.

Countries where CBDC is Suspended

However, the Central Bank of Kenya (CBK) issued a Discussion Paper on Central Bank Digital Currency and sought views from the public on the potential applicability of a Central Bank Digital Currency (CBDC) in Kenya. In June 2023, Kenya released the output of the discussion paper on their CBDC survey. The Bank argued that the implementation of a CBDC in Kenya may not be a compelling priority in the short to medium term. The Bank has deferred the decision on the adoption of CBDC to strengthen innovations around the existing payment ecosystem.



For instance, linking eNaira, eCedi, and e-Ariary will allow interoperable functions, and exchange of payments in local currency to reduce frictions in cross-border payment.

Connecting Regions: Multi-CBDC Projects in Africa

Most central banks are aiming to bridge the cross-border and remittance payment inefficiencies such as cost, delays and risk through interoperable multi-CBDC payment platforms. A multi-CBDC interlinks different CBDCs and currencies into a single payment interface with the opportunity to pay in local currency. Multi-CBDC arrangements are preferable to proposals that involve the creation of a global private-sector global stablecoin. Instead, they look to foster a diversity of convertible national currencies and strengthen monetary sovereignty in the digital age (Auera et al., 2021).

However, one lacking project of CBDC in Africa is the interlink CBDC research to build a multi-CBDC that could probably link one CBDC to the other. For instance, linking eNaira, eCedi, and e-Ariary will allow interoperable functions, and exchange of payments in local currency to reduce frictions in cross-border payment. This experiment is long overdue as most of Europe and Asia are piloting multi-CBDC projects.

Although South African Reserve Bank is participating in a joint CBDC “Project Dunbar”. The Project Dunbar brings together the Reserve Bank of Australia, Bank Negara Malaysia, the Monetary Authority of Singapore, and the South African Reserve Bank with the BIS to experiment and facilitate direct cross-border transactions between financial institutions in different currencies. However, the collaboration is with non-African central banks. To facilitate and promote research interest in joint CBDC projects in the African region, this study put forth key multi-CBDC-related projects that governors and central banks can learn from in Table 5.

Table 5: Examples of cross-border CBDC projects worldwide

Project	Participants	Purpose
Project Icebreaker	BIS Innovation Hub Nordic Centre, Bank of Israel, Norges Bank, and Sveriges Riksbank	Cross-border and cross-currency CBDC
Nexus	BISIH Singapore Centre is collaborating with the central banks of Indonesia, Italy, Malaysia, the Philippines, Singapore, and Thailand	It aims to enable cross-border payments in less than 60 seconds.
Project Mariana	Switzerland, Singapore, Eurosystem BIS Innovation Hub Centres, the Bank of France, the Monetary Authority of Singapore, and the Swiss National Bank	To automate foreign exchange markets and settlement, potentially improving cross-border payments.
mBridge	The BIS Innovation Hub Hong Kong Centre, the Hong Kong Monetary Authority, the Bank of Thailand, the Digital Currency Institute of the People's Bank of China, and the Central Bank of the United Arab Emirates	Multi-CBDC for cross-border payments
Project Dunbar	Project Dunbar brings together the Reserve Bank of Australia, Bank Negara Malaysia, Monetary Authority of Singapore, and South African Reserve Bank with the BIS	Facilitate direct cross-border transactions between financial institutions in different currencies.
Project Inthanon-LionRock2	Hong Kong Monetary Authority (HKMA) and the Bank of Thailand (BoT) (BISIH)	Explores the use of DLT for facilitating real-time cross-border funds transfers
Project Jura	The Swiss Centre, together with the Bank of France, the Swiss National Bank, and a private sector consortium, including the SIX Digital Exchange (SDX)	Explores the direct transfer of euro and Swiss franc wCBDCs between French and Swiss commercial banks on a single DLT platform

Source: Bank for International Settlement (BIS)

Justification for CBDC in Africa

Government and central banks entering the retail finance market largely dominated by private entities seem uncomfortable. This is because private corporations as well as governments have adequate innovative real-time and instant payment infrastructure that can be strengthened to achieve greater efficiency in the Africa region. For instance, mobile money payment is widely accepted and the adoption rate grows every year significantly. Moreover, the consumers' intrinsic value in cash and existing payment methods are unchanging and retail CBDC looks like a mere duplication, misplaced priority and intention to invade and compete with the current market structures. While all the aforementioned reasons sound perfect, the need for CBDC, with the authority from the state is essential in the following ways;

Stability and Regulatory Means

There are significant differences between Bitcoin, like decentralized blockchain-based cryptocurrencies, and fiat money, such as stability and regulatory means. Thus, these decentralized cryptocurrencies in Africa cannot be an option for digital fiat money. And central banks in Africa and worldwide are researching their digital fiat money, popularly termed Central Bank Digital Currency (CBDC). Thus, there is a need to make proper regulations, statutes, and provisions backed by the state and central bank codes to run digital currency.

Cross-Border Transaction

There are too many paper systems in Africa cross-border transaction activities and countless currencies. This makes international remittance difficult and comes with a high cost. From a cross-border aspect, digital currencies, including CBDCs, are likely to reduce transaction costs for end-users, and hence the transfer of remittance is expected to be easier and cheaper.

Keeping pace with financial innovation

The fear of missing out (FOMO) has led to the creation of CBDCs. A CBDC uses technology to create a digital format of a country's or region's currency. The digital revolution is transforming financial growth, and global governmental agencies do not want to be left out. There is a need for central banks to be proactive and research ahead of the need for fiat currency adoption before they become late entrants.

Financial Inclusion

One of Africa's significant challenges is that the majority of a country's population is excluded from the financial system. Retail CBDC can increase access and usability for users, reduce e-commerce and cross-border payment costs, and help enhance monetary policy.

Reduce Cryptocurrency Dominance in Africa

Before CBDC, digital currencies in cryptocurrencies already existed and even took over the financial market. Many people were demanding and using cryptocurrencies for several transactional purposes. Central banks need to be innovative and break the dominance before it is too late. The implementation of CBDCs and linking them to other nations' CBDCs for real-time cross-border payment will reduce the dependency on private digital currency.

Define C

The
Optimizer
The Planner

Groups of
friends
travelling
together

Understand RC

2. PROBLEMS / PAINS

Which problems do you solve for your customer?
There could be more than one, explore different ones.
eg. existing solar solutions for private houses are not considered
a good investment (1).

X

MANY

Potential Challenges of CBDC in Africa

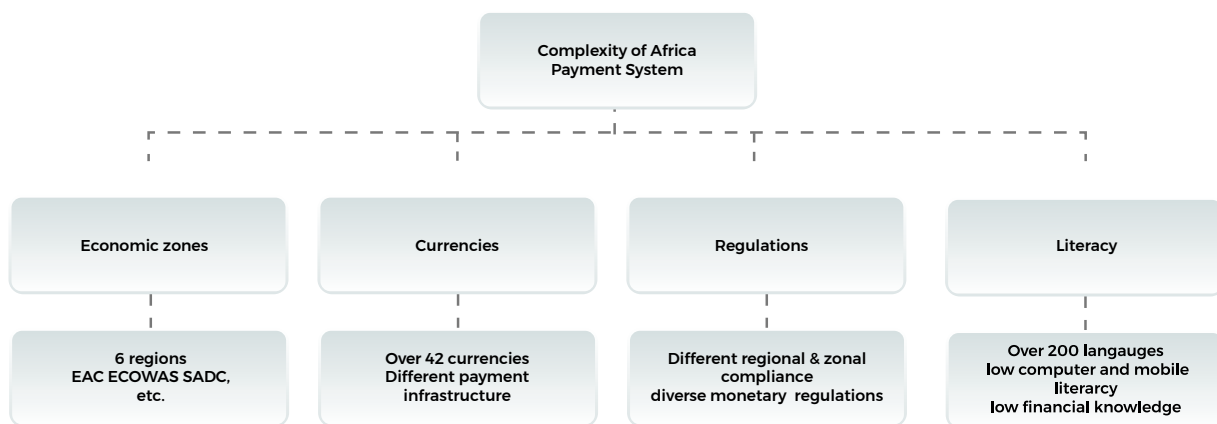


Firstly, the introduction of a CBDC requires a robust technological infrastructure to support it. This includes having a secure and reliable payment system, internet connectivity, and digital identity verification systems.

The complexity of the African payment system

The complexity of payment systems in Africa is primarily due to the intersecting economic zones in Africa. Thus, several regional monetary unions and economic regional communities in Africa are involved with unequal payment systems. There is the existence of overlapping regional and country-based integration initiatives coupled with countless monetary currencies and denominations in the continent. The adoption of a CBDC in a country that has not yet developed the necessary payment systems and infrastructure could encounter some challenges. This makes country-specific CBDC more feasible than multi-CBDC. Firstly, the introduction of a CBDC requires a robust technological infrastructure to support it. This includes having a secure and reliable payment system, internet connectivity, and digital identity verification systems. If a country does not have these in place, it may struggle to establish a CBDC framework.

Figure 4: Complex payment market

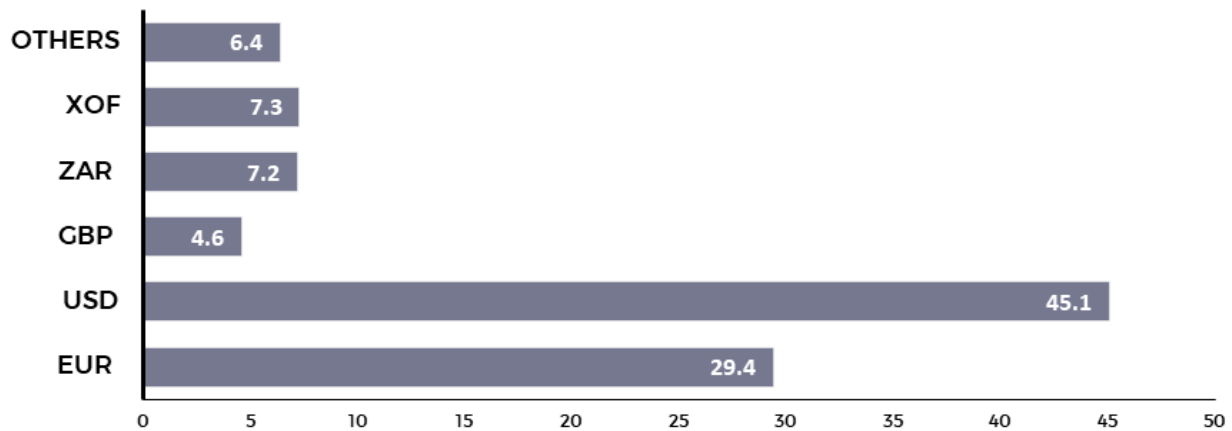


Source: Agpaytech Research

Currencies in Circulation

The US dollar accounted for more than 45.1% of payments from Africa in 2017. The Euro is increasing in importance, by 29.4%. Despite the over 42 currencies in the African continent none is used as a regional trade currency and this remains a constraint to intra-Africa trade and cross-border CBDC payments. The notable currencies are the West African CFA franc, used in 8 independent countries, and the Central African CFA franc, used in 6 other nations. Their relative stability is guaranteed to utilize the fixed exchange rate; currently, both are pegged to the Euro. However, the only local currency ranked among the most traded in the international forex market is the South African rand, placed at 20th position globally. The multi-CBDC project involves many currencies and requires the participating financial institutions to have vostro and nostro accounts to serve clients' needs which might not be possible for banks and PSPs to cooperate fully. The lack of recognition of the many African currencies poses a challenge in attracting CBDC projects from developed countries.

Figure 5: Africa's currency usage for cross-border commercial payments



Source: Source: SWIFT BI Watch, 2017

Payment Infrastructure

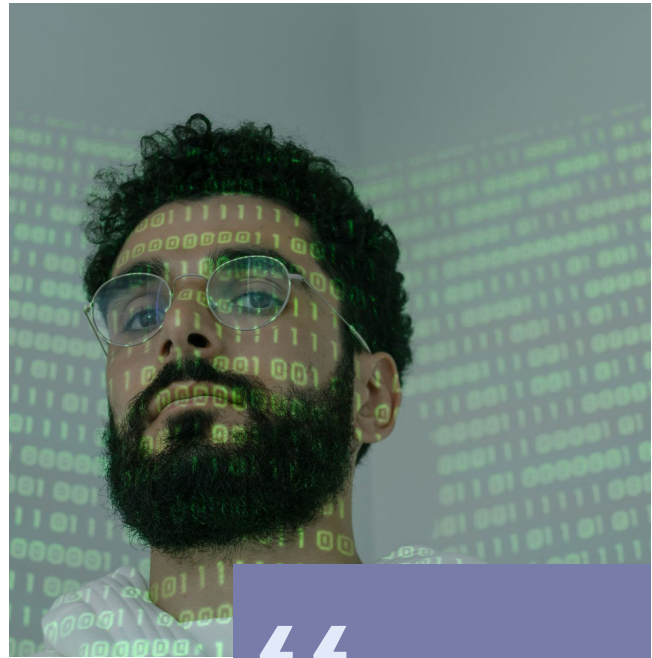
Central banks that participate in the CBDC ecosystem require infrastructure that includes both virtual and physical components to connect them securely. Thus, African countries must understand that the introduction of a CBDC requires a robust technological infrastructure to support it. This includes having a secure and reliable payment system, internet connectivity, and digital identity verification systems. If a country does not have these in place, it may struggle to establish a CBDC framework.

A CBDC adoption requires a strong financial infrastructure ecosystem that connects with industry partners and ecosystems like financial institutions, payment processors, foreign exchanges, cross-border multi-currency payment platforms, FinTech companies, digital wallet providers, card networks, real-time gross settlement systems (RTGS), cloud network, telecom providers and internet service providers. There will be opportunities for central banks to participate in related ecosystems as the digital currencies market develops and interoperates with other financial services and trading ecosystems if the right and advanced infrastructure is available. This will positively influence user adoption.

Onboarding Verification IDs

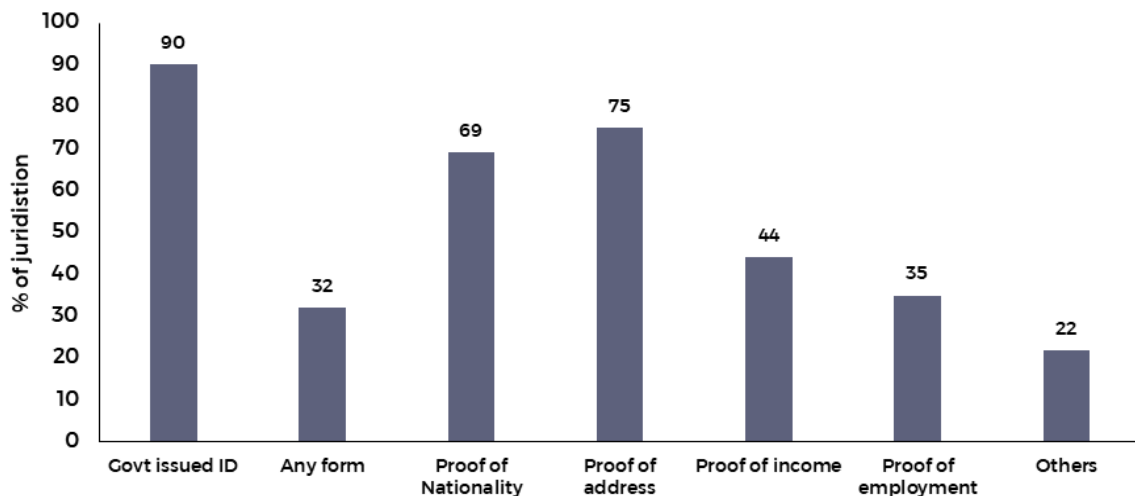
Both card IDs and digital identity or electronic identity (e-ID) are increasingly important in today's interconnected world, where individuals interact with various online platforms, services, and systems. The World Bank and ID4D (2021) estimated that approximately 850 million people in the world do not have an official ID, and over 90% of this total represents people living in lower-middle-income and low-income countries. Around half of these 850 million are children, and half live in Sub-Saharan Africa. World Bank (2018) and Metz and Clark (2019), analysis using the ID4D-Findex survey data also shows that the remaining ID coverage gap is largely concentrated among potentially disadvantaged groups, including women, younger people, less educated people, rural dwellers, and those living in poverty.

Many people in the African region are excluded from digital payment opportunities due to not having the right identification proof. For both account and token-based CBDCs, there is a need to have acceptable identification to onboard users. Due to inadequate ID systems, many countries have resulted in a tier wallet limit system where the level of knowing your customer (KYC) is associated with the transaction limit.



*The World Bank and ID4D (2021) estimated that approximately **850 million people** in the world do not have an official ID, and over 90% of this total represents people living in lower-middle-income and low-income countries.*

Figure 6: ID usage by the issuer



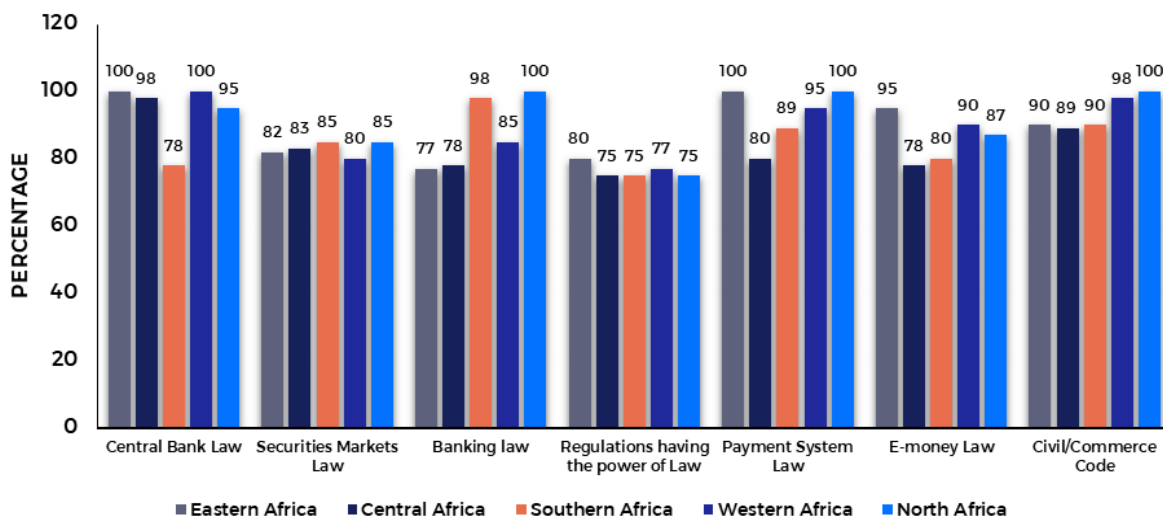
Source: ID4D 2017 Survey



CBDC Governance

Effective governing and governance mechanisms are essential in the implementation of CBDCs. For central banks to act as a provider, a regulator and actors, they must adhere to its regulations as the key pillar for a robust financial payment system and adoption. Central banks as a provider of retail CBDC needs to observe the retail finance market protocols and act as a self-check. Moreover, the complexity of the legislation and governance system among countries in Africa differ. This requires central banks to have common interests first, then develop a regulatory framework that could guide linking CBDCs. According to BIS, this may be achieved via common technical standards, linking multiple CBDCs through a familiar interface, and integrating various CBDCs in a single multi-CBDC system. Overlapping initiatives with sometimes conflicting provisions may prove to be an obstacle to achieving the objectives of each, at the very least, they squander resources of expertise and money, which are in short supply in Africa.

Figure 7: Legislation regulating payment and settlement systems



Source: Agpaytech Research



Making CBDCs Possible in Africa

CBDC Education

Widespread adoption of CBDC may require public education and incentives to encourage its use. Some individuals and businesses may be hesitant to adopt digital currency due to unfamiliarity or mistrust. Therefore, public awareness and justification of the CBDC use among other payment methods would increase the adoption rate. Most retail CBDCs such as the eNaira has been known to have low adoption rate. Recently, the Central Bank of Nigeria(CBN) has encouraged students of higher institutions across the country to embrace payment of their school fees through the use of its eNaira platform. Similarly, the Chinese government recently announced its intention to broaden the use of the e-CNY in educational institutions. That includes areas like scholarship distribution, tax payments, and school fees. Also, the e-CNY has been integrated into WeChat Pay and Alipay to promote public awareness, and payment options for users. Central banks planning to launch digital currencies should consider integrating them into the existing payment systems to promote financial inclusion.



Recently, the Central Bank of Nigeria(CBN) has encouraged students of higher institutions across the country to embrace payment of their school fees through the use of its eNaira platform

Data and Sandboxes Regulation

The financial products and services sector is highly regulated almost everywhere in the world because governments want to make sure that their citizens' money is safe and protected. Financial regulation is critical to protecting customers, but it can also hamper innovation by raising the barriers to entry into the sector so high that they keep new players out. Due to the complex payment systems in some countries in Africa, it is a great idea to introduce a regulatory sandbox to test CBDC use cases such as interoperability, merchants' transactions (C2B), government payments (G2P, P2G), data privacy, inbound remittance, identifying illicit transactions, KYC models solutions, cross-border payments and other use features.

Already, some countries in Africa have used the regulatory sandbox in a controlled environment that allows entrepreneurs, regulators, and other players in the FinTech industry to test out new financial products or services without being too constrained by inappropriate regulations. CBDCs in Africa should adopt a similar regulatory sandbox framework to discover the innovative solutions that CBDCs can offer to the existing payment market. A key example is the Zambia Central Bank Regulatory Sandbox. Moreover, this research has put forth a regulatory sandbox in Africa for reference purposes.

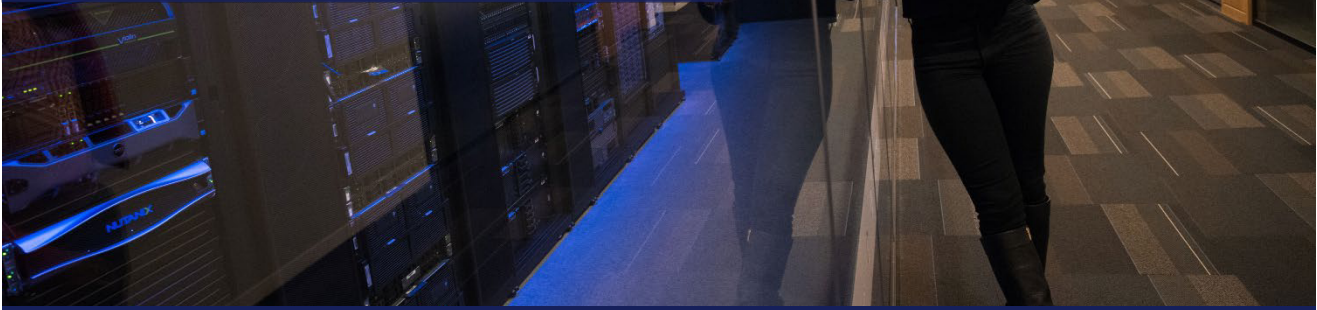
Table 6: State of the regulatory sandbox

Country	Regulatory sandbox
Kenya	Kenya's regulatory sandbox is under the Capital Markets Authority of Kenya (CMA). It was approved in March 2019 when the CMA started to accept applications for admission into the regulatory sandbox. Interested companies or individuals are expected to apply to be considered, following a list of requirements outlined in the Regulatory Sandbox Policy Guidance Note
Sierra Leone	Sierra Leone's Sandbox Regulatory Framework was launched in 2018. The process was started by the Bank of Sierra Leone with the help of the Financial Sector Deepening Africa (FSDA) and the United Nations Capital Development Fund (UNCDF), as part of the country's FinTech Initiative.
Rwanda	The National Bank of Rwanda (BNR) in 2022 decided to create an enabling regulatory environment for digital innovations or FinTechs by establishing a regulatory sandbox.
Mauritius	In Mauritius, companies apply for a Regulatory Sandbox License, permitting them to conduct business where there is no legal framework guiding the activities to be conducted. This License is provided by the Economic Development Board to eligible companies that are willing to invest in innovative projects. Mauritius permits both FinTech and non-FinTech companies to apply for the licenses, providing guidelines for each category
Ghana	The Bank of Ghana in collaboration with EMTECH Company recently launched a regulatory sandbox pilot program
Nigeria	The Central Bank of Nigeria released Nigeria's regulatory sandbox framework in January 2021. It targets FinTech and telecom solutions and will start to approve solution providers who apply for it on a cohort-by-cohort basis
Mozambique	Governor of the Banco de Moçambique, Rogério Zandemela, launched the 4th edition of the Regulatory Sandbox, an initiative aimed at tackling the challenges set forth by technological innovation in financial services. The project falls under the implementation of the 2016-2022 National Financial Inclusion Strategy, set to increase the use and access to financial services by the Mozambican population.
South Africa	The Intergovernmental FinTech Working Group (IFWG) is pleased to provide feedback on its inaugural regulatory sandbox (RSB) initiative, a framework used by regulators across the world to foster innovation in the financial services sector while keeping oversight of emerging risks.
Zambia	The Bank of Zambia (BoZ) launched its Central Bank Regulatory Sandbox in 2021 after identifying the need to develop regulations for FinTech companies to foster innovation whilst managing the risks these technologies may present

Source: Agpaytech



The eNaira hackathon is a joint project between CBN and the African FinTech Foundry (AFF) aimed to pool together a team of outstanding African entrepreneurs, developers, designers, solution developers, and problem solvers to create creative solutions for increased eNaira adoption.



Digital Currency Hackathon

Financial technology innovation challenges, webinars, and conferences such as hackathons among FinTechs, developers, and technocrats individuals would harness the digital currency talents in Africa. A hackathon is a time-bound, collaborative, and intensive event where individuals or teams work on creative and innovative projects, typically related to technology, software development, or problem-solving. Similarly, a hackathon is a sprint-like event where a group of people creates solutions to real-life problems on short notice. Two CBDC projects have opened for innovative challenges (hackathon). First was the eNaira hackathon. The eNaira hackathon is a joint project between CBN and the African FinTech Foundry (AFF) aimed to pool together a team of outstanding African entrepreneurs, developers, designers, solution developers, and problem solvers to create creative solutions for increased eNaira adoption. The overall goal of the hackathon was to make the eNaira the African gateway to the digital economy. The strategic objectives of the initiative include: driving financial inclusion, improving macroeconomic management and growth, facilitating cross-border trade, improving the value of the Naira by digitizing and democratizing Naira swap to other major currencies like USD, GBP, EURO, improving funds remittances, and improving payment efficiencies.

Furthermore, as part of the digital Cedi piloting, there is an innovation challenge dubbed the eCedi hackathon. eCedi hackathon was a joint initiative between the Bank of Ghana and EMTECH Inc. to provide opportunities for FinTech, developers and innovators to design innovative solutions that explore various use cases of a Central Bank Digital Currency (CBDC). The event provides a platform for developers, innovators, and blockchain enthusiasts to showcase their creativity by exploring the many possibilities of CBDC technology and contributing to the future of Ghana's digital financial ecosystem.

Conclusion

In conclusion, the analysis of the state of Central Bank Digital Currency (CBDC) in Africa has revealed a complex and evolving landscape. African nations are increasingly recognizing the potential benefits of CBDCs in enhancing financial inclusion, reducing transaction costs, and promoting economic growth. However, the implementation and adoption of CBDCs in Africa are still in their early stages, and several key challenges and considerations need to be addressed.

Firstly, the regulatory and technological infrastructure for CBDCs in Africa needs further development. Central banks must work closely with financial institutions, FinTech companies, and other stakeholders to establish a robust framework for CBDC issuance, distribution, and oversight. Ensuring the security and resilience of these digital currencies is of paramount importance.

Secondly, the diversity of economic conditions and financial systems across African countries requires a tailored approach to CBDC implementation. Each nation must consider its unique economic and financial circumstances when designing and implementing a CBDC to ensure that it addresses specific challenges and opportunities effectively.

Thirdly, collaboration and information-sharing between African countries can play a crucial role in fostering the successful adoption of multi-CBDCs. The sharing of best practices and experiences can help streamline the adoption process and create a more interconnected financial ecosystem within the continent.

Lastly, public awareness and education regarding CBDCs are essential for their acceptance and use. Central banks should engage in comprehensive public campaigns to inform citizens about the benefits, risks, and usage of CBDCs.

In the coming years, African central banks will continue to work towards developing and implementing CBDCs to modernize their financial systems. Success in this endeavor will depend on the ability of these institutions to navigate the challenges and leverage the opportunities that CBDCs present. By addressing these challenges, fostering collaboration, and prioritizing financial inclusion, African nations have the potential to realize the benefits of CBDCs in enhancing their economic stability and resilience. The state of CBDC in Africa is a dynamic and promising field that merits ongoing attention and investment to promote financial inclusion and economic growth throughout the continent.

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