



Financial Regulatory Pathways for Scaling Carbon Markets

In support of clean cooking projects in Africa

2025



Contents

Executive Summary	2
Context	2
Aim of This Report	3
Three Priority Areas for Regulatory Action	3
Context-Specific Implementation Considerations	5
Introduction and Scope of This Report	7
Context	7
Objective of This Report	8
Integrating Carbon Credits Into Mainstream Finance	11
Approach	11
Assessment Outcome	12
The Process Leading to The Pathways	14
List of Core Interventions	19
Seeking Alignment With Green Finance Regulatory Interventions	19
Summary of the Intervention Design Process	24
List of Core Interventions	25
Issue Guidance on Carbon Credit Assets' Prudential Treatment	26
Include Carbon Credits as Mitigators in Bank Climate Risk Recommendations	27
Cover Carbon Credits in ESG and Climate Disclosures	28
Integrate Carbon Credit Data into Climate Risk Databases	29
Incorporate Carbon Credits in Stress Testing Frameworks	30
Support Insurability for Carbon Credit Value Chains in Insurance Recommendations	31
Classify Clean Cooking Projects in Green Taxonomies	32
Incorporate Clean Cooking Projects in Green Bond Frameworks	33
Incentivize Loans for Carbon Credit-Related Projects	34
Standardize Listing, Trading, and Clearing Criteria for Carbon Credits and Linked Products	35
Clarify Carbon Credits Treatment in the Portfolio of ESG Mutual Funds	36
Incubate Carbon Credit-Linked Bond Instruments in a Regulatory Sandbox	37
Incubate Securitized Carbon Transactions in a Regulatory Sandbox	38
Provide Backstop Guarantees to Deliver Minimum Price Support	39
Provide Backstop Guarantees to Insurers Covering Carbon Market Investments	40
Implementation Considerations	42
Technical Note on the Application of the Assessment Framework to Identify Priority Countries for Developing Country-Specific Roadmaps	46
Background	46

Financial Regulatory Pathways for Scaling Carbon Markets

In support of clean cooking projects in Africa

May 2025

This report was prepared by Climate Focus in 2024 based on research commissioned by the Clean Cooking Alliance (CCA):

Climate Focus Team: Szymon Mikolajczyk, Gábor Gyura, Michael Gerhard, Malachy Tierney,
Lydia Omuko-Jung

From Clean Cooking Alliance: Feisal Hussain, Rajeev Kumar Gupta

Cover photo: Judith Omondi for KOKO Networks

01

Executive Summary

Executive Summary

Context

The global financial system is at a crossroads, balancing economic growth with the urgent need to address climate change. Financial regulation – both at international and national levels – plays a pivotal role in “greening” financial markets by creating frameworks that promote sustainable investment practices, mitigate climate risks, and align financial activities with climate and sustainability goals. The development of green taxonomies, sustainable financing disclosure requirements, and incorporation of climate risks into monetary policy and financial supervision are examples of how financial regulators are moving the needle on sustainable finance globally.

Clean Cooking Is a Critical but Underfunded Policy Challenge: Nearly 2.1 billion people – almost a quarter of the world’s population – still lack access to clean cooking, contributing to 3.2 million premature deaths annually and over one billion tons of carbon emissions –on par with the aviation sector. Despite its relevance to health, gender equality, energy access, and climate goals, clean cooking remains one of the most overlooked and underfunded global challenges.

Carbon Projects Deliver Multi-Sectoral Benefits: Clean cooking carbon projects offer an effective response. By replacing or by improving the combustion efficiency, polluting fuels like charcoal, wood, and kerosene, they reduce emissions, improve indoor air quality, and ease the physical burden of cooking – particularly for women and children –while helping forest aggradation. The use of standardized methodologies and digital monitoring strengthens their credibility for investment and policy engagement. These projects also bolster macroeconomic stability by cutting public health costs, reducing environmental damage, and increasing household productivity. They help governments raise domestic revenue, attract local currency investment, and lessen aid dependency, thus contributing to more resilient, inclusive, and climate-aligned economies.

Carbon Finance Is Enabling Market Expansion: Carbon finance is accelerating access to scalable solutions, such as improved biomass, ethanol, biogas, LPG, and electric stoves – many of which cost just \$25–\$100 per household. Carbon revenues are helping enterprises overcome affordability barriers, strengthen business models, and deliver measurable health, gender, and climate benefits. When deployed at scale, clean cooking carbon projects represent one of the most cost-effective investments in development.

Current Financial System Engagement Remains Limited: Despite this potential, engagement from domestic financial systems remains limited. Banks, insurers, and capital market institutions are well-placed to support climate-aligned solutions but face operational and regulatory barriers, including limited capacity, unclear risk profiles, and weak enabling frameworks. This represents a missed opportunity for regulators to align domestic finance with climate priorities and unlock inclusive growth. Stakeholder consultations and work with commercial banks through the Clean Cooking Alliance’s Catalytic Finance Accelerator confirm strong interest among local financial institutions, but highlight the need for clearer regulatory guidance, technical assistance, and market-building tools to scale participation.

Aim of This Report

This report shares findings from a research initiative commissioned by the Clean Cooking Alliance to explore non-prescriptive, policy-aligned options for financial regulators – such as central banks, securities authorities, and insurance regulators – to strengthen domestic financial system links to carbon markets. Carbon markets are gaining traction as climate finance mechanisms, but many developing countries still face structural barriers to accessing de-risked capital. Financial regulators can play a catalytic role in creating conditions for a more stable and investable carbon market. Effective regulatory engagement can improve transparency, credibility, and bankability in carbon markets. By prioritizing clean cooking, African regulators can help shape a more inclusive model of climate finance and demonstrate global leadership in designing sustainable financial systems.

The report offers pathways for advancing the use of carbon markets with its recommendations rooted in African regulatory contexts and informed by global sustainable finance developments. The report outlines possible policy steps that central banks, banking, securities, and insurance regulators (collectively referred to as “financial regulators”) can take to overcome existing barriers and unlock the potential to integrate carbon credits into mainstream finance.

Within the area of carbon markets, special focus is provided to clean cooking carbon projects, which act as both a critical climate solution and a significant development priority for Africa. Clean Cooking projects are especially well suited to invest into through recommendations made in this report, given their low capital intensity, shorter revenue cycles, and close alignment with national development goals. Compared to sectors like forestry or renewable energy, they offer faster returns and localized benefits. However, most of the recommendations contained within this report are technology agnostic, treating carbon credits as one consolidated and standardized financial asset class.

Three Priority Areas for Regulatory Action

This report, *Financial Regulatory Pathways for Scaling Carbon Markets*, proposes priority areas of interventions and specific actions that can fall within the broad mandate of African financial regulators. Through the adoption of the identified targeted interventions, financial regulators can contribute to the integration of carbon credits into mainstream financial markets, thus helping to position them not only as tools for climate change mitigation but also as viable, tradable assets.

Carbon credits are not yet fully recognized within most financial regulatory frameworks. Uncertainty regarding their classification, legal status, and risk treatment continues to constrain institutional engagement and limit the scale of capital mobilization.

To address these challenges, regulators may consider 15 core actions across three strategic areas:

Establishing a Stable Carbon Market Infrastructure

Regulatory Guidance & Risk Management

- Issue guidance on carbon credit assets' prudential treatment.
- Include carbon credits as mitigators in bank climate risk recommendations.
- Cover carbon credits in ESG and climate disclosures.

Market Transparency & Data Integration

- Integrate carbon credit data into climate risk databases.
- Incorporate carbon credits in stress testing frameworks.

Expanding Market Participation and Financial Integration

Financial Market Expansion

- Support insurability of carbon credit value chains to mitigate investment risk.
- Classify clean cooking projects within national green taxonomies.
- Incorporate clean cooking projects in green bond frameworks.

Financing Mechanisms & Standardization

- Incentivize loans for carbon credit-related projects.
- Standardize listing, trading, and clearing criteria for carbon credits and linked products.

Ensuring Financial Stability and Risk Mitigation

Investment Security & Product Development

- Clarify carbon credits treatment in the portfolio of ESG mutual funds.
- Incubate carbon credit-linked bond instruments.
- Incubate securitized carbon transactions.

Risk Mitigation & Price Stability

- Provide backstop guarantees to deliver minimum price support.
- Provide backstop guarantees to insurers covering carbon market investments.

Context-Specific Implementation Considerations

Given the diversity of financial systems, the recommendations here are designed for flexible adoption based on institutional capacity, supervisory mandates, and market readiness. Rather than prescribing uniform reforms, this report proposes a framework for iterative learning and experimentation. Global initiatives such as the Network for Greening the Financial System (NGFS) and the Basel Committee are beginning to recognize carbon-related risks. Early national action to define the regulatory treatment of carbon assets can position countries as early movers in sustainable finance oversight.

Structured Testing Through Regulatory Sandboxes

One recommended vehicle for early implementation is the establishment of a regulatory innovation sandbox. This approach enables financial authorities, including central banks, securities regulators, and insurance supervisors, to test the treatment and integration of carbon credits under controlled conditions. The sandbox model allows for cross-sectoral coordination and practical experimentation in areas such as asset classification, disclosure protocols, and investment product structuring. It can also support collaboration across regulatory agencies, ministries of energy and environment, carbon project developers, and international partners.

By leveraging regulatory innovation sandboxes, financial authorities can guide the evolution of carbon markets toward the levels of transparency, accountability, and stability expected of other regulated asset classes. Sandboxes allow regulators to test and refine classification, risk management, and disclosure practices in a controlled environment, laying the groundwork for long-term regulatory coherence and market integrity.

Illustrative use cases include:

- Defining carbon credits as eligible financial assets or collateral.
- Structuring carbon-linked bonds or securitized transactions.
- Developing guarantee and insurance mechanisms.
- Supporting price discovery and platform standardization.

Structured regulatory experimentation provides an evidence base for formal policymaking while helping to build technical capacity and institutional readiness. Where appropriate, alignment with regional initiatives and international standards can enhance credibility and interoperability.

Recognizing that each country operates within its own unique regulatory, economic, and socio-political context, tailored roadmaps will be essential to ensure the effective mainstreaming of carbon credits into domestic financial markets. These country-specific roadmaps can serve as guiding documents, outlining not only the key interventions, but also specific timelines and milestones based on local conditions, resources, and priorities. The Clean Cooking Alliance looks forward to engaging with regulators and stakeholders to align domestic finance with climate priorities and unlock inclusive growth at country level.

02

Introduction

Introduction and Scope of This Report

Context

The global financial system is at a crossroads, balancing economic growth with the urgent need to address climate change. Financial regulation – both at international and national levels – plays a pivotal role in “greening” financial markets by creating frameworks that promote sustainable investment practices, mitigate climate risks, and align financial activities with climate and sustainability goals. The development of green taxonomies, sustainable financing disclosure requirements, and incorporation of climate risks into monetary policy and financial supervision are examples of how financial regulators are moving the needle on sustainable finance globally. While these developments are positive, a significant climate finance gap remains, with the \$300 billion annual commitment agreed upon at COP29 in Azerbaijan falling far short of the trillion-dollar amounts sought by developing countries.

International carbon markets are one channel through which public and private sustainable finance can flow to climate-positive investments. If implemented correctly, carbon markets can play a catalytic role in driving the green transition, providing financial incentives for greenhouse gas emission reduction to be deployed that otherwise would remain financially unviable. Yet carbon markets are currently not being deployed to their full potential, due to a combination of integrity, transparency, and legal barriers which are withholding their scaling and maturation. The size of the global carbon credit market was valued at \$1.4 billion in 2024, a fraction of the optimistic projections that anticipate it could reach \$35-50 billion by 2030.¹ This is a missed opportunity, affecting the prospects of green investments in many segments of the global economy.

Clean cooking is one of the leading examples of a sector where carbon markets have played a leading role in unlocking private sustainable financing at scale. Market data indicates that carbon revenues are responsible for between 20 to 30 percent of the total revenues of clean cooking enterprises in the Global South, allowing these businesses to thrive in environments where access to carbon finance is available.² The carbon markets’ growth in recent years has improved investor confidence in the clean cooking sector, and unlocked millions of dollars in both upfront investments and results-based payments across the African continent and other developing regions. It has contributed to driving down costs for end consumers, and enabled companies to scale and expand into new markets.

But despite drawing growing interest from investors, current financial flows remain deeply insufficient, and 2.1 billion people still lack access to clean energy cooking options. According to the International Energy Agency, annual investments of around \$8 billion are needed through to 2030 to cover the investments in cookstoves, consumer equipment, and infrastructure required to close this gap.³ Despite the potential, engagement from domestic financial systems remains limited. Banks, insurers, and capital market institutions are well-placed to support climate-aligned solutions but face operational and regulatory

1 MSCI (2025): Frozen Carbon Credit Market May Thaw as 2030 Gets Closer. Available at: <https://rb.gy/6tanbw>

McKinsey (2021): A blueprint for scaling voluntary carbon markets to meet the climate challenge. Available at: <https://rb.gy/vz9cgu>

2 Clean Cooking Alliance (2023) 2023 Clean Cooking Industry Snapshot. Available at: <https://cleancooking.org/wp-content/uploads/2023/12/CCA-2023-Clean-Cooking-Industry-Snapshot.pdf>

3 Ibid.

barriers, including limited capacity, unclear risk profiles, and weak enabling frameworks. This represents a missed opportunity for regulators to align domestic finance with climate priorities and unlock inclusive growth. Stakeholder consultations and work with commercial banks through the Clean Cooking Alliance's Catalytic Finance Accelerator confirm strong interest among local financial institutions, but highlight the need for clearer regulatory guidance, technical assistance, and market-building tools to scale participation.

The role that international carbon markets will play in delivering scaled sustainable financing to clean cooking — and other segments of the green economy — will depend on the market's ability to offer liquidity, reliable price discovery, enforceability, and reliable information flow. This has been acknowledged by initiatives such as the Taskforce for Scaling Voluntary Carbon Markets⁴ and International Organization of Securities Commissions,⁵ which have stressed that market regulation is a pre-condition to enable the private sector to play a full part in the transition to a green global economy. These basic characteristics of effective markets can be shaped by coherent and supportive regulatory oversight at international and national levels.

Objective of This Report

This report offers pathways for advancing the use of carbon markets in Africa, with a focus on financial regulatory actions that can help scale their use and establish carbon credits as a recognized financial asset class. It outlines possible policy steps that central banks, banking, securities and insurance regulators (hereinafter collectively referred to as “financial regulators”) can take to overcome existing barriers and unlock the potential of carbon credits to drive sustainable development. Within the area of carbon markets, special attention is provided to clean cooking carbon projects, which act as both a critical climate solution and a significant development priority for Africa. However, most of the recommendations contained within this report are technology agnostic, treating carbon credits as one consolidated and standardized financial asset class.

This report's intervention design that leads up to the implementation considerations is based on a dual approach — combining a top-down approach (interventions to incorporate carbon credits into the ongoing evolution of mainstream green financial policies) with possible initiatives identified through a bottom-up approach (targeted, but non-conventional measures that are not linked to mainstream green financial policies). This holistic thinking leads to a set of core interventions that can encourage the widespread use of carbon credits in mainstream financial markets, a particularly desired outcome for developing regions that face the dual challenges of climate adaptation and economic growth and demand financial innovation to overcome the challenges ahead.

The final output is the Financial Regulatory Pathways for Scaling Carbon Markets, proposing priority areas of interventions and specific actions that can fall within the broad mandate of African financial regulators. The aim of this report is to allow financial regulators to take timely and coordinated action to fulfill their respective mandates of supporting the greening of financial markets, acknowledging the rapidly evolving nature of this space. Financial regulators in the region face unique challenges, including — in some

4 Institute of International Finance (2021) Taskforce on Scaling Voluntary Carbon Markets, Final Report. Available at: https://www.iif.com/Portals/1/Files/TSVCM_Report.pdf

5 International Organization of Securities Commissions(2024) Promoting Financial Integrity and Orderly Functioning of Voluntary Carbon Markets. Available at: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD774.pdf>

countries — constrained institutional capacity, fragmented market structures, and competing development priorities. Through the adoption of the identified targeted interventions, financial regulators can contribute to the integration of carbon credits into mainstream financial markets, thus helping to position them not only as tools for climate change mitigation but also as viable, tradable assets.

As a final note, given the diversity of financial systems, the recommendations here are designed for flexible adoption - based on institutional capacity, supervisory mandates, and market readiness. Rather than prescribing uniform reforms, this report proposes a framework for iterative learning and experimentation. The objective of this report is to lay down the foundations for tailored country-level roadmap development, a necessary next step that will allow to take into account host country specificities and advancements already taken on some of the policy fields covered in this report.

Structure of the Report

The remainder of the report is structured as follows:

- **Chapter 3** takes stock of the current state of international carbon markets, evaluating key characteristics of carbon credits as an asset class and summarizing present gaps and challenges the market is facing from a financial market perspective. The chapter subsequently explains the approach taken by the authors to analyzing how financial regulators can address these challenges to foster the broader use of carbon credits in financial markets.
- **Chapter 4** provides a shortlist of regulatory measures that financial regulators can adopt to promote the integration of carbon credits into existing financial markets. This includes a detailed examination of the roles different financial regulatory bodies can play, with a particular focus on the possibilities of central banks, bank, securities, and insurance regulation in promoting carbon credit adoption. The chapter discusses how carbon credits can be incorporated into green finance policies and link to clean cooking activities.
- **Chapter 5** presents the implementation considerations for the proposed interventions, which can be adapted to different country contexts. This concluding chapter also reflects on the potential risks and challenges of the proposed pathways, offering recommendations for overcoming barriers to market development.

03

Stock Take

Integrating Carbon Credits Into Mainstream Finance

Approach

The carbon market has gained significant interest in recent years, driven by the increasing recognition of the critical need to enable cost-effective greenhouse gas emission reductions or carbon removals by sovereigns, corporations, and individuals. Despite the attention, carbon credits remain a niche asset class with several structural challenges that limit their full integration into the broader financial markets. One of the primary challenges is the lack of a standardized market structure, which hinders liquidity and makes it difficult for investors to use carbon credits in secured lending.

To evaluate the degree to which carbon credits are recognized by financial market participants as a mature asset class that can effectively leverage green investments, this report assesses the ability of carbon credits to serve as “high-quality security” underpinning lending and other forms of investments. The rationale for assessing the suitability of carbon credits as an acceptable form of collateral is that collateral plays a critical role in the global financial sector thanks to its ability to reduce exposure to credit risk. Research by institutions like the Bank for International Settlements (BIS),⁶ the Bank of England,⁷ and the US National Bureau of Economic Research⁸ confirms the inherent link between the acceptability of collateral and capital flows.

The assessment of the suitability of carbon credits as an acceptable form of collateral has been conducted through (1) a set of indicators derived from a comprehensive literature review on commodity markets, financial regulation, and sustainable finance; and (2) consultations held with investors (i.e., commercial banks, impact investment funds, development financing institutions) active in carbon markets.

The research identified eight common indicators of a mature financial asset that can be regarded as “good quality collateral” and evaluated the extent to which carbon credits in the current market context are likely or unlikely to satisfy each respective indicator. Against each of the indicators in the table below, the assessment mentions inherent risks associated with international carbon markets, and points to the general areas of intervention that will require attention from central bank authorities or other financial regulators (detailed in Chapters 4 and 5).

6 Bank of International Settlements (2021) CGFS Papers No 66 - Changing patterns of capital flows. Available here: <https://www.bis.org/publ/cgfs66.pdf>

7 Cesa-Bianchi, A., Ferrero, A., & Rebucci, A. (2017) Staff Working Paper No. 680 International credit supply shocks. Bank of England. Available here: <https://www.bankofengland.co.uk/-/media/boe/files/working-paper/2017/international-credit-supply-shocks.pdf>

8 Fostel, A., Geanakoplos, J., & Phelan, G. (2023) Global Collateral and Capital Flows. National Bureau of Economic Research. Available here: https://www.nber.org/system/files/working_papers/w25583/w25583.pdf

Assessment Outcome

In well-functioning financial markets, key attributes such as liquidity, effective price discovery, and clear legal definitions ensure that assets can be traded efficiently and reliably. Standardized contracts, transparent price discovery methods, and efficient exchanges and clearinghouses are some characteristics that underpin the credibility of established markets like commodities, equities, and bonds.⁹ In contrast, carbon credit markets are still fragmented today, with a wide array of accounting standards and methodologies delivering carbon credits of varying credibility and quality.¹⁰ These deficiencies not only discourage the participation of mainstream financiers, but also increase transaction costs of doing business in the carbon market overall, limiting the potential for carbon credits to function as a scalable green financial instrument.

Table 1 summarizes the performance of carbon credits as an asset class against each of the indicators of “good quality collateral.” Key deficiencies include price instability, poor liquidity, legal ambiguities, and time-value depreciation, all attributes that currently obstruct the recognition of carbon credits as quality collateral by most commercial financiers. Even where carbon credits are being considered as eligible collateral, the necessary application of substantial haircuts diminishes their utility in financial structuring. Consequently, most investors active in the carbon market today need to revert to unsecuritized lending against future carbon revenue receivables. This highlights the need for intimate familiarity with carbon financing to ensure the appropriate sizing of debt and risk buffers, currently making the market attractive mainly for specialized lenders or equity investors.

Table 1: Performance of carbon credits as an asset class against indicators of “good quality collateral”

Indicator	Assessment
Ability to Ascertain Value The capability to determine the value of an asset through market value, third-party appraisal, or comparable measures.	<ul style="list-style-type: none"> Carbon credits can be valued through established (exchange-traded) markets, but these markets remain illiquid and obstruct effective price discovery. The resulting price volatility obstructs asset valuation, and financial regulatory intervention that promotes exchange traded markets and indexes would help improve price discovery.
Market Value Stability The degree to which the value of collateral remains stable/comparable/predictable compared to the moment of collateral valuation.	<ul style="list-style-type: none"> The value of carbon credits is subject to significant fluctuations due to changing market demand, poor liquidity, and regulatory changes. Furthermore, the value of voluntary carbon credits diminishes over time (vintage effect”). The volatility of carbon credit prices represents a material risk, and financial regulatory intervention that helps stabilize pricing would be beneficial to overall market maturation.

9 Bank for International Settlements (2012) Principles for Financial Market Infrastructure. Available at: <https://www.bis.org/cpmi/publ/d101a.pdf>

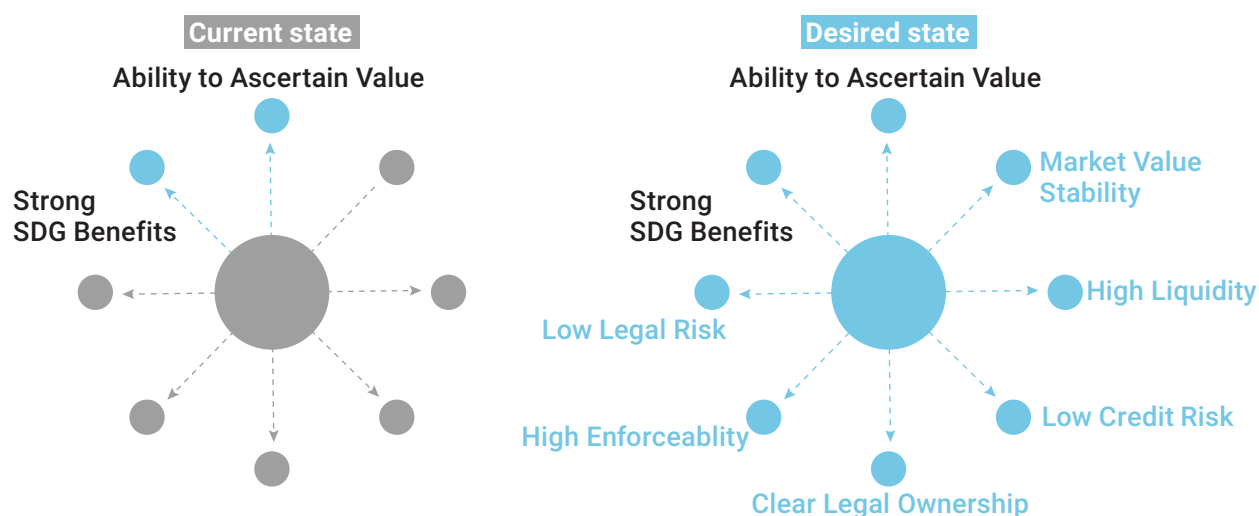
10 International Organization of Securities Commissions (IOSCO) (2021) Voluntary Carbon Markets Report. Available at: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD774.pdf>

Indicator	Assessment
High Liquidity The ease and cost-effectiveness with which an asset can be converted to cash without significantly affecting its value.	<ul style="list-style-type: none"> Compared to other assets, the carbon market has a small capitalization that is associated with lower liquidity and large movements in pricing. The limited liquidity in carbon markets represents a material risk, and financial regulatory intervention that helps deepen trading activity would be beneficial to overall market maturation.
Low Credit Risk The risk of default associated with the entity issuing or backing the asset.	<ul style="list-style-type: none"> Credit risk may apply to both the carbon project developer, as well as the counterparty that is obligated to offtake the carbon credits. The credit risk associated with carbon projects is elevated where no alternative collateral is available, and financial regulatory intervention that reduces counterparty risk would be beneficial to overall market maturation.
Clear Legal Ownership The formal recognition and regulation of ownership claims over the asset.	<ul style="list-style-type: none"> Uncertainty exists in many African jurisdictions as to (1) ownership rights over generated emission reductions or removals and (2) the legal treatment of the asset in financial market transactions. The legal risk associated with carbon credit ownership can be material, and financial regulatory intervention that reduces this legal uncertainty would be beneficial to overall market maturation.
High Enforceability The ease with which legal rights to the collateral can be enforced in case of borrower default.	<ul style="list-style-type: none"> Carbon credits, being a relatively new form of asset, lack comprehensive legal frameworks or precedents and standardized enforcement mechanisms to ensure claims. The enforceability risk associated with carbon credits can be material, and financial regulatory intervention that reduces this legal uncertainty would be beneficial to overall market maturation.
Low Sovereign Risk The risk associated with the political and economic stability of the jurisdiction where the asset is generated.	<ul style="list-style-type: none"> Carbon credits are generated from projects across diverse geographic locations, which exposes them to varying levels of geopolitical sovereign risk. The sovereign risk associated with carbon projects in many African states can be material, and financial regulatory intervention that reduces risk would be beneficial to overall market maturation.
High Economic or Development Relevance The socio-economic value of the asset beyond its market value as a financial asset.	<ul style="list-style-type: none"> Carbon credits have tangible environmental benefits and economic utility, which makes them useful beyond their market value. As such, this is not a priority area for financial regulatory intervention.

The Process Leading to The Pathways

The preceding analysis highlights the current challenges carbon markets are facing in Africa and globally, and where underdeveloped financial markets and regulatory systems create additional barriers to scaling carbon credits. These structural hurdles underscore the need for targeted regulatory interventions that address the unique realities of developing countries while fostering trust and broad participation in carbon markets.

Despite these challenges, carbon markets hold immense potential. As climate change continues to be a defining issue for policymakers worldwide, the pressure to develop robust, market-driven solutions for cost-effective deployment of emissions reductions will only increase. To unlock the full potential of carbon credits as a financial asset class, it is imperative that regulatory interventions address these weaknesses and create the necessary conditions for market growth. The vision can be illustrated in **Figure 2**, which set the foundations for the development of the final *Financial Regulatory Pathways for Scaling Carbon Markets*.



To advance on these key market developments, the eight assessed indicators can be synthesized into **five overarching long-term outcomes** that are needed to build confidence in carbon credits as a financial asset class and promote market scaling. Each of these outcomes directly addresses improves key attributes required to unlock the market's full potential:



The realization of these long-term outcomes should lead to the **impact**, which is the effective and efficient use of international carbon markets in the global combat of climate change. This is the ultimate objective of carbon market mechanisms, which in the context of the Paris Agreement are to enable countries to raise climate ambition and implement national action plans more affordably.¹¹

This report acknowledges that to achieve these long-term outcomes, various strategies will need to be pursued that will require the backing and participation of different market actors. Given the regulatory focus of this report, most of the identified actions will naturally fall in the remit of financial regulators (Table 2); however, close collaboration with relevant ministries (i.e., Finance, Environment, National Development) and other relevant market stakeholders will be vital to advancing the long-term goals.

Table 1: Performance of carbon credits as an asset class against indicators of “good quality collateral”

Financial regulators	Mandate	Link to carbon markets
Central banks	<ul style="list-style-type: none"> • Price stability • Employment • Financial stability • Sustainable development* 	In line with these mandates, central banks may consider supporting carbon credit markets if it can help improve the smooth transmission of monetary policy, by deepening financial markets and improving market infrastructure.
Securities commissions/regulators	<ul style="list-style-type: none"> • Investor protection • Market integrity/conduct • Capital market development • Compliance monitoring 	In line with these mandates, securities regulators may consider supporting carbon markets to ensure that investors have access to more reliable information and promoting a more efficient/liquid markets.
Insurance market regulators	<ul style="list-style-type: none"> • Consumer protection • Market conduction regulation • Licensing and oversight 	In line with these mandates, insurance market regulators may consider supporting carbon markets with a view to integrate the asset class into available insurance products.

* Sustainable development, environment, and/or climate change may represent extended mandates of central bank authorities in specific jurisdictions in African countries. See Box 1 for further details.

The interventions outlined in the next chapter identify which financial policymakers will be the best-positioned institution to take the lead in pushing for progress. Particular attention is given to the role central banks can play in promoting the uptake of these measures, recognizing the critical role these institutions have in regulating domestic financial markets and issuing prudential guidelines to steer the evolution of markets in a particular direction.

11 UNFCCC (2024) Article 6. Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement/article-64-mechanism>

Box 1: Central Bank Mandates and Climate Change

Central banks are expected to operate independently from political interference and be free to pursue their mandate regardless of political shifts in power.¹² This offers stability and predictability in policymaking. While this need for political independence is generally recognized, there are different schools of thought about the very scope of central bank mandates.

The primary mandate of any central bank is to maintain price stability.¹³ Some central banks, however, have broader mandates extending to limiting unemployment or maintaining stable exchange rates.¹⁴ There is also a growing expectation that central banks have a role to play in addressing environmental challenges, especially climate change.¹⁵ Officials at institutions such as the Bank of England¹⁶ and the European Central Bank have for some time now argued that the role of central banks must be interpreted to incorporate climate risks, considering the threats (physical, transitional, and associated liability risks) that climate change is likely to have on financial market stability. Support for this is strong in the central banking community, with surveys indicating that a large share of central bank representatives (over 70%¹⁷) view climate change as a “major threat to financial stability” and that the majority of central banks (75%¹⁸) are planning to consider climate-related actions in their financial stability monitoring frameworks.

This shift in opinion observed in recent years is not surprising, considering the abundance of studies pointing towards the materiality of financial exposure to physical (i.e., the risk of economic and financial losses due to climate-related hazards), transition (i.e., losses related to regulatory and economic adjustments in a transition to a low-carbon economy), and liability (i.e., risk that liability insurers providers have to cover due to capital asset depreciation) risks.¹⁹ This potential spillover effect on the global economy has been dubbed a “Green Swan” event,²⁰ alluding to a “Black Swan” event that relates to an exceedingly rare event (from a probabilistic standpoint) but with potentially catastrophic repercussions. One important development that signals coordinated thinking on this topic is the launch of the Network for Greening the Financial System (NGFS) in 2017 by eight central banks, with a mission to “contribute to the development of environment and climate risk management in the financial sector, and to mobilize mainstream finance to support the transition toward a sustainable economy.”²¹ The NGFS – today a network of around 150 central banks and financial supervisors – has been instrumental in promoting sustainable and climate finance topics with financial regulators around the world, including its 15 African member organizations.

12 World Bank (2021) Why Central Bank Independence Matters. Available at: <https://documents1.worldbank.org/curated/en/284641638334557462/pdf/Why-Central-Bank-Independence-Matters.pdf>

13 International Monetary Fund (2024) Monetary Policy and Central Banking. Available at: <https://www.imf.org/en/About/Factsheets/Sheets/2023/monetary-policy-and-central-banking>

14 International Monetary Fund (2024) Monetary Policy and Central Banking. Available at: <https://www.imf.org/en/About/Factsheets/Sheets/2023/monetary-policy-and-central-banking>

15 Journal of Financial Regulation (2023) Central Banks and Climate Change: Mission Impossible? Available at: <https://academic.oup.com/jfr/article/9/2/174/7091910>

16 Bank of England (2024) Available at: <https://www.bankofengland.co.uk/climate-change>

17 European Central Bank (2024) Available at: <https://www.ecb.europa.eu/ecb/climate/html/index.en.html>

18 Financial Stability Board (2020) Stocktake of financial authorities’ experience in including physical and transition climate risks as part of their financial stability monitoring. Available at: <https://www.fsb.org/wp-content/uploads/P220720.pdf>

19 Ecological Economics (2021) Central bank mandates, sustainability objectives and the promotion of green finance. Available at: <https://www.sciencedirect.com/science/article/pii/S092180092100080X>

20 P. Bolton et al (2020) The Green Swan: Central Banking and Financial Stability. Available at: <https://greencentralbanking.com/research/the-green-swan-central-banking-and-financial-stability-in-the-age-of-climate-change/>

21 Network for Greening the Financial System (2024) Available at: <https://www.ngfs.net/en>

04

Pathways: List of Interventions

List of Core Interventions

Seeking Alignment With Green Finance Regulatory Interventions

Considering the growing attention to international carbon markets and the key role these mechanisms can play in allowing countries to meet their Paris Agreement targets, it is expected that financial regulators – both internationally and more specifically in Africa – will increasingly recognize that strengthening domestic carbon markets and aligning these markets with broader financial systems can contribute to fulfilling elements of their mandates (be it financial and price stability, or sustainable development). While carbon markets have not been a focus area for most financial regulators in Africa, significant progress has been made in advancing climate and green financial policies on the continent. This sets important precedents for how central banks and other regulators can promote carbon markets going forward.

Looking at the global landscape first, several bodies and international organizations that shape the central banking and financial regulatory community have issued recommendations to develop policies that advance climate risk management or support the green transition. The most notable examples include:

- The Basel Committee on Banking Supervision's (BCBS) *Principles for the effective management and supervision of climate-related financial risks* of 2022,²² and the integration of climate risks into the *Core Principles for Effective Banking Supervision* in 2024.²³
- The Network for Greening the Financial System (NGFS) issued its *Call-to-Action* report in 2019,²⁴ outlining six recommendations for authorities and market players, followed by the publication of the *Guide for Supervisors*²⁵ in May 2020, providing five main recommendations aimed at integrating climate-related and environmental risks into supervision. Similar other recommendations and technical papers followed later. These documents encourage central banks and supervisors to incorporate climate risk into their regulatory frameworks, improve financial disclosures in line with the Task Force on Climate-related Financial Disclosures (TCFD),²⁶ and support a global, consistent framework for climate data and scenarios.

22 Basel Committee on Banking Supervision (2024) Core Principles for Effective Banking Supervision. Available at: <https://www.bis.org/bcbs/publ/d573.htm>

23 Basel Committee on Banking Supervision (2022) Principles for the Effective Management and Supervision of Climate-Related Financial Risks. Available at: <https://www.bis.org/bcbs/publ/d530.htm>

24 Network for Greening the Financial System (2019) Call to Action: Climate Change as a Source of Financial Risk. Available at: https://www.ngfs.net/sites/default/files/medias/documents/ngfs_first_comprehensive_report_-_17042019_0.pdf

25 Network for Greening the Financial System (2020) Guide for Supervisors: Integrating Climate-Related and Environmental Risks into Prudential Supervision. Available at: https://www.ngfs.net/sites/default/files/medias/documents/ngfs_guide_for_supervisors.pdf

26 Task Force on Climate-related Financial Disclosures (2017) Recommendations of the Task Force on Climate-related Financial Disclosures. Available at: <https://www.fsb-tcfd.org/publications>

- The G20's Sustainable Finance Working Group (SFWG) released a roadmap in 2021, aiming to support a global sustainable financial system. The *G20 Sustainable Finance Roadmap*²⁷ includes priority areas such as improving sustainability reporting, enhancing climate-related data and risk assessment practices, and supporting transitions to net-zero economies. The roadmap represents a multi-year framework that the G20 updates regularly, with involvement from various international financial institutions to ensure coordinated global efforts.
- The International Organization of Securities Commissions (IOSCO) issued its *Recommendations on Sustainability-Related Practices, Policies, Procedures, and Disclosure in Asset Management*²⁸ in 2021. This document provides guidance for regulators of asset managers on integrating climate risks into strategies and improving transparency in sustainability disclosures. Another relevant publication for the purpose of this report is the 2023 report on *Voluntary Carbon Markets*²⁹, which – inter alia – advocates for clear and effective regulatory frameworks that provide legal certainty and proportional oversight of carbon markets.
- In the insurance sector, regulation of climate risk management is also gaining importance. The International Association of Insurance Supervisors (IAIS) issued guidance in 2021 titled the *Application Paper on the Supervision of Climate-related Risks in the Insurance Sector*,³⁰ outlining practical recommendations to help insurance supervisors address the increasing risks associated with climate change.

While the aforementioned examples differ in scope, objectives, and granularity, they collectively establish an internationally accepted approach for integrating sustainable finance – particularly climate-related aspects – into central banking, as well as banking, insurance, and capital markets regulations.

27 G20 Sustainable Finance Working Group (2021) G20 Sustainable Finance Roadmap. Available at: https://g20sfwg.org/wp-content/uploads/2022/01/RoadMap_Final14_12.pdf

28 International Organization of Securities Commissions (IOSCO) (2021) Recommendations on Sustainability-Related Practices, Policies, Procedures, and Disclosure in Asset Management. Available at: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD679.pdf>

29 International Organization of Securities Commissions (IOSCO) (2021) Voluntary Carbon Markets Report. Available at: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD774.pdf>

30 International Association of Insurance Supervisors (IAIS) (2021) Application Paper on the Supervision of Climate-Related Risks in the Insurance Sector. Available at: <https://www.iaisweb.org/uploads/2022/01/210525-Application-Paper-on-the-Supervision-of-Climate-related-Risks-in-the-Insurance-Sector.pdf>

Based on these regulatory trends, this report identifies the following internationally followed “building blocks” increasingly adopted across countries, into which this report evaluates how carbon markets can be integrated (**Table 3**):

1. Issuance of Climate Risk Recommendations for Banks
2. Development of ESG and Climate Disclosure Requirements
3. Climate Stress Testing
4. Insurance Recommendations for Climate Risks
5. Facilitating Availability of Climate Risk Data
6. Green Taxonomies and Classification Systems
7. Standards for Sustainable Investment Funds
8. Support for Green Bond Markets
9. Incentives for Sustainable Lending

These developments collectively aim to enhance financial institutions’ ability to manage climate risks, improve transparency through ESG disclosures, support the development of green investment products, and foster greater alignment with climate goals. They also encourage capacity building and the creation of supportive de-risking financing strategies, ultimately driving more investment into sustainable and climate-resilient projects. Currently, however, these regulatory developments do not cover carbon credits explicitly, instead targeting more mainstream and well-established asset classes, such as loans and bonds. In a growing number of countries, the carbon markets strategy and policy development has been evolving as a stand-alone policy effort, without creating and exploring the links to the mainstream financial regulatory steps mentioned above.

Table 3: Seeking alignment with green finance regulatory interventions.

Green finance “building block”	Scope of policy or regulation	Link to carbon markets
Issuance of Climate Risk Recommendations for Banks	Providing guidance for banks to identify, assess, and manage climate-related risks, integrating these risks into governance and risk management frameworks.	By clarifying what role carbon credits can play in mitigating climate risks, the assets can become more widely accepted in general by banks.
Development of ESG and Climate Disclosure Requirements	Establishing mandatory or voluntary frameworks for companies/banks to disclose ESG metrics, including climate-related risks and emissions.	Including carbon credits in disclosures would allow transparent reporting on carbon offset contributions.
Climate Stress Testing	Requiring scenario analyses from financial institutions/running analyses by central banks to assess how various climate events and policy changes might impact their financial stability.	Stress test scenarios could take into account carbon credits with a potentially favorable impact on portfolio resilience to changes in carbon prices or regulations.

Green finance “building block”	Scope of policy or regulation	Link to carbon markets
Insurance Recommendations for Climate Risks	Developing standards for insurers to evaluate climate risks accurately, such as natural disaster exposure, and encouraging products that support climate resilience.	Clarifying what elements of the carbon credit value chain could be insurable.
Facilitating Availability of Climate Risk Data	Creating centralized databases and access channels for banks to obtain reliable data on climate risks, improving risk assessment and decision-making.	Data on carbon credits could be integrated into climate risk databases to inform risk evaluations and lending decisions.
Green Taxonomies and Classification Systems	Defining and categorizing environmentally sustainable economic activities, helping investors identify green assets and directing finance toward sustainable projects.	Including carbon project types, such as clean cooking projects, as an explicit sustainable economic activity in the taxonomy.
Standards for Sustainable Investment Funds	Setting criteria for investment funds to classify as “sustainable” promoting transparency and aligning funds with environmental and social goals.	Clarifying if and how carbon credits can be classified as “sustainable investments” in the portfolio of ESG mutual funds.
Support for Green Bond Markets	Encouraging the development of green bond frameworks and securitization mechanisms to increase capital availability for green projects and climate resilience initiatives.	Local green bond framework recommendations could incorporate specific carbon project types, such as clean cooking projects, enabling bonds tied to carbon credits and securitized offset portfolios.
Incentives for Sustainable Lending	Providing benefits, such as green capital requirement discounts, to banks for financing environmentally positive projects, making sustainable finance more attractive.	Financial incentives (such as a green capital requirement discount) could prioritize loans for projects that produce carbon credits/are secured by carbon credits.

Box 2: Green Finance Regulatory Developments in Selected African States

The financial regulatory trends summarized above reflect a global movement toward integrating climate risks into financial systems. A growing number of African countries are also beginning to adopt these measures, including the following notable examples:

- **Issuance of Climate Risk Recommendations for Banks and Development of ESG and Climate Disclosure Requirements.** In Kenya, the Central Bank of Kenya (CBK) has issued guidelines encouraging banks to integrate climate risk into their risk management frameworks.³¹ In Nigeria, the Central Bank of Nigeria (CBN) has issued the Nigerian Sustainable Banking Principles,³² which include considerations for environmental and social risks. In addition, a Climate Risk Disclosure Framework is also under development.³³ In Ghana, the Bank of Ghana has initiated steps to incorporate climate risk into its supervisory practices, though formal guidelines were still under development at the time of this report writing.³⁴
- **Climate Stress Testing.** In Kenya, the CBK is exploring the integration of climate stress testing into its supervisory toolkit, though comprehensive frameworks are still evolving.³⁵ In Nigeria, there is discussion about conducting climate stress tests for banks.³⁶ In Ghana, the Bank of Ghana is in the preliminary stages of developing climate stress testing methodologies.³⁷
- **Insurance Recommendations for Climate Risks.** In Kenya, the Insurance Regulatory Authority has encouraged insurers to develop products addressing climate and nature risks, such as agricultural insurance schemes.³⁸
- **Green Taxonomies and Classification Systems.** In Kenya, the CBK is developing a green taxonomy to classify sustainable economic activities, aiding in the identification of green assets.³⁹ In Nigeria, the CBN has introduced a Nigerian Sustainable Finance Roadmap,⁴⁰ which includes plans for developing a green taxonomy. In Ghana, the Bank of Ghana recently released a national green taxonomy to guide sustainable investments.⁴¹
- **Support for Green Bond Markets, including Securitization.** In Kenya, the Nairobi Securities Exchange has launched a green bond segment to facilitate the issuance and trading of green bonds and has issued the *Kenya Green Bond Guidelines Background Document*.⁴² In Ghana, stakeholders are exploring frameworks to support green bond issuances, aiming to attract investment into sustainable projects.⁴³

31 Central Bank of Kenya (2024) Available at: <https://www.centralbank.go.ke/2024/09/18/10758/>

32 Central Bank of Nigeria (2012) Available at: <https://www.cbn.gov.ng/out/2012/ccd/circular-nsbp.pdf>

33 Green Central Banking (2024) Available at: <https://greencentralbanking.com/2024/10/16/kenya-climate-disclosure-framework/>

34 Bank of Ghana (2024) Available at: <https://tinyurl.com/8ym9z8b4>

35 Central Bank of Kenya (2023) Available at: <https://tinyurl.com/25k5vyu4>

36 Green Central Banking (2023) Available at: <https://greencentralbanking.com/2023/10/09/imf-nigeria-prioritise-climate-action/>

37 Bank of Ghana (2024) Available at: <https://tinyurl.com/5dkxy8hj>

38 Insurance Regulatory Authority (2024) Available at: <https://tinyurl.com/yc84pt9p>

39 Central Bank of Kenya (2024) Available at: <https://www.centralbank.go.ke/2024/04/11/10452/>

40 SBF Network (2018) Available at: <https://tinyurl.com/mskk3tz2>

41 Ghana Ministry of Finance (2024) Available at: <https://tinyurl.com/3hnm7j>

42 Green Bonds Programme (no date) Available at: <https://www.nse.co.ke/wp-content/uploads/gbpk-background-document-2.pdf>

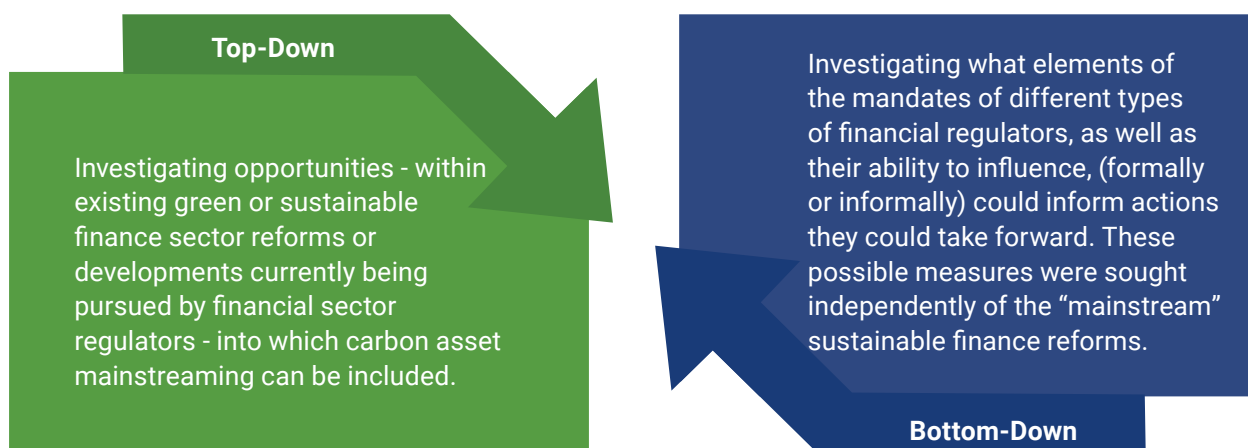
43 FSD Africa (2021) Available at: <https://fsdafrica.org/wp-content/uploads/2021/04/Ghana-Green-Bonds-Scoping-Report-22.04.21.pdf>

Summary of the Intervention Design Process

Building on the global and regional trends in green finance regulation, the design of effective regulatory interventions in support of carbon markets requires a systematic approach that combines both top-down and bottom-up strategies:

- The **top-down** approach relates to existing regulatory reforms or development initiatives driven by financial regulators, such as changes to monetary policy frameworks, the development of risk management guidelines, or the issuance of regulations that integrate carbon risks into existing frameworks, in line with the recommendations of the NGFS and other international bodies. These actions often require coordination with international bodies and private-sector stakeholders to ensure that regulatory frameworks align with global best practices.
- The **bottom-up** approach, on the other hand, focuses on the actions that are not derived directly from the aforementioned regulatory trends but can be considered novel areas of action that can be taken by/with financial regulators within the scope of their mandates and powers to influence. These are more specific interventions to foster the adoption of carbon credits and may include setting up of sandboxes to introduce specific carbon market regulations or develop new financial products.

Figure 3: Dual approach to identify interventions that could move the needle in financial markets



This dual approach leads to 15 core interventions that have been formulated through a methodology that evaluates their potential impact and feasibility within the existing regulatory environment. As such, each of the proposed interventions has been designed to align with the broader objectives of the relevant financial regulators, such as promoting financial stability, enhancing market liquidity, and encouraging sustainable investments.

As introduced at the onset of this report, the proposed interventions relate to carbon credits as a general asset class, with the ultimate objective of advancing climate-positive investments that can contribute to the goals of the Paris Agreement. Clean cooking, as a critical climate and development priority, is a priority area in this report, considering its relevance to many African countries and its ability to deliver both climate and other sustainable development impacts. This dual focus ensures that the interventions not only address the financial and regulatory gaps in carbon credit markets generally but also contribute to scaling clean cooking solutions. As such, several interventions explicitly integrate clean cooking into the scope, including recognizing clean cooking activities in green taxonomies or sandboxing innovative financing instruments that can serve clean cooking carbon project developers specifically.

List of Core Interventions

The interventions outlined below offer a comprehensive approach to addressing the discussed barriers preventing the integration of carbon credits into mainstream financial markets. By focusing on regulatory clarity, enhanced transparency, and increased market participation, these interventions are designed to foster an efficient and reliable market for carbon credits. The recommended measures aim to improve both the supply and demand sides of the market, ensuring that financial institutions are better equipped to manage climate risks and that carbon credits are increasingly recognized as valuable assets within investment portfolios. For each intervention, alongside a general description of the scope of the action, the possible short- and mid-term outcomes are presented to clarify what impact they stand to generate.

Implementing these interventions will require careful coordination among regulators, market participants, and other stakeholders. Their successful realization will rely on a country specific roadmap strategy that accounts for local market conditions, existing regulatory frameworks, and the specific challenges faced by developing states in Africa. From an implementation standpoint, the regulators can also choose and club interventions that align their strategic priorities into distinct phases:

- **Phase 1: Foundational phase** that sets the regulatory groundwork needed to foster trust and participation in carbon markets.
- **Phase 2: Adoption phase** that transitions to directly incentivizing the uptake of investments in carbon market activities by mainstream financial institutions.
- **Phase 3: Expansion phase** that builds on the adoption of carbon finance by mainstream financiers and aims to scale these efforts to further standardize domestic carbon markets and deepen liquidity.

The phases and the interventions do not represent rigid sequential steps.

In some cases, regulatory sandboxes – designed to test innovations in a controlled environment – may serve as an effective entry point, allowing financial authorities to experiment with market mechanisms, inform regulatory frameworks, or introduce tools before formalizing broader regulations. The level of regulatory intervention required by the responsible authorities may differ depending on the national context. In the particular case of regulatory sandboxes, these forms of intervention are established to test products or services that would otherwise have been prohibited because they conflict with existing laws or other regulatory frameworks. Regulators may test entire new regulatory environments in such sandboxes for an extended period of time before formally adopting them. However, they may also consider prioritizing quick

wins to unlock specific barriers – for instance, through simplifying or waiving certain standard approval procedures that may be restricting innovation.

The phased approach is, therefore, intended to provide an actionable path while maintaining flexibility for regulators, financial institutions, and other stakeholders to adopt the critical measures that can create an enabling ecosystem that supports the widespread adoption of carbon credits in mainstream financial markets.

The 15 core interventions included in the final roadmap are presented in the following pages under the three strategic areas:

1. Establishing a Stable Carbon Market Infrastructure

1.1 Regulatory Guidance and Risk Management

Intervention 1 Issue Guidance on Carbon Credit Assets' Prudential Treatment

SUMMARY

At the moment, the prudential treatment of carbon credits by commercial banks is uncertain in most jurisdictions across Africa. This foundational intervention seeks to provide tiered guidance to integrate carbon credits as assets in banks, aligned with Basel III standards. This includes guidance on the financial treatment of carbon credits, their valuation, risk weights, and collateral haircuts within the banking sector. The guidance can range from informal advisory to formal prudential guidelines issued by regulators.

OUTCOMES

- Standardized treatment of carbon credits as bankable assets
- Greater consistency in carbon credit valuation and reporting
- Increased financial stability through improved risk management practices

LEADING REGULATOR

Bank regulator

SUPPORTING INSTITUTIONS

Banking association

STRATEGY SUGGESTED

Regulators can study comparable assets' treatment (including intangible assets) in the Basel III framework and in regional or national accounting frameworks. Setting up a dedicated working group is recommended, which can work towards drafting informal guidance, showcasing pilot case studies, and issuing phased guidance to demonstrate the value of carbon market investments incrementally.

SHORT-TERM MILESTONES

- Initial publication of guidance
- Training session completions
- Number of pilot banks engaged

LONG-TERM MILESTONES

- Compliance rate with guidance among banks
- Inclusion of carbon credits in balance sheets at scale

Intervention 2 Include Carbon Credits as Mitigators in Bank Climate Risk Recommendations

SUMMARY

Banks must enhance their climate and environmental risk management frameworks, and African financial institutions are progressing on adopting good practices for climate-related and environmental risk management. This intervention seeks to clarify the role of carbon credits in mitigating climate risks, which may enhance the assets acceptance among banks.

OUTCOMES

- Improved understanding of carbon credits' role in risk management
- Increased appetite for banks to finance against carbon credits

LEADING REGULATOR

Bank regulator

SUPPORTING INSTITUTIONS

Banking association

STRATEGY SUGGESTED

Regulators can build on existing good practice guidelines for climate-related risk management, such as those the NGFS and the Basel Committee. The development of carbon market specific guidelines should be guided by public consultations, to understand current practices by domestic financial institutions and promote buy-in for the final recommendations.

SHORT-TERM MILESTONES

- Initial guidelines on carbon credit integration
- Public consultations on the draft
- Published final recommendations
- Workshops to discuss implementation strategies

LONG-TERM MILESTONES

- Number of banks adopting new guidelines

Intervention 3 Cover Carbon Credits in ESG and Climate Disclosures

SUMMARY

ESG disclosure refers to the process by which financial institutions report on their environmental, social, and governance activities and performance. Climate risk reporting (e.g., based on the TCFD recommendations) is an important domain here, which is also increasingly applied in Africa. Integrating carbon credits into evolving ESG disclosure/sustainability reporting requirements for financial institutions and/or companies will promote transparency and accountability in financial reporting.

OUTCOMES

- Improved overall market transparency about how carbon credits relate to broader ESG activities
- Increased trust in and demand for the asset as a result of a clear use case for financial institutions/companies for carbon credits

LEADING REGULATOR

Securities commission/regulator

SUPPORTING INSTITUTIONS

Stock exchange, auditors

STRATEGY SUGGESTED

Regulators can build on existing ESG disclosure guidelines and collaborate with financial institutions or companies to make sure that ESG disclosures reflect carbon credits. Current climate-related disclosure standards already allow covering carbon credits too, so the way forward can be a combination of making the disclosure rules more prescriptive in this regard, and/or engaging market players to include them, even if the volumes held are not substantial yet.

SHORT-TERM MILESTONES

- Draft ESG disclosure guidelines that incorporate carbon credits into TCFD-like frameworks
- Public consultations
- Published final recommendations
- Training sessions for firms on new disclosure requirements

LONG-TERM MILESTONES

- Number of firms including carbon credits in their ESG disclosures

1.2 Market Transparent and Data Integration

Intervention 4 Integrate Carbon Credit Data into Climate Risk Databases

SUMMARY

Integrating data on carbon credits into existing climate risk databases (or into newly developed databases, if they do not exist yet) will enhance risk assessments and lending decisions for banks, making carbon credits more suitable to be used as collateral. For other market players it could reduce perceived risks and thereby increase trust in carbon credits.

OUTCOMES

- Increased trust in carbon credits to invest in or to hold the asset as collateral

LEADING REGULATOR

Bank/Securities regulator (if carbon credits are regulated financial instruments in the respective country)/Relevant Ministry

SUPPORTING INSTITUTIONS

ESG data providers

STRATEGY SUGGESTED

Collaborate with data providers to ensure comprehensive carbon credit data is available to financial institutions, including pricing trends, emission reductions, project details, vintage years, and ownership records. This data will help banks assess the credits' risk mitigation potential and suitability as collateral.

SHORT-TERM MILESTONES

- Identified data sources and integration methods
- Designed access options
- Launched pilot database

LONG-TERM MILESTONES

- Percentage of institutions using integrated carbon credit data

Intervention 5 Incorporate Carbon Credits in Stress Testing Frameworks

SUMMARY

Stress tests help to evaluate the capital adequacy of banks. Including carbon credits in such stress tests will help banks assess their resilience to carbon price fluctuations and regulatory changes. The increased understanding of the impact of the asset class on key financial risk indicators will build confidence of financial institutions to finance firms that hold such credits or directly provide lending against carbon credits.

OUTCOMES

- Increased preparedness for climate-related financial risks
- Improved understanding of carbon credits' role in risk management
- Increased appetite for banks to finance against carbon credits

LEADING REGULATOR

Central bank or bank regulator that either issues the stress test expectations (in case of bottom-up) or runs the stress test (in case of top-down)

SUPPORTING INSTITUTIONS

Climate scenario providers

STRATEGY SUGGESTED

Include carbon credits in either top-down or bottom-up stress tests that focus on transition risks. (Note: In this context, bottom-up stress tests are conducted by banks on their own balance sheets, while top-down stress tests are run by regulators using system-wide bank data and macro-level methodologies.)

SHORT-TERM MILESTONES

- Established working group to develop a methodology on how carbon credits can be taken into account in stress test scenarios
- Piloted initial stress tests incorporating carbon credits

LONG-TERM MILESTONES

- Number of bottom-up stress tests run by banks that include carbon credits

2. Expanding Market Participation And Financial Integration

2.1 Financial Market Expansion

Intervention 6

Support Insurability for Carbon Credit Value Chains in Insurance Recommendations

SUMMARY

Rules and guidelines to facilitate the activities of insurance companies exist to ensure that these institutions are run prudently, and policyholders are protected. These rules, which in many African jurisdictions already extend to general climate risk recommendations, can be expanded to include carbon credits as a new asset class. By clarifying the insurability of carbon credit-related risks and providing recommendations or standards on their treatment will enhance confidence in servicing this market by insurance companies. Moreover, specific recommendations can be formulated for other elements of the carbon credit value chain, particularly the underlying clean cooking projects and assets, including project risks, damage risks, and liability risks.

OUTCOMES

- Improved insurance products tailored to carbon credit projects
- Increased investment in carbon market activities due to lowered real and perceived risk

LEADING REGULATOR

Insurance regulator

SUPPORTING INSTITUTIONS

Central banks (as macroprudential authorities)

STRATEGY SUGGESTED

Engage with insurance companies to base the draft elements on existing experience and best practices. Some insurance companies – domestic or international – might already offer products and services tailored to carbon credit-related risks, providing valuable lessons and benchmarks for developing recommendations.

SHORT-TERM MILESTONES

- Identified insurance protection gaps
- Draft recommendations
- Public consultations
- Published final recommendations

LONG-TERM MILESTONES

- Number of new insurance products for carbon credits

Intervention 7 Classify Clean Cooking Projects in Green Taxonomies

SUMMARY

The objective of a green taxonomy is to enable investors to make informed sustainable capital allocation decisions. Taxonomies are built around identified economic activities that are regarded as sustainable, and can be linked to fiscal incentives, or requirements around product marketing (e.g., to avoid greenwashing). While some typical carbon credit-eligible activities, such as renewable energy production, are already included in most taxonomies, the explicit inclusion of other carbon credit project activities -- including clean cooking -- will help direct more finance toward such projects and boost trust in carbon market investments more generally.

OUTCOMES

- Increased funding for clean cooking initiatives
- Enhanced clarity for investors on sustainable opportunities linked to carbon markets

LEADING REGULATOR

Central bank or bank regulator

SUPPORTING INSTITUTIONS

Ministry of Environment or other relevant ministry

STRATEGY SUGGESTED

Green taxonomies have recently been adopted or are currently under consideration in several African countries (Box 2). The successful introduction of such taxonomy is grounded upon close consultations with relevant stakeholders, including investors, industry representatives, development partners, and government authorities. Discussions with domestic clean cooking enterprises and non-profits working in the space is required to ensure the definition of clean cooking activities is appropriate for the domestic context.

SHORT-TERM MILESTONES

- Draft recommendations for taxonomy inclusion
- Public consultation domestically with relevant international stakeholders
- Published final criteria for clean cooking included in the domestic green taxonomy

LONG-TERM MILESTONES

- Increase in investment directed toward clean cooking projects, both within carbon markets as well as beyond

Intervention 8 Incorporate Clean Cooking Projects in Green Bond Frameworks

SUMMARY

While there are some examples of green bond issuances contributing to clean cooking investments, there are significant opportunities for scaling. Regulators can advocate for incorporating clean cooking projects into green bond frameworks by publishing guidelines or recommendations. This will facilitate further issuances of bonds with such use-of-proceeds, as well as investment in clean cooking initiatives.

OUTCOMES

- Attraction of diverse investors to the green bond markets broadly
- Increased issuance of green bonds tied to clean cooking and other carbon market interventions

LEADING REGULATOR

Central Bank/Securities commission/regulator

SUPPORTING INSTITUTIONS

External review providers, bond arrangers

STRATEGY SUGGESTED

Using the Green Bond Principles/Climate Bond Standards as a basis, engage with bond issuers to develop frameworks that include clean cooking projects. As the respective regulator is preparing the framework, it is important to cooperate with the actual issuers or prospective issuers to ensure that the new guidance reflects market realities.

SHORT-TERM MILESTONES

- Established guidelines for green bonds that include clean cooking projects
- Identified potential issuers for pilot projects
- Possible introduction of financial incentives (as mentioned in Intervention 9)

LONG-TERM MILESTONES

- Total value of green bonds issued for clean cooking projects
- Number of green bonds issued for clean cooking projects
- Impact report KPIs of such green bonds

2.2 Financial Market Expansion

Intervention 9 Incentivize Loans for Carbon Credit-Related Projects



SUMMARY

Financial incentives or regulatory reliefs can encourage banks to prioritize loans for projects that generate carbon credits or to invest more in green bonds financing with such projects. This intervention calls for the introduction of specific eligibility criteria targeting eligible clean cooking projects.



OUTCOMES

- Increased debt finance for carbon credit initiatives, both within carbon markets and beyond



LEADING REGULATOR

Central Bank or bank regulator



SUPPORTING INSTITUTIONS

Banking association



STRATEGY SUGGESTED

Work with domestic commercial banks to design incentive programs that reward sustainable lending practices. At the same time, ensure that prudent lending is maintained so financial risks do not increase. Possible incentives include dedicated refinancing programs, green capital requirement discounts, less stringent project finance lending requirements (e.g., collateralization, debt/equity and other financial ratios).



SHORT-TERM MILESTONES

- Draft incentive criteria
- Consultation with banks
- Launch program and require regular reporting
- Studied results after first year and considered revisions



LONG-TERM MILESTONES

- Increase in loans extended or investments made for/in carbon market projects/bonds

Intervention 10 **Standardize Listing, Trading, and Clearing Criteria for Carbon Credits and Linked Products**

SUMMARY

Standardizing the listing, trading, and clearing criteria for carbon credits will enhance market efficiency and transparency. This initiative aims to create a uniform framework that facilitates easier access for participants and encourages greater market participation. By establishing clear guidelines, it helps mitigate risks associated with carbon trading, improves liquidity, and fosters investor confidence.

OUTCOMES

- Improved market liquidity
- Greater investor confidence
- Harmonized practices

LEADING REGULATOR

Securities commission/regulator

SUPPORTING INSTITUTIONS

Clearing houses, central counterparties, market makers.

STRATEGY SUGGESTED

Regulators can engage with market participants, including traders, brokers, and financiers, to collaboratively develop and refine standardized criteria. Regular consultations and workshops will facilitate knowledge sharing and ensure that the criteria meet the needs of all stakeholders. This collaborative approach will also help identify potential challenges as areas for improvement.

SHORT-TERM MILESTONES

- Draft criteria
- Public consultations
- Published final standards
- Organized trainings to encourage the application of new standards

LONG-TERM MILESTONES

- Volume of carbon credits traded
- Number of transactions

3. Ensuring Financial Stability And Risk Mitigation

2.1 Investment Security and Product Development

Intervention 11 Clarify Carbon Credits Treatment in the Portfolio of ESG Mutual Funds



SUMMARY

A growing number of countries set standards for ESG/ sustainability-themed funds. As a part of such standards clear guidelines on carbon credits will enhance their inclusion in ESG portfolios and promote investment.



OUTCOMES

- More investments in carbon credits as a new asset class covered by funds
- Improved liquidity for carbon credits as a result



LEADING REGULATOR

Securities commission/regulator



SUPPORTING INSTITUTIONS

Investment Fund Managers' Association, ESG rating agencies



STRATEGY SUGGESTED

Include the carbon credit element as part of the development/revision of the ESG fund standards. Carbon credits are special instruments and such credits — or carbon-credit linked securities or other derivatives — might be suitable to be included in ESG funds. However, because of carbon credits' unique characteristics, it is often unclear for conventional equity/bond fund managers how to treat them. If ESG standards exist in the respective country, it is logical to clarify the asset's treatment in these documents defining those standards.



SHORT-TERM MILESTONES

- Draft standards
- Public consultation
- Published final standards



LONG-TERM MILESTONES

- Percentage of mutual funds investing into carbon credits
- Volume of carbon credit investments

Intervention 12 Incubate Carbon Credit-Linked Bond Instruments in a Regulatory Sandbox

SUMMARY

A results-based finance bond or green bond with a coupon structure positively related to the carbon price development can stimulate early investment in carbon projects and can unlock affordable project financing at scale. Testing such carbon-linked bond in a sandbox allows market players to test such innovative instruments in a controlled environment.

OUTCOMES

- Enhanced market participation, potentially involving also risk-averse players
- Shifting risk-weights of green assets on the balance sheet of financial institutions
- Can be specifically tailored to clean cooking interventions

LEADING REGULATOR

National Development Bank/Central Bank as a supporting institution

Central Bank as endorser

SUPPORTING INSTITUTIONS

Commercial financial institutions, DFIs, Climate Bonds Initiative

STRATEGY SUGGESTED

Collaboration with domestic and international commercial financial institutions, DFIs, and other relevant stakeholders such as the Climate Bonds Initiative to co-create and test carbon credit-based financial instruments. Financial regulators could play a strong and leading role or a more passive (but supporting) one. Regular workshops and feedback sessions could be organized to gather insights and adjust the sandbox framework as necessary.

SHORT-TERM MILESTONES

- Established sandbox framework: developed operational guidelines, eligibility criteria, and governance structure for the regulatory sandbox
- Launched pilot projects: facilitating the first cohort of financial institutions to test their carbon-linked bond products in the sandbox

LONG-TERM MILESTONES

- Number of carbon-linked bonds issued
- Volume of finance mobilized for clean cooking projects
- Number of regulatory improvements enacted

Intervention 13 Incubate Securitized Carbon Transactions in a Regulatory Sandbox

SUMMARY

Carbon credit offtake agreements (ERPAs) can mitigate risks by providing a predictable carbon revenue streams, which is critical for investor confidence. This intervention promotes the use of longer-term ERPAs (potentially backed by guarantees) to serve as anchors in carbon credit securitization structures.

OUTCOMES

- Providing diversification effect that provides financiers with comfort to invest into the asset class
- Incentivizing project developers to develop new projects and incorporate a risk-share to ensure their vested interests

LEADING REGULATOR

National Development Bank or other government agency
Central Bank as endorser

SUPPORTING INSTITUTIONS

Commercial financial institutions, DFIs

STRATEGY SUGGESTED

Collaboration between a pool of project developers that can offer comparable carbon credits, deal underwriters, potential de-risking by DFIs. The role of financial regulators might be indirect, but even in that case, by promoting such activities or publicizing “lessons learned”, regulators such as central banks can bring attention to these innovative financing strategies in support of broader climate and sustainable development objectives.

SHORT-TERM MILESTONES

- Initial support a handful of projects to test the deal structure and show proof of concept

LONG-TERM MILESTONES

- Number of carbon projects included in securitized deals
- Volume of finance mobilized for clean cooking projects
- Number of regulatory improvements enacted

3.2 Risk Mitigation and Price Stability

Intervention 14 Provide Backstop Guarantees to Deliver Minimum Price Support

SUMMARY

High volatility in carbon prices observed in the market reduces the financial appeal of carbon market investments, including cookstove projects. The lack of a predictable price of carbon credits leads to considerable investment risk, as many ventures depend largely on future carbon revenues. Providing backstop guarantees to deliver minimum price support will eliminate downside risks for these businesses, encouraging participation from mainstream investors.

OUTCOMES

- Incentivizing project developers to develop new projects and incorporate a risk-share to ensure their vested interests
- Providing project risk mitigation that provides financiers with comfort to invest into projects
- Supporting projects at levels that ensure financial and development additionality

LEADING REGULATOR

National Development Bank, DFIs
Central Bank as endorser

SUPPORTING INSTITUTIONS

Investors, fund administrators

STRATEGY SUGGESTED

The lead for this intervention can lie with a development (finance) institution that can manage the development, testing, and scaling of a mechanism that underwrites a carbon credit price level for underfunded, high quality cookstove projects in a particular jurisdiction or region. Operationalizing the concept could involve a phased development and testing of the instrument on a full grant model initially to demonstrate the reliability of the mechanism, build trust in the system, and provide enough data to allow the private sector to accurately assess and price the risks involved.

SHORT-TERM MILESTONES

- Initial support to a small portfolio of eligible projects covering the initial year(s) of sales
- Phased development and testing of the instrument on a full grant model

LONG-TERM MILESTONES

- Replication and scaling through blending financing
- Such a mechanism could be scaled to other similar carbon-reducing projects, contributing to broader sustainability and climate goals

Intervention 15 Provide Backstop Guarantees to Insurers Covering Carbon Market Investments

SUMMARY

Well-functioning insurance markets are pivotal in enabling effective trade in commodities and other types of assets. With carbon-credit-linked insurance products slowly entering the market, dedicated public-private insurance programs or risk-pooling mechanisms can assist to standardize the offering and familiarize investors with their use. DFIs can be particularly well positioned to support initial backstopping insurance guarantees that target interventions specifically dedicated to a particular asset class, such as clean cooking carbon credits.

OUTCOMES

- Providing project risk mitigation that provides financiers with comfort to invest in projects
- Improved regulatory clarity for insurers

LEADING REGULATOR

National Development Bank or other (D)Fis
Central Bank or Insurance regulator as endorser

SUPPORTING INSTITUTIONS

Commercial insurers

STRATEGY SUGGESTED

Similarly, while regulators like central banks or insurance regulators may play an endorsing role, the lead behind this intervention is likely to be a national development institution or multilateral funder that has experience with credit and political risks insurance markets. Commercial insurers can bring in the technical underwriting expertise and broad experience with both short- and long-tenor risks, with the lead implementer(s) de-risking the exposure of the principal insurers to bring down cost and risk for investors.

SHORT-TERM MILESTONES

- Initial support to a portfolio of eligible projects covering initial delivery volumes

LONG-TERM MILESTONES

- Number of backstopping guarantees offered
- Volume of finance/carbon credits guaranteed
- Number of regulatory improvements enacted

05

Implementation Considerations

Implementation Considerations

Host country realities will have to be taken into consideration when tailoring pathways to country-specific contexts and regulatory developments. The next step, therefore, should focus on translating these recommendations into actionable, country-specific strategies in selected African countries. Recognizing that each country operates within its own unique regulatory, economic, and socio-political context, tailored roadmaps will be essential to ensure the effective integration of carbon credits into domestic financial markets. These country-specific roadmaps can serve as guiding documents, outlining not only the key interventions, but also specific timelines, and milestones based on local conditions, resources, and priorities.

Successful implementation of country-level roadmaps calls for a coordinated and holistic approach that addresses both market and non-market factors, which will be essential to ensure that carbon credits as an asset class can be integrated into mainstream domestic financial markets. This final section of the report offers several considerations for regulators to keep in mind when planning for the domestic implementation of the suggested interventions.

- **Securing buy-in through public consultations**

Comprehensive stakeholder consultations will be critical to ensure the country roadmap is tailored to domestic contexts. By engaging regulators, financial institutions, project developers, local communities, and non-profits (among others), these consultations can help identify specific local challenges, opportunities, and capacity gaps. For example, with a view to scaling domestic carbon markets, consultations with private sector participants should include corporate representatives from sectors with high carbon emissions, such as energy, manufacturing, and transportation, who may be the primary offtaker of carbon credits in future domestic carbon markets. This inclusive approach will ensure that identified interventions are not only practical but also widely supported by those who will be directly impacted by them.

- **Structured testing through regulatory sandboxes**

One recommended vehicle for early implementation is the establishment of a regulatory innovation sandbox. This approach enables financial authorities - including central banks, securities regulators, and insurance supervisors - to test the treatment and integration of carbon credits under controlled conditions. The sandbox model allows for cross-sectoral coordination and practical experimentation in areas such as asset classification, disclosure protocols, and investment product structuring. It can also support collaboration across regulatory agencies, ministries of energy and environment, carbon project developers, and international partners. By leveraging regulatory innovation sandboxes, financial authorities can guide the evolution of carbon markets toward the levels of transparency, accountability, and stability expected of other regulated asset classes. Sandboxes allow regulators to test and refine classification, risk management, and disclosure practices in a controlled environment - laying the groundwork for long-term regulatory coherence and market integrity. Structured regulatory experimentation provides an evidence base for formal policymaking while helping to build technical capacity and institutional readiness. Where appropriate, alignment with regional initiatives and international standards can enhance credibility and interoperability.

- **Educating stakeholders through capacity building**

General capacity building and targeted training are essential for empowering all stakeholders expected to be involved in carbon market activities. Whether the stakeholder category represents financial institutions, regulators, project developers, or other market participants, there needs to be a concerted effort to enhance the knowledge and skills required to navigate this complex market. This is especially important with domestic stakeholders, who might not have yet had any exposure to carbon market investments in the past. Capacity-building efforts should focus on both regulatory and commercial aspects, including understanding global and national carbon market trends, common asset valuation and project financing approaches, and available risk management strategies. These efforts will help financial regulators assess the risk of carbon credit-backed assets and provide knowledge to investors on the potential returns and risks of these investments.

- **Promoting collaboration with relevant regulatory authorities**

Strong domestic coordination between financial regulators and other key stakeholders, such as environment and finance ministries, non-profits, and academic institutions, is key to building support behind the implementation of the country roadmap. The successful execution of this roadmap will ultimately depend on the ability of these entities to find common ground and work collectively toward achieving the various milestones. Such collaboration between regulators and other actors will also help build a shared understanding of the needs and challenges of strengthening domestic carbon markets, driving more coherent policy responses and better market integration.

- **Leveraging existing funding facilities and policy-aligned financing**

Strategic alignment with existing national and regional development finance programs is another powerful lever. Many African countries already have policy-aligned financing initiatives supported by national development banks, multilateral development finance institutions, or climate-related funds. These programs typically offer established concessional financing, credit guarantees, or blended finance mechanisms that can be leveraged to de-risk early-stage carbon projects and encourage mainstream financial institutions to enter the market. By collaborating with these initiatives, financial regulators can help direct existing funding toward nationally relevant carbon market development, ensuring that interventions complement broader financial sector reforms and climate investment strategies.

- **Engaging in international cooperation**

International cooperation is a crucial enabler of the roadmap. Carbon markets operate in a globalized context, and collaboration is necessary to align market standards, promote transparency, and ensure consistency in the treatment of carbon credits across borders. African regulators can benefit from working on joint capacity-building programs, but also through engaging in efforts such as the development of shared carbon registries, the introduction of harmonized green taxonomies, or defining common standards of financial accounting of carbon credits. Furthermore, international coordination among regulators, ministries, non-profits, and private-sector actors will be crucial for aligning carbon market activities with regional development goals. Working on realizing these synergies will ensure that the country roadmap not only addresses climate objectives but also generates tangible socio-economic benefits for the host countries.

- **Keeping track of the market developments**

Maintaining a close watch on international developments in carbon markets is essential

for ensuring that the country roadmap remains aligned with global trends and standards. Key developments, such as the afterlife of COP29's Article 6 agreement on carbon market mechanisms, and guidance by carbon market oversight bodies like the Integrity Council for Voluntary Carbon or the International Civil Aviation Organization's Carbon Offsetting and Reduction Scheme for International Aviation, will have significant implications for how carbon credits are traded, verified, and valued globally. The evolving international landscape can bring about new opportunities or present new challenges for African countries. It is important for domestic regulators and market participants to remain adaptable, continuously integrating these international developments into their strategies to keep pace with the dynamic nature of this international market.

- **Establishing legal clarity beyond financial markets**

One of the most fundamental enablers of any financial market is the broader legal environment in which the assets operate. Without clear legal frameworks that define the enforceability of carbon credit claims, the market will continue to face uncertainty and risk. In particular, legal clarity regarding the ownership and transfer of carbon credits is essential for building trust among investors and market participants. Furthermore, a robust legal environment that protects property rights, defines carbon credit contracts, and ensures accountability is critical for the long-term success of the market. If these external legal factors are not properly addressed by the relevant national authorities, the financial policy interventions outlined in this report will not reach their full potential, as the success of the proposed interventions will be undermined by a lack of legal security and enforceability.

- **Maintaining flexibility in the implementation**

Local market conditions and regulatory landscapes are evolving rapidly across the African continent and will require tailored approaches to the integration of these core interventions within domestic regulatory work streams. Even though there are interlinkages and synergies the suggested interventions are not prerequisites for any other steps, reinforcing that there is no strict linearity in implementation.

06

Annex: Technical Note

Annex 1

Technical Note on the Application of the Assessment Framework to Identify Priority Countries for Developing Country-Specific Roadmaps

Background

This report offers pathways for advancing the use of carbon markets in Africa and the role financial regulatory actions can play in scaling their use and establishing carbon credits as a recognized financial asset class. It outlines possible policy steps that central banks, banking, securities, and insurance regulators can take to overcome existing barriers and unlock the potential of carbon credits to drive sustainable development. The final output is the Financial Regulatory Pathways for Scaling Carbon Markets, which proposes priority areas of interventions and specific actions that fall within the broad mandate of African financial regulators.

As part of this work supported by the CCA, Climate Focus conducted a preliminary assessment of selected African jurisdictions to identify priority sub-Saharan African countries for which detailed, country-specific roadmaps can be prepared. This preliminary assessment defined this prioritization through the following four high-level dimensions:

- Central bank mandate and capacities to advance green finance initiatives
- Central bank participation in regional or green financial coalitions and networks
- Carbon markets participation
- Financial market potential

Based on these high-level indicators, Climate Focus developed an assessment framework consisting of nine key criteria and 34 indicators that were applied against a longlist of sub-Saharan countries. Table 4 summarizes the key criteria utilized in this assessment framework and provides a brief rationale, describes the indicators associated with each, and outlines the data sources used to assess each indicator.

1. Central Bank Climate Mandate and Adopted Strategies

Assessing the central bank's mandate and strategy for addressing climate change is relevant to judge its readiness to engage with and drive sustainable financial practices and policies. Additionally, whether a central bank is in alignment with or promotes national policy on climate change (particularly climate-related financial risk) and/or sustainable finance is relevant to the assessment. Indicators include:

- 1.1 Central bank mandate to address climate change in place or under development
- 1.2 Central bank strategy to address climate change in place or under development
- 1.3 Central bank alignment/endorsement of national policymaking

Data sources: 2021 journal article by the Grantham Research Institute, London School of Economics and Political Science, titled [Central bank mandates, sustainability objectives and the promotion of green finance](#). This was further underpinned by Climate Focus's own analysis of published central bank corporate strategy documents and annual reports (including objectives/targets), as well as press statements or briefings.

2. National Progress on Green Finance Development

Evaluating the progress on green finance development helps identify countries with established frameworks that support green investments and regulatory environments conducive to sustainable growth. While many countries announce they are working on sustainable finance initiatives, this assessment focused on actual progress. Therefore, green bond issuance and green taxonomy implementation as key indicators were selected:

- 2.1 Green bond guidelines or frameworks adopted
- 2.2 Issuance of green bonds in the country
- 2.3 Volume of green bonds issued
- 2.4 Status of green taxonomy development and implementation

Data sources: The primary data source pertaining to green bond issuance volumes is the [IFC report: Emerging Market Green Bonds \(2024\)](#). This was supplemented with additional internet research to establish the status quo of issuances after the publication of the report, as well as the status of green taxonomy development in each country.

3. Regional and Sub-Regional Network Integration

Regional network integration is essential - to determine the potential influence a country may have on its neighbors; promoting regional financial stability through more interconnected financial systems and through facilitating the spread of best practices. Undertaking assessment of membership to African continent level bodies and Africa sub-regional (i.e. East, West, and Southern Africa) bodies, namely:

- 3.1 Association of African Central Banks (AACB)
- 3.2 Making Finance Work for Africa (MFW4A)
- 3.3 East African Community (EAC)
- 3.4 Economic Community of West African States (ECOWAS)
- 3.5 Southern African Development Community (SADC)
- 3.6 West African Monetary Zone (WAMZ)
- 3.7 Common Market for Eastern and Southern Africa (COMESA)
- 3.8 African Securities Exchanges Association (ASEA)
- 3.9 Making Finance Work for Africa (MFW4A)

Data sources: An internet search of the websites of each of these organizations.

4. Green Network Involvement

Assessing the inclusion of national institutions in green networking initiatives can be used an indicator for a country's interest in green finance. Given the assignment's focus on central banks, membership of central banks in two indicative networks was assessed, namely:

- 4.1 Member of the Network for Greening the Financial System
- 4.2 Member of the Sustainable Banking and Finance Network

Data sources: An internet search of the websites of each of these organizations.

5. Carbon Market Governance

Though long-established globally, carbon markets – both regulated and voluntary – are still undergoing a rapid phase of evolution (exemplified by the recent developments under Article 6 of the Paris Agreement). For sub-Saharan Africa, carbon markets can be said to be in their infancy. While private-sector-led carbon projects may have been established in a country without any involvement from national institutions, indicators identified that allow to judge the readiness or maturity of national institutions in the context of promoting carbon markets:

- 5.1 Carbon markets governance frameworks established or under development
- 5.2 Carbon tax, Emissions Trading Scheme (ETS), or other carbon pricing mechanism established or under development

Data sources: Drawn from the [Gold Standard Public Carbon Regulations Tracker](#) (June 25, 2024) as well as the [World Bank's State and Trends of Carbon Pricing](#) (2024).

6. Voluntary Carbon Market Participation

In addition to the presence of carbon market governance frameworks, it is valuable to ascertain the degree of participation in voluntary carbon market transactions to judge the overall country readiness or maturity to engage in the sector. The issuance volumes of voluntary carbon projects generally, as well as clean cooking projects specifically, are assessed through the following indicators:

- 6.1 Total issued VCM credits to date (all types)
- 6.2 Total number of registered VCM projects (all types)
- 6.3 Total issued VCM carbon credits to date (cookstoves only)
- 6.4 Total number of registered VCM projects (cookstoves only)

Data sources: Climate Focus [VCM Dashboard](#) (2024).

7. Progress on Implementing Article 6

Progress on establishing Article 6 governance frameworks specifically, as well as developing or implementing pilot project transactions, demonstrate a country's readiness and capability to engage in international carbon markets.

- 7.1 Presence of Article 6 governance frameworks
- 7.2 Active participation in Article 6 pilot transactions
- 7.3 Joint Crediting Mechanism (JCM) projects
- 7.4 Bilateral agreements in place
- 7.5 CDM project transition requests

Data sources: The UNEP Copenhagen Climate Centre [database](#) on Article 6 project developments and CDM transfers.

8. Clean Cooking Market Potential

There are several factors to consider when assessing the market potential for clean cooking. As an assessment of that nature is beyond the scope of this assignment, the presence of a CCA Country Assessment was used as an indicator that sufficient data is available to ascertain that there is potential to scale clean cooking activities in targeted jurisdictions:

- 8.1 Clean cooking market potential assessment completed by CCA

Data sources: [CCA website](#) and publications.

9. Market Depth/Liquidity

Financial depth is the final assessment category applied. The aim of the selected indicators is to help judge to the size and maturity of the financial sector of each respective country relative to the economy (i.e., GDP). Understanding the loan uptake potential (both national and international) in each country is crucial for assessing the potential trickle-down effect CCA's and other sector building organization's engagement can have on carbon market investments domestically. The following indicators are applied:

- 9.1 Bank credit to the private sector as a percentage of GDP
- 9.1 Bank account ownership (% of population)
- 9.1 Foreign Direct Investment ranking (relative to other SSA countries)
- 9.1 Stock market capitalization as % of GDP ranking







Data sources: Bank credit to the private sector as a percentage of GDP is a useful metric to evaluate and compare market depth and liquidity between sub-Saharan African countries, specifically regarding the ability of the in-country market to offer small loans. This indicator measures the financial resources provided to the private sector by financial corporations. It effectively reflects the capacity of financial institutions to supply credit and the willingness of the private sector to take up these loans, which directly correlates with market depth and liquidity. The World Bank data [website](#) provides this data. While it is a useful indicator of overall market depth and liquidity, it may not directly reflect lending specifically to low-income households or the availability of microfinance. Individual bank account ownership was additionally measured, per the World Bank Global Findex Database. Macroeconomic indicators, such as foreign direct investment (FDI) inflows, per the [EY Africa Market Attractiveness](#) report (2023), as well as stock market capitalization as a percentage of GDP per the [Absa Africa Financial Markets Index](#) (2023), were also utilized.

Assessment Outcome

Shortlisting countries on their perceived readiness to consider the adoption of carbon market-specific financial roadmaps considered the following criteria:

- Primary screening of Criteria 1 and 2: Considering that the primary target audience of such a roadmap is central bank authorities, the presence of extended central bank mandates and/or a track record with stimulating green financing instruments is regarded as a pre-condition to shortlisting.
- Secondary screening of Criteria 3 to 9: Other relevant criteria confirmed through the literature review conducted as part of this work can further help to assess the host country's readiness for the adoption of this *Financial Regulatory Pathways for Scaling Carbon Markets*. Here, particular attention is given to existing regulations and guidelines prescribing rules around the collateralization of assets, acknowledging the critical collateral plays in capital allocation decisions in financial markets.

Countries that both score highest “on the Primary screening criteria and perform strongly on the Secondary screening criteria can be selected for developing the country specific roadmaps.

 CleanCooking.org
 [@cleancooking](https://twitter.com/cleancooking)
 [@cleancookingalliance](https://www.instagram.com/cleancookingalliance)
 [@cleancookingalliance](https://www.facebook.com/cleancookingalliance)
 [@Clean Cooking Alliance \(CCA\)](https://www.linkedin.com/company/CleanCookingAlliance)
 info@cleancooking.org

