

FINTECH DEVELOPMENTS In The SADC Region



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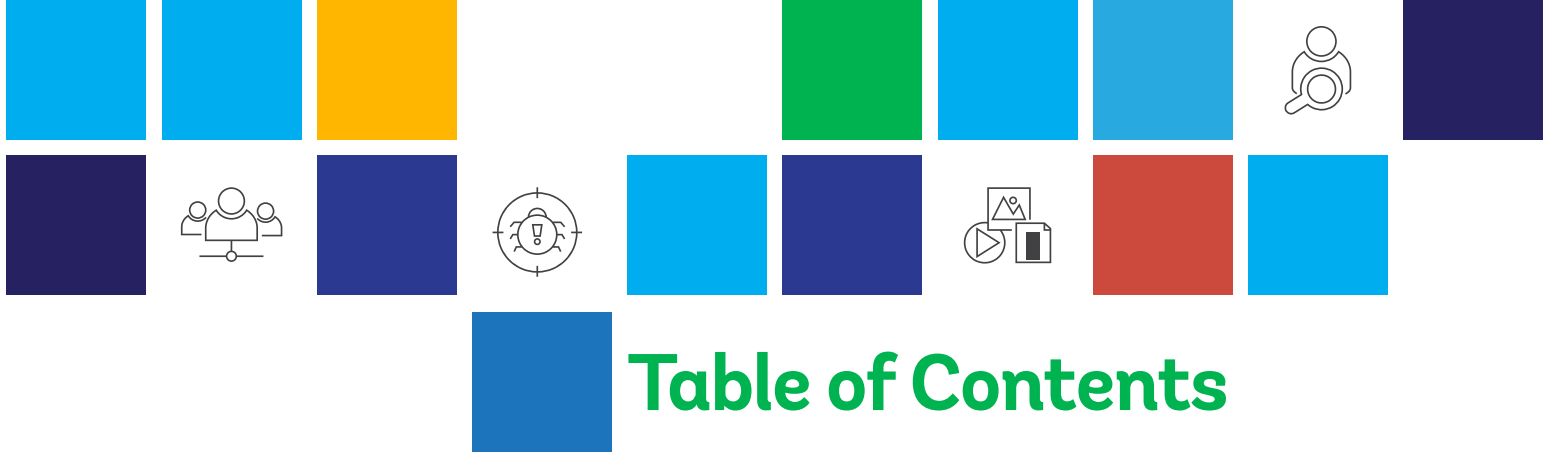


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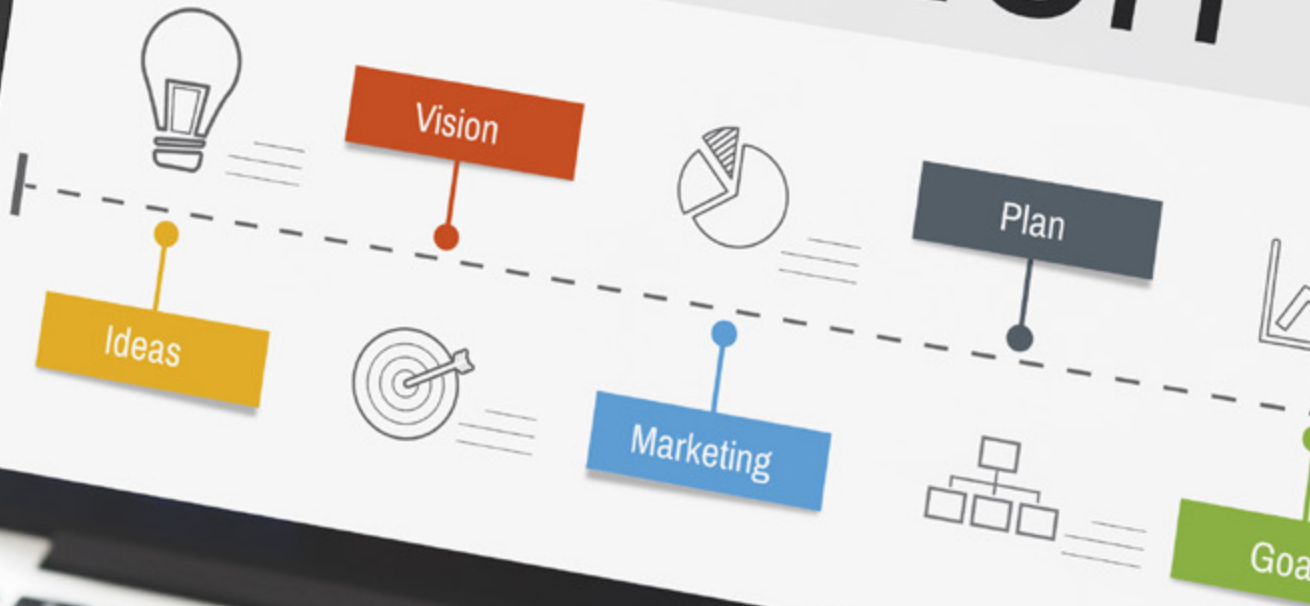
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Abbreviations and Acronyms



| | |
|------------------|-------------------------------------------------------------|
| AI | Artificial Intelligence |
| AfCFTA | African Continental Free Trade Area |
| AI | artificial intelligence |
| AML | anti-money laundering |
| API | application programming interface |
| CBDC | central bank digital currency |
| CCBG | Committee of Central Bank Governors |
| CFT | combating the financing of terrorism |
| DLT | distributed ledger technology |
| FAQ | frequently asked question |
| FIC | Financial Intelligence Centre |
| fintech | financial technology |
| G2P | government to person |
| ICT | information and communications technology |
| ID | identification |
| IEC | International Electrotechnical Commission |
| insurtech | insurance and technology |
| ISMS | information security management system |
| ISO | International Organization for Standardization |
| IT | information technology |
| KYC | know your customer |
| ML | machine learning |
| PCI DSS | Payment Card Industry Data Security Standard |
| PSP | payment service providers |
| P2G | person to government |
| regtech | regulatory technology |
| RSL | Regulatory Sandbox Licence |
| SADC | Southern African Development Community |
| SIPS | systemically important payment systems |
| suptech | supervisory technology |
| SWIFT | Society for Worldwide Interbank Financial Telecommunication |

FINTECH



Acknowledgments



This report constitutes contributions from the Financial Technology (Fintech) Working Group established by the Southern African Development Community (SADC) Committee of Central Bank Governors (CCBG) in 2018. The overall Fintech Working Group was organized into the following six working groups to contribute to the report.

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Executive Summary



Innovations in financial technology have the potential to fundamentally change the financial sector and the wider economy. Although still early in its evolution, financial technology (fintech) can, for example, promote financial inclusion, expand access to capital for individuals and small businesses, and, more broadly, reshape how society interacts with financial services. In addition, the COVID-19 pandemic has further increased consumer usage of digital financial services and fintech platforms, highlighting their significant benefits, challenges, and potential risks, especially in times of crisis and economic stress.

Central banks in the Southern African Development Community (SADC) region are adjusting their policies and legal and regulatory frameworks. In some cases, the goal is to foster fintech development for benefits such as greater financial inclusion. In other cases, efforts are focused on mitigating risks by responding to developments such as growth in crypto-assets. As fintech continues to evolve, stakeholders in this ecosystem, which includes the government and private sector, must actively participate in its development to ensure growth that maximizes value for the consumer and for the system in a safe and sustainable manner.

Policy makers, regulators, and supervisors worldwide find themselves in a regulatory dilemma when trying to achieve the right balance between enabling innovative fintech and safeguarding the financial system. There is no one-size-fits-all approach to addressing the challenge, and what works for one country may not work for another. Digital payments are usually an early area of innovation, followed by digital credit, investment and insurance products, and capital markets. There is no universal sequence, however, and one might see the use of cryptocurrency in a market that is otherwise nascent due to idiosyncratic factors.

Regional fintech strategies have focused on regulatory reforms, but the SADC region may also consider improvements in digital infrastructure, skills, and public adoption of fintech solutions. SADC countries still have large digital infrastructure constraints, inadequate digital skills, and a slow pace of digital innovation and entrepreneurship. Efforts should therefore be made to encourage investment in infrastructure and human capacity to foster growth in the fintech sector. Finally, a more collaborative approach to building awareness and marketing is also necessary to encourage public adoption of fintech solutions.

Policy and regulation of fintech in the SADC region is still in its infancy. Most SADC jurisdictions have yet to formulate national fintech strategies and enact necessary fintech legislation and regulations. The mapping exercise can help to identify

indications of inefficient markets and/or the absence of fintech activity where it might be expected and where fintech is expected to be in the forefront of the financial inclusion drive. Appropriate regulatory policies could then be formulated to catalyze fintech activity where necessary. Further, results of the mapping exercise could unearth emerging risks to the financial system, which would facilitate the formulation of the necessary public policies to safeguard the financial system and ensure financial stability across the region.

There are only a few country-level fintech strategic approaches, and SADC may also benefit from a regional strategy. The remaining SADC countries should establish policy, legal, and regulatory approaches to fintech that are responsive to their context and demographics. It also may be useful to consider formulating a regional fintech strategy that will assist with the monitoring, tracking, and oversight of fintech-related activity in the region.

For fintech to achieve its full potential, stakeholders must learn and collaborate to orient products and services toward broader objectives that benefit consumers, markets, and the economy. SADC countries can benefit from an overarching framework and supporting principles to establish a practical model to promote innovation but also maintain appropriate oversight of emerging risks. In addition to the framework, a regular self-assessment can be undertaken through a standardized survey that can track progress over time and allow for comparisons within the region.

SADC countries continue to monitor developments relating to crypto-assets and central bank digital currency (CBDC), and some are moving toward formulating policy positions and regulatory regimes.

The goal is to continue efforts to understand benefits but also manage risks, given the wide-ranging and profound implications of crypto-assets and CBDC. It is evident that policy and regulatory responses to crypto-assets and CBDC may need to weigh several policy objectives to maintain financial stability and consumer protection and ensure application of new technologies in the financial system that most likely will remain a desirable outcome of regulatory actions.

Finally, SADC countries may benefit from following good practices from international experience with innovation facilitation.

Defined good practice guidelines for developing innovation facilitators are intended to serve as a reference guide to develop mechanisms to engage with fintech and related stakeholders. Although not all fintech activities fall outside of existing regulatory frameworks, many areas emerged where the regulatory framework for fintech activities was unclear or nonexistent. Structured approaches include new laws and regulations, innovation hubs, regulatory sandboxes, and regulatory accelerators.

1. Introduction



Financial technology (fintech) development supports potential economic growth and poverty reduction by enhancing financial inclusion and financial sector productivity. The main challenge for central banks is maximizing the benefits of fintech development and associated reforms while minimizing potential risks to the financial system and consumers.

In May 2018, the Southern African Development Community (SADC) Committee of Central Bank Governors (CCBG) approved the establishment of a SADC CCBG Fintech Working Group. Among other tasks, the objective of the working group is to advise the CCBG on fintech developments, including crypto-assets, as they relate to central banks' mandates and make recommendations about fintech-prioritized programs and projects. The Fintech Working Group draws its membership from CCBG subcommittees, including Banking Supervision, Financial Markets, Information and Communications Technology, and Legal Macroeconomic, as well as other stakeholders.

The Fintech Working Group comprised six working groups that each focused on specific fintech initiatives. The terms of reference for the Fintech Working Group were adopted by the Payment Systems Subcommittee in September 2019, followed by the CCBG's approval. The CCBG Payment Systems Subcommittee was mandated to lead this initiative. This report consists of contributions from each of the six working groups, structured as separate sections.

First, the report maps the SADC fintech landscape and identifies fintech activities in operation across the SADC region. It also notes policies that have been instituted to facilitate the safe and secure provision of fintech activities and the existence of the necessary fintech regulatory frameworks. The mapping is expected to result in a repository of fintech service providers across the region and their fintech products.

Second, the report covers research that studies key factors underlying successful fintech strategies. This section assesses existing fintech strategies within the SADC region according to the framework developed. It also benchmarks existing fintech strategies in the SADC region against other regional formations with existing fintech strategies that are effective—for example, North America, South America, Asia, and the European Union.

Third, the report puts forward a framework and supporting principles to establish a practical model to promote innovation but also maintain appropriate oversight of emerging risks. The framework aims to foster innovation, entrepreneurship, and

competition, to address financial stability risks and risks to the regulatory perimeter from emerging technology and business models. Further, it expects to ensure that consumer protection and consumer risk exposure have been thoroughly considered and to strengthen financial inclusion in the SADC region.

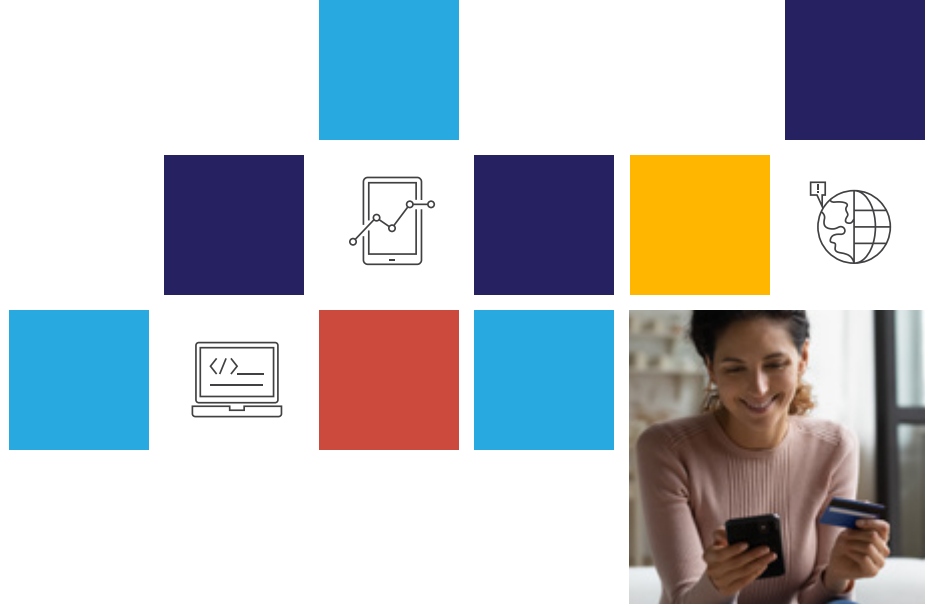
Fourth, the report provides a diagnostic tool to assess the fintech landscape. This section and its supporting appendix contain an analytical framework and survey that can be applied to monitor the fintech landscape to identify and rectify legal and regulatory gaps pertaining to fintech and crypto-asset developments in the SADC region. The survey instrument has been designed to provide insights into different cross-cutting areas and/or product themes within the jurisdiction. The survey instrument is expected to be used dynamically by SADC member states as a means of self-assessment against an overarching fintech regulatory framework.

Fifth, the report reviews the region's progress in formulating policy positions and regulatory regimes relating to crypto-assets and central bank digital currency (CBDC). The goal is to continue efforts to understand benefits but also manage risks, given the wide-ranging and profound implications of crypto-assets and CBDC. Noting the fast-moving developments with digitalization and the need for central banks to act swiftly and be at the forefront in this area, the review and analysis of best experiences will assist SADC members on further prioritization, given the complexity of the issue and the evolving regulatory environment.

Sixth, the report outlines good practice guidelines for establishing innovation facilitators. This section is intended to serve as a quick reference guide for SADC members seeking to develop mechanisms to engage with fintech and related stakeholders. Although not all fintech activities fall outside of existing regulatory frameworks, many areas have emerged where the regulatory framework for fintech activities is unclear or nonexistent. In response to these emergent scenarios, responses have included new laws, innovation offices, regulatory sandboxes, and reskilling.

Going forward, central banks and regulatory bodies will most certainly face new challenges as technology evolves and is applied to new products and services. Continuous efforts will be necessary to steer innovation in a desirable direction while minimizing potential risks to the financial system. Only with sufficient resources and access to timely and reliable information will central banks and regulatory bodies in the SADC region be able to understand innovative business models and their underlying risks, enabling them to assess potential implications and swiftly adjust policy and regulatory responses. In this context, continued cooperation and coordination at a regional level remain essential.

2. SADC Fintech Landscape



2.1. Background

Fintech developments are an important source of economic growth. With their ever-increasing customer base, fintech firms and large technology firms, often referred to as bigtechs, have the potential to rapidly scale up into market segments and quickly become systemically important. Therefore, they may require increased and frequent scrutiny by policy makers and regulators. In this regard, the mapping and measurement of fintech activity will aid and inform local, regional, and cross-border decisions around policy, strategy, and the fintech agenda and will provide a benchmark against which future developments can be measured.¹

Fintech metrics can be used to facilitate appropriate regulatory responses to the various risks generated by fintech activities, with a view to addressing public policy concerns. Insights drawn from the mapping and measurement of fintech activity can be used to formulate policies and strategies by a wide range of policy makers and regulators.

The specific objective of mapping the SADC fintech landscape is to identify fintech activities in operation across the SADC region, policies that have been instituted to facilitate the safe and secure provision of fintech activities, and the existence of the necessary fintech regulatory frameworks.

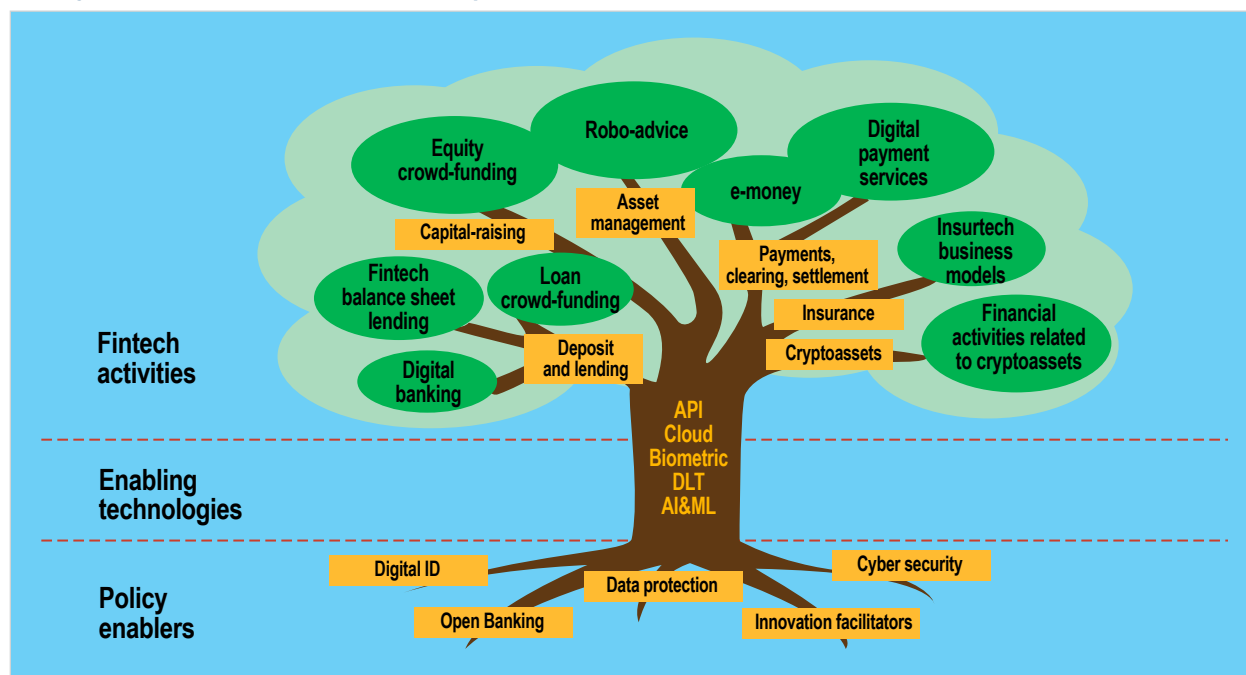
The mapping is expected to result in a repository of fintech service providers across the SADC region and their fintech products. This repository should help to identify and support innovative financial services and products (payments, credit, insurance, and savings) that facilitate access to domestic and regional payment services to promote financial inclusion. Further, the repository should assist in prioritizing the development of an appropriate regulatory environment for digital payment services, products, and new providers of electronic payment services.

2.2 Fintech Taxonomy Adopted

Working Group 1 adopted the Fintech Tree Conceptual Framework for mapping the SADC fintech landscape (figure 1). Designed by the Financial Stability Institute through a 2019 survey of policy responses to fintech across 31 jurisdictions, the Fintech Tree Conceptual Framework provides a guide for the classification of fintech. The framework defines fintech based on three key features: fintech activities, enabling technologies, and policy enablers.

¹ This section was developed by Working Group 1 of the overall SADC CCBG Fintech Working Group.

■ Figure 1: The Fintech Tree Conceptual Framework



Source: Ehrentraud et al. 2020.

Note: AI = artificial intelligence; API = application programming interface; DLT = distributed ledger technology; ID = identification; ML = machine learning.

Fintech activities are classified per the different financial-service sectors: deposits and lending; capital raising and alternative sources of funding; asset management, trading, and related services; and payments, clearing, and settlement services. (The insurance sector and crypto-assets are classified as an independent sector.) The conceptual framework then identifies nine fintech-specific activities: digital banking, fintech balance sheet lending, loan crowdfunding, equity crowdfunding, robo-advice, digital payments, e-money, insurance, and technology (insurtech) business models, and financial services relating to crypto-assets.

The enabling technologies underlying the operation of fintech activities are application programming interfaces (APIs), artificial intelligence (AI), cloud computing, machine learning (ML), biometric identification (ID), and distributed ledger technology (DLT).

Policy enablers that form the foundation for the provision of fintech services include open banking regulations, statutes, and policies on data protection, cybersecurity, and digital ID as well as policies relating to innovation hubs and regulatory sandboxes.

Working Group 1 developed a template to map the fintech landscape and fintech activities by all SADC central banks. The template is based on the Fintech Tree Conceptual Framework taxonomy. A detailed overview of the methodology is provided in appendix A.

2.3. Findings

Nine of 15 SADC central banks mapped their fintech landscapes and submitted mapping results for consolidation and analysis: Botswana, the Democratic Republic of the Congo, Eswatini, Lesotho, Madagascar, Namibia, the Seychelles, South Africa, and Zambia.

2.3.1. Policy and Regulatory Frameworks

Development and implementation of a policy and regulatory framework varies across countries. The survey covered six aspects of the policy and regulatory framework applicable specifically to fintech, crypto-assets, and cross-border electronic crime. Table 1 provides a summary of the questions and responses received.²

² Note that the information is based on responses received to the survey, and there may have been developments since then.

Table 1: Countries with Specific Policy and Regulatory Frameworks

| Does a fintech policy exist? | Does a national fintech strategy exist? | Does fintech legislation exist? | Does legislation cover cross-border electronic crime? | Does a fintech regulatory framework exist? | Does a crypto-assets policy exist? |
|------------------------------|-----------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| • Mozambique | | • Botswana • Democratic Republic of the Congo • Madagascar • Mozambique | • Botswana • Democratic Republic of the Congo • Madagascar • Mozambique • Namibia • Seychelles • Zambia | • Botswana • Democratic Republic of the Congo • Eswatini • Madagascar • Mozambique • Zambia • Zimbabwe | • Democratic Republic of the Congo • South Africa |

Out of the nine responding jurisdictions, seven had a regulatory framework for fintech, four had a policy for crypto-assets, three had legislation covering cross-border electronic crime, two had a fintech policy, one had a national fintech strategy, and none had specific fintech legislation.

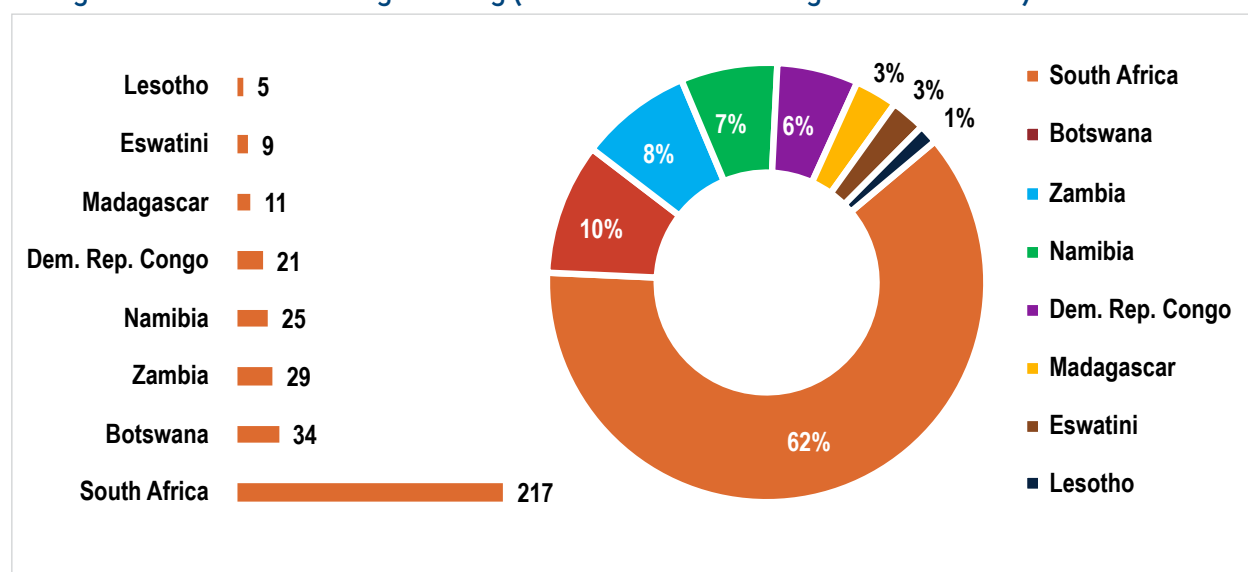
Although the specific structured approaches may not exist for fintech, the responses indicated considerable reform energy within this space. Many countries were at different stages of consultation and development with regards to specific legislation, policies, and strategies. In addition, some countries, such as Zimbabwe, have

issued guidelines specific to fintech and innovation. Most countries also counted a national fintech strategy as a work in progress, with foundational work on road maps and visions already completed.

2.3.2. Fintech Activities

Firms. The survey also aimed to understand the nature of the fintech activities being undertaken. A total of 351 fintech firms were reported from the nine SADC countries that responded to this survey. The distribution of fintech firms derived from the responses are highlighted in figure 2.³

Figure 2: Fintech Firms by Country (Number and Percentage of Total Firms)



Source: Working Group 1 survey.

² Note that this data is based on survey results at the time of collection and may differ from current data.

Overall, less than 10 firms in the SADC region operated within a regulatory sandbox, highlighting the rare prevalence of regulatory sandboxes within the responding SADC jurisdictions.

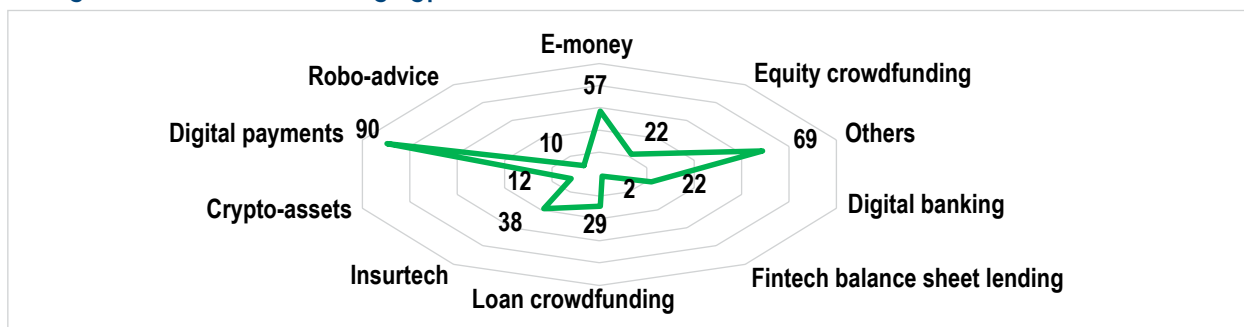
Products. Digital payments and e-money were most common. Comments received indicated that some jurisdictions included mobile money under this categorization (figure 3).

Enabling technologies. A high number (111) of responses suggested that APIs were a common enabling technology

for provision of services. There was a low count (5) of the use of DLT and cloud computing. Finally, a large number (202) was classified as other technologies, which suggests that more distinctions may be needed in subsequent mapping exercises (figure 4).

Policy enablers. One of the most-cited policy enablers was innovation facilitators (55), with data protection (32), cybersecurity (14), open banking (9), digital ID (4), and others (237) constituting the remaining responses (figure 4).

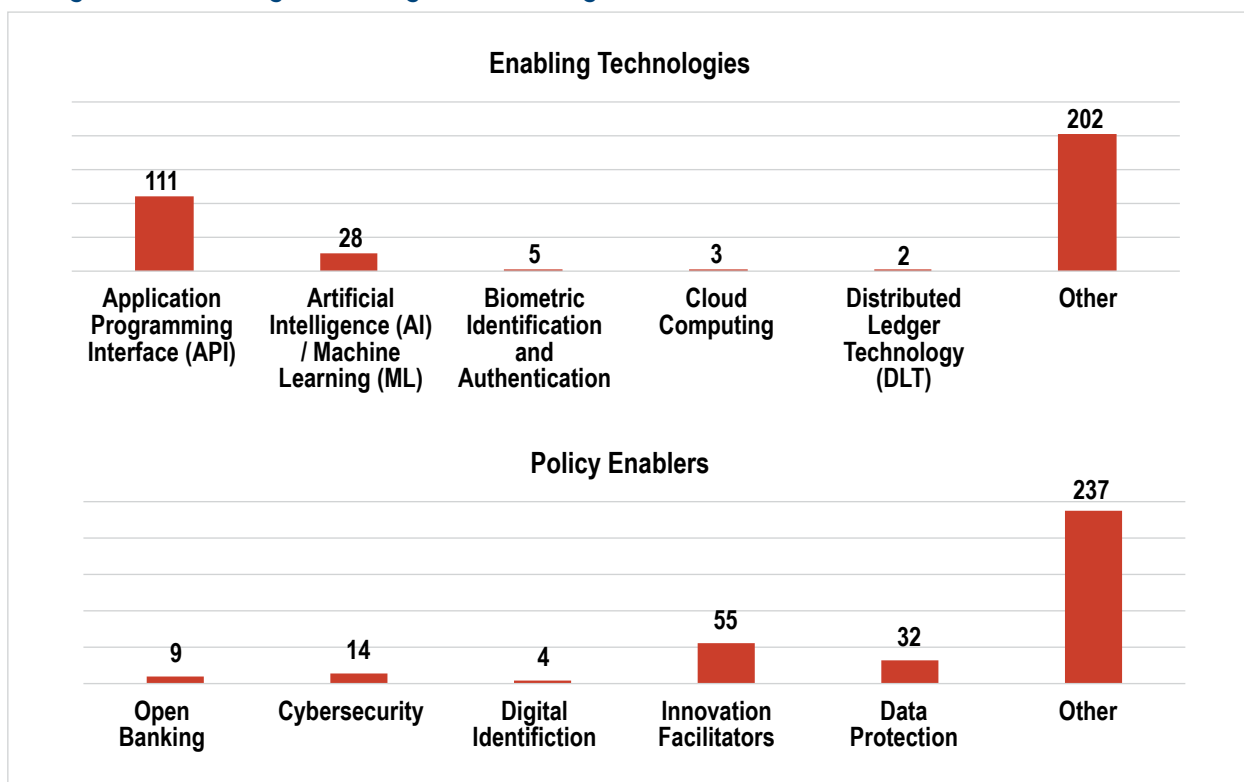
■ **Figure 3: Fintech Firms by Type of Products**



Source: Working Group 1 survey.

Note: fintech = financial technology; insurtech = insurance and technology.

■ **Figure 4: Enabling Technologies and Policy Enablers**



Source: Working Group 1 survey.

3. Regional and Country-Level Fintech Strategies



3.1. Background

The benchmarking research aims to contribute toward improving the SADC fintech strategies concerning payment systems and cross-border initiatives. The research seeks to achieve the following objectives:

- Develop a framework to better understand the key factors underlying successful fintech strategies and assess the existing fintech strategies within the SADC region.
- Benchmark existing fintech strategies in SADC against other regional formations with existing fintech strategies that are effective—for example, Africa, the Americas, Asia, and the European Union.

The benchmarking process was divided into four phases, starting with the planning phase and evolving through analysis and a qualitative review, finally to outline possible areas of improvement within the SADC fintech strategies. In each of the phases, Working Group 6 members have identified actions that need to be taken.⁴

3.2 Structure and Methodology

The methodological approaches outlined below were suggested to achieve the objectives of the current benchmarking research:

- *Ideal type standards.* The model is based on ideal best practices for selected fintech strategies or cross-border initiatives, then used as the basis to assess the SADC region's fit to the model.
- *Activity-based benchmarking.* In this methodology, a selected number of activities, which are either typical or representative of the range of institutional provision, are analyzed and compared with similar activities in other selected institutions. Activities may be considered solely on their own terms or may act as a proxy for overall institutional performance. For example, the following could be prioritized:
 - The development of legal, regulatory, and supervisory frameworks
 - Payment and securities settlement systems
 - Cross-border payments
 - Risk management, with emphasis on cybersecurity and anti-money laundering/combating the financing of terrorism (AML/CFT) (including know your customer, or KYC)

⁴ This section was developed by Working Group 6 of the overall SADC CCBG Fintech Working Group.

The study was conducted in the following two primary research phases to provide relevant and accurate insights into the selected regional body structure:

- Desk-based research was employed to identify various regional formations with fintech strategies.
- A questionnaire was used to refine and enhance the desk-based insights obtained to determine which functional areas within the SADC fintech strategy initiatives should be benchmarked. This will further support understanding of how central banks have been leveraging regional strategies to inform and support country-specific strategies.

3.3. Fintech Framework Pillars

Globally, fintech developments have been growing exponentially, and those in Africa are no different. These technological developments have also been disruptive due to a lack of preparedness from regulatory authorities. It is therefore important to have strategies in place that assist with monitoring, tracking, and overseeing fintech-related activity.

This section outlines a proposed framework for an effective fintech strategy that is aligned with conducting a fintech benchmarking study. Various aspects were identified through desktop research to better understand the key factors underlying successful fintech strategies from a regulatory point of view. The framework aims to assist in compiling best practice guidelines based on fintech activities in other regions. The benchmarking framework consists of the following five pillars.

3.3.1. Fintech Enablers

Fintech enablers are the demographic, infrastructural, and technological aspects of a country that will be benchmarked. Various indicators can aid in identifying trends based on what has occurred in similar markets. For example, countries with a young and largely unbanked population are more prone to fintech disruption due to the need for financial solutions that cut across educational, technological, and digital divides.

3.3.2. Business Models

A wide variety of approaches has been used to classify fintech activities. Although no widely adopted taxonomy is available, classifying fintech actors and firms according to the economic functions and/or financial products and services they provide is

common. For this framework, the taxonomy is based on the business models and products that have been developed in the financial-service sector.

3.3.3. Regulation

First, there is the regulatory approach used by the governing body—whether it is an enforcement approach or an engagement approach. The engagement approach enables the regulator to have communication channels in place that offer adaptability and flexibility. On the other hand, the enforcement approach focuses more on averting risk, with a clear separation between the regulators and covered entities. There can be varying degrees of each approach utilized by the same regulator.

Second, there are the tools that the regulatory body utilizes to formulate policy. It is important to consider if the regulator utilizes surveys, polls, and toolkits offering financial literacy or education—such as the toolkit from the Organisation for Economic Co-operation and Development—as well as how regularly reports are submitted by financial-service providers.

Finally, there is the formulation and use of regulatory sandboxes. Various sandbox pilot programs have been launched and proposed in Sub-Saharan Africa, in countries such as South Africa and Zimbabwe (Mudzingwa 2020). The sandbox is intended to enable the development of innovative fintech products, services, and solutions. It offers a live environment where these solutions can be deployed and tested, within specified parameters and time frames, before being launched into the marketplace.

3.3.4. Emerging Technologies

The technological landscape provides insight into fintech activities. Similar to the enablers, certain factors exist, such as the physical infrastructure and mobile phone usage. Yet this section has a different focal point: the various technologies that are utilized by fintech companies to achieve the last mile.

The framework organizes the technologies into two categories: current and emerging technologies. Examples of current technologies are unstructured supplementary service data, the short message service, and mobile device applications; emerging technologies include biometrics, near-field communication, DLT, wearables, and big data analytics.

3.3.5. Awareness and Marketing of Fintech Regulatory Initiatives

For the uptake of fintech products and services to be successful, various initiatives need to be in place. This framework identifies two main activities around financial literacy and education. This pillar covers the various channels through which information is disseminated and the level of regulatory and/or financial support that various countries give to fintech-related activities.

3.4. Fintech Strategies from Other Regions

This section provides an overview of the various regional formations with existing fintech strategies that are considered effective. The new financial, technological, and legal reality is inherently disruptive and usually does not fit easily into existing regulatory frameworks. This challenges regulators to produce an appropriate response. The timeliness and adequacy of such a legal response determines not only the viability of the fintech solution but also its potential impact and capacity to contribute to positive social change.

Quite often, however, the regulatory feedback to financial innovation is incomprehensible or

inconsistent—or it comes too late—which results in technologies being adopted unevenly. The same fintech solution may therefore struggle to achieve sufficient local demand in some jurisdictions (for example, MTN’s and Vodacom’s mobile money platforms in South Africa) while gaining overwhelming support in others (for example, Safaricom’s M-Pesa in Kenya).

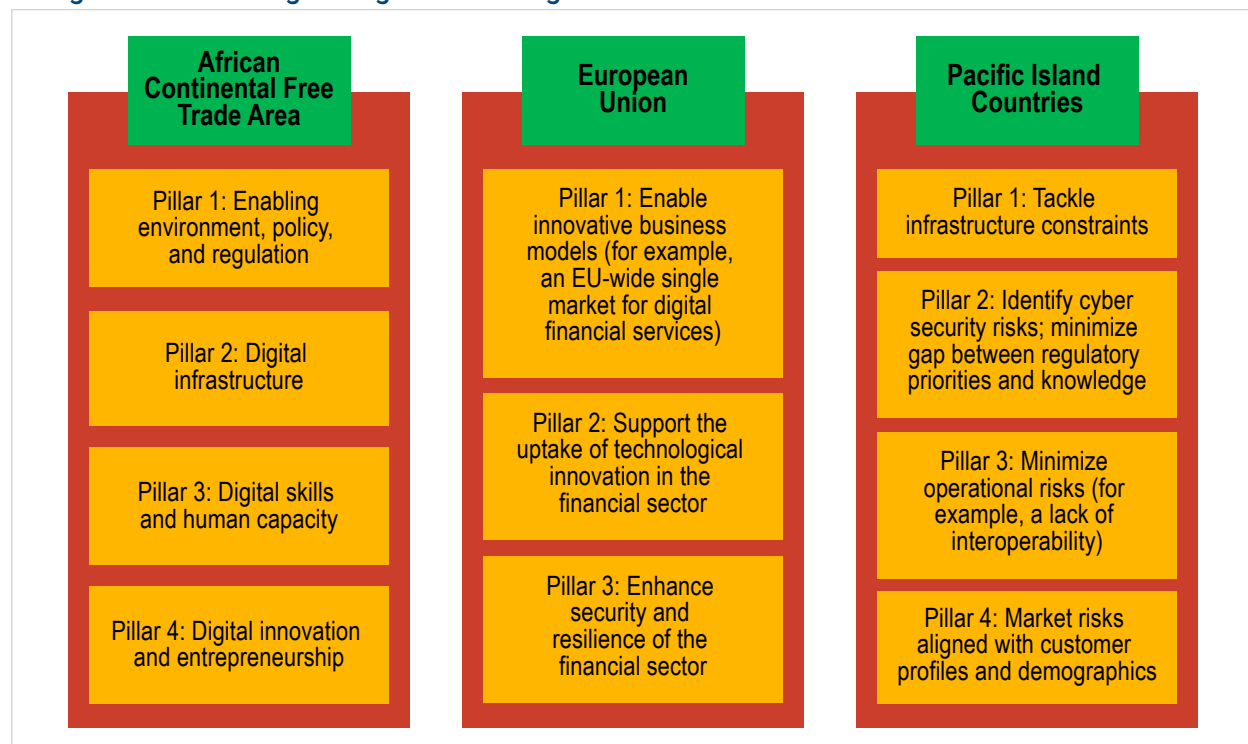
The inputs in this study were formulated by looking at some of the mandates from regional bodies and studies that outline important strategies when it comes to fintech innovation key pillars that are aligned with each region.

3.4.1. Africa

Africa has experienced rapid growth in the digital financial market, with various payment services, such as M-Pesa in Kenya and Orange Money in West Africa (AU 2020b). Moreover, e-commerce has also risen with use in cross-border trade.

African Continental Free Trade Area (AfCFTA). The AfCFTA, under the African Union, advocates for policies that improve the business and investment climate as well as resource allocation for the development of the information and communications technology (ICT) sector. It also advocates for increased

■ Figure 5: Summary of Regional Strategies



Source: Working Group 6 research.

consumer awareness, education, and access to these fintech innovations. This was part of the main agenda of the Fourth Specialized Technical Committee on Finance, Monetary Affairs, Economic Planning, and Integration in March 2020 in Accra, Ghana. The committee discussed the following:

- The African Union Commission’s Digital Transformation Strategy for Africa (2020–2030) as well as digital trade and financial services
- Understanding the digital financial and payment system landscape in Africa: addressing how the African states can prepare for and understand the

opportunities presented by fintech companies and mobile payment solutions

- Promoting women and youth technology entrepreneurs across Africa: considering the policies that can be put in place to support entrepreneurs, increase visibility, coordinate efforts, and improve access to finance

One major aim is to build a secured digital single market in Africa by 2030. This would encompass the free movement of persons, services, and capital. Individuals and businesses are also expected to access and engage in online activities seamlessly, in line with the AfCFTA.

Table 2: Digital Transformation Strategy for Africa (2020–2030)

| Theme | Fintech-related activities |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Improve the policies for digital innovation and entrepreneurship</p> | <ul style="list-style-type: none"> • Develop an effective legal, institutional, and regulatory framework and policy agenda for supporting the development of digital innovation, entrepreneurship, and research and development. • Develop adaptive and anticipatory regulations as well as legal and regulatory systems promoting academic and other forms of entrepreneurship. • Develop a national system of innovation to address the pressing barriers to the capabilities of humans to advance digital innovation—mainly poverty (its broad definition), inequality (redistribution), social capital (cohesion and trust), institutions (policies, organizations, networks), natural capital (electricity, water), and economic resources (for example, access to credit, transport). • Build government capacity on policy design, implementation on technology-related policies, and broader policies. • Strengthen the protection of intellectual and innovative property rights. • Encourage start-ups to obtain patents and protect their ideas and innovations. • Promote and facilitate the development of the private sector to stimulate both the supply of and the demand for technologies needed in the economic sectors. • Promote the development of innovative products that have commercial, social, and/or economic relevance and provide real added value for the African economy and contribute to social development. • Encourage innovators to develop products whose deployment would preserve the economic equilibrium of African countries, particularly their foreign exchange reserves. • Establish retention mechanisms for young innovators whose training and/or projects would be financed by funds dedicated to the development of Africa. |
| <p>Create a conducive environment to empower people to innovate, and facilitate access to finance and funding mechanisms for digital enterprises</p> | <ul style="list-style-type: none"> • Develop structures and mechanisms that promote the production, diffusion, use, and management of technology and innovations to accelerate the achievement of Agenda 2063 and the Sustainable Development Goals targets. • Establish an innovation fund from which the growing pool of hard-working and successful entrepreneurs could tap into resources to stimulate digital innovation and entrepreneurship development, and encourage commercialization through a public-private partnership. |

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <ul style="list-style-type: none"> • Provide incentives in the form of awards and national recognition to encourage innovation. • Facilitate access to funding for start-ups by local ecosystems (hubs) and development partners. • Build and support country-level “angel” investor networks in partnership with continental networks, and educate and attract international venture capital firms to invest in African technology. • Support the establishment of local digital innovation centers serving as cocreation and innovation hubs for the digital solutions of tomorrow and as the first entry point for foreign investors. |
| <p>Create an enabling ecosystem that addresses all interrelated barriers and needs, and improve advisory services to stimulate digital entrepreneurship for digital enterprises</p> | <ul style="list-style-type: none"> • Customize the support to digital entrepreneurs, and support networking for more peer mentorship services. Regionally, seek successful serial entrepreneurs and “star geeks.” • Develop a holistic continental mapping of ecosystems, building on existing initiatives, to identify and support the scaling up of innovative models and financing platforms, accompanied by relevant soft and business skills training for digital entrepreneurs, and to inform investors on existing relevant opportunities. This would include crowdfunding, innovative fintech tools, and mobile banking. This would entail the holistic mapping of ecosystems to identify promising models that could be scaled up in Africa. • Promote the availability of quality information, accuracy, and accessibility to market actors to increase awareness of existing solutions and opportunities among digital entrepreneurs and the public. • Promote open data policies that can ensure the mandate and sustainability of data exchange platforms or initiatives to enable new local business models while ensuring data protection and cyber resilience to protect citizens from the misuse of data and businesses from cybercrime. • Encourage governments to entrust national start-ups and social enterprises with public projects by adopting their cost-efficient solutions to address local issues (for example, agriculture, health, administration). • Segment and group countries by the maturity level of their innovation ecosystem and define four or five thematic business clusters as centers of excellence in the context of the European Union–Africa Start-Up Initiative, which is to be created (a proposed action under the recommendations on partnerships). • Support African digital entrepreneurs to network and showcase their products outside of Africa (for example, at trade fairs). • Encourage cooperation with start-up advocacies to improve further market and regulatory reforms through multistakeholder dialogue. • Train, advise, coach, and mentor entrepreneurs through blended learning. |
| <p>Establish and strengthen partnerships among African actors, to harmonize efforts related to digital entrepreneurship at the continental, regional, and national level.</p> | <ul style="list-style-type: none"> • The African Union Commission plans to create an online portal for African entrepreneurs, start-ups, and small and medium-sized enterprises for the marketing of their services and skills and to encourage African Union member states to source services from the listed entrepreneurs to support intra-Africa trade in line with the African Continental Free Trade Area. • Embed digital entrepreneurship in continental, regional, and national policies, and enable structured policy dialogue between public and private partners to inform policy makers about the most pressing actions to be taken in creating a favorable environment for digital entrepreneurship, with a focus on building on existing continental, regional, and national partnerships. |

- Support member states in setting up national start-up strategies and start-up laws in terms of both legislation drafting and enforcement. Invest in research related to start-up acts. This should be based on a multistakeholder, bottom-up approach while taking the entrepreneurs' point of view into the legislation process.
- Fund continental and regional knowledge sharing, training, and technical meetings addressing the needs of the digital ecosystems and creating open educational resources.
- Support the establishment and financing of innovation hubs in collaboration with the private sector.
- Encourage and promote digital innovations designed locally by empowering all the relevant local actors (governments, start-ups, researchers, the private sector).

The Digital Transformation Strategy for Africa considers foundation pillars, critical sectors, and cross-cutting themes that are apparent in the digital ecosystem. Recommendations from this strategy that align with fintech-related activities are presented in table 2.

3.4.2. European Union

The European Union has established a Fintech Action Plan and a Digital Finance Strategy. The European

Union's Fintech Action Plan is based on three focus areas, as shown in table 3.

The European Union's Digital Finance Strategy, published in September 2020 (European Commission 2020a), emphasizes the following:

- Enabling interoperable EU-wide digital IDs in finance
- Ensuring that strict rules are in place to identify customers and prevent money laundering

Table 3: European Union's Fintech Action Plan

| Key area | Activities |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enable innovative business models to reach EU scale | <ul style="list-style-type: none"> • Clear and converging licensing requirements for fintech firms • Common standards and interoperable solutions for fintech • Enabling innovative business models to scale up across the European Union through innovation facilitators • Technology-neutrality suitability review • Removing obstacles to the use of cloud services • The European Union's public blockchain initiative: considering all the relevant legal implications of distributed ledger technology and blockchain • Building capacity and knowledge in a European fintech lab |
| Support the uptake of technological innovation in the financial sector | <ul style="list-style-type: none"> • Technology-neutrality suitability review • Removing obstacles to the use of cloud services • The European Union's public blockchain initiative: considering all the relevant legal implications of distributed ledger technology and blockchain • Building capacity and knowledge in a European fintech lab |
| Enhance the security and resilience of the financial sector | <ul style="list-style-type: none"> • Strengthening the European Union's financial sector and the cyber resilience of the European Union |

- Paving the way for harmonized customer identification rules in EU member states
- Implementing a single digital ID across Europe to allow for fast and easy customer identification; businesses would have a single solution, and customers would need to identify themselves only once

Open finance: promoting business-to-business data sharing in the European Union’s financial sector and beyond:

- Ensuring that consumers have better access to, and control over, their data
- Allowing access to more customer and business data, which would enable financial-service providers to offer more personalized services and address customer needs in a tailor-made manner
- Enabling people and businesses to compare products and find more cost-effective options

Clear and comprehensive rules for crypto-assets in the European Union:

- Introducing a European passport for crypto-assets, with strong safeguards to ensure consumer protection and financial stability
- Unleashing the full potential of crypto-assets to lead to innovative payment solutions for consumers and new financing opportunities for businesses
- Reaping the benefits of crypto-assets while regulating their risks, such as theft from digital wallets, fraud, and the use for money laundering

Mitigating the risks of digital transformation by strict and common rules on digital operational resilience:

- All financial entities will be subject to operational resilience requirements to ensure a safe financial system across sectors and to avoid a domino reaction
- Critical third-party ICT providers (for example, cloud computing services) will be subject to oversight to ensure that they do not pose undue operational risks for finance

Ensuring “same activity, same regulation”:

- Everyone will be subject to supervision: from traditional market actors (banks, insurance firms, and investment companies) to fintechs and bigtechs that provide payments, savings, and insurance

- Supervisors will be better equipped to avoid risks in the financial system and therefore will be able to better protect financial stability

3.4.3. Pacific Island Countries

The strategy for fintech in the Pacific Island countries looks at addressing the risks and constraints faced by fintech, such as limited infrastructure and cybersecurity risks. The strategy advises policy makers to conduct a comprehensive assessment of risks by type and nature to decide how to absorb, control, or mitigate them. The strategy identifies infrastructure constraints, cybersecurity risks, operational risks, and market risks.

Infrastructure constraints. Uneven and underdeveloped general and information technology (IT) infrastructure has been outlined as possibly hindering the development of technology-enabled solutions. A reliable electricity supply underpins all technological solutions, even those that use less advanced features and devices, such as feature phones running on 2G cellular networks. Most Pacific Island countries have successfully secured financing for undersea fiber-optic cables and are working on connectivity.

Cybersecurity risks. Cybersecurity, data protection, data privacy, and fraud have been identified by regulators as the most critical risks from fintech. The Pacific Island countries could be at a disadvantage in coping with the growing risks of cyberthreats. The gap between regulatory priorities and knowledge is highest for cybersecurity and technological tools for regulation and supervision.

Operational risks. Fintech solutions for financial inclusion might be exposed to operational disruptions and challenges. The lack of interoperability between different applications would hamper their effectiveness and adoption. Creating a technological platform would ensure interoperability between applications but would increase the risk of a single point of failure. Interoperable technological platforms, open-source software code, and capacity-building efforts are critical to the sustainable adoption of fintech applications.

Market risks. The main market risks are related to unequal access to infrastructure, which has the repercussions of preferential or unequal access; this, in turn, distorts competition among market participants.

3.5. Benchmarking Fintech Strategies from SADC Countries

The following section consolidates and contextualizes a selection of fintech strategies within SADC countries against the backdrop of fintech framework pillars and approaches across the world. The case studies include **Mauritius, South Africa, Tanzania, and Zimbabwe.**

3.5.1. Mauritius

Mauritius is using the concept of a regulatory sandbox to spur innovation in the fintech industry by accommodating the entry of new entrepreneurs. The country has avoided adopting a prescriptive approach to regulation and has instead developed a regulatory framework that facilitates “testing grounds” for new digital business models that are not protected by current regulation. The purpose of the sandbox is to adapt compliance with strict financial regulations to the growth and pace of innovation in a way that does not burden the fintech sector with rules while also ensuring consumer protection.

The Mauritius government launched the Regulatory Sandbox Licence (RSL) on October 20, 2016. The RSL is issued by the Economic Development Board of Mauritius to eligible companies willing to invest in innovative projects according to an agreed set of terms and conditions for a defined period. All fintech projects under the RSL are determined and recommended by the National Regulatory Sandbox Licence Committee, which is jointly administered by the Economic Development Board and the Mauritian Financial Services Commission through a permanent secretariat.

The following are the objectives of the National Regulatory Sandbox Licence Committee:

- Operate as an independent committee to coordinate the processing of all RSL applications made to the Economic Development Board with respect to fintech.
- Be the focal point of assessing
 - all fintech-related applications requiring an RSL; and
 - all newly announced fintech applications announced in the national budget of 2018–19.
- Consider fintech-related RSL applications received at the level of the Economic Development Board in view of preventing financial regulatory arbitrage.

- Recommend whether the Economic Development Board should approve or decline an RSL application.
- Assign the supervisory function for the holder of the fintech RSL to either the Bank of Mauritius or the Financial Services Commission, depending on the nature of the proposed fintech activity.

Although the RSL covers any innovative industry, most of the recent successful RSL applicants were in the fintech industry. For instance, SelfKey obtained an RSL to develop a digital ID wallet service based on blockchain. Other licenses have been issued to an online crowdfunding platform, a medical company producing stem cells, and a financial provider of new investment products for the film industry.

The Mauritian Financial Services Commission has enacted a sandbox license recognizing cryptocurrency as a digital asset, as it seeks to develop and promote blockchain technology. The commission then went on to establish a regulatory framework for digital asset custodian services following consultations with the Organisation for Economic Co-operation and Development on the governance and regulation of digital assets such as cryptocurrencies.

In July 2021, section 11 of the Banking Act and section 14 of the Financial Services Act were amended to enable the Bank of Mauritius and the Financial Services Commission to do the following:

- Grant regulatory sandbox authorization to their licensees or any other body corporate intending to test any service or product falling within their respective regulatory remit
- Establish a fintech innovation hub and digital lab
 - to foster innovation and the use of emerging technologies to facilitate the provision of banking and payment solutions and other related services falling under the purview of the central bank;
 - to identify critical trends in technology affecting the banking and payment services sectors and develop in-depth insights into these technologies;
 - to provide a testing environment for fintech to develop, test, prototype, and operate products or services;
 - to establish an international networking platform for experts on innovative technologies related to the banking and payment services sectors to promote research, exchange of views, and knowledge sharing; and

- for such other purposes as the central bank may determine.

The Bank of Mauritius and the Financial Services Commission are jointly working on the operationalization of the regulatory sandbox authorization regime and establishment of an innovation hub and a digital lab to foster innovation and fintech.

3.5.2. South Africa

The Intergovernmental Fintech Working Group was formed in 2016, comprising representatives from the Financial Intelligence Centre, Financial Sector Conduct Authority, Competition Commission, National Credit Regulator, National Treasury, South African Reserve Bank, and South African Revenue Service.

The Intergovernmental Fintech Working Group's innovation hub has three innovation structures. The Regulatory Guidance Unit provides a central point for obtaining clarity on regulatory matters to help market innovators resolve specific questions regarding the policy landscape and regulatory requirements. It provides a central point of entry for market innovators to submit inquiries related to fintech and innovation-oriented policies and regulations. Responses from the Regulatory Guidance Unit integrate perspectives from relevant financial sector regulators, eliminating the need to contact multiple regulators. The guidance provided is nonbinding, and innovators are encouraged to seek formal legal advice on complex inquiries.

The working group's regulatory sandbox provides regulatory relief within the existing legislative and regulatory framework. This relief allows participants to test products in a "real world" environment. The testing of products may, however, infringe on existing regulatory frameworks; relief may therefore be provided for only a specific period. This would not have been possible for innovators without a regulatory sandbox environment.

The regulatory sandbox therefore provides participants with regulatory clarity on innovations that do not fit neatly within existing frameworks. The participant therefore has access to several different regulators at the same time to help resolve gray-area regulatory issues. The regulatory clarity provided may translate into participants being able to access the market with

greater certainty that they are compliant with (potential) regulation. Additional benefits potentially include greater speed to market for innovative products and services and increased certainty when speaking about regulatory matters to potential investors. The Financial Conduct Authority in the United Kingdom has put out a report on the benefits that its sandbox participants have identified.

The third structure in the working group's innovation hub is the innovation accelerator. This structure exists to provide a collaborative, exploratory environment for financial sector regulators to learn from and work with each other, and with the broader financial sector ecosystem, on emerging innovations in the industry. The structure has various fintech initiatives, which include financial market innovation, crypto-assets, bigtech in fintech, fintech scoping in South Africa, digital platforms, and non-traditional data as well as regulatory technology (regtech)⁵ and supervisory technology (suptech).⁶

3.5.3. Tanzania

The Bank of Tanzania has adopted a regulatory approach that is strengthened by a cooperative relationship with the private sector. To provide access to financial services for unserved and under-served communities, the central bank works closely with banks and nonbanks to facilitate innovation by providing legal frameworks for digital financial services.

The overall approach adopted by the Bank of Tanzania has been described as a test-and-learn approach. The bank first learned from the market and then began to draft national payment system laws, giving the private sector confidence and a conducive environment to invest in innovative financial services.

The Tanzanian legal system is based on English common law. The Bank of Tanzania is the regulator for the financial sector, including fintech businesses. Depending on the nature of their activities, fintech businesses may also be regulated by the Tanzania Communications Regulatory Authority under the Electronic and Postal Communications Act of 2010. Having a multiplicity of regulators is usually a recipe for stagnation and slow delivery of services.

⁵ Regtech is the management of regulatory processes within the financial industry through technology. Main functions of regtech include regulatory monitoring, reporting, and compliance.

⁶ Suptech is the use of innovative technology by supervisory agencies to support supervision.

3.5.4. Zimbabwe

The approach to fintech in Zimbabwe has taken the following three steps:

- Institutional arrangements have been formed to promote collaboration on fintech between financial sector regulators, government ministries, and other key stakeholders in the fintech ecosystem.
- A fintech regulatory sandbox has been established to promote responsible innovation in the country.
- To understand the opportunities and risks presented by fintech developments, gaps in current regulations that impede innovation have been identified, and recommendations for regulatory changes to enhance innovation have been made.

Institutional arrangements. In view of the multidimensional nature of fintech innovations, Zimbabwe has adopted a collaborative and consultative approach. Zimbabwe has a National Fintech Steering Committee cochaired by the Reserve Bank of Zimbabwe and the Ministry of Finance. The committee is supported at a technical level by the Interagency Fintech Working Group.

The National Fintech Steering Committee and Interagency Fintech Working Group are composed of representatives from the following bodies: the Ministry of Finance; Ministry of Information and Communications Technology; Ministry of Industry and Commerce; Ministry of Justice, Legal, and Parliamentary Affairs; Office of the President and Cabinet; Reserve Bank of Zimbabwe; Zimbabwe Revenue Authority; Securities Exchange Commission; Insurance and Pension Commissions; and Postal and Telecommunications Authority of Zimbabwe.

The Reserve Bank of Zimbabwe has also formed a fintech unit that works closely with the various arms of the bank, including National Payment Systems, Bank Supervision, Financial Intelligence, Legal, Exchange

Control, Economic Policy and Research, and ICT. The unit reports to the deputy governor responsible for economic policy and research and has three areas of focus: IT, fintech operations, and policy and research. The unit is also responsible for coordinating the fintech regulatory sandbox.

Fintech regulatory sandbox. The framework outlines the qualification, application, and evaluation criterion for entities to be admitted into the sandbox. The sandbox provides an opportunity for innovators to connect to banks and other financial system players. The launch of the regulatory sandbox was announced by the governor of the Reserve Bank of Zimbabwe through the biannual monetary policy statement of February 2021. The relevant excerpt from this statement reads as follows: “Establishing a Fintech Regulatory Sandbox to allow entities to list their financial products, services, or solutions within a controlled environment. The Fintech Regulatory Sandbox, which will be housed at the bank, will be open for financial innovation with effect from 1st March 2021. The Regulatory Sandbox guidelines are being finalized and will be accessed from the Bank’s website” (Mangudya 2021).

The framework governing the regulatory sandbox is covered by the Fintech Regulatory Sandbox Guidelines. The reserve bank’s vision is to promote responsible innovation in the financial sector, and the sandbox is targeted at innovators and start-ups ready to undertake a proof of concept through monitored market testing. The guidelines provide criteria for eligibility and requirements for prospective applicants as well as a list of products and services currently eligible for testing in the sandbox.

Laws and regulations. The current laws in Zimbabwe relate only to mobile money and mobile banking; the regulatory framework for the other emerging innovations will be developed in line with the market appetite for the products and services.

4. Principles for Developing a Fintech Framework



4.1. Background

Policy makers and regulators must consistently endeavor to understand new technologies to support innovation in furthering important policy objectives. They must also work collaboratively with fintech innovators to mitigate potential risks.⁷

The term *fintech* has been defined in many ways. This report uses the term broadly to encompass a wide spectrum of technological innovations that affect a broad range of financial activities, including payments, investment management, capital raising, deposits and lending, insurance, regulatory compliance, and other activities in the financial-service space (IMF 2018). These innovations include, for example, mobile payment solutions for consumers and merchants, online marketplace lending, investment tools, virtual currency, biometric digital customer ID and authentication, and automated middle and back-office enterprise functions, such as the use of algorithms, big data, AI, and link analytics.

This section puts forward a framework and supporting principles to help countries establish an operating model to promote innovation while also maintaining appropriate oversight of the new products and players entering the ecosystem. The section has been designed to provide high-level principles that can be used as a foundation upon which SADC members can base their overarching approach to fintech, balancing the opportunities and risks.

4.2 Strategic Objectives of the Framework

The framework focuses on broad financial sector policy objectives, including efficiency, innovation, competition, inclusion, stability, transparency, integrity, and consumer protection. These are the specific objectives developed within the framework:

- Making payments (including cross-border payments) transparent, efficient, and interoperable, and making transactions more secure through emerging technology
- Developing innovative credit scoring using alternative data and the use of big data techniques
- Making customer onboarding processes and transaction verification faster and more efficient through digital ID solutions

⁷ This section was developed by Working Group 2 of the overall SADC CCBG Fintech Working Group.

- Strengthening compliance with global standards for financial stability and integrity and increasing supervision efficiency using regtech and suptech
- Ensuring that risks and infringements on the regulatory perimeter are considered adequately in line with regulatory mandates and with a view toward competition and innovation

4.3. Key Considerations

Fintech has become a fast-growing business area, positively affecting payments and other financial services, but it is also accompanied by risk. Fintech has the potential for increasing efficiency; reducing costs; and improving access to, and the delivery of, financial services. Considering this, the prevalence of the use of these technologies and their pace of evolution have increased substantially. Regulators are therefore challenged to keep pace with the technological developments and to continuously assess the adequacy of regulatory frameworks. Ensuring that regulation and supervision allow fintechs to execute business models without unduly affecting customer protection, the integrity of the financial markets, and the overall stability of the financial system is especially demanding.

4.3.1. Governance

Fintech could have a major impact on the legal foundations of the governance of central banks. The following aspects are particularly salient in this regard:

- *Fintech impacts on the mandate of central banks.* Fintech calls for a reconsideration of the adequacy of the legal formulation of the currency issuance and payment system functions and powers. Central banks and other regulatory bodies must ensure that their legal instruments cover the oversight of fintechs. When designing laws, however, central banks should consider not being too prescriptive when considering future technologies. Legislation (and, by extension, the legal framework to which the central bank is subject) should be technology neutral to an extent possible. In addition, the use of open legal categories and possibly well-designed “catchall” provisions should be given due consideration.
- *Fintech impacts on the decision-making structures of central banks.* The oversight board or department responsible should have sufficient fintech skills available to allow it to discharge its duties. In this regard, legal and other steps can be considered to bridge the gap. Regular training of staff should

be undertaken. Central banks may also consider creating new positions and other internal structures, such as working groups, to keep abreast of fintech developments.

It is important to note that there is no one-size-fits-all solution. Fintech governance should be shaped by the context of central banks, including their mandate and legal institutional setup.

4.3.2. Technology Risk and Operational Resilience

Innovation has enormous potential to make finance fair and inclusive, competitive and healthy, and to make financial regulation more effective and efficient. At the same time, innovation carries great risk due to misuse, fraud, and exclusion. It also tends to create new problems as it solves old ones. In fintech, new benefits and dangers are often interwoven, making it challenging for policy makers to enable the former and prevent the latter in its entirety, highlighting the need for a balanced approach.

These risks can stem from the technology underpinning new fintech offerings. The risks can also be the result of novel actors, business models, and product features. Some of these risks may not be new or unique to fintech. They may instead be new manifestations of existing risks. The overall greater availability of financial products and rise in usage that fintech facilitates can also generate risk.

The risks posed by fintech to consumers can be broadly categorized around loss of privacy; compromised data security; rising risks of fraud and scams; unfair and discriminatory uses of data and data analytics; uses of data that are opaque to both consumers and regulators; and risks that fintech firms entering the financial or financial regulatory space will lack adequate knowledge, operational effectiveness, and stability, which may disrupt their operations and/or lead to loss of funds by customers.

4.3.3. Data Handling and Privacy

One major risk for consumers arising from new technologies will be the potential breach of privacy and data security. These two issues are intertwined and raise different kinds and degrees of concern, depending on what and how consumer data are being accessed and stored, how sensitive and identifiable the information is, who is accessing the data, whether that access is legal or illegal, and whether there should be more restrictions

on use and if consumers should be more empowered to make decisions on certain kinds of uses.

Risks to consumers may also arise over whether and how they can grant permission to third parties to access their bank account data and other financial and personal data to perform tasks for them, such as letting financial apps help them save money and give them access to better-suited financial products. Numerous fintech innovators rely on this permissioned access. This access may be unsecured, and in the event of breaches or loss, customers may blame the bank for allowing the fintech to use the data. This issue raises questions about who actually owns a consumer's bank account information—the customer or the bank.

In light of these risks, SADC countries should, among other steps, adopt the following measures to ensure that technology risk is minimized and operational resilience is maintained by fintechs:

- Central banks should adopt secure data standards as stipulated by standard-setting bodies such as the Society for Worldwide Interbank Financial Telecommunication (SWIFT). Adoption of the same should be enforced proportionately across fintechs.
- Central banks/countries should have data protection and cybersecurity regulations in place to address issues of data privacy and cyber risk.
- Central banks/countries should have a financial literacy strategy that, among other things, includes awareness campaigns that empower customers to protect themselves against fraud and cyberattacks.
- Central banks should ensure that fintechs have sound risk assessment policies in place that address all risks, including technology risk, and that they go through a vetting process before they are approved.

4.3.4. Fraud and Scams

Along with the loss of privacy and cyberinsecurity, consumers may also face the risk of rising fraud and scams when using new fintechs. Scams are especially harmful to vulnerable groups of consumers, such as differently abled people, senior citizens, and people with low levels of literacy. Broadly speaking, online and mobile channels are also subject to far higher rates of fraud than branch-based services. It is easier to assume fake identities online than in person. As such, fintechs and mobile channels that usually operate online have this inherent risk. In addition, other new technologies, such as blockchain, may enable customers to transact

anonymously. This creates a conducive environment for fraud and other malpractices, such as tax evasion, money laundering, and terrorist financing.

4.3.5. Use of Data by Policy Makers

Financial supervision and central bank functions related to monetary statistics and financial stability are vastly driven by data. This has necessitated the use of regtech and supotech in analyzing this data. Fintech data, along with data from other payment system players, therefore has the potential to provide central banks with highly informative reports that can affect decision making and forecasting. When handling data, central banks should keep in mind the following:

- They should appoint data officers/analysts who should be sufficiently trained in general data analytics and the handling of big data. Big data is data that contains greater variety and arrives in increasing volumes and with more velocity. Put simply, big data is larger, more complex data sets, especially from new data sources, such as fintechs.
- Central banks should have a budget allocated to the handling of data (including big data).
- Central banks should have a shared internal platform to enable different areas of the central bank to access data resources and ensure maximal use of data.
- Sensitive data should be protected from access by external stakeholders.
- Regulators should establish standards, processes, and capacity to assure that data used is accurate and “clean.”
- IT infrastructure and processes must be optimized to collect, process, analyze, and disseminate supervisory and statistical data from different sources and in various formats. Process automation and innovative solutions are required to increase the quality and efficiency of supervision and reduce expenditures and operational burdens.

4.3.6. Conduct and AML

One major challenge arising from the proliferation of fintech relates to AML and CFT. New business models offering financial products (for example, virtual currencies) or new technologies (blockchain) raise vulnerabilities and weaknesses that cannot be neglected by regulators and supervisors. The rise of fintech has introduced more players into the financial market and has allowed easier handling and the

anonymous execution of transactions—especially regarding virtual currencies, which can cause complex transaction monitoring for financial institutions and public authorities.

Certain financial players may be outside the scope of regulation. Therefore, they may not be subject to—or may be less affected by—prudential AML/CFT rules and regulations compared to traditional financial institutions. Consequently, regulatory gaps or loopholes may be taken advantage of to commit financial crimes. In cases where financial players fall within the scope of financial sector regulations and are subject to AML regulations, system failures, such as lapses in customer ID, may sometimes occur, thereby causing a money laundering risk.

SADC countries/regulatory authorities should assess the risk of financial crime for each type of business model during application by the business. For financial institutions, the benefits of a risk assessment include, among others, the dialogue with stakeholders and compliance with regulatory requirements. Furthermore, it prevents reactive-action costs, which are typically much higher than issuing budget costs that allow a proactive action plan to be executed.

Central banks must also have collaborative structures, including a memorandum of understanding, with financial crime authorities and cooperate with other governing bodies on the same.

Countries should consider adopting digital ID systems, as they usually are less compromised than analog ID systems in terms of financial crime. According to the Financial Action Task Force, reliable digital ID can make it easier, cheaper, and more secure to identify individuals in the financial sector. It can also help with transaction monitoring requirements and minimize weaknesses in human control measures.

4.3.7. Cybersecurity

Cybersecurity is the practice of protecting systems, networks, and programs from digital attacks. These cyberattacks are usually aimed at accessing, changing,

or destroying sensitive information; extorting money from users; or interrupting normal business processes. In general, cyber risk in payment services refers to the risk of unsecured payment services and the risk of service providers' weak governance of ICT.

Cybersecurity that focuses on measures such as the use of cyberintelligence tools, antivirus protection, software updates, and data backups is essential to mitigate technology and cyber risk. Fintech companies need to institute adequate cyber risk and data security management measures by implementing effective controls to mitigate against cyber risks. These controls include user authentication, data loss protection, and cyberattack prevention and detection. Regulation, by necessity, must keep pace and respond to the changing environment.

Recommended cyber risk policy interventions could include the following, which should be made part of licensing, regulation, and oversight of payment service providers (PSPs) and the broader fintech market:

- Developing an appropriate **cybersecurity policy**
- Establishing a sound and robust **technology risk management framework**
- Developing strong **cybersecurity tools and authentication mechanisms**
- Strengthening system **security, reliability, resiliency, and recoverability**

Efforts to enhance cybersecurity and data security should include alignment with internationally recognized standards and guidelines, which should form part of licensing requirements and regulatory compliance. These internationally recognized standards include the International Organization for Standardization (ISO)/International Electrotechnical Commission (IEC) 27001,⁸ ISO/IEC 27002,⁹ the National Institute of Standards and Technology (NIST),¹⁰ and the Payment Card Industry Data Security Standard (PCI DSS).¹¹ The different jurisdictions within SADC could develop specific national guidelines that have greater systemic importance and focus less on digital PSPs.

⁸ ISO 27001 (formally known as ISO/IEC 27001:2005) is a specification for an information security management system (ISMS).

⁹ The ISO 27002 standard is a collection of information security guidelines intended to help an organization implement, maintain, and improve its information security management.

¹⁰ NIST is a self-certification mechanism but is widely recognized. NIST frameworks have various control catalogs and five functions to customize cybersecurity controls, whereas ISO 27001 Annex A provides 14 control categories with 114 controls and has 10 management clauses to guide organizations through their ISMS.

¹¹ The PCI DSS is an actionable framework for developing a robust payment account data security process, including prevention, detection, and appropriate reaction to security incidents. It provides a baseline of technical and operational requirements designed to protect payment account data.

4.3.8. Regulatory Treatment of Fintech Products

Regulatory responsibilities for fintech activities have two distinct roles: prudential supervision and oversight. Supervisory and oversight powers are generally established in different regulatory authorities. Prudential supervision should focus on individual business models, and oversight should focus on systems, critical service providers, and impact on financial stability objectives. These approaches are complementary. Whereas oversight should focus on the sound and safe functioning of the system, including macroeconomic challenges, prudential supervision should pursue safe, stable, and secure entities delivering retail services.

Licensing entities for prudential supervision.

Licensing processes for fintechs could start with the application process. The legal framework discussed below should be used for ascertaining legal certainty of proposed services where established laws could exempt certain entities from licensing. Licensing criteria could cover requirements such as the type of fintech service proposed to be offered, capital requirements, fit and propriety, financial soundness, incorporation, shareholding structures, operational requirements, agency appointment criteria, risk management processes, consumer protection procedures, ICT and cybersecurity policies and provisions, customer due diligence procedures, AML/CFT-compliance arrangements, and public interest.

Further threshold values could be used to determine their risk profiles and, hence, the regulatory intensity required. A criterion for access to regulated payment systems or payment schemes could also help address competition, innovation, and financial stability objectives. Entities offering fintech activities could also be broadly grouped in accordance with the sector or type of service to enable determination of applicable laws, licensing and regulatory requirements, competent authority—for example, a payments and settlement department or some other regulatory authority—and regulatory gaps.

Drawing the regulatory perimeter. Appropriate treatment of service providers is particularly important when such providers are high risk and have systemic profiles. This includes bigtechs because of their potential to orchestrate rapid change due to their unique features and large customer base. This highlights their ability to scale into market segments and provide services that are outside their core business.

Bigtechs can quickly become systemically important and function as financial market infrastructures, therefore requiring increased regulatory scrutiny. In addition to bigtechs, other financial market infrastructures, such as systemically important payment systems (SIPS), should also be regulated, given their potential to trigger or transmit systemic disruptions. This generally includes systems that are the sole payment system in a country or the principal system in terms of the aggregate value of payments; systems that handle mainly time-critical, high-value payments; and systems that settle payments used to effect settlement in other systemically important financial market infrastructures.

The criteria that can be considered in determining the need for, or degree of, regulation, supervision, and oversight should include the following:

- Number and value of transactions processed
- Number and type of participants
- Markets served
- Market share controlled
- Interconnectedness with other financial market infrastructures and other financial institutions
- Available alternatives to using the financial market infrastructure at short notice

Regulatory authorities could also designate financial market infrastructures as systemically important based on other criteria that are relevant in their jurisdictions. System risk profiles and the regulatory intensity of payment infrastructures should inform designation decisions. Payment infrastructures comprise payment systems, PSPs, payment schemes, and critical service providers, where regulatory intensity could differ as follows:

- *Highly regulated.* SIPS that handle high-value and time-critical payments are critical infrastructures that should be required to comply with national and international standards. Non-SIPS should be considered nonsystemic. Non-SIPS could be required to comply fully, or partly, with the relevant international standards for payment systems.
- *Moderately regulated.* Proportionate regulation could be applied to promote innovation and competition in the payment market by electronic PSPs, mobile network operators, and money transfer operators. Critical service providers, including postal offices, IT, and messaging providers, should be subject to regulatory oversight.

- *Less regulated.* Informal fund transfers that occur in the absence of, or are parallel to, formal payment service channels could be subjected to less/minimal regulatory oversight.

4.3.9. Financial Stability

Financial stability is a state in which the financial system—that is, the key financial markets and the financial institutional system—is resistant to economic shocks and smoothly fulfills its basic functions: the intermediation of financial funds, management of risks, and arrangement of payments. Financial stability reflects a sound financial system; in turn, this reinforces trust in the system and prevents phenomena such as a run on financial institutions, which can destabilize the economy.

Financial technology can influence financial stability by changing the market structure in financial services. Despite the various benefits of financial innovations, their potential risks also should be considered. Financial innovations are changing consumer needs and preferences, therefore producing potential threats and impacts to traditional financial services. Central banks should

- ensure that the positive influences of fintechs on financial stability are harnessed to guarantee the realization of their full benefits; and
- adequately manage the potential risks associated with fintechs to avoid the negative impacts that this might have on financial stability.

Crypto-assets. Although financial institutions currently have limited exposures to crypto-assets, there may be several channels, both direct and indirect, by which they could be exposed to risks from crypto-assets. The range of potential fintech business exposures depends in part on the type of crypto-asset and the scope of permitted activities under applicable laws and regulations within each jurisdiction. Regulatory gaps could arise when crypto-assets fall outside the perimeter of market regulators and payment system oversight, and with the absence of international standards or recommendations on how they are to be regulated.

Crypto-assets may potentially present several financial risks for financial institutions, including liquidity risk, market risk, and credit and counterparty

credit risk. In addition, payment system providers could potentially be exposed to several nonfinancial risks as a result of their direct or indirect exposures to crypto-assets and related services. These include cyber and operational, legal, reputational, third-party, and implementation risks.

Prudential treatment for crypto-assets could be guided by the following principles:

- *Same activity, same regulation.* Where a crypto-asset and a “traditional” asset are otherwise equivalent in their economic functions and the risks they pose, they should not be treated differently for prudential purposes.
- *Simplicity.* Certain types of crypto-assets potentially could become systemically important. The design of the prudential treatment of crypto-assets should therefore be simple and flexible in nature. Where appropriate, the prudential treatment of crypto-assets should build on the existing framework, especially for crypto-assets with equivalent economic functions and risks as other asset classes.
- *Minimum standard.* Prudential treatment of crypto-assets should be aligned with minimum standards from international standard-setting bodies, with an option to apply additional and/or more conservative measures where necessary.

Bigtech. It is recommended that SADC jurisdictions regulate bigtechs in accordance with finance-specific regulations (banking, credit, payment regulations, and so on) and cross-sectoral regulations (for example, data protection and privacy, data security, competition, and so forth). A combination of regulatory measures for bigtechs would safeguard against their capability to disrupt financial stability.

AI/ML. Applications driven by AI/ML have rapidly evolved in financial services and need close regulatory scrutiny and monitoring.¹² AI/ML applications present potential risks, including dependence on third-party service providers, the emergence of new systemically important players that fall beyond the scope of the regulatory perimeter, a lack of the interpretability or “auditability” of AI/ML methods, and capacity that may result in unintended consequences. AI profoundly changes the functioning of financial systems in at least three areas: products, processes, and analysis.

¹² Although this section of the report focuses on AI/ML, the working group acknowledges that other technology enablers exist, such as blockchain, the use of APIs, biometrics, and so on, and considers these enablers to be key to the fintech development journey for the SADC region.

Public policy concerns with respect to cybersecurity, data privacy, consumer protection, and financial stability should therefore be safeguarded by appropriate regulation and oversight of AI/ML-driven payment services. SADC jurisdictions could apply the same well-established principle of “same activity, same regulation” that has proved to be a sound standard for innovations. This includes the requirement to have appropriate processes for due diligence, risk assessment, and ongoing monitoring of any payment services and products that are AI/ML driven, reassessing existing legal frameworks and supervisory models to cover AI/ML-driven payment services and products.

Another key point to note is the inherent biases that might exist within technology models. For instance, discrimination in AI algorithms and biases can have unintended consequences. Moreover, it can also reduce the transparency and interpretability of the models, increasing systemic risk.

4.3.10. Legal Considerations

Regulators should promote legal certainty through a transparent, comprehensive, and sound legal framework for fintech companies. As fintech businesses modernize, a sound legal basis is imperative. In response to the entry of bigtechs into the fintech sector, regulatory authorities could institute one of the following:

- *Activity-based regulatory frameworks.* Follow the basic principle of “same activity, same regulation” by adapting new technologies to existing law. This approach would ensure that the legal and regulatory frameworks for payments are designed functionally to regulate all providers of regulated payment services per the general rules.
- *Institutional regulatory frameworks.* Adjust the existing legal and regulatory framework to technological innovation to accommodate and extend its application to new technology.

Promoting legal certainty is a part of the general guidelines for developing regulations for fintech and are applicable to emerging innovative fintech activities. Key considerations include the legal framework, stakeholder consultations, the legal framework transparency and accessibility, and the role of regulators in the development of the legal framework. The following key considerations for promoting the legal certainty of electronic payment services are recommended:

- *Adapting the legal framework to system development.* Legal reforms should be based on relevant “model laws” developed by international legal organizations.
- *Developing the legal framework through consultation.* Consultants include all relevant stakeholders, national payment system participants, regulators, and legislators for fundamental reform of the legal framework.
- *Making the legal framework transparent and accessible.* Regulations, legislation, and system rules should be clearly drafted, making use of widely accepted standard form agreements. The laws and regulations should be publicly available, and the critical information contained therein should be easily accessible to all interested stakeholders.
- *Providing a legal basis for central bank functions.* Central banks should derive their oversight responsibilities and powers from explicit statutory or contractual instruments or from general agreements on their overall functional mandate.
- *Involving central bank contributions.* Where there is limited legal expertise on payment systems from other sources, the central bank could help monitor legal developments and identify critical legal issues that may have an impact on the national payment system.

There should be consideration for the formulation of laws specific to electronic payments—that is, payment instrument laws (electronic payment laws); payment obligation laws (settlement); laws on default proceedings and disputes in payments (evidence laws regarding electronic payments and dispute-resolution mechanisms such as arbitration clauses); laws on central bank roles, responsibilities, and authority in the national payment system; and laws relating to the formation and conduct of infrastructure service providers and markets (formation and operation of clearing and settlement arrangements, access and participation in infrastructure systems, pricing of infrastructure services, rules on the issuance and redemption of e-money, and protection of central counterparties from risk).

Provision of electronic payment services specifically requires the need to develop new guidelines to provide greater legal clarity and augment laws and regulations with directives that address data protection, cybersecurity, and financial integrity. Such directives could include the following:

- **Network and information systems directive** to provide legal measures to boost the overall level of cybersecurity.
- **AML directive** to strengthen rules for tackling money laundering, tax avoidance, and the financing of terrorism.
- **Payment account directive** that (i) establishes basic transparency requirements for fees charged by electronic PSPs, (ii) establishes the requirements for payment account switching procedures, and (iii) requires electronic PSPs to offer basic payment accounts.
- **Payment services directive** that (i) defines regulated electronic payment services and the prudential supervisory regime applicable to its users and (ii) defines the rules on transparency for electronic payment services and rights and obligations for electronic payment service users and electronic PSPs.

4.4. Principles for Developing a Fintech Framework

Fintech in the SADC region is emergent and has demonstrated a promise to act as an enabler for financial sector growth, financial inclusion, and, ultimately, economic development. Many countries in the SADC region have become global leaders in mobile money

innovation, leading to large segments of the population gaining financial access.

The following principles constitute a framework to assess fintech developments and develop policy and regulatory approaches (figure 6).

4.4.1. Principle 1: Evaluate the Right Regulatory Approach

No generally accepted method exists to apply regulatory approaches to fintech, and different regulators have employed different methods and tools when assessing and responding to developments. However, the most observed policy responses fall into one of the following:

- *Applying existing regulatory frameworks to new innovations and their business models, often by focusing on the underlying economic function rather than the entity.* In this scenario, the existing regulatory framework does not change; instead, authorities clarify how existing requirements apply to fintech.
- *Adjusting existing regulatory frameworks to accommodate new entrants and the reengineering of existing processes to allow adoption of new technologies.* In this scenario, the current regulatory framework is amended to include fintech activities.
- *Creating new regulatory frameworks or regulations to include or restrict fintech activities.* This includes instruments such as laws or new regulations to

■ Figure 6: Principles for Developing a Fintech Framework



Source: Working Group 2 research.

extend regulatory perimeters, introduce specific requirements for new classes of players in the ecosystem, or prohibit certain specific fintech activities.

4.4.2. Principle 2: Start with the Consumer in Mind

Understanding consumer issues and experiences in relation to fintech and financial products is essential to assessing the burgeoning fintech market and financial sector more generally. This includes gauging consumer expectations of fintech products. Information on consumer experiences and expectations can be obtained through existing data sources, such as complaints data and supervisory activities, and by undertaking new research, such as through consultations with consumer focus groups, engaging with providers and consumer and civil society stakeholders, or conducting broader market research.

Using this consumer research, as well as accompanying data on the jurisdictional fintech landscape, regulators can evaluate whether existing frameworks effectively address the issues facing consumers or whether and how regulatory policy needs to be adapted to address emergent risks. If it is determined that action is needed, an appropriate policy strategy and corresponding prioritized actions can be further informed by this research.

4.4.3. Principle 3: Same Activity, Same Regulation

Although the fintech market in many jurisdictions is not large enough to pose a systemic threat, it is constantly growing and evolving. Moreover, significant differences between the business models of fintech players and those of traditional entities require a significant transformation in supervisory approaches. Though there are no binding international standards for a supervisory framework for fintech, the emerging thinking is to follow the basic principle of “same activity, same regulation.” This assumes that the same activity poses the same level of risk to the system and, hence, should be regulated as such.

4.4.4. Principle 4: Proportionality in Regulation and Supervision

It is good practice for supervisors to establish a risk-based and proportional supervisory method that is

based on activity, rather than entity. The concept of proportionality stems from the need to limit intervention—in the form of rules, sanctions, and oversight—to what is needed to achieve the desired policy objectives. Financial sector policy objectives typically include financial stability, market integrity, and consumer protection. Within this domain, proportionality aims at avoiding policies that could distort the financial-service market—for example, by unduly constraining its development, curbing competition, or limiting the diversity of market participants.

4.4.5. Principle 5: Promote Safe Financial Inclusion and Financial Health

Fintech can have a positive impact on expanding financial inclusion, but it can also pose possible hazards, including to financial health, for ordinary consumers who may not be accustomed to using fintech or financial services generally. To provide safeguards and balance the opportunities of fintech with these hazards, potential risks that may be posed to consumers by emergent fintech products should be considered (as described in Principle 1). However, regulatory measures can potentially harm industry development and, in consequence, financial inclusion. Thus, in terms of a jurisdiction’s priorities and context, a proportionate, risk-based approach should factor considerations of market development, innovation, and industry impacts with the need for consumer protection.

4.4.6. Principle 6: Recognize and Overcome Potential Technological Bias

Regulation should be technology agnostic. It is important that the neutrality of the framework should be maintained, especially in relation to the technology used. In essence, new methods of finance must deliver the same protection as existing business models and market infrastructure, irrespective of the technology used. This is to ensure that regulation does not favor one entity or form of activity over another based on the technology used, provided the risks are the same. As mentioned in Principle 3, countries should effectively look to employ an activity-based regulatory framework. This follows the principle of “same activity, same regulation” by adapting new technologies into existing legislation where appropriate.

4.4.7. Principle 7: Maximize Transparency and Increase Competition

Fintech can be beneficial in increasing competition in the marketplace, making it more efficient. Regulatory initiatives such as sandboxes and innovation hubs help reduce barriers to entry for fintech firms and open the market to competition. As in most sectors of the economy, the benefits of full, effective competition in the financial sector are enhanced efficiency, the provision of better products to final consumers, greater innovation, lower prices, and improved international competitiveness.

Enablers such as open banking—that is, the sharing and leveraging of customer-permissioned data by banks with third-party developers and firms to build applications and services—and increased transparency could increase the competitiveness of current market structures and facilitate new entry and expansion.

However, the potential risk of an uneven playing field should be recognized—by introducing significant and sustained differences in the regulatory burden of incumbents in relation to new entrants or even between those new entrants who choose to enter into dialogue with the regulator and those who do not.

4.4.8. Principle 8: Strive for Interoperability and Harmonize Technical Standards

Interoperability between innovative and traditional products should be considered and implemented where possible, such as whether e-wallets can access bank accounts, and whether e-commerce merchants can receive payments from internet banking, cards, mobile money, and e-wallets.

Policies, procedures, technical standards, and market infrastructure features should also be modernized to support the development of new services, including those led by nonbank players, to provide access to new entrants to the interoperable infrastructure and settlement infrastructure.

4.4.9. Principle 9: Building in Cybersecurity, Data Security, and Privacy Protections from the Start

Due to the continuous threat that cyber risks pose to the industry, fintech companies must incorporate robust cybersecurity, data security, and privacy safeguards

at the beginning of, and throughout, product and service life cycles. As more entities gain access to larger amounts of personal and proprietary data, efforts to gain improper access to this information will increase and may become easier in the absence of appropriate safeguards.

Protecting consumer and institutional data while also protecting the integrity of the financial-service industry infrastructure must be a priority for fintech companies large and small as well as for regulators.

4.4.10. Principle 10: Increase Efficiency and Effectiveness of Financial Infrastructure

As innovations continue to develop in the fintech landscape, institutions should remain focused on continuously improving efficiency, structural integrity and safety, transparency, access, and regulatory compliance. Whether these innovations involve faster payments or compliance systems, they have tremendous potential to improve the financial-service sector.

4.4.11. Principle 11: Ensure Financial Stability

Although the fintech sector is still relatively smaller than the broader financial-service industry, fintech companies must be mindful of, and forward-thinking about, the potential risks that fintech could pose to financial stability. New and untested innovations may increase efficiency and have economic benefits, but they could potentially pose risks to the existing financial infrastructure and be detrimental to financial stability if their risks are not understood and proactively managed. The risks to financial stability may range from the degree of competition versus cooperation between fintech firms and traditional financial-service providers, the provision of core banking functions by fintech firms, and the evolution of the regulatory environment, among other aspects. Therefore, it remains critical for fintech companies to work with incumbent institutions, policy makers, and regulators to identify and mitigate potential risks to financial stability.

4.4.12. Principle 12: Regulatory Approaches

Financial-service firms need to be able to demonstrate not only that they are in compliance with the growing array of fintech-related regulatory requirements but

also that they have considered the various risks posed by fintech more generally. Successful, well-managed firms should adopt a proactive response to emerging risks and to evolving regulation and supervision, not a purely reactive response as and when regulatory and supervisory reactions are finalized.

4.4.13. Principle 13: Strengthen Cross-Sector and Cross-Country Engagement

Fintech companies, financial institutions, and government authorities should consistently engage with one another. Whether the company is a new entrant or

a mature institution, it must seek to develop consistent and ongoing relationships with policy makers and regulators. Likewise, government authorities should seek to learn about product and industry developments directly from participants before problems emerge. Such engagement helps identify areas for collaboration and reduces regulatory uncertainty. Additionally, close collaboration could potentially accelerate innovation and commercialization by surfacing issues sooner or by highlighting problems awaiting technological solutions. Such engagement has the potential to add value for consumers, industry, and the broader economy.

5. Diagnostic Tool to Assess the Fintech Landscape



5.1. Background

This section contains an analytical framework and survey that can be applied to monitor the fintech landscape to identify and rectify legal and regulatory gaps pertaining to fintech and crypto-asset developments in the SADC region. The framework survey would be helpful for legal and regulatory gap assessments as central banks consider their policy and regulatory responses to fintech developments.¹³

Building on work by global standard-setting bodies and other international organizations, the Financial Stability Institute developed the conceptual framework for analyzing policy and regulatory responses to fintech, referred to as the Fintech Tree Conceptual Framework. The fintech tree concept distinguishes three categories: fintech activities, enabling technologies, and policy enablers.

Fintech-related policy measures can be usefully classified into three groups: policies regulating fintech activities directly, policies focusing on the use of new technologies in the provision of financial services, and policies promoting digital financial services more specifically. As proposed by the Financial Stability Institute, this classification can be illustrated by means of a fintech tree, where the treetop represents fintech activities, the trunk represents enabling technologies, and the roots represent enabling policies (Restoy 2019).

5.2 Methodology

The framework is made up of a series of survey instruments that have been designed to provide insight into different cross-cutting areas and/or product themes within the jurisdiction. The survey instruments are intended to identify specific gaps in existing regulatory frameworks.

The survey aims to provide a cross-country overview of the responses that central banks have pursued in relation to fintech and to identify legal and regulatory gaps. However, it has been a major challenge worldwide to design an adequate policy and regulatory framework for fintech.

The responses to such a survey need to be supplemented by a comprehensive review of relevant laws, regulations, and documents as well as a detailed legal gap analysis based on best practices that would aim to identify and rectify legal and regulatory gaps with concrete recommendations on the issuance of guidelines, regulations, or amendments to existing legislation to address fintech and crypto-asset developments.

¹³ This section was developed by Working Group 3 of the overall SADC CCBG Fintech Working Group.

The aim of legal regulatory reforms in fintech and the crypto-assets area is to address the implications of the use of new technologies by financial market participants. Central banks need to balance the potential benefits of technological development and improvements to the financial system and economy with the set of potential risks that could require public intervention.

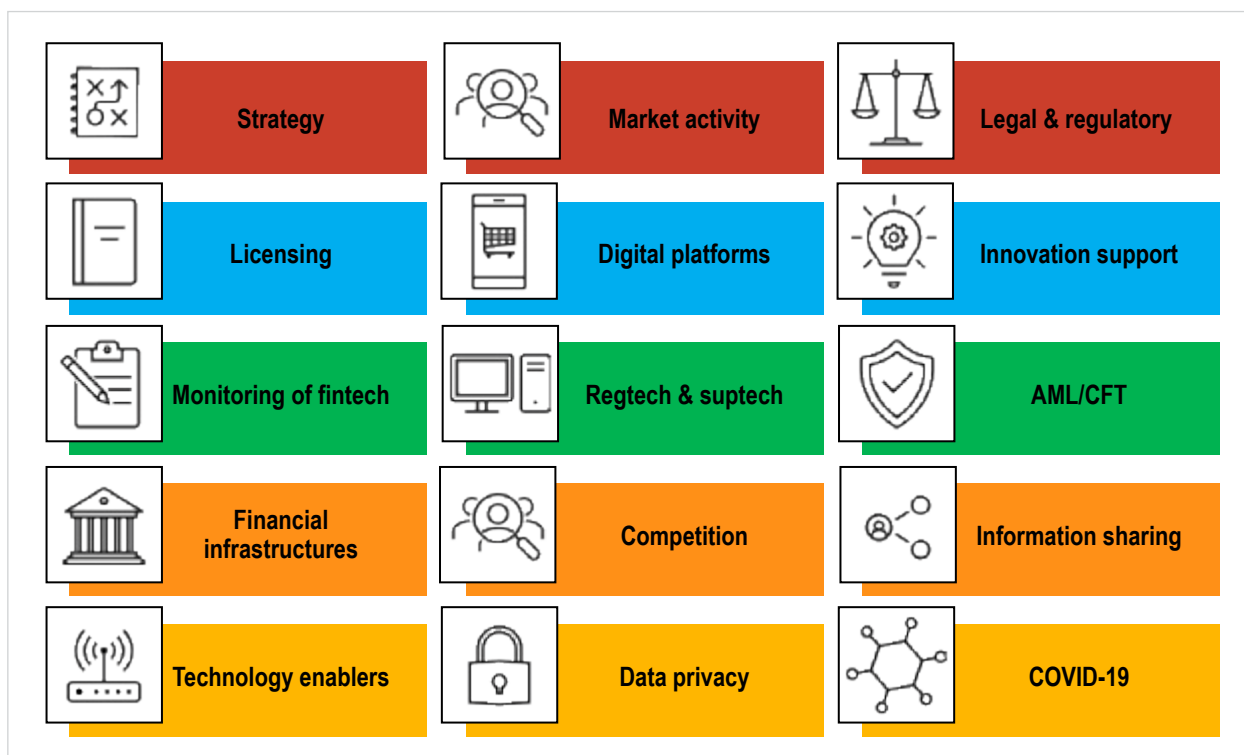
Reliance on unregulated third-party providers might raise operational risk issues, as new payment systems and instruments could compromise market integrity and, ultimately, financial stability; new products might raise consumer protection issues; and new technologies might erode privacy issues.

When used in combination or as a whole, the survey instruments form the basis on which to develop a harmonized regulatory framework that achieves a balance between supporting innovation and managing the potential risks posed by fintech. The survey is expected to be used dynamically by SADC member countries as a means of self-assessment against an overarching fintech regulatory framework.

5.3. Main Themes of the Survey

The survey is intended to map the themes outlined below and to be modular in nature so that regulators can focus on areas of concern. The themes are provided in figure 7, and the detailed self-assessment survey is provided in appendix B.

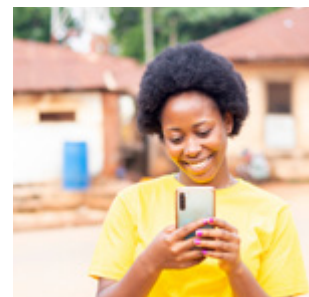
■ Figure 7: Themes of the Self-Assessment Survey



Source: Working Group 3 survey.

Note: AML = anti-money laundering; CFT = combating the financing of terrorism; fintech = financial technology; regtech = regulatory technology; suptech = supervisory technology.

6. Review of Crypto-Assets and CBDC Policy Positions



6.1. Background

Due to the wide-ranging and profound implications of digital money and crypto-assets, central banks in the SADC region are looking to accelerate efforts to reap the full benefits but also manage the risks. Noting the fast-paced developments with digitalization and the need for central banks to act swiftly and be at the forefront in this area, the review and analysis of best experiences will assist SADC member states with further prioritization, given the complexity of the issue and the evolving regulatory environment.¹⁴

Although the international regulatory community is actively engaged in discussions around crypto-assets, approaches are varied and often only partially address potential risks. The fast pace of fintech poses challenges to authorities and standard setters to develop sound regulatory and supervisory approaches to contain the risks while supporting healthy innovation.

Digital money must be designed, regulated, and provided so that countries maintain control over monetary policy, financial conditions, capital account openness, and foreign exchange regimes. Payment systems must grow increasingly integrated, not fragmented, and must work for all countries to avoid a digital divide. Moreover, reserve currency configurations and backstops must evolve smoothly (IMF 2021).

The Group of Twenty (G20) cross-border road map calls for analyzing the various options for leveraging CBDC for cross-border payments, which will improve payment system performance. The possibility of central banks issuing their own digital currency to the broader public, against the backdrop of the development of new forms of private money, such as crypto-assets and stablecoins, has raised the need to study the various aspects of CBDC, from design to implementation, and the implications of CBDC for the financial system, including its policy, regulation, and oversight and the economy more broadly.

Certain conditions must be in place for CBDC to amplify its potential benefits and minimize its risks. All these conditions do not necessarily need to be present at the beginning of the implementation project, but—to the extent possible—they should be achieved as soon as feasible. For example, the presence of relevant foundations, such as a sound legal and regulatory framework, efficient infrastructures (including ICT, digital ID, and networks of service providers), and the strong commitment of relevant stakeholders are critical success factors for reforms of national payment systems (World Bank 2021a).

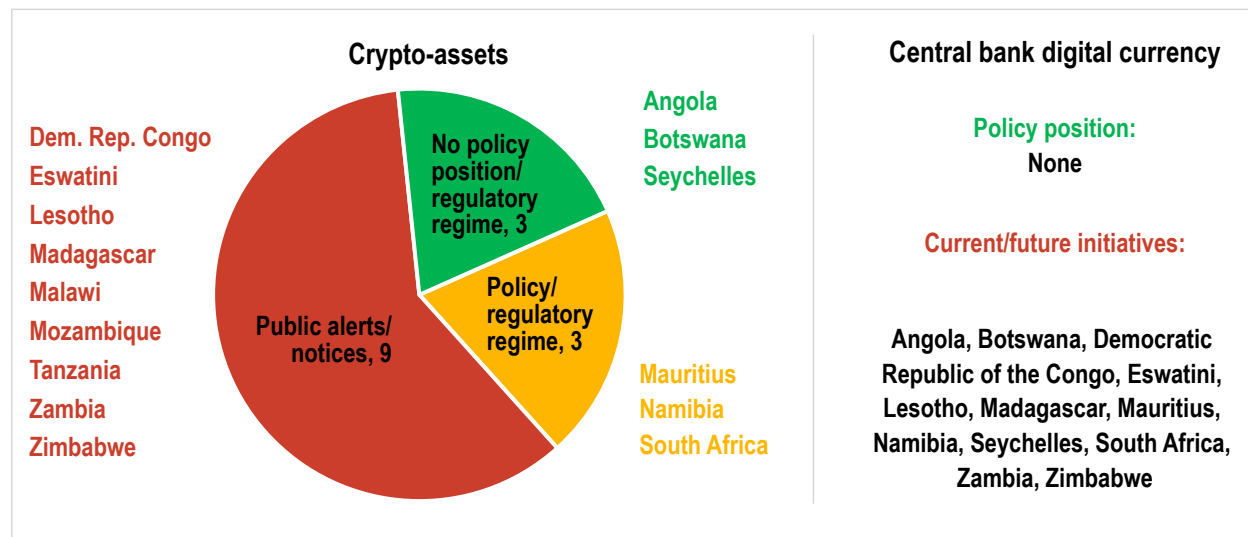
¹⁴ This section was developed by Working Group 4 of the overall SADC CCBG Fintech Working Group.

Finally, the evolving nature of crypto-assets makes it necessary to have a continuous assessment of risks and regulatory approaches. Given the cross-border and cross-sectoral nature of the activities related to crypto-assets, closer international cooperation and coordination at the SADC level is needed to address legal and regulatory gaps

6.2 SADC Member Country Approaches on Crypto-Assets and CBDC

A total of 15 SADC countries responded to the request to submit their crypto-asset and CBDC policy positions and/or regulatory regime. A summary of the responses is provided in figure 8.

Figure 8: Summary of SADC Country Approaches on Crypto-Assets and CBDC



Source: Working Group 4 survey.

A detailed review of country-level policy positions and regulatory regimes is provided based on responses received.



6.2.1. Namibia

| Crypto-Assets |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Overall Position |
| <ul style="list-style-type: none"> The overall position of the Bank of Namibia is that it does not recognize, support, or recommend the possession, utilization, or trading of cryptocurrencies in Namibia and by members of the public. Members of the public who do so will have no recourse to the bank in the event of financial loss or misfortune. As such, the bank strongly discourages any engagements or activities related to unregulated currencies such as cryptocurrencies. The Bank of Namibia strongly discourages the practice of soliciting funds from the public to invest or trade in cryptocurrencies on their behalf. Any person found to be in contravention of the Banking Institutions Act of 1998 (Act No. 2 of 1998) as amended with respect to conducting banking business or illegal financial schemes will be prosecuted in accordance with the relevant laws and bylaws. The public is reminded to refrain from cryptocurrencies and related activities because cryptocurrencies could be used as a platform for illegal financial activities, such as pyramid schemes, unauthorized banking business, money laundering, and terrorist financing and proliferation activities, which may be in contravention of the Banking Institutions Act of 1998 (Act No. 2 of 1998) as amended and the Financial Intelligence Act of 2012 (Act No. 13 of 2012), respectively. |

CBDC

- The Bank of Namibia has completed its research into CBDC and is currently in the process of sourcing a consultant to assist with further work to be done pertaining to CBDC.

Current/Future Initiatives

- The Bank of Namibia has set up an innovation hub that looks into various innovations impacting the bank and the financial system in general. The Financial Intelligence Centre (FIC) has issued directives to enable virtual asset service providers to register with the FIC. The bank has issued a fintech regulatory framework enabling financial services innovations, including virtual assets, to be put through different approaches, varying from sandboxes to test-and-learn approaches within specified parameters.



6.2.2. Mauritius

Crypto-Assets

Overall Position

- The Bank of Mauritius has issued public cautionary notices regarding the risks associated with cryptocurrencies.
- The Financial Services Commission, the regulator for nonbanking financial services and the global business sector, will license security token trading systems and providers of custody services for digital assets. The commission views cryptocurrencies as a subcategory of digital assets.

BOM (Bank of Mauritius) 2017. Public Notices (Extract)

- Cryptocurrencies are unregulated digital money that is neither issued nor guaranteed by a central bank.
- The exchange platforms for these currencies also tend to be unregulated and do not give the same safeguards as regulated ones.
- Consumers are not protected through regulation when using virtual currencies as a means of payment or for investment purposes and may be at risk of losing their money.
- The bank cannot be held responsible in case of any loss that members of the public may sustain on account of any dealing in these unregulated virtual currencies.
- The Virtual Asset and Initial Token Offering Services Act 2021, which regulates virtual asset service providers and issuers of initial token offerings that carry out their business activities in or from Mauritius, came into force on December 16, 2021.

CBDC

- None.

Current/Future Initiatives

- The Bank of Mauritius is working on the feasibility of the introduction of CBDC.



6.2.3. South Africa

Crypto-Assets

- The South African Reserve Bank does not oversee, supervise, or regulate the crypto-asset landscape, systems, or intermediaries for effectiveness, soundness, integrity, or robustness. Consequently, all activities related to the acquisition, trading, or use of crypto-assets (particularly decentralized convertible crypto-assets) are performed at the end user’s sole and independent risk and have no recourse to the bank.
- Given the current landscape and information currently available, the bank contends that crypto-assets pose no significant risk to financial stability, price stability, or the national payment system. However, end users, whether individuals or businesses that accept crypto-assets and businesses involved in the crypto-asset ecosystem, are cautioned that any activities performed or undertaken with crypto-assets are at their sole and independent risk.
- In line with the bank’s position that regulation should follow innovation, the bank continues monitoring developments in this regard and reserves the right to change its position should the landscape warrant regulatory intervention.
- A position paper on crypto-assets was issued for public comment, with 30 policy recommendations. The paper is currently under review, with a specific focus on updating the recommendations.
- In support of the review of the position paper on crypto-assets, the reserve bank is currently conducting research on whether payment use cases can be brought within the National Payment System Act (which is currently being reviewed).
- Crypto-assets have been declared a financial product under the Financial Advisory and Intermediary Services Act.

CBDC

- The bank is considering findings and recommendations of a feasibility study for the issuance of electronic legal tender—a retail CBDC issued and backed by the South African Reserve Bank.

Current/Future Initiatives

- The Intergovernmental Fintech Working Group Innovation Hub announced the launch of Project Khokha 2 to explore the policy and regulatory implications of innovation in financial markets driven by DLT.
- Project Khokha 2 will issue, clear, and settle debentures (bonds) on DLT using tokenized money in a minimum viable product to inform policy and regulatory reflections. Industry participants will be able to purchase the debentures with a wholesale central bank-issued digital currency and a wholesale digital settlement token (wToken). The wToken can be seen as a privately issued stablecoin used for interbank settlement.



6.2.4. Democratic Republic of the Congo

Crypto-Assets

Public Notice

- The governor of the Central Bank of the Democratic Republic of the Congo has published a public notice on cryptocurrencies, crypto-assets, and similar currencies. The notice stipulates that all structures that are not regulated are neither authorized in accordance with the provisions of Law No. 003/2002 of February 2, 2002, relating to the Banking Law nor are allowed to operate in the Democratic Republic of the Congo.

CBDC

- None.

Current/Future Initiatives

- A team has been tasked with the study of CBDC to better understand its mechanism and advantages in relation to the national economy.



6.2.5. Eswatini

Crypto-Assets

Overall Position

- The central bank, in line with its mandate to issue and redeem currency, as well as to promote safe and accessible payment systems, continues to closely monitor developments in the financial-service industry with a view to ensure that the regulatory framework remains relevant and appropriate. The bank acknowledges its role in supporting innovation and adoption of new technologies in the industry and, together with many other regulatory institutions worldwide, adopts an optimistic but cautious view that the financial-service industry will certainly benefit from these technologies but that their development and deployment must be done in a manner that sufficiently safeguards the interest of the users.

Public Statement (Extract)

- The Central Bank of Eswatini Order 1974 (as amended) stipulates that only notes and coins issued by the central bank shall be legal tender in Eswatini.
- Currently, the bank has authorized as legal tender in Eswatini the Lilangeni and the South African rand, which continue to circulate side by side and on par.
- Other foreign currencies are traded by licensed institutions in the country in line with applicable exchange control legislation, and it is understood that these foreign currencies have, as a key attribute, the feature that they are issued and redeemed by the duly authorized institution in their country of issue and hence enjoy legal tender status, which a cryptocurrency, by definition, does not.
- This presents a risk to users of the currency because no protection or legal recourse is available from any institution, including the central bank, in the event that the user suffers financial loss from the use of bitcoin or any other cryptocurrency.

CBDC

- None.

Current/Future Initiatives

- The outcomes of a CBDC diagnostic from 2020 suggest that CBDC can add value to the Eswatini economy and financial system in three important ways: payment system efficiency, consumer demand, and fiscal consolidation. This indicates that exploring the possibility to pilot or eventually to implement a CBDC of some form in Eswatini is relevant and may potentially be beneficial for the country.
- However, further research is warranted to investigate whether necessary prerequisites are currently in place to enable identified CBDC use cases. This investigation would therefore seek to evaluate whether: (i) key infrastructure and market prerequisites are in place to support the payment use case and the long-term fiscal gains via existing identity systems, (ii) key preconditions are present to encourage merchant and consumer acceptance/adoption of CBDC, (iii) regulation and sufficient institutional capacity exists to bring CBDC into effect in a safe and secure way, and (iv) institutions are ready and capable of ensuring its success.
- These research endeavors will form part of the second phase of the CBDC diagnostic, if chosen to be pursued by the central bank and its board of directors.



6.2.6. Lesotho

Crypto-Assets

Public Warnings

- The emerging and growing promotion of cryptocurrencies

(Ref: 09112017/2):

- Section 23 of the Central Bank of Lesotho Act of 2000 gives the bank the powers to be the sole issuer and redeemer of currency in Lesotho.
- The Central Bank of Lesotho hereby notifies and warns the public that it does not oversee, supervise, or regulate the cryptocurrencies, their systems, promoters, or intermediaries.

Ref: 07022018/1:

- Members of the public are warned that, by virtue of being offered as (financial) investment opportunities to the public, cryptocurrencies directly expose their promoters to violation of sections 27 and 28 of the Central Bank of Lesotho Capital Market Regulations of 2014, which require investment advisers to be licensed by the Central Bank of Lesotho.

CBDC

- None.

Current/Future Initiatives

- Work currently under way to develop the fintech strategy may provide policy guidance on fintech, including cryptocurrencies or crypto-assets or CBDC.



6.2.7. Madagascar

Crypto-Assets

Public Notice (2021)

- Warning the public against trading and usage of crypto-assets by highlighting evolving risks and specifying the following:
- Crypto-assets are not considered legal tender in Madagascar and are not backed by the central bank.
- No dedicated laws, regulations, or regulatory compliance requirements specifically govern the use of crypto-assets in Madagascar.
- The central bank does not currently oversee, supervise, or regulate crypto-assets.
- The central bank is fully aware that the sector evolves rapidly and may give rise to areas or potential gaps that require more regulatory focus in the future. In this regard, the bank keeps carrying out attentive and continuous monitoring and stays abreast of any significant changes that may influence the current approaches.

CBDC

- The central bank considers that issuing CBDC might bring greater impacts on the efficiency of domestic payments and financial inclusion.
- Currently, the central bank recognizes that it is strongly important to proceed with caution. Then it is essential to assess beforehand whether the opportunities offered by the issuance of a CBDC will outweigh the costs and the unintended implications.

Current/Future Initiatives

- The central bank is currently assessing the opportunities, costs, and unintended consequences of CBDC. Furthermore, the central bank is planning to conduct deeper investigative and experimental phases to carefully weigh CBDC's implications for financial stability, monetary policy, legal aspects, and the overall economy.



6.2.8. Malawi

| Crypto-Assets |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Public Statement on Cryptocurrencies |
| <ul style="list-style-type: none"> • The Reserve Bank of Malawi wishes to advise the general public that cryptocurrencies are not legal tender in Malawi. • The general public is further being informed that the reserve bank shall neither approve nor recognize any inbound or outbound foreign investment in cryptocurrencies. • The reserve bank wishes to acknowledge that it is aware that the underlying cryptocurrency concept is blockchain technology, which has proved to be so versatile that it has found beneficial application in various other areas of commercial activity in the business world. As such, the reserve bank wishes to underline that this public statement is against trading in cryptocurrencies and any related activities rather than the technology behind it. • The reserve bank wishes to assure the general public that it will continue to monitor domestic, regional, and global developments regarding the subject matter and reserves the right to review its position regarding any regulatory intervention it may feel necessary to apply. |
| CBDC |
| <ul style="list-style-type: none"> • None. . |
| Current/Future Initiatives |
| <ul style="list-style-type: none"> • Just like cryptocurrencies in general, CBDC remains largely uncharted territory whose developments are just being monitored for the time being. |



6.2.9. Mozambique

| Crypto-Assets |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Public alert: Alert about the risks arising from bitcoin-related transactions. • The bank does not regulate, supervise, or oversee any activities and transactions carried out through bitcoin. |
| CBDC |
| <ul style="list-style-type: none"> • None. |
| Current/Future Initiatives |
| <ul style="list-style-type: none"> • None |



6.2.10. Tanzania

Crypto-Assets

Public Notice on Cryptocurrencies

- This is to advise members of the public against the trading, marketing, and usage of virtual currency because doing so is contrary to existing foreign exchange regulations.
- The Bank of Tanzania, as stipulated in sections 26 and 27 of the Bank of Tanzania Act of 2006, is the sole institution in Tanzania mandated to issue banknotes and coins and to declare a legal tender in the country. The Bank of Tanzania, therefore, reiterates that the only acceptable and used legal tender in the country is the Tanzanian shilling.
- Other foreign currencies are traded by licensed institutions in the country in line with applicable foreign exchange regulations, where the currencies could be issued and redeemed in the country of issuance as a legal tender.

CBDC

- None. .

Current/Future Initiatives

- None



6.2.11. Zambia

Crypto-Assets

Public Notice on Cryptocurrencies

Bank of Zambia press release:

- Section 30 of the Zambia Act vests the right to issue notes and coins exclusively in the Bank of Zambia. To date, the bank has not issued any form of cryptocurrency. Cryptocurrencies are not legal tender in the Republic of Zambia.
- The Bank of Zambia neither oversees, supervises, nor regulates the cryptocurrency landscape. Consequently, any and all activities related to the buying, trading, or usage of cryptocurrencies are performed at owner's risk.
- In line with the Bank of Zambia's position that regulation should not constrain but enable innovation, the bank will continue to actively monitor all developments.

Securities and Exchange Commission notice on cryptocurrencies and related digital products/assets:

- Whether any digital assets/products fit the description of a financial security in accordance with the Securities Act will be assessed on a case-by-case basis focusing primarily on each asset/product's characteristics, features, and uses.
- These products are not regulated by the commission unless they meet the definition of security as defined in the Securities Act. This will be considered on a case-by-case basis.
- The commission would further like to caution those who are operating any systems and platforms within Zambia that effect or facilitate transactions for the abovementioned products/assets to ensure that they are not in any way abrogating any part of the Securities Act and that those products/assets that meet the description of securities in accordance with the Securities Act are registered with the commission.
- The commission believes that the emergent technology on which cryptocurrencies and other related digital assets/products are based may prove to be positively disruptive, transformative, and efficiency enhancing. This could ultimately lead to an increased assortment of investible products/assets within financial markets and possibly enable the investment process to be more efficient. However, as this process continues to develop, it is important that caution be observed by investors.

CBDC

- The country is conducting research on the feasibility of issuing a CBDC..

Current/Future Initiatives

- None



6.2.12. Zimbabwe

Crypto-Assets

Overall Position

- Over the past five years, the Reserve Bank of Zimbabwe has continued to guide the market and consumers on the status of virtual currencies through the issuance of circulars and monetary policy statements.

Public Statement (Extracts)

- Circular No. 01/11/2015 warned consumers against the use of virtual currency and the attendant risks.
- **Extract:** The unit will continue to monitor evolving risks posed by virtual currencies both nationally as well as globally and to put in place commensurate measures to address the risks.
- **Public warning:** The press statement (December 20, 2017) also warned the public against transacting in virtual currencies and advised that the operations of the same were not regulated by the reserve bank and had no legal recourse.
- Circular to Banking Institutions No. 2/2018 and the subsequent press statement of May 18, 2018, provided similar guidance and a warning against trading in the virtual currencies that are not currently regulated.
- **Extract:** All financial institutions are hereby required to
 - ensure that they do not use, trade, hold, and/or transact in any way in virtual currencies;
 - ensure that they do not provide banking services to facilitate any person or entity in dealing with or settling virtual currencies; and
 - exit any existing relationships with virtual currency exchanges within 60 days of the date of this circular and proceed to liquidate and retribute existing account balances.
- For the avoidance of doubt, banking services include maintaining accounts, registering, trading, clearing, collateral arrangements, remittances, payment and settlement accounts, giving loans against virtual tokens, accepting them as collateral, opening accounts of exchanges dealing with them, and the transfer/receipt of money in accounts relating to the purchase/sale of virtual currencies.

CBDC

- None.

Current/Future Initiatives

- In 2018, the Reserve Bank of Zimbabwe set up a Fintech Working Committee under the Office of the Deputy Governor specifically to review the policy position on fintech developments, including crypto-assets. The membership comprises all key government entities and will be extended to strategic private sector representatives.
- The objective of the committee is to formulate a coherent and comprehensive framework stance on fintech while ensuring the continued integrity and efficient functioning of financial markets and the services sector and, at the same time, maintaining financial stability, upholding consumer protection, and combating money laundering and terrorist activities.
- Through the establishment of the fintech committee, the Reserve Bank of Zimbabwe recognized the need to use evidence-based policies to develop and, where necessary, aid the transition to incorporating new technologies, such as the cryptocurrencies/assets.
- Notably, the issued policy guidance remains the regulatory position on cryptocurrencies and CBDC, and the Fintech Working Committee has been mandated to expeditiously produce the requisite framework to govern the development of innovative financial services in the economy.



6.2.13 Angola

Crypto-Assets

- None

CBDC

- None.

Current/Future Initiatives

- The central bank is currently studying the concepts, risks associated with crypto-assets, and measures adopted by some authorities. A public statement on the National Bank of Angola's position on crypto-assets was also prepared, but it has not been disclosed yet.
- Analysis and benchmarking for CBDC is under way.



6.2.14. Botswana

Crypto-Assets

- Botswana introduced the Virtual Assets Act of 2022 and the Virtual Assets Regulations of 2022 effective February 25, 2022.
- The act seeks to regulate the sale and trade of virtual assets and the licensing of virtual asset service providers and issuers of initial token offerings and to provide for matters connected, incidental, and related thereto.
- As such, any person wishing to operate as a virtual asset service provider or an issuer of initial token offering is required to apply for a license in accordance with the act and its regulations. The act is administered by the Non-Bank Financial Institutions Regulatory Authority.

CBDC

- None.

Current/Future Initiatives

- A cross-departmental Fintech Monitoring and Strategy Group was established with a focus on monitoring and assessing relevant fintech developments and determining areas of interest and impact that will inform the policy response of the bank.



6.2.15. Seychelles

Crypto-Assets

- None

CBDC

- None.

Current/Future Initiatives

- Work is in progress on a position paper on crypto-assets and research is being undertaken on CBDC.

7. Innovation Facilitators



7.1. Background

Globally, regulators have reacted to the emergence of fintech with a variety of responses. However, variables such as the jurisdictional context, including legal and regulatory frameworks, the complexity of the fintech market, and the availability of resources play important roles. Policy priorities also play a role here. For some jurisdictions, approaches to fintech were instituted with a focus on supporting market development objectives, such as economic growth, productivity, and financial inclusion. Other jurisdictions seek to understand and mitigate the potential risks from emerging financial innovation to consumer protection, financial integrity, and financial stability.¹⁵

Broadly, the following four types of regulatory tools and approaches have emerged in response to fintech:

- *Wait and see.* In this approach, regulators observe and monitor innovation trends at arm's length before intervening where and when necessary.
- *Test and learn.* In this market-driven approach, regulators create custom frameworks for individual business cases, allowing the business to function in a ring-fenced, live environment (often with dispensations, such as a “no-objection” or “no-action” letter).
- *Innovation facilitators.* Regulators using this approach put in place a framework and mechanisms to promote innovation and experimentation. These approaches include innovation hubs, regulatory sandboxes, and regulatory accelerators and are the focus of this report.
- *Regulatory laws and reform.* This approach involves introducing new laws or enhancements to existing laws or licenses in response to innovative firms or business models.

Detailed descriptions, pros and cons, and the applicability of each approach are provided in appendix C.

¹⁵ This section was developed by Working Group 5 of the overall SADC CCBG Fintech Working Group.

7.2 Good Practice Guidelines for Establishing Innovation Facilitators

The guidelines defined are intended to serve as a reference guide for SADC members seeking to develop mechanisms to engage with fintechs and related stakeholders. Although not all fintech activities fall outside of existing regulatory frameworks, many areas have emerged where the regulatory framework for fintech activities is unclear or nonexistent. In response to these emergent scenarios, responses have included new laws, innovation offices, regulatory sandboxes, and reskilling. This good practice guide draws from international experiences and highlights several recognized models of innovation facilitators. The pros and cons of other approaches are also outlined in the interest of completeness.

Good practice 1. Consider the institutional mission of the policy maker or regulator and its policy priorities.

Good practice 2. As an initial step, an assessment of the jurisdictional context and fintech landscape should

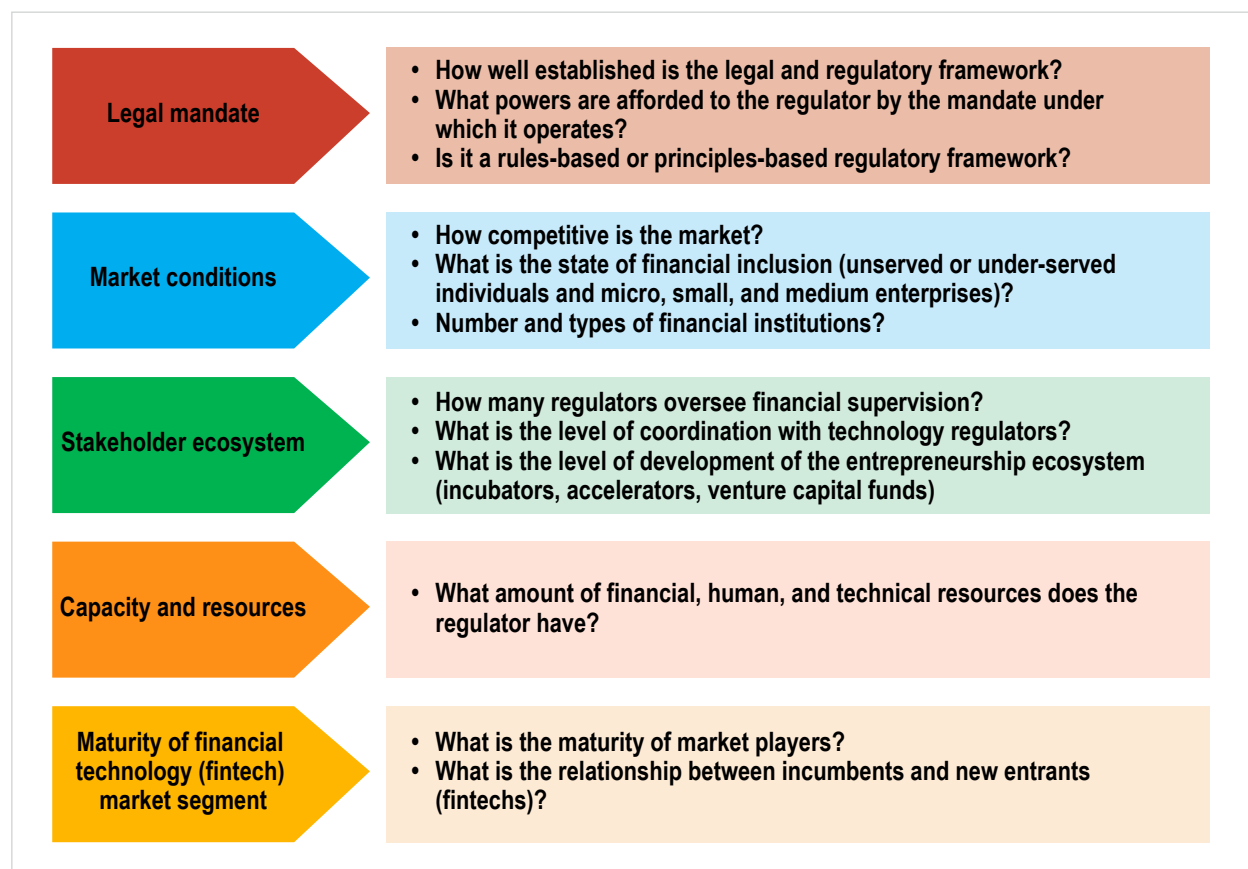
be undertaken before deciding on a regulatory approach to fintech. The factors to access are summarized in figure 9.

Good practice 3. In the context of individual jurisdictions, where different regulatory objectives (for example, financial stability, consumer protection, market conduct, competition) are mandated to different agencies, the adoption of an approach to fintech will also require intra-agency coordination. The table below provides an assessment of various regulatory approaches and inherent implications.

7.3. Defining Innovation Facilitators

Innovation facilitators have become popular tools and approaches used by regulators to enable the development of fintech. Dependent on the objective, the structure and design of innovation facilitators can vary greatly from simple points of contact within existing bodies to more structured framework

■ Figure 9: Factors to Consider before Evaluating a Regulatory Approach to Fintech



Source: Adapted from World Bank 2020a, 2020b.

■ Table 4: Policy Assessment and Implications with Regulatory Approaches to Fintech

| | Wait and see | Test and learn | | | Innovation facilitators | | | Regulatory reform |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| | | Letters of no objection | Waivers/exemptions | Restricted authorization | Innovation hubs | Regulatory sandboxes | Accelerators | |
| Legal and regulatory framework | Needs to be within the scope of the regulator to permit postponing decisions until all valid contingencies have occurred | Require powers to interpret law | Usually codified in law; therefore, no need for subjective decisions from the regulator | Usually codified in law, but subjective decisions from the regulator required | No additional legal powers required to set up a point of contact | Require wide scope of powers to provide restricted authorization, proportionate requirements, or waivers, if required | No additional legal powers required; provides the ability to test, demo, and generate proof of concepts for emerging technologies, but procurement laws may need to be considered | The efficiency with which this can be conducted depends on the overarching legal system in which the jurisdiction operates |
| Capacity and resources | Minimal additional resources required, but the activity should be monitored | No additional resources for implementation or maintenance are required after dispensation is provided | Require resources for establishment; no special resources for maintenance are required | Require resources for establishment; no special resources for maintenance are required | Require dedicated resources for establishment and operation | Require substantial resources for establishment, continuous design, maintenance, and monitoring | Require dedicated resources for establishment and operation | Resources dedicated to financial technology might not be needed, but supervisory capacity will need to be increased |
| Market conditions (including maturity) | Relevant for markets with limited capacity, but keen not to hinder innovation; useful as an initial step before embarking on other, more involved approaches | Relevant for smaller markets with a more contained scope of innovative services; also useful for nontraditional firms entering the financial sector | Relevant for developed markets with active unlicensed players | Relevant for smaller markets with a contained scope of innovative services | Relevant for those markets where a need for regulator input is observed, but the approach is undecided (good precursor to a sandbox) | Relevant for developed markets with active unlicensed players | Relevant for those regulators who want to improve their functioning and streamline compliance | Relevant for those markets where a clear gap in the regulatory environment is noted |

| | | | | | | | | |
|------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stakeholder ecosystem | Requires trust from the market, as decisions are discretionary | Requires trust from the market, as letters of objection can be contested | As regulators do not make arbitrary decisions, trust from the market is not of primary relevance | As regulators do not make arbitrary decisions, trust from the market is not of primary relevance | Market trust not a key factor but a useful added value to ensure the success of the hub | Requires high levels of trust from the market, as regulators' decisions are discretionary and can be contested | Require trust and market participation to ensure success | Regulators do not make arbitrary decisions, and policies are often put out to consultation before being passed into law, underlining the importance of stakeholder buy-in |
|------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

environments to provide space for experimentation. Generally, they focus on promoting greater knowledge exchange and interaction, with both new entrants and incumbents developing new technology-driven products and services. Facilitators can also be used to monitor market developments, including the challenges, risks, and opportunities related to technological innovation in the financial sector and the impact of this on financial stability.

Innovation facilitators tend to be more resource intensive, requiring the involvement of more staff with specialized skill sets as well as office space. For any facilitator approach, a careful analysis of the costs and expected benefits should be undertaken at the outset and periodically evaluated against results.

7.3.1. Types of Innovation Facilitators

Innovation hubs. An innovation hub can take various avatars, depending on the appetite and mandate of the authority. It is most often a central contact point to streamline queries and provide support, advice, and guidance to either regulated or unregulated firms to help them navigate the regulatory, supervisory, policy, or legal environment.

Regulatory sandboxes. A regulatory sandbox is a virtual environment that enables the live testing of new products or services in a controlled and time-bound manner. This involves a more structured approach, which often includes controlled experimentation in a live environment to promote innovation and guide interactions with firms while allowing regulators good oversight of emerging financial products.

Regulatory accelerators. Accelerators are more inward focused and enable partnership arrangements between innovators or fintech firms and government authorities to innovate on shared technologies to solve predefined use cases.

Several good practices exist that are common to all types of facilitators, regardless of the engagement model chosen.

Good practice 4. Regulators seek to undertake a feasibility assessment to understand the potential costs—both financial and human—and benefits of the selected regulatory approach.

Good practice 5. Regulators should consider the preparedness to offer regulatory relief that will help determine the type and design of the regulatory approach.

Tip Box: Get an executive-level sponsor and engage with the market often and early.

Good practice 6. Innovation facilitators should have clearly defined objectives, scope, functions, and eligibility criteria and tools, if applicable. These should be made transparent to the public.

Good practice 7. Access and knowledge to the facilitators, including relevant points of contact, should be easily available and visible to market participants, such as through a dedicated web page, external communications, press releases, frequently asked questions (FAQs), and so on.

Good practice 8. Outreach events on the facilitator's role and objectives are beneficial to sensitize the market and should include public and private sessions with key government, private sector, and development partner stakeholders.

Good practice 9. Authorities should maintain a record of the internal operations and decision-making process of the facilitator, including a database of all those firms that have applied to or interacted with the facilitator.

Good practice 10. A roster of subject matter experts, both internal and external, should be identified and engaged (for example, experts on supervision, payments, consumer protection, and technology) as necessary to resolve targeted regulatory inquiries.

Good practice 11. Lessons from facilitators should be disseminated within the authority, and, where appropriate, communications should be made externally on the regulatory and supervisory approaches identified through the facilitator.

Good practice 12. The regulator should be clear that the advice it provides is not intended to be interpreted as legal advice and that firms should engage their own legal advisers. What the regulator provides should be focused on how to navigate the regulatory environment.

Good practice 13. Innovation facilitators can gain from seeking lessons learned by other jurisdictions by developing regional and international collaboration at the outset of their initiatives.

Good practice 14. Innovation facilitators can deliver more impact when they are integrated within the regulatory ecosystem, and especially when they are well integrated within a regulatory authority.

Good practice 15. Internal engagement is critical to enabling facilitators to achieve their objectives. Frequent and close coordination between regulatory functions, including supervisory, legal, and enforcement, is necessary to understanding parameters and limits.

Good practice 16. Executive leadership and institutional support, including through demonstrated buy-in and allocation of appropriate resources.

7.4. Innovation Hubs

Innovation hubs, sometimes referred to as innovation offices or labs, most often provide a dedicated point of contact for firms to raise inquiries with competent authorities on fintech-related issues and to seek nonbinding guidance on regulatory and supervisory expectations, including licensing requirements. Most commonly, they provide support, advice, guidance, and even, in some cases, physical office space to regulated and unregulated firms. Single points of contact, dedicated newly created units, identified networks of experts, or similar organizational arrangements can be considered as innovation hubs.

Supervisors may use innovation hubs to understand and monitor the new business models and technologies and to identify regulatory and supervisory challenges associated with fintech.

Tip Box: An innovation hub can be particularly useful for those jurisdictions that are considering their approach to fintech, and it can be less resource intensive to establish than other options. An innovation hub can complement other approaches and is a good primary step for regulators to gauge the interest and maturity of the market.

7.4.1. Observed Good Practices for Innovation Hubs

Good practice 17. Hubs should have dedicated resources. They may be able to start lean, with a small core staff of two or three dedicated team members, but then expand as the initiative grows.

Good practice 18. Although regulators should be cautious not to provide legal advice to firms (see good practice 12), staff must nevertheless have appropriate expertise and be well informed on the intersection of

technology-led innovation and financial regulation to provide useful advice and support, especially on clarifying regulatory frameworks—which is the main function of an innovation hub.

Good practice 19. Responses to inquiries received via innovation hubs should be provided within a defined, reasonable time frame. Innovation hubs should maintain a database of all inquiries received to inform decision making and ensure follow-through.

Good practice 20. Where inquiries raise issues that fall outside the scope of the authority or authorities responsible for innovation hubs, a referral should be made to other relevant authorities, where appropriate (see good practice 3 on coordination).

Good practice 21. Industry associations can play an important role as key stakeholders for innovation hubs, advising members and raising concerns of inappropriate provider behaviors.

7.5. Regulatory Sandboxes

A regulatory sandbox is a time-bound, live, controlled, testing environment defined by regulators. It allows innovators to test, on a small scale, innovative products, services, business models, and delivery mechanisms subject to regulatory discretion and proportionality. The testing environment often involves limits or parameters within which the testing firms must operate.

At their core, sandboxes are formal regulatory programs that are a reaction to the rapidly changing backdrop of digital financial services. They provide a dynamic, evidence-based regulatory environment that learns from, and evolves with, emerging technologies. Sandboxes bring the potential to change the nature of the relationship between regulators and financial-service providers toward a more open and active dialogue, and they bring agility to the regulatory and supervisory framework; however, the evidence on sandboxes from available data is still inconclusive.

Good practice 22. Set clear objectives before setting up a sandbox because they will define both the design and the measurement of outcomes. The objectives will help inform other design components, get stakeholder buy-in, set expectations, target implementation, measure results, and identify where adjustments may be needed. A sandbox may have more than one objective, but it should be well aligned with the regulatory mandate and priorities.

Good practice 23. A sandbox is a formal program that must align with the regulator’s statutory mandate and background legal and regulatory requirements. Therefore, threshold legal feasibility analysis is necessary to confirm permissible sandbox objectives (mandate), eligible participants, testing constraints, and available regulatory relief.

7.5.1. Good Practices for Eligibility and Selection

Good practice 24. Set clear and measurable eligibility criteria, including the type of firm that will be allowed to apply to a sandbox—that is, licensed or otherwise formally authorized entities, fintech firms, and technology providers—the fitness and propriety of applicants’ key stakeholders, the risk mitigation plan, and consumer protection safeguards, among others.

Good practice 25. Identify and invite key internal staff to participate on the review and selection committee and engage with external resources as needed.

Good practice 26. All applications should be subject to the same level of scrutiny and the same rigorous checks, and the decision-making process should be as transparent as possible. Once the firms are selected, it is good practice to publish a list of firms that are going through the sandbox process with the regulator to ensure transparency.

Good practice 27. Develop FAQs and guidance to reduce ineligible and incomplete applications and encourage high-quality and complete submissions.

Good practice 28. Maintain a register of applicants so that those who do not qualify for this round might be invited for subsequent ones.

7.5.2. Good Practices for Testing and Exit

Good practice 29. Ensure that a detailed, clearly defined testing plan is in place prior to commencing the test, including (i) test objectives and intended outcomes, (ii) anticipated test duration, (iii) key metrics and outcome indicators, (iv) reporting requirements and frequency, and (v) milestones.

Good practice 30. Relaxations: The specific regulatory requirements that can be relaxed or modified to accommodate the test should be identified well in advance of the test. It is also useful to keep in mind those regulations that need to be evaluated during the test.

Good practice 31. Testing restrictions: Sandbox activities must comply with some legally mandated restrictions and requirements that fall outside a regulator’s discretion, such as minimum AML/CFT compliance. These should be noted.

Good practice 32. Boundary conditions: It is good practice to define boundary conditions, including, but not limited to, client type and number, transaction size, and total exposure limit for firms within the sandbox. Measures to monitor and ensure compliance with the boundary conditions should also be established.

Good practice 33. Safeguards:

- A clear, precise, and actionable risk mitigation plan should be in place for each firm that is undergoing testing.
- Develop measures to mitigate risks to, and impact on, customers arising from any test failures, including insurance or compensation programs.
- Disclosures and safeguards, particularly those for consumers, should be reviewed by regulators prior to the test.
- Develop and implement measures to handle client inquiries, after-test services, and complaints in a fair and effective manner.

Good practice 34. Exit strategy: Authorities should ensure that a clear and actionable exit strategy is created and reviewed before the testing ensues. The regulator should understand its options for “graduating” sandbox participants when an innovation has tested successfully and the regulator considers it worthwhile for the market. The three main options are full license granted, extension granted, and failure and exit from the process.

Good practice 35. Regulatory change: Sandboxes are unique in that they provide the empirical evidence needed for a rule or regulation change. Regulators should be prepared to make that change, if needed.

7.6. Regulatory Accelerators

An accelerator for regulators is more inward focused than the other innovation facilitators and enables partnership arrangements between innovators or fintech firms and government authorities to “accelerate” growth, innovate on shared technologies, and develop use cases that are particular to that authority. Regulatory accelerators are often used as suptech tools to support oversight and other supervisory functions.

In addition to the good practices for eligibility and selection noted in the sandbox section above, the following good practices have been observed:

Good practice 36. Clear priority areas should be chosen to streamline the application process and ensure that the outcomes dictate the eligibility criteria.

Good practice 37. Firms that the regulator directly regulates should ideally not be a part of the regulatory accelerator due to conflict-of-interest issues.

Good practice 38. Issues such as data storage portability, storage, compliance with data laws, and the use of confidential and market-sensitive information should be considered before engaging with a firm.

Good practice 39. A proof of concept is usually conducted as part of the accelerator and can lead to a more permanent service provider relationship with the chosen firm if required. The accelerator should have a dedicated technology resource to support the technical build of the proof of concept.

Tip Box: Contract negotiations are by far the longest and most onerous part of the accelerator process. A streamlined negotiation process should be put in place, with proportionate thresholds relating to business needs for conducting a proof of concept.

Good practice 40. It is good practice to sign a nondisclosure agreement with firms conducting the proof of concept or even with those that reached the final stage of the application process. This is to protect the firms' intellectual property rights.

7.7. Evaluating Impacts

Evaluations should be done to understand whether the innovation facilitator framework is fit for purpose or needs to be streamlined—this introduces agility into the regulators' processes.

Good practice 41. Having a clear objective and intended outcomes can underpin a facilitator's success. Translate objectives into measurable indicators and targets to ensure that progress is tracked and assessed.

Good practice 42. Evaluation assessments should be done not only at the end of the process but also at a midpoint to ensure continued suitability and relevance.

Good practice 43. It is good practice to have both quantitative and qualitative metrics and indicators.

Tip Box: Simple quantitative metrics often used by sandboxes, such as the number of firms admitted into the sandbox, are not wholly useful dimensions for quantifying achievements or testing policy implications.

Good practice 44. Outcomes should be defined at four levels: (i) country-level outcomes, (ii) regulatory outcomes, (iii) market- and firm-level outcomes, and (iv) operational and institutional outcomes.

Tip Box: Regulatory outcomes can include direct regulatory change or knowledge and intelligence gathered that affect regulation, supervision, or policy.

Good practice 45. Country-level outcome indicators should focus on how well the facilitator contributes to broader financial sector outcomes. This may include, for instance, national financial inclusion goals, economic measures such as the ability to attract foreign talent and improve growth, or broader digital development.

Good practice 46. Final evaluations should be conducted at the end of a process or after a defined duration. This is a point-in-time evaluation and should be positioned to help determine the impact on broader financial sector and national goals, such as building institutional capacity, enabling firms to come to market, growing the broader fintech ecosystem, or contributing to national financial inclusion progress.

Good practice 47. Collecting and leveraging different data points and indicators will help policy makers evaluate impact and support the ability to adjust operations and processes to the needs of the policy maker, consumer, and market. Sources of additional data points include market research leveraging insights from stakeholders through consumer surveys or feedback forms, including grievances and claims from customers through complaint-handling and other mechanisms.

7.8. SADC Country Case Studies

The working group conducted a survey to facilitate understanding of the landscape and fintech regulatory regime in member countries. Twelve countries participated in the survey: Angola, Botswana, the Democratic Republic of the Congo, Eswatini, Lesotho, Madagascar, Mozambique, Namibia, the Seychelles, Tanzania, Zambia, and Zimbabwe. Of the 12 countries, 7 confirmed that there is a regulator with a fintech mandate in their jurisdiction. In all 7 countries, the fintech mandate sits with the central bank. Five of these countries already have fintech-specific regulatory frameworks.

The survey sought to determine how active the fintech markets are in the different SADC jurisdictions on a scale of one to five, with five being very active and one being least active. The responses in figure 10, panel a, show that the fintech market is not so active in most of the member countries.

7.8.1. Coordination

A third of the survey respondents confirmed collaboration/coordination among regulators in their jurisdictions. Seven countries were found to be without arrangements for coordination, and one respondent was

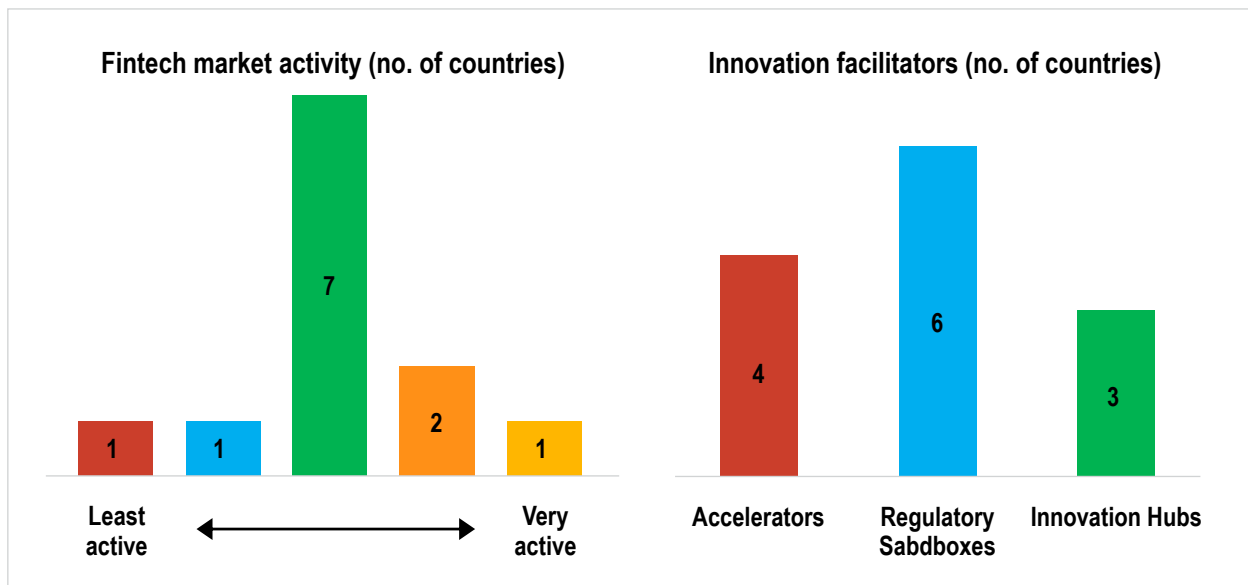
not sure. In answers to another question, six respondents confirmed the existence of a fintech working group. The membership of the working groups differs from one jurisdiction to another. In other member countries, working group membership is limited to departments in the central banks, yet in other jurisdictions, it consisted of different regulatory agencies and other nonregulatory stakeholders.

7.8.2. Innovation Facilitators

The type of innovation facilitators in the different member countries are depicted in figure 10, panel b. Six countries have set up a regulatory sandbox, three have innovation hubs, and four have other facilitators, which include regulatory accelerators. One respondent does not have any innovation facilitator in place. Two respondents, Angola and Mozambique, have both an innovation hub and a regulatory sandbox.

For those member countries with regulatory sandboxes, seven member countries allow applications at any given point in time, and one country, Mozambique, uses the cohort approach. Angola hosts a competition in which the winners get access to the sandbox. The access criteria used by the different member countries is detailed in the sandbox guidelines.¹⁶

■ Figure 10: Fintech Market and Innovation Facilitators in SADC Countries



Source: Working Group 5 Survey.

¹⁶ Below are links to some of the guidelines:

- Angola: <https://lispa.ao/>
- Eswatini: <https://www.centralbank.org.sz/introducing-the-central-bank-fintech-regulatory-sandbox/>
- Zimbabwe: <https://www.rbg.co.zw/documents/BLSS/Fintech/FINTECH-REGULATORY-SANDBOX-GUIDELINES.pdf>



- International
- Legal Resources
- Legal
- Accounting
- Finance
- Marketing
- Strategy
- Production
- Research
- Apparel
- Development
- Engineering
- Manufacturing
- Planning

8. Conclusions



Globally, policy makers, regulators, and supervisors face regulatory challenges when trying to enable innovative fintech while also safeguarding the financial system. No single approach can be used to address the challenge because what works for one country may not work for another. Early areas of innovation include digital payments, followed by digital credit, investment and insurance products, and capital markets. However, no universal sequence exists, so cryptocurrency may be used in a newer market due to idiosyncratic factors.

The exercise of mapping the SADC fintech landscape has revealed that regulation of fintech in the SADC region is still in its infancy. Most SADC jurisdictions have yet to formulate national fintech strategies and enact necessary fintech legislation and regulations. The mapping exercise takes an initial step to identify inefficient markets and/or the absence of fintech activity where it might be expected and where fintech is expected to be in the forefront of the financial inclusion drive. Appropriate regulatory policies could then be formulated to catalyze fintech activity where necessary. Further, results of the mapping exercise could unearth emerging risks to the financial system, which would facilitate the formulation of the necessary public policies to safeguard the financial system and ensure financial stability across the region.

However, it should be noted that the exercise of mapping the SADC fintech landscape is only as good as the data that is put into the tool and the ability to keep the data up to date. For a holistic view of fintech developments in SADC, it is necessary for all SADC member states to participate in the mapping exercise, enable the ongoing maintenance of the SADC fintech landscape results, and make relevant fintech data accessible by policy makers, regulators, governments, and the public.

SADC countries can benefit from an overarching framework and supporting principles to establish a practical model to promote innovation but also maintain appropriate oversight of emerging risks. The framework aims to foster innovation, entrepreneurship, and competition and to address financial stability risks and risks to the regulatory perimeter from emerging technology and business models. Further, it expects to ensure that consumer protection and consumer risk exposure have been thoroughly considered and to strengthen financial inclusion in the SADC region. The framework is expected to go through a rapid review every two years and a detailed review every five years to ensure that it remains aligned with current developments in the fintech landscape.

Given the nascency of the fintech market and regulatory approaches, SADC countries must regularly assess their respective country-level fintech landscape.

The report provides an analytical framework and standardized survey instrument that can be applied to monitor the fintech landscape to identify and rectify legal and regulatory gaps pertaining to fintech and crypto-asset developments in the SADC region. SADC member states can use the survey instrument as a means of self-assessment against an overarching fintech regulatory framework.

SADC countries must continue to monitor developments relating to crypto-assets and CBDC, but they must also move toward formulating policy positions and regulatory regimes. The goal is to continue efforts to understand benefits but also manage risks, given the wide-ranging and profound implications of crypto-assets and CBDC. It remains important to keep updated about country-level statements, public announcements, regulations, and other legislative changes across the region. It supports prioritizing emerging benefits and risks while laying out practical tools to implement.

Several SADC countries are adapting regulatory approaches to facilitate innovation, but more can be done to contextualize and implement emerging best practices. Defined good practice guidelines help

link policy objectives with mechanisms to engage with fintech and related stakeholders. Although not all fintech activities fall outside of existing regulatory frameworks, many areas have emerged where the regulatory framework for fintech activities was unclear or nonexistent. In response to these emergent scenarios, SADC countries could adapt structured regulatory responses based on their market landscape.

Overall, more countries in the region could develop fintech strategies, and a regional fintech strategy may also be considered for SADC. Only a few country-level fintech strategies exist in the region. The remaining SADC countries should establish policy, legal, and regulatory approaches to fintech that are responsive to their context and demographics. It also may be useful to consider formulating a regional fintech strategy that will assist with the monitoring, tracking, and oversight of fintech-related activity in the region. Such a regional fintech strategy should be aligned with the AfCFTA framework. Efforts should also be made to encourage investment in infrastructure and human capacity to foster growth in the fintech sector. Finally, a more collaborative approach to building awareness and marketing is also necessary to encourage public adoption of fintech solutions.

Appendix A: Fintech Mapping Methodology



Working Group 1 used Microsoft Excel to develop a template to map the fintech landscape to facilitate the mapping of fintech activities by all SADC central banks. The template is based on the Fintech Tree Conceptual Framework taxonomy and is divided into two parts. The first part of the mapping is based on general questions about the existence of fintech legislation, a national fintech strategy, fintech policy, a fintech regulatory framework, the regulatory body responsible for fintech regulation, and whether the fintech policy covers crypto-assets.

The second part of the mapping involved an input table aligned closely with the structure of the Fintech Tree Conceptual Framework. The template provides drop-down lists for all the listed fintech activities (digital banking, digital payments, mobile money operations, insurance business models), enabling technologies (APIs, ML, biometric ID, DLT), and policy enablers (open banking regulations, data protection policies, digital ID policies).

The central banks issued the template to all Payment Systems Subcommittee country leaders, with a requirement for the SADC central banks to facilitate mapping of fintech activities provided by both the banking and nonbanking sector.

Nine of 15 SADC central banks mapped their fintech landscapes and submitted mapping results for consolidation and analysis: Botswana, the Democratic Republic of the Congo, Eswatini, Lesotho, Madagascar, Namibia, the Seychelles, South Africa, and Zambia.

Assumptions and Limitations

The following assumptions were applied:

- The theoretical framework is an accurate reflection of the fintech landscape.
- Answers to the mapping questions accurately reflect the true status of the SADC fintech landscape and will enable the elicitation of rich textural data to address the objective of the mapping exercise.
- Any data collected is necessary to draw valid and reliable conclusions.
- The participants are aware of, and able and willing to, discuss their jurisdictions' fintech landscape to help draw conclusions to address the objective of the mapping exercise.

- The mapping template used is a valid and reliable instrument to facilitate the mapping of the SADC fintech landscape.
- The methodology used is appropriate for the mapping exercise.
- The analysis is sufficient to detect significant patterns across the SADC fintech landscape.
- Respondents are representative of their jurisdictions and have sufficient knowledge to provide the information necessary for the accurate mapping of their jurisdictions' fintech landscape.
- An accurate and complete representation of the market is provided by the survey respondents.

The findings of the mapping exercise are limited by the following:

- The accuracy of the theoretical framework to reflect the phenomena under study
- The reliability and validity of the template
- The ability of the methodology chosen to address the objective of the mapping exercise

- How well participants represent the SADC region
- The number of participants that participated in the mapping exercise

Data Analysis

The survey results were collected, processed, and aggregated using Power Query.¹⁷ Multiple views were formulated to interrogate the data, and this structure also allowed further views to be created in a rather swift manner to allow the story to unfold from the responses provided.

In addition, consideration was also briefly accorded to the use of PowerBI to provide similar functionalities as well as an interactive web-based dashboard on the dedicated SADC website. However, this approach had not been extensively covered at the time of formulating this report, given that the web-based dashboard was a function that would be delivered with future infrastructure upgrades to the current SADC website. This will therefore be considered in the future, with a focus on the need to ensure seamless and continuous data updates in this fast-evolving and dynamic landscape.

¹⁷ Power Query is a tool that can be used to collect, aggregate, process, manipulate, and wrangle data automatically via a graphical user interface. In this respect, using it is arguably simpler than using other tools, such as Python or R or even Tableau. It can be used within various products and services, including Microsoft Excel and PowerBI. For the case at hand, it was used in conjunction with Excel.

Appendix B: Regulator Self- Assessment Survey



| Questions | Responses |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Strategy | |
| 1. Do you currently have a fintech strategy? | |
| i. Do you have a strategic plan in place to promote universal digital access? | Yes/no |
| ii. If “yes,” has it been passed by the government? | Yes/no |
| iii. What agencies or departments are responsible for implementing the plan? | |
| iv. What is the progress in implementing the plan? | |
| 2. If “yes” to a strategic plan, who sets the fintech strategy, and how is this set? | |
| 3. What stakeholders (public and private sector) are involved? How are they consulted? | |
| 4. Have you received any feedback about what the market wants to see? How do you actively interact with and gather views from the market? | |
| 5. What does your jurisdiction see as the top three benefits of fintech for the financial sector? | |
| 1. What does your jurisdiction see as the top three benefits of fintech for the financial sector? | |
| i. Increase competition and lower barriers to entry. | |
| ii. Increase innovation (e.g., new business models, products, and services). | |
| iii. Increase operational and cost efficiencies of financial institutions. | |
| vi. Increase access to financial services for consumers. | |
| v. Increase access to financial services for micro, small, and medium enterprises. | |
| vi. Improve regulatory compliance and supervision. | |
| vii. Improve cross-border payments and remittances. | |
| viii. Other benefits (please provide a brief description). | |
| 6. To maximize fintech’s benefits, does your jurisdiction actively undertake the following activities? (Please check all that apply and provide a description.) | |
| i. Strengthening of institutional capacity | |
| ii. Expanding outreach to stakeholders (e.g., financial incumbents, fintech companies) | |
| iii. Adopting a cross-agency approach involving relevant ministries and agencies | |
| iv. Improving consumer awareness and education | |

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| v. Reviewing and amending the policy framework to enable fintech investment, innovation, and adoption (e.g., similar treatment of similar activities and risks, proportionality) | |
| vi. Other (please provide a brief description) | |
| 7. In the process of adopting fintech services in your jurisdiction, do you expect significant transition risks within the next five years? In your view, what remove are the main risks? | |
| i. Financial stability risks | |
| ii. Operational and cyber risks | |
| iii. Risks related to reliance on third-party service providers | |
| iv. Legal and reputational risks | |
| v. Illicit financial activity risks (e.g., AML/CFT) | |
| vi. Fraud | |
| vii. Antitrust (i.e., competition risks) and “winner takes all” | |
| viii. Consumer protection risks | |
| ix. Data protection and privacy risks | |
| x. Customer indebtedness and asset quality | |
| xi. Other | |
| Market Activity | |
| 8. What is the range of fintech activity? (Provide, where possible, quantitative info on market structure, market share, size and growth rate of the market, etc.) | |
| i. Across financial products (credit, payments, investments, insurance, etc.) | |
| ii. Across providers (start-ups, incumbents, telecom players, bigtech, etc.) | |
| 9. What has been the impact of fintech on the segment of the financial system that is outside of the regulatory perimeter? | |
| 10. Is it largely incumbent led or start-up led? | Incumbent/ start-up |
| 11. Do you consider the start-ups enablers or disruptors? | Enablers/ disruptors |
| 12. Are there any markets you would like to see more developed? | |
| 13. Which of the following financial infrastructures are operating in your jurisdiction? (Please check all that apply.) | |
| i. Retail payment system connecting providers of payment services such as cards, credit transfers, and mobile money | |
| ii. Fast retail payment services (i.e., enables the payer to receive a transfer or payment in real time, round the clock, and all through the year) | |
| iii. Innovative payment mechanisms (e.g., QR code payments using an alias (such as an email ID) and services similar to Apple Pay, Ali Pay, and Android Pay) | |
| iv. Securities settlement systems | |
| v. Central securities depositories | |
| vi. Central counterparties | |
| vii. Trade repositories | |
| viii. Credit reporting systems with near universal coverage of credit products that offer services such as credit scoring | |

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| ix. Alternative data sources (e.g., payment records for utility services) that are available to financial institutions | |
| x. Reliable, online repositories of lien or assignments placed on collaterals | |
| xi. Applications of DLT to land or property records | |
| xii. Centralized KYC registry/shared KYC registry | |
| xiii. API-based access to information services of a financial institution to other financial institution or authorized entity | |
| xiv. API-based access to transaction services of a financial institution by another financial institution or authorized entity | |
| Legal and Regulatory Frameworks | |
| 14. Do you have in your legal framework any definitions of fintech companies? | Yes/no |
| 15. Do you have a legal framework that regulates the activity of fintech companies or regulates fintech services (i.e., covered by existing law, requirement for new laws, etc.)? | Yes/no |
| 16. Are there legal and regulatory frameworks for e-money issuers and PSPs? | Yes/no |
| 17. Please provide information on the types of fintech firms, services, activities, and products that require authorization/registration and the condition under which authorization might be refused. | |
| i. Crypto-assets (digital tokens): Participating in and providing financial advice related to the issuance and sale of crypto-assets (securities token offerings), crypto-asset trading platforms (between digital tokens and/or fiat currency), transferring virtual assets, and custody/safekeeping and/or administration of virtual assets or instruments enabling control over virtual assets; mobile money/payment services (nonbanking) | |
| ii. Equity crowdfunding | |
| iii. Digital credit (online and mobile credit) and fintech credit (marketplace lending, peer-to-peer lending, e-commerce lending, and social platform lending) | |
| iv. Digital-only trading platforms, robo-advising, and/or social trading | |
| v. Digital payments (mobile money, e-wallets, QR codes, etc.) | |
| vi. Insurtech | |
| vii. Other types of fintech companies based on national definitions or professional judgment | |
| 18. What laws and regulations govern the provision of credit? How is lending by entities other than banks or regulated nonbank financial institutions treated under banking, consumer protection, usury, fair credit, or other laws? | |
| 19. Have there been any laws or regulations issued covering specific business models/providers (e.g., marketplace finance)? | |
| 20. Have securities and investments laws and regulations and the functions and practice codes of any securities markets self-regulatory organizations been updated to cover internet/mobile brokerage, alternative trading systems and exchanges, automated investment advice, and other fintech applications? | |
| 21. Have insurance laws and regulations and the functions and practice codes of any insurance market self-regulatory organizations been updated to cover internet/mobile brokerage, alternative or automated underwriting, and other fintech/insurtech applications, or has guidance been provided as to how existing regulations apply to insurtech applications? | |

| | |
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| 22. Are there any internet and telecom laws and regulations from the relevant ministries that govern provision of financial services through telecom networks or the internet? | |
| 23. Please provide information on the prudential or other regulatory measures that you have considered in relation to fintech (e.g., capital requirements, outsourcing, disclosures liquidity, concentration, other limits) for the fintech companies? | |
| 24. What are your views on crypto-assets? Are financial institutions allowed to invest in crypto-assets or derivatives on crypto-assets? If not directly, can they do that, for example, through structured products? | |
| 25. Do you consider your jurisdiction's existing securities law (e.g., provisions regarding securities settlement, clearing, delivery, custody, and recordation) sufficiently broad to encompass and provide certainty and clarity with regard to fintech developments, such as the treatment of crypto-assets, distributed ledgers, and automated processes such as "smart contracts"? | |
| i. Yes, and we are not considering any further changes at present. | |
| ii. Yes, but we are considering further changes at this moment. (Please provide a brief description and include citations to relevant legal provisions or any relevant legal literature.) | |
| iii. No, but we are considering changes at present. | |
| iv. No, and we are not considering any changes at present. | |
| 26. Do you consider your jurisdiction's existing payments law (e.g., provisions regarding settlement finality, payments messaging, acceptance/rejection of payment instructions, definitional terms such as payment systems) sufficiently broad to encompass and provide sufficient certainty and clarity with regard to fintech developments? | |
| i. Yes, and we are not considering any further changes at present. | |
| ii. Yes, but we are considering further changes at this moment. (Please provide a brief description and include citations to relevant legal provisions or any relevant legal literature.) | |
| iii. No, but we are considering changes at present. | |
| iv. No, and we are not considering any changes at present. | |
| Licensing | |
| 27. Do any of the regulators offer special licensing schemes to innovators? | Yes/no |
| 28. Is any regulatory or supervisory review or approval required for a licensed financial institution to introduce a new product or technology? | Yes/no |
| 29. If "yes," please explain the logic for such review and the areas of operations that are covered by the requirement to see approval. | |
| 30. What are the process, time line, approval rates (by innovation type or product area) and most common reasons for declining to approve? | |
| 31. Is there data tracking of requests for approval of new products and technologies? | |
| 32. If so, please provide data on applications, approval times, rates of approval/rejection, and types of innovations entering the market. | |
| Innovation Support | |
| 33. What innovation support activities (hubs, fintech offices, sandboxes, accelerators, or others) are being undertaken by each regulator? What is the statutory mandate authorizing each support activity? | |
| 34. How have the various authorities modified their regulatory and supervisory approach to facilitate the development of fintech (e.g., demonstration of new business model in a sandbox)? Note: This could include regulators and other public bodies (i.e., Ministry of Finance, ICT department). | |

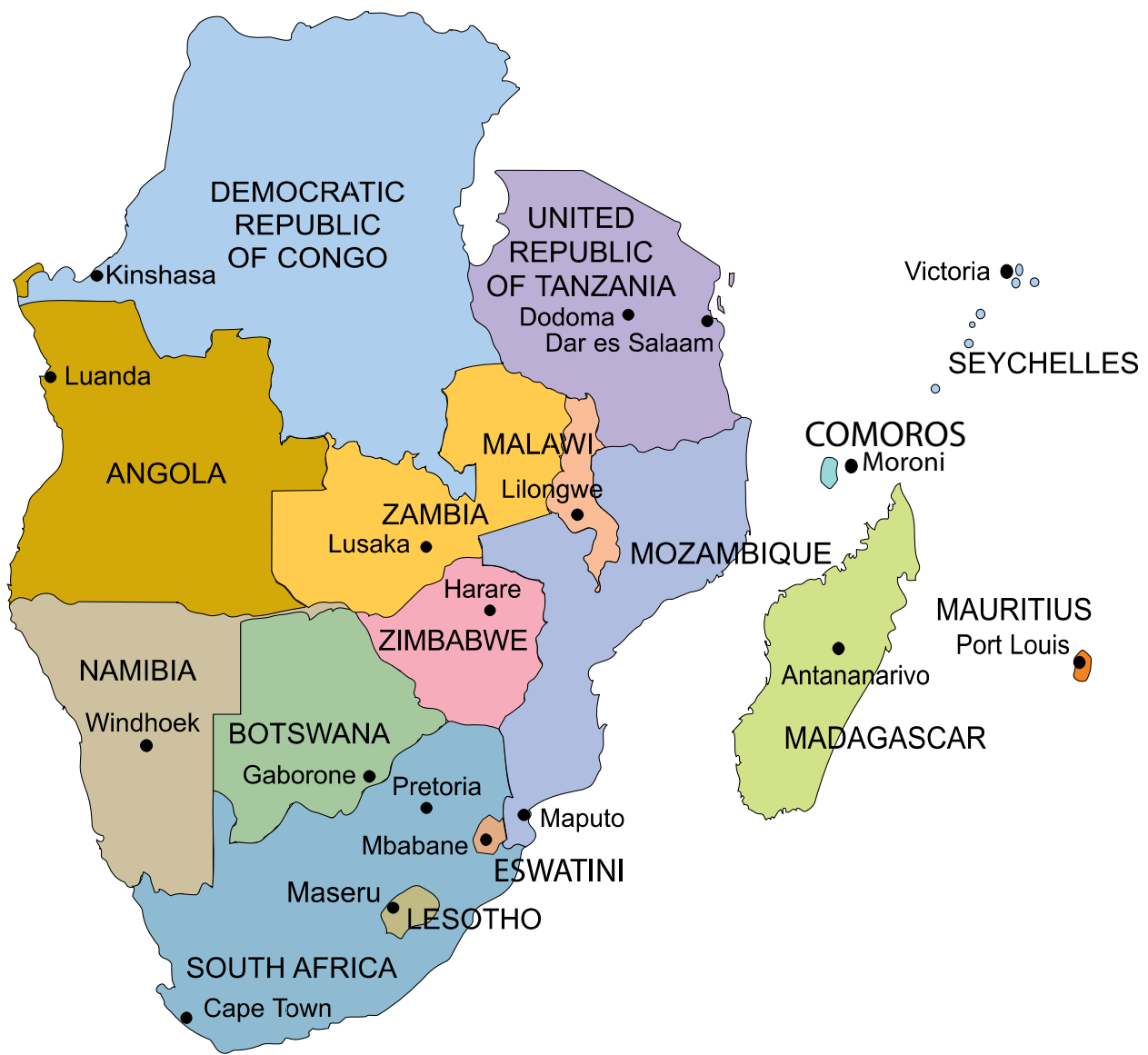
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| 35. Do the regulators have a view regarding the extent of cross-border services/products being extended by domestically domiciled firms both regulated and unregulated? | |
| 36. If there is a regulatory sandbox, what is the objective of the sandbox and under what statute does it operate? | |
| i. Who has participated in the sandbox, and what types of innovations have been accepted? | |
| ii. What types of innovations have been applied but not accepted? Is there a sector/segment/stage focus? | |
| iii. Has a sandbox test resulted in any changes to regulations, and if so, what were these? | |
| iv. What criteria are used to design the sandbox test? | |
| v. How are tests executed and monitored? | |
| vi. Is the sandbox authorized to provide a waiver or “sandbox license”? | Yes/no |
| vii. Is participation in the sandbox required in order to introduce an innovation? | Yes/no |
| viii. Who runs and staffs the sandbox? How does the team link to and leverage others in the regulator, and to other regulators? Is outside expertise tapped to assess new technologies and business models? | |
| Digital Platforms | |
| 37. Which of the following data collected and maintained by the government can currently be accessed online by a qualified third party (e.g., a financial institution, licensed fintech company)? (Please check all that apply.) | |
| i. Details pertaining to any form of governmental identification documents (ID), including national ID and driver license | |
| ii. Land and other real estate records | |
| iii. Vehicle registration details | |
| iv. Other (please provide a brief description) | |
| v. None | |
| 38. Are government-to-person (G2P) and person-to-government (P2G) payments digitized? If so, which? *Please skip if none of the G2P or P2G payments is digitized. | |
| i. Personal income taxes | |
| ii. Corporate income taxes | |
| iii. Fines (e.g., traffic violations) | |
| iv. Driver license fees | |
| v. Business registration and other fees | |
| vi. Social welfare payments | |
| vii. Fees | |
| viii. Other government services (please provide a brief description) | |
| Monitoring of Fintech | |
| 39. Does your institution intend to carry out fintech surveillance by activity type or by entity type (both official data requests and informal market surveillance)? Please describe in brief. | |
| 40. Have you set up an active information-sharing mechanism on fintech developments? (Please check all that apply.) | |
| i. There is no established information-sharing mechanism. | |

| | |
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| ii. There is an interagency mechanism for sharing information on fintech developments. | |
| iii. There is a mechanism for sharing information on fintech with foreign authorities. | |
| iv. Other (please provide a brief description). | |
| 45. Are regulatory requirements for fintech cybersecurity reflected in overall ICT risks or cybersecurity supervisory framework? | |
| 46. Please share any analysis or descriptions about the authorities' assessment on cyber risks arising from fintech services and activities. | |
| 47. Have you set up a consultation group with private stakeholders (e.g., fintech companies, industry associations, etc.) to monitor policy developments? | |
| 48. Please describe how (process, responsibilities, etc.) you review the appropriateness of the regulatory perimeter and the adequacy of the regulatory framework. | |
| 49. Which are the top three areas where there is a need to revise existing international standards or develop new standards related to fintech developments? | |
| i. None | |
| ii. Crypto-assets: issuance, exchange, and custody | |
| iii. Investment products with robo-advisers | |
| iv. Peer-to-peer lending | |
| v. Lending activities with AI and ML on credit scoring | |
| vi. Mobile money/payment services | |
| vii. Algorithmic/automated trading and/or smart contracts | |
| viii. Other (please provide a brief description) | |
| Regtech and Suptech | |
| 50. For which purpose do financial regulators actively use or consider using enhanced technology to support supervisory activities (suptech)? (Please check all that apply.) | |
| i. Suptech is not considered at present | |
| ii. For regulatory reporting | |
| iii. For market surveillance | |
| iv. For credit risk analysis | |
| v. Other (please provide a brief description) | |
| AML/CFT and Fintech | |
| 51. What approach has the authorities adopted to respond to the challenges associated with fintech-related financial integrity risks? | |
| i. Adapted the country's existing AML/CFT framework to address the risks | |
| ii. Refrained from taking action while monitoring developments and potential money laundering/terrorism financing risks | |
| iii. Banned all or part of specific activities deemed more at risk, such as "initial coin offerings" (please provide a brief description) | |
| 52. Has your jurisdiction taken legislative or regulation actions on crypto-assets from the AML/CFT perspective? | |
| i. No action has been taken. | |
| ii. Yes, we have subjected crypto-assets to the AML/CFT framework by amending existing AML/CFT provisions. | |

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| iii. Yes, we have subjected crypto-assets to the AML/CFT framework by encapsulating crypto-assets under existing AML/CFT framework. | |
| iv. Other (please provide a brief description). | |
| 53. Is there a sanction regime (fines, suspension of activities, change of management/ shareholders, others) for the fintech companies? | |
| 54. Do you have any memorandum of understanding with other supervisory authorities regarding the cross-border supervision (including AML/CFT supervision) of fintech companies? | |
| Financial Infrastructures | |
| 55. Do financial infrastructures provide a sufficient level of interoperability (including for smaller players in the industry) between different types of accounts and payments networks? If “yes,” please provide a brief description. | |
| 56. Have authorities implemented minimum requirements regarding third-party service providers (e.g., cloud computing services) that would apply to fintech? If “yes,” please provide a brief description. | |
| 57. Does a universal legal ID exist in the country? Please describe it. | |
| 58. Are e-KYC and digital signatures available? | |
| 59. Do credit registries take into consideration fintech market players? If “yes,” please describe how. | |
| Competition | |
| 60. Does the national competition policy framework enable innovation? If “yes,” please describe how. | |
| 61. Given the changes brought about by fintech, do you feel the need to adjust the competition policy and framework within your jurisdiction? | |
| 62. Intellectual property regulations: Are there clear guidelines on what is and is not patentable? | |
| 63. Does the government offer any financing mechanisms for innovative businesses? If “yes,” have these been effective in promoting and supporting digital start-ups? | |
| Information Sharing | |
| 64. Have you set up an active information-sharing mechanism on fintech developments? (Please check all that apply.) | |
| i. There is no established information-sharing mechanism. | |
| ii. There is an interagency mechanism for sharing information on fintech developments. | |
| iii. There is a mechanism for sharing information on fintech with foreign authorities. | |
| iv. Other (please provide a brief description). | |
| Technology Enablers | |
| IT, telecom, and electricity infrastructure | Strong/ moderate/ weak |
| Internet and broadband penetration and cost (both urban and rural areas) | |
| Mobile device penetration (both urban and rural areas) | |
| Tech talent and expertise | |
| Fintech start-up funding and support | |
| Universal digital ID | |

| | |
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| Fair access to financial infrastructures (e.g., payment networks, credit information, e-KYC) | |
| Quality of financial infrastructures | |
| Financial literacy of existing consumers (i.e., at least have a transaction account) | |
| Financial literacy of the “unbanked” | |
| Cloud computing and storage services | |
| Digitalization of financial transactions with the government | |
| Digitalization of and access to relevant government records (e.g., records related to tax, identity, courts) | |
| Availability and accessibility of alternative data (e.g., utilities, social media) | |
| Data Privacy | |
| 65. Is there any existing legal framework for data protection and privacy? | |
| 66. Are there specialized rules for the financial sector? | |
| 67. Does the legal framework adequately cover the main components of data protection and privacy including ownership of data, authorization, and how data may be used? | |
| 68. Who is authorized to access and use sensitive customer information collected by fintechs? | |
| 69. Does the legal framework cover all relevant actors in fintech, including fintech companies and third-party providers? | |
| 70. Do rules on data sharing unduly limit innovative fintech models? | |
| 71. What legal liability do providers have with respect to data privacy practices of contracted third parties? | |
| 72. Are there minimum requirements for data protection and privacy at contracted third parties? | |
| 73. Do fintech providers conduct due diligence or oversight of service providers/third parties regarding compliance with data protection rules? | |
| 74. Do rules on data localization unduly limit innovative fintech models? | |
| 75. What rights do consumers currently have with respect to data portability? | |
| COVID-19 | |
| 76. How has COVID-19 and your jurisdiction’s response affected the provision of financial services? | |
| 77. Please explain briefly the COVID-related measures you have adopted. | |
| 78. Among the fintech sectors you engage with, have you observed a change in the use of fintech solutions by consumers and/or businesses as a result of COVID-19? | |
| 79. Has COVID-19 led to a change in your approach to innovation initiatives? | |

Appendix C: Regulatory Strategies to Facilitate Innovation



| | Wait and see | Test and learn | Innovation hubs | Regulatory sandboxes | Accelerators | Direct regulatory reform |
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| Description | Observer capacity by regulators: new fintech business models are permitted to function with the explicit intention of allowing innovations to develop with limited restraint for a period of time | An agile approach, where regulators grant restricted licenses or partial exemptions for new entrants or established intermediaries testing new technologies | Point of contact for firms to raise inquiries with competent authorities on fintech-related issues and to seek nonbinding guidance on regulatory and supervisory expectations | Partnership arrangements between innovators or fintech firms and government authorities to “accelerate” growth, innovate on shared technologies, and develop use cases that are particular to that authority. | Controlled, time-bound, live testing environments that allow innovators to test, on a small scale, innovative products, services, business models, and delivery mechanisms | Amendment or introduction of new laws and regulations |
| Regulatory response | Limited but “watchful” | Apply existing regulatory frameworks to new business models by focusing on the underlying economic function rather than the entity Explore new frameworks to promote innovation and experimentation in areas where the regulatory framework is either unclear or not present (dispensation) | The role of the hub can take many forms and will likely extend beyond the application of regulation to advising firms on regulatory procedure Apply existing regulatory frameworks to new business models by focusing on the underlying economic function rather than the entity Regulators should be cautious not to provide legal advice to firms, and to define the limits of the innovation hub clearly | Explore new frameworks to promote innovation and experimentation in areas where the regulatory framework is either unclear or not present | Adjust existing regulatory frameworks to accommodate the reengineering of existing processes and allow the adoption of new technologies Explore new frameworks to promote innovation and experimentation in areas where the regulatory framework is either unclear or not present | Adjust existing regulatory frameworks to accommodate the adoption of new technologies Create new regulations to extend regulatory perimeters and introduce specific requirements for new classes of players in the ecosystem Laws can take the form of overarching regulatory reform, incremental change, or product-specific reforms |

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| <p>Pros</p> | <p>Allow regulators to understand technology and its possible applications in the financial market prior to regulatory changes Provides an active learning environment in which regulators can explore technology that is nascent and not expected to adversely affect the statutory objectives Regulators can informally monitor trends to determine when and where formal intervention is performed or required No legislative reform; existing regulation continues to be upheld</p> | <p>Sufficient data and experience for regulators to adjust regulation or apply it accordingly Regulators can observe and understand risks and how the market is evolving, so they can develop regulatory strategy appropriately suited to the risks and innovation posed by the product, process, or application No immediate legislative reform; regulators allow existing regulation to continue or apply it accordingly Results of the “test” might result in regulatory reform Flexible and agile</p> | <p>Guides interactions with firms while allowing regulators oversight of emerging financial products and trends Supports the fintech ecosystem and fosters an open dialogue with industry Allows the policy maker to understand and identify trends before embarking on a more resource-intensive strategy toward fintech Assists regulators by informing them of potential issues around fintech that could be relevant for policy development Less resource intensive than other innovation facilitators</p> | <p>Allows regulators to improve familiarity with fintech products, concepts, and firms by getting “their hands dirty” Increases collaboration between the regulators and stakeholders to develop market solutions to financial sector challenges Assists financial authorities to regulate and supervise the marketplace more effectively and efficiently Provides hands-on experience for regulators with innovative technology</p> | <p>Provides insight into the market, providing the regulator with intelligence on developments, trends, and emerging risks Creates open and active dialogue between regulators and firms and brings agility to the regulatory and supervisory framework More direct control over risks Ability to review the existing regulations to purpose Provides a dynamic, evidence-based, regulatory environment that learns from, and evolves with, emerging technologies</p> | <p>Transformative market change might be possible only with supporting regulation to support the fintech industry Note that all approaches described above can potentially result in regulatory reform</p> |
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| <p>Cons</p> | <p>Has a short shelf life, which is suitable for an immature market and should not be allowed to carry on indefinitely Needs to be used carefully for selected products Regulators need to monitor the market carefully to ensure that products do not develop unchecked and cause impacts on the statutory objectives</p> | <p>Has a short shelf life; after market matures, adverse consequence on consumer protection and competition may arise Scalability: can be applied only to a limited number of innovations/participants Test and learn is flexible and agile, but the principles of the existing regulation must be upheld Not suited for simultaneous diverse fintech products due to capacity constraints on oversight Difficult to ensure equal treatment of participants and a level playing field Regulation oversight is at arm's length and is conducted on the open market without a ring-fenced or controlled environment</p> | <p>Requires dedicated resources relative to the test-and-learn and wait-and-see responses Regulators should be cautious not to provide legal advice to firms and to clearly define the limits of the innovation hub</p> | <p>Requires a dedicated resource to work and develop proofs of concept with firms In-house knowledge to use and develop use cases is required Issues of maintaining a level playing field and a transparent process</p> | <p>Risk of being perceived as picking winners Risk of an inappropriately designed framework without a clear objective in mind might result in limited or inappropriate applications Outcomes might be difficult to measure if objectives are not defined at the outset Can be deeply labor intensive</p> | <p>Introduction of regulation prior to understanding market movements might lead to inappropriately designed regulation</p> |
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| Products | Testing of new technologies such as DLT Treatment of crypto-assets | Testing of new technologies Mobile money Investment-based crowdfunding | Not product specific | Regtech or supotech products normally not under the purview of the regulator | Depending on the design of the sandbox, it can be used for existing as well as new products | Crowdfunding Mobile money |
| Jurisdictions | Generally suitable for smaller and highly specialized fintech ecosystems but has been applied successfully in larger markets | Suitable for most fintech ecosystems and requires some degree of regulatory oversight | Suitable for all fintech markets | Suitable for more developed fintech markets where authorities are keen to test fintech tools themselves | Suitable for larger and more developed fintech markets where a clear objective has been determined | Suitable as an initial step for more rules-based regimes |

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Appendix D: Definitions



alternative credit scoring: A nontraditional model of assessing credit risk using ML and algorithms based on big data mining.

anti-money-laundering (AML) and combating the financing of terrorism (CFT) measures: Defined by the Financial Action Task Force, the international standard setter in this area. The Basel Committee on Banking Supervision regularly issues guidance to facilitate banks' compliance with their obligations in this area.

artificial intelligence (AI): IT systems that perform functions requiring human capabilities. AI can ask questions, discover and test hypotheses, and make decisions automatically based on advanced analytics operating on extensive data sets. ML is one subcategory of AI (BCBS 2018).

big data: The designation of large volumes of data that can be generated, analyzed, and increasingly used by digital tools and information systems. This capability is driven by the increased availability of structured data, the ability to process unstructured data, increased data storage capabilities, and advances in computing power.

crowdfunding: The practice of funding a project or venture by raising monetary contributions from a large number of people. It is often performed today via internet-mediated registries that facilitate money collection for the borrower (lending) or issuer (equity) (BCBS 2018).

digital financial services: Financial services that rely on fintech for their delivery and use by consumers. (Fintech is defined below.)

digital transformation: The process of adopting fintech by incumbent financial institutions.

distributed ledger technology (DLT): A means of recording information through a distributed ledger—that is, a repeated digital copy of data at multiple locations—such as blockchain. These technologies enable secure nodes in a network to propose, validate, and record state changes (or updates) to a synchronized ledger that is distributed across the network's nodes (BCBS 2018).

financial technology (fintech): Advances in digital technology (for example, web, mobile, cloud, ML, distributed ledger) that have the potential to transform the provision of financial services, spurring the development of new—or the modification of existing—business models, applications, processes, and products.

fintech ecosystem: Made up of consumers, financial institutions, fintech start-ups, investors, regulators, and educational institutions, it aims to provide mutually beneficial cooperation among stakeholders and to help deliver financial services at lower cost, higher speed, and at better quality to more consumers.

fintech firm: A new entrant in the financial sector that specializes in offering digital financial services.

fintech hub: A platform with a physical and virtual presence to act as a flag bearer and one-stop shop for all fintech-related matters, facilitating ecosystem collaboration and talent development.

fintech incubator and fintech accelerator: Two types of ecosystem support programs to encourage start-up growth. Incubators are designed to “incubate” disruptive ideas, aiming to help generate from them a business model and company. Accelerators are aimed at “accelerating” growth of a company that is already operational.

fintech start-up: A company, usually of small size and enjoying fast growth, that leverages technology to produce, deliver, or enable financial services.

innovation facilitator: Public sector initiatives to engage with the fintech sector, such as regulatory sandboxes, innovation hubs, and innovation accelerators.

innovation hub/office: An innovation facilitator set up by a supervisory agency that provides support, advice, or guidance to regulated or unregulated firms as they navigate the regulatory framework or identify supervisory policy or legal issues and concerns. Unregulated entities can engage with regulators to discuss fintech-related issues (share information, views, and so on) and seek clarification about conformity with regulatory frameworks and/or licensing requirements.

machine learning (ML): A method of designing problem-solving rules that improve automatically through experience. ML algorithms give computers the ability to learn without specifying all the knowledge a computer would need to perform the desired task, as well as study and build algorithms that can learn from and make predictions based on data and experience (BCBS 2018).

new entrant: A prospective financial-service provider that has not yet been authorized by the regulator.

no-enforcement-action letters: Letters assuring firms that the regulator will not take enforcement action against them as long as they comply with the conditions specified in the letter.

peer-to-peer lending: Direct lending from savers to borrowers—traditionally, the platform avoids intermediation by banks but also does not bear the risk of default.

regulatory accelerator or regtech lab: A partnership arrangement between fintech providers and central banks/supervisory agencies to “accelerate” growth or develop use cases, such as suptech or regtech, which may involve funding and/or authorities’ endorsement/approval for future use in central banking operations or in the conduct of supervisory tasks.

regulatory exemption or waiver: Exempt a firm from requiring authorization to carry out a regulated activity or compliance with a specific requirement.

regulatory forbearance and alleviation through discretions: The testing environment may involve limits or parameters within which the firms must operate.

regulatory sandbox: It is a time-bound, live, controlled, testing environment defined by regulators.

regulatory technology (regtech): New technologies that help regulated providers streamline audit, compliance, risk-management, and other back-office functions to enhance productivity and overcome regulatory challenges, such as the risks and costs related to regulatory reporting and compliance obligations. This can also refer to firms that offer such applications.

restricted or temporary license: A license granted to a firm with limitations, for example, on its authorization, the type of service that can be provided, the number of customers that can be served, or the time validity of the license.

supervisory technology (suptech): The use of innovative technology by supervisory agencies to support supervision. It is intended to help supervisory agencies digitize (in the main) reporting and regulatory processes, resulting in more efficient and proactive monitoring of risk and compliance at financial institutions.

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