GREEN FINANCING

Mechanisms for MSMEs in Africa

UN environment programme

January 2023

switchafrica GREEN

Funded by the European Union

Report design by Dalberg Media

© Photos provided by UNEP/Switch Africa Green Programme

ACKNOWLEDGEMENTS

This green financing assessment report highlights a set of actions needed to expand access to green finance for Micro, Small, and Medium Enterprises (MSMEs) in Africa. The report aims to provide relevant stakeholders with an up-to-date and broad understanding of the green financial instruments available to MSMEs in the region and MSME access to such finance.

The initiative stemmed from recommendations received during the implementation of the SWITCH Africa Green programme. During the development of the report, regional, sub-regional and national consultations were held both virtually and in person (June - August 2022) with stakeholders and experts from academia, industry and/or trade associations, technical agencies, national government ministries and institutions, non-state actors, NGOs, development partners, and various UN agencies. The findings were validated through a multistakeholder regional validation workshop held on 24-25 August 2022 in Accra, Ghana. The validation workshop was jointly organised by UNEP and the Ghana Ministry of Environment, Science, Technology and Innovation (MESTI) with technical support from Dalberg.

Development of the report was coordinated by Rhoda Wachira (Programme Management Officer, UNEP) and Patrick Mwesigye (Regional Resource Efficiency Sub-Programme Coordinator, Africa Office, UNEP), with the overall guidance of Frank Turyatunga (Regional Director, Africa office, UNEP). Administrative support was provided by Sylvia Munuhe (Africa Office, UNEP).

UNEP would like to thank Dalberg, the lead authors of this report. The team was led by Devang Vussonji (Partner, Dar es Salaam), Rym Keramane (Associate Partner, Rabat), Bertrand Assamoi (Associate Partner, Abidjan), and Scott Hosking (Senior Project Manager, Johannesburg). UNEP appreciates the continued support and collaboration of our partners in the development of this report, notably AUC, UNECA and AfDB.

UNEP is grateful for the financial support provided by the European Union (EU) for the implementation of the SWITCH Africa Green programme.

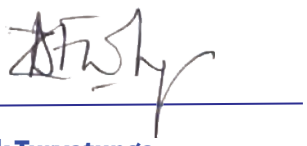
FOREWORD BY THE UN ENVIRONMENT PROGRAMME

Access to finance is a pressing challenge for a majority of the MSMEs in Africa. This is a large-scale issue considering that MSMEs are the backbone of Africa's economies. MSMEs account for 90% of private sector businesses in developing countries and provide at least half of the jobs in Sub-Saharan Africa.* Barriers such as collateral requirements and MSME informality hinder MSMEs from accessing finance. However, the challenges are compounded for green MSMEs and MSMEs that want to green their business operations.

During the review of the implementation, opportunities, and challenges of the SWITCH Africa Green Programme from 2014 – 2020, access to finance was identified as one of the major challenges faced by MSMEs in the uptake of Sustainable Consumption and Production (SCP) and green practices in the region. Furthermore, the importance of circular economy and green financing in Africa was reiterated at the SWITCH Africa Green Regional meeting held in February 2020 in Kampala, Uganda, under the theme "Advancing Green Business and Circular Economy in Africa." The meeting highlighted that the scale-up of green business and circular economy practices in Africa is essential for the region's sustainable development.

This green financing assessment report is accompanied by Guidelines to Accelerate the Transition Towards a Circular Economy in Africa, which seek to enhance the ongoing efforts to promote green business and a circular economy in the region. Promoting circular economy approaches requires galvanising public and private financing mechanisms to ensure access to capital for firms of all sizes. This report aims to provide an up-to-date and broad understanding of the financial mechanisms available to MSMEs in the region.

UNEP, through the SWITCH Africa Green programme, developed this report to enhance the ongoing efforts to promote green business and act as a step towards developing a green financing mechanism to guide financial institutions and support MSMEs in Africa. It is imperative that MSMEs are empowered with financing options that enable them to influence a transition into a green economy as well as take advantage of the opportunities that a green economy has to offer. Given the extent of MSME operations in Africa and their positioning in bringing about economic growth, changes in how MSMEs conduct business could have a significant contribution to the continent's transition to an inclusive green economy. We hope this report encourages dialogue between stakeholders, including MSMEs, governments and financial institutions, contributes to eliminating barriers to access to finance, and leads to an informed increase in the mobilisation of capital flows towards green business in the region.

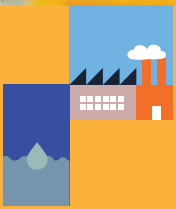


Frank Turyatunga
Director and Regional Representative for Africa,
UN Environment Programme (UNEP)

Sources: *AfDB, Global development finance coalition commits over $5.5 billion for MSME financing in Africa, 2022

TABLE OF CONTENTS

EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

Climate and environmental action will shape the way that Micro, Small and Medium Enterprises (MSMEs) conduct business – and the business environment itself – in Africa. As the impact of climate change increases in the region, policy and regulatory action around climate mitigation and adaptation will likely grow. Despite its low contribution to GHG emissions globally, Africa is the most vulnerable continent to climate change. Every African country signed the Paris Climate Agreement, and 39 countries have updated their Nationally Determined Contributions, indicating that the region is committed to creating low-carbon economies. Such climate ambitions are pushing governments to establish policies, laws and strategies to meet the targets. Examples include introducing regulatory measures around plastics and newer interventions such as carbon pricing mechanisms.

MSMEs need green finance to absorb shocks and take advantage of opportunities but face a wide range of constraints in accessing this finance. Green finance describes the financial flows to businesses working to develop or transition to climate-friendly models, which requires capital investments that MSMEs are unlikely to afford. Currently, accessing finance is constrained by issues that have historically faced traditional MSMEs, such as strict collateral requirements and additional issues specific to green finance, such as higher perceived risk.

While financiers and development actors are working to address constraints, there remains little clarity on the extent to which green finance reaches MSMEs and how the flows can be expanded. There is also competing demand for climate finance from the government for creating fiscal incentives to advance the green economy.

This study seeks to close the gap by presenting a macro-view of green finance in Africa. This entails looking at the demand for green finance, key trends in flows of green finance, and the challenges MSMEs face in accessing finance. The in-depth understanding of the MSME green finance landscape in Africa informs a set of presented recommendations on how stakeholders can improve access.

EMERGING DEMAND DRIVERS FOR MSME GREEN FINANCE

There are two drivers of demand for green finance – greening and green MSMEs. Greening MSMEs are existing businesses leveraging economic incentives to transform their usual operations to have a lower impact on the climate and environment. These include the need to adopt new and clean green technologies, such as off-grid solar solutions, as a response to domestic policies and regulations related to climate action and from increasing trade pressure (Figure 1). In addition to greening MSMEs, finance demand will also come from green MSMEs, i.e., MSMEs with entire business models built around climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and protection and restoration of biodiversity and ecosystems. These MSMEs will all require finance to adapt and grow.

Figure 1: Drivers for greening MSMEs

Global trade partner expectations

Consumer preferences and trade partner regulations

Green domestic policies and regulations

Climate regulations

New, better green technology

Cooling, heating, lighting, energy management, etc.

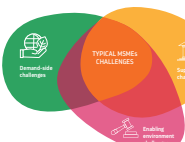
Figure 2: MSMEs challenges

Challenges to green finance for MSMEs

MSMEs face an array of challenges in accessing finance. The state of MSME green finance is constrained by various challenges in its demand, supply, and enabling environment, as highlighted in Figure 2.

• MSMEs are small with informal, underdeveloped systems. They can be difficult to assess and cannot absorb large tickets

• MSMEs are unaware of the available financing options and opportunities, and, therefore, do not pursue them.



Stakeholder groups: Policymakers, Private sector investors
• Political and macroeconomic instabilities and risks dampen private sector enthusiasm to invest.
• Intermediaries inefficiently facilitate investment and are necessitates by the existing financial regulations and business environment.
• Intermediaries hinder investment by setting hard-to-meet requirements

Stakeholder group: Financial institutions, Private sector investors
• The perception of MSMEs as risky and costly to serve deters financial institutions from targeting them for investment.

• There are limited exit opportunities for investors due to the underdeveloped market infrastructure.

• Domestic banks do not provide extensive capital to the private sector.

There are also additional financing gaps that are unique to green MSMEs. The majority of green MSMEs are developing new business models based on new technology and approaches. These business models are usually untested models and unfamiliar to financial service providers (FSPs). At the same time, many of the businesses operate in sectors that have been historically difficult and risky for lenders and as result, banks often opt to either not lend to the MSMEs or add measures to curb the risk, such as higher interest rates.

Greening MSMEs also face significant uncertainty related to the extent and speed of the commercial benefits of investing in decarbonising their business. This manifests in three challenges in financing greening investments:

(1) Most MSMEs do not have the skills needed to develop greening production processes and cannot afford to hire dedicated capacity to help with greening operations.[1]
(2) Green substitutes also have higher upfront costs, which MSMEs are unlikely to afford. Lastly,
(3) the low demand for green products in Africa significantly constrains MSMEs from adopting green practices.

Photo courtesy of UNEP

1. Dalberg, Stakeholder interviews, 2022

THE OPPORTUNITY: KEY GREEN FINANCING TRENDS

1. Increased access to financing opportunities: Flow of green financing from development partners and the private sector has been increasing in Africa.
2. New lucrative revenue channels: Global demand for carbon credits is growing.

Development financiers have recognised the importance of green finance and are shifting their portfolios in Africa. There have been increases in climate-related flows that have an explicit MSME strengthening objective. At the regional level, there was an increase in green finance for MSMEs from USD 4.2 billion per annum in 2015 to USD 14.5 billion in 2020.[2]

Global flows of private finance to green instruments also present opportunities for African FSPs though uptake has been slow thus far. The green bond market has increased from USD 26 billion in 2015 to over USD 508 billion in 2021.[3] Although using green bonds to raise financing has not yet gained traction in Africa, many entities have begun using them to support green MSMEs. Across the continent, different archetypes of FSPs are innovating to channel this financing to green and greening MSMEs. The FSPs are targeting a spectrum of business growth stages and ticket-size needs. These FSPs offer products such as grants, equity, loans, guarantees, and asset financing, to address ecosystem challenges.

Globally, large firms are increasingly seeking to offset their carbon emissions through voluntary carbon markets. This is in anticipation of increasing regulations and in response to changing

RECOMMENDATIONS

1. Develop new green financial service providers to serve the needs of MSMEs. This report recommends establishing national Green Funds that are independent but government-mandated to prioritise green financing. The entities should be jointly capitalised by public and private funding. They should also be able to provide flexible capital to MSMEs. Additionally, the entities should be positioned to lend directly and capitalize on smaller innovative FinTech and Pay-As-You-Go (PAYGO) operators serving micro-enterprises.

2. Strengthen the ability of existing FSPs in African countries to serve green and greening MSMEs. Five key areas for support activities can help FSPs to increase financing to green and greening MSMEs: strategy development, opportunity identification, product development, fundraising, and impact measurement.

3. Improve the ability of MSMEs to access green finance facilities. Achieving this will involve activities such as business case development and testing, both for green and greening MSMEs and MSMEs. Similarly, where MSMEs have an investment opportunity, project preparation support to undertake assessments, develop carbon financing propositions, and structure offtake agreements have proven to be valuable in securing finance opportunities.Successful implementation of these recommendations will depend on involving organisations that can take on a leadership role in promoting green finance. They need to have the right credibility, networks with government institutions, and technical capabilities, as well as be gender-responsive in their approach.

2. OECD, Climate Change: OECD DAC external development finance statistics, accessed June 2022
3. Climate Bonds Initiative, Market data, accessed July 2021

I.INTRODUCTION

I. INTRODUCTION

Climate and environmental action will influence opportunities for MSMEs and shape the way MSMEs conduct business on the continent. Africa has demonstrated a commitment to going green. The countries have pledged to meet the Paris Climate Agreement of keeping the average temperature below 2oC. Almost three-quarter of African countries – 39 out of 54– have submitted their updated Nationally Determined Contributions.[4] Governments are therefore setting legislation, policies, taxes, and strategies to accompany such climate-related ambitions. Initiatives such as carbon border adjustment mechanisms and carbon taxes are starting to take shape. Globally, there are 37 national initiatives implementing carbon pricing mechanisms in the form of carbon taxes and emissions trading systems (ETS), including one carbon tax mechanism in South Africa.[5] Additionally, 34 African countries have introduced legislation banning single-use plastic bags.[6] These climate regulations are affecting the business environment in which MSMEs operate and are increasingly applying pressure for MSMEs to decarbonise and/or transition towards climate-friendly business models.

This climate and environmental action movement has the potential to place a significant financial burden on MSMEs, yet it also presents an enormous opportunity. MSMEs will require finance to manage climate shocks (or, a sudden challenge and its implications) meet decarbonisation requirements and access newly regulated markets. While climate action prescribes adopting solutions such as renewable energy, energy-efficient technologies, climate-smart agriculture, and integrated waste management, such solutions typically require high upfront capital investments. Aside from the costs of ensuring compliance with climate regulations, non-compliance often incurs penalties.[7] However, climate action is also triggering emerging opportunities for MSMEs in terms of new product markets and revenue streams. For example, favourable policies in sustainable transport are enabling the growth of e-mobility initiatives in to form a new product market; and, the establishment of carbon markets can provide additional revenue.

Finance mechanisms are needed to help MSMEs absorb shocks and take advantage of new opportunities. Incentives and enabling access to and securing finance can help MSMEs change their business practices and decarbonise. For example, government incentives such as reduced feed-in tariffs can encourage MSMEs to adopt renewable energy. Enabling finance such as grants and subsidised loans can help manufacturers acquire energy-saving equipment. Providing investment and working capital can also help MSMEs take advantage of new opportunities; for example, patient capital – or money independently raised by SMEs with lenient repayment terms – can enable internal combustion engine vehicle manufacturers to introduce a line of electric vehicles in their product range.

However, MSMEs in Africa face a wide range of constraints in accessing green finance. Barriers that have traditionally constrained MSME access to finance, such as the perception of MSMEs as risky by banks, and strict regulations around collateral, also apply to green finance. For MSMEs specifically seeking green finance, new challenges compound this challenge. These can include the perception that green economic activities are nascent and a lack of apparent demand in the market. Additionally, intermediaries do not have the tools and expertise to assess climate risk and opportunities. Twenty per cent of African banks surveyed by the European Investment Bank (EIB) indicate that they lack data, tools, and models for understanding and assessing climate risk, while 23.4% have limited expertise in assessing opportunities. Furthermore, intermediaries have limited commercial

4. Africa NDC Hub, Africa's NDC journey and the imperative for climate finance innovation: A report by the Africa NDC Hub for COP26, 2021
5. World Bank, Carbon Pricing Dashboard, updated April 2022
6. UN News, Nations sign up to end global scourge of plastic pollution, 2022
7. International Trade Centre, SME Competitiveness Outlook 2021: Empowering the Green Recovery, 2021

incentives to segment, target, and develop products for green MSMEs or greening MSMEs. expertise in assessing opportunities.[8] Furthermore, intermediaries have limited commercial incentives to segment, target, and develop products for green MSMEs or greening MSMEs.

A wide range of development actors and funds have identified the need for climate finance to flow to Africa. Three per cent of global climate finance is currently directed to Africa.[9] A study by the Climate Policy Initiative reports that Africa's annual climate flows for 2020 from domestic and international sources amount to 12% of the amount needed to implement the region's Nationally Determined Contributions (NDCs).[10] International development finance actors like the Green Climate Fund (GCF) are stepping in to address these resource needs. The Green Climate Fund allocated its largest portion of funding (38%) to Africa as of May 2022.[11]

Nevertheless, there is a lack of clarity on the extent to which climate finance reaches the MSMEs that need it and how these flows can be expanded. There is extensive data and information on climate finance flows and reporting on MSME financing. However, literature providing a comprehensive view of green finance to African MSMEs is limited. There are also competing demands for climate finance, making it difficult for MSMEs to become central to the climate finance agenda. There is also a tension between governments needing climate finance to establish incentives that encourage the growth of MSMEs in priority sectors; however, most fiscal incentives rely on the upfront spending of government funds.[12]

This study sought to help close this gap.[13] The purpose of the study is to help policymakers and development actors understand existing gaps in the flows of MSME green finance in Africa by providing a macro-view of the region's flows and innovations in MSME-oriented green finance. It also aims to spotlight MSME green finance innovations that can be elevated and expanded upon in terms of both instruments and policies. To achieve these objectives, the report covers the following:

- **Demand:** The demand for – and drivers of – MSME green finance
- **Challenges:** The difficulties MSMEs face in accessing finance
- **Flows:** Mapping of the finance flows from development actors and the private sector
- **FSP landscape**: The landscape of financial service providers (FSPs) already innovating in MSME green finance
- **Products:** The innovative products available to MSMEs and those used to catalyse public and private sector investment in green finance
- **Barriers**: Barriers that FSPs face in accessing finance flows and developing green finance products
- **Recommendations:** Recommendations for addressing the challenges to expanding MSME access to finance

This study is a part of the region's ongoing efforts to promote green business development. Many regional and national actors have been working to facilitate Africa's transition to a green economy. Such efforts include the SWITCH Africa Green programme, implemented by the United Nations Environment Programme (UNEP) in partnership with the European Union in seven African countries (Burkina Faso, Ethiopia, Ghana, Kenya, Mauritius, South Africa, and Uganda). The programme has

8. European Investment Bank, Finance in Africa for green, smart and inclusive private sector development, 2021
9. AFDB, Africa must not be short-changed by climate finance, says expert panel at COP26, 2018
10. Climate Policy Initiative, The State of Climate Finance in Africa: Climate Finance Needs of African Countries, 2022 GCF,
11. GCF Spotlight Africa, 2021
12. UNCTAD, Tax Incentives and Foreign Direct Investment, 2000
13. The countries are Burkina Faso, Cote d'Ivoire, Ethiopia, Ghana, Kenya, Mauritius, Nigeria, Rwanda, South Africa, and Uganda

three main components: policy support, green business development (through grants), and a networking facility. The programme has successfully conducted work in enabling the adoption of sustainable consumption and practices (SCP) in priority sectors identified based on the needs and priorities of national stakeholders during the programme's inception. These sectors include Integrated Waste Management (IWM), sustainable tourism, sustainable agriculture, and manufacturing. The programme has already benefitted 55 grantees in its two phases of implementation. During the review of the programme activities from 2014 – 2020, access to finance was identified as one of the major challenges faced by MSMEs in the uptake of SCP and green practices in the region. Addressing this barrier requires an up-to-date, in-depth understanding of the MSME green finance landscape, which this study aims to provide. The seven SWITCH Africa Green countries, together with three member countries of the African Circular Economy Alliance (Côte d'Ivoire, Nigeria, and Rwanda), are the selected focus countries of this study and provide a basis to inform a region-wide view of MSME green finance in Africa.

Photo courtesy of UNEP

II. THE EMERGING DEMAND DRIVERS FOR MSME GREEN FINANCE

II. THE EMERGING DEMAND DRIVERS FOR MSME GREEN FINANCE

MSMEs are categorized into two types in relation to transitioning to a green economy: greening MSMEs and green MSMEs. Greening MSMEs are transforming their usual business operations to have a lower impact on the climate and environment. Green MSMEs provide green technologies in different sectors, such as clean energy solutions, climate-smart agriculture products, circular economy innovations, and, more recently, carbon removal technologies.

Figure 3: Greening and green MSMEs

MSMEs across sectors working to transform their operations with the objective of reducing their carbon footprint and/or increase their adaptive capacity.

Examples include:

- Resource efficiency such as energy efficiency, using new and clean energy sources
- Less carbon-intensive practices in agriculture such as organic fertilizers

MSMEs providing green technologies across sectors, typically functioning as producers or retailers.

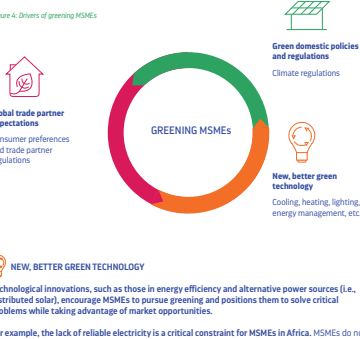
Examples include:

- Energy: producers and retailers of off-grid solar solutions
- Agriculture: producers and retailers of inputs such as organic fertilisers and climate-resilient seeds
- Integrated Waste Management: waste to energy, recycling, upcycling
- Carbon removal: Direct Air Capture (DAC), agroforestry

THE DRIVERS OF GREENING MSMES

The core drivers pushing MSMEs to green their operations include the use of new and better green technology, increasing pressure from domestic policies and regulation, and global trade partner expectations.

Figure 4: Drivers of greening MSMEs



NEW, BETTER GREEN TECHNOLOGY

Technological innovations, such as those in energy efficiency and alternative power sources (i.e., distributed solar), encourage MSMEs to pursue greening and positions them to solve critical problems while taking advantage of market opportunities.

For example, the lack of reliable electricity is a critical constraint for MSMEs in Africa. MSMEs do not have reliable access to grid electricity, forcing them to operate without access or supplement their operations with generators. World Bank Enterprise Surveys highlighted that almost 40% of firms in Sub-Saharan Africa perceive unreliable electricity as a major constraint.[16] In Burkina Faso, 28.2% of the enterprises surveyed by ESSE rated the electricity supply as very poor.[17] Frequent supply shortages and load shedding constitute a significant barrier to growth for 19% of South Africa's MSMEs.[18] SMEs in Nigeria reportedly get 1 to 5 hours of electricity daily.[19] MSMEs' use of small gasoline generators is also conservatively estimated to be 27% of the 22 million generators in the country.[20] Analysis by the International Energy Agency estimated that backup diesel generators in Sub-Saharan Africa produced the equivalent of 8% of the region's electricity generation in 2018.[21]

Distributed solar involves installing solar arrays to supply electricity, unlocking more hours of electrification where there is an unreliable grid supply. Installing solar arrays is a popular resource efficiency measure among MSMEs. There has been a range of interesting developments in distributed solar, including productive use leveraging solar energy (PULSE)[22] products such as water pumps, cold-storage solutions, and agro-processing equipment (Figure 5). These appliances are typically energy-efficient and can enable MSMEs to benefit from increased productivity.

16. International Energy Agency, Africa Energy Outlook 2019, 2019 17. ESSE, L'environnement propice aux entreprises durables au Burkina Faso, 2019
18. FinMark Trust, FinScope MSME Survey: South Africa 2020, 2020 19. PwC, PwC's MSME Survey 2020, Building to Last, Nigeria Report, 2020
20. Access to Energy Institute and Dalberg, Putting an End to Nigeria's Generator Crisis: The Path Forward, 2019 21. International Energy Agency, Africa Energy Outlook 2019, 2019 22. Productive use leveraging solar energy (PULSE) is defined as any agricultural, commercial, or industrial activity that uses solar energy as a direct input to the production of goods or provision of services (GOGLA, 2020 Off-Grid Solar Market Trends Report, 2020)

Figure 5: Examples of distributed solar products

COUNTRIES	MARKETS	TYPE OF APPLIANCE	DESCRIPTION	PRODUCT	INDICATIVE PRICES
SunCulture	Senegal, Côte d'Ivoire, and Uganda	Water pumps	Solar water pumps improve irrigation and extend the growing season for rural smallholder farmers.	SunCulture Rainmaker 2	USD 495-4,031
InspiraFarms	11 countries, including Kenya, Ethiopia, Ghana, Benin and Zimbabwe	Cold-storage solutions	Solar-powered cold-storage solutions enable larger-scale preservation of produce, meat, and dairy products, targeted mostly at small businesses.	InspiraFarms cold storage	USD 160 or more
AGCCU	Kenya,Tanzania, Uganda, and Zambia	Agro-processing equipment	The most common agro-processing application is solar-powered grain milling, given the importance of the maize value chain in Sub-Saharan African markets.	Agsol Solar-Powered Hammer Mill	Variable

Source: IDDEA, 2020 Off-Grid Solar Market Trends Report, 2020

There is an enormous opportunity to improve productivity and decrease emissions of MSMEs through innovative financing in distributed solar. Products such as solar-powered irrigation systems can have high upfront investment costs, indicating the need for innovative financing. Financing in distributed solar is being made increasingly available, including for MSMEs, by various actors. Solar PV, attracted 33% of the cumulative investments in Africa between 2010 and 2020.[21] Development Bank of Rwanda (BRD) started implementing the USD 48.94 million Renewable Energy Fund (REF) project in 2018 to expand access to off-grid solar systems and mini-grids, targeting small businesses and households as beneficiaries.[22] The Off-Grid Energy Access Fund (FEI OGEF) is a USD 100 million debt financing facility launched in 2018 that is partly capitalised by the African Development Bank (AFDB) to facilitate financing to solar off-grid companies and the related ecosystem.[23] The Beyond the Grid sub-initiative launched in 2014 by USAID Power Africa is partnering with investors to invest USD 1 billion into adding 25-30 million new Solar Home Systems and Mini Grid connections by 2030.[24]

Energy efficiency will also add to MSMEs' need for green finance. MSMEs are increasingly seeking energy efficiency through energy-saving equipment, lighting, and appliances. However, cooling and refrigeration are the fastest-growing sources of GHG emissions in developing countries.[25] While cold chains are a critical enabler of delivering high-quality agricultural produce and safe medicines in health, they are energy intensive, which adds to the business costs and increases emissions. Cooling needs are also growing through the demand for air conditioners in buildings due to increased urbanisation and disposable income.[26] International Energy Agency estimates that electricity demand for air conditioners in Africa will increase ten times by 2040.[27] While better building designs and more efficient air conditioners are potential solutions, these solutions require high upfront capital investments.

GREEN DOMESTIC POLICIES AND REGULATIONS

African countries are committing to green growth on the global stage and are in the early stages of implementing climate regulations, which will have implications for MSMEs. As of 10 December 2021, 39 countries submitted their updated NDC with significant improvement in their ambition to

21. IRENA and AfDB (2022), Renewable Energy Market Analysis: Africa and its Regions, International Renewable Energy Agency and African Development Bank, Abu Dhabi and Abidjan. 22. Development Bank of Rwanda, 2018 Annual Report, 2018
23. AfDB, Facility for Energy Inclusion, n.d. 24. USAID, Beyond the Grid, n.d. 25. IRENA, 'IPPVolt for Africa's Clean Cold Centre Shows How We Can Keep Alive The Goal Of 1.5 Degree Celsius, 2022 26. Yale Environment 360, A Flood of Polluting Air Conditioners Hampers Africa's Climate Efforts, 2020
27. International Energy Agency, Africa Energy Outlook 2019, 2019

reduce GHG emissions.[29] The commitments are translating into policies, strategies, and action plans by governments to ensure they meet their targets. For example, The National Treasury of Kenya is developing a National Policy Framework on Green Fiscal Incentives to stimulate green innovation.[29] There are also sector-level incentives. In transport, Kenya's 2019 Finance Act halved the excise duty for imported electric vehicles to 10%[30], and Burkina Faso committed to introducing fiscal incentives to promote e-mobility as part of the ECOWAS Commission's clean fuels and vehicle regulations.[31] African governments are also taking other green actions. For example, 34 African countries have imposed a plastic ban, and some have introduced Extended Producer Responsibility schemes.[32]

Implementation of climate regulations in the region is nascent. Levers that can mainstream greening MSME are beginning to take shape. With public procurement accounting for 60%[33] of government expenditure, Uganda has started integrating sustainability into its national public sector procurement policy.[34] However, there has been slow progress in developing and implementing carbon pricing mechanisms. As of July 2022, South Africa is the only African country that has implemented a carbon tax (2019). Only four other countries - Botswana, Côte d'Ivoire, Morocco, and Senegal - have started exploring the potential or feasibility of carbon pricing.[35]

As the impact of climate change increases in the region, policy and regulatory action around climate mitigation and adaptation will likely grow. Despite its low contribution to GHG emissions globally, Africa is the most vulnerable continent to climate change.[36] There is the possibility that up to 118 million extremely poor people will be exposed to drought, floods, and extreme heat by 2030.[37] By 2050, climate change could potentially lower Sub-Saharan Africa's Gross Domestic Product by a further 3%.[38] Higher temperatures and mixed rainfall will also impact crop yields, as well as food prices and availability.[39] As effects of climate change are estimated to grow, African countries will ramp up climate regulations to cope. These regulations will likely influence MSME business practices and require some forms of compliance.

GLOBAL TRADE PARTNER EXPECTATIONS

Consumers in the global north are increasingly demanding green products, causing relevant trade partners to act accordingly which contributes to changes in the African context. Consumers are concerned about the environment and conscious of their individual impact on it. Therefore, MSMEs in African countries that want to access these markets must ensure their operations are green. This also entails using credible green labelling that global consumers recognise. A Eurobarometer survey report published in 2020 highlighted that protecting the environment is important to 94% of citizens in the European Union.[40] United States consumers of all generations are also willing to spend more on

28. Africa NDC Hub, Africa's NDC Journey and the imperative for climate finance innovation: A report by the Africa NDC Hub for COP26, 2021 29. National Treasury, Climate Policy Initiative, and Kenya Climate Innovation Centre, The Landscape of Climate Finance in Kenya: On the road to implementing Kenya's NDC, 2021 30. The Presidency, Kenya To Fully Transition To Clean Energy By 2030, President Kenyatta Says, 2021 31. Climate & Clean Air Coalition, West African Ministers adopt cleaner fuels and vehicles standards, 2020 32. Green Peace Africa, 34 Plastic Bans In Africa | A Reality Check, 2020 Ministry of Finance, Planning and Economic Development, The National Public Sector Procurement Policy – 2020, 2020 33. Ministry of Finance, Planning and Economic Development, The National Public Sector Procurement Policy – 2019s, 2020 34. SWITCH Africa Green, Greening Uganda's Public Sector Procurement Policy, 2018 35. World Bank, Carbon Pricing Dashboard, updated April 2022 36. AfDB, Climate Change in Africa, n.d. 37. World Meteorological Organization, State of the Climate in Africa – 2020, 2021 38. World Meteorological Organization, State of the Climate in Africa – 2020, 2021 39. Foreign Policy Research Institute, The Impact of Climate Change on Africa's Economies, 2021 40. European Commission, Special Eurobarometer 501: Attitudes of European citizens towards the environment, 2020

Photo courtesy of UNEP

sustainable products.[41] For Gen Z, in particular, their influence on this trend will only increase as they grow into adulthood and represent 27% of the world's income by 2030.[42]

Moreover, sustainability standards and certifications are increasingly influencing consumer behaviour. Acquiring such certifications will require investment from MSMEs to green their production processes. The 2017 version of the Eurobarometer survey determined that ecolabels play a role in the purchasing decisions of 32% of the EU respondents.[43] Additionally, 19% of the respondents said that they bought products with an environmental label six months before the survey, and that figure increased to 22% in the 2020 report. Therefore, MSMEs in African countries that want to access these markets must ensure their operations are green. This also entails using credible green labelling that global consumers recognise. Currently, there are 456 ecolabels globally.[44] The majority of the Eurobarometer survey[45] respondents indicated that they had seen or heard about and bought products with the EU Ecolabel, Germany's Blue Angel, and France's N.F. Environment labels. Acquiring such certifications will require investment from MSMEs to green their production processes. For example, to be awarded the EU Ecolabel, MSMEs need to ensure that they employ high environmental standards in raw material extraction, production, distribution, and disposal of their products and services.[46]

Trade partners such as the European Union and the United States are introducing regulations targeting the trade of commodities that are emission intensive. The EU is addressing the concern of potential carbon leakage by using carbon border adjustment mechanisms. The EU's Green Deal proposes a Carbon Border Adjustment Mechanism that will introduce a carbon price when fully implemented in 2026.[47] USA's FAIR Transition and Competition Act of 2021 proposes an import fee for carbon-intensive products from 2024.[48] While both border carbon adjustments currently exclude agricultural and textile trade, it is a possibility that they may extend to the sectors. However, some regulations may affect these sectors much sooner. The European Commission proposed a regulation in 2021 to ban agricultural products linked to deforestation.[49] The European Commission and the USA also employ Maximum Residue Limits (MRLs), limiting pesticide use on agricultural produce. Therefore, MSMEs need transition capital to adopt practices that meet trade partner regulations.

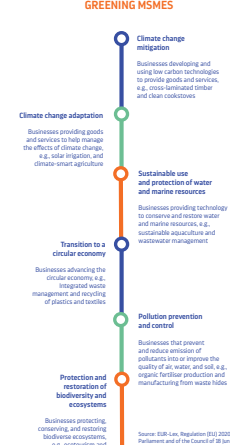
EMERGING GREEN MSMES

Demand will also arise from MSMEs innovating in climate change mitigation and adaptation, sustainable water, marine use, circular economy, pollution prevention, and biodiversity and ecosystems[50], as illustrated in Figure 6. MSMEs have started developing green business models to address these environmental challenges across sectors such as agriculture, land-use change, forestry, energy, and waste. MSMEs operating in mitigation contribute to long-term goals such as the Paris Agreement and NDCs. Adaptation solutions are helping populations deal with the current and future effects of climate change. In terms of sustainable use and protection of water and marine resources, MSME activities revolve around achieving good environmental status and preventing deterioration of surface, ground, and marine waters. Some are helping the countries' transition to a circular economy typically operate in waste prevention, reuse, and recycling. Pollution prevention and control include activities that prevent or improve levels of pollutant (non-GHG) emissions into the air, water, and land.

41. First Insight, The Sustainability Disconnect Between Consumers and Retail Executives, 2020 42. Forbes, Consumers Demand Sustainable Products And Shopping Formats, 2022 43. European Commission, Special Eurobarometer 468: Attitudes of European citizens towards the environment, 2017 44. Ecolabel Index, accessed July 2022 45. Published in 2017 46. European Commission, EU Ecolabel, n.d. 47. European Commission, Carbon Border Adjustment Mechanism, 2021 48. Wiley, Democrats Introduce Carbon Border Adjustment Legislation, 2021 49. European Commission, Questions and Answers on new rules for deforestation-free products, 2021 50. EUR-Lex, Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (Text with EEA relevance), 2020

Lastly, MSMEs operating in biodiversity and ecosystems aim to protect, conserve, or restore biodiversity and ecosystems. Solutions in these spheres are interrelated and can directly enable the realisation of objectives related to other spheres of innovation. Emerging green MSMEs, therefore, need early-stage capital with flexible terms and long tenor, and those who have established proof of concept to the point of scaling need to access market loans to scale.

Figure 6: Climate action elements addressed by MSME business models

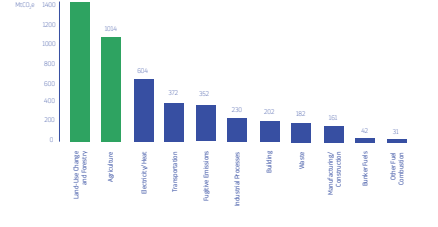


Source: EUR-Lex, Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (Text with EEA relevance), 2020

In Africa, mitigation activities are considered an important aspect of climate action, which also opens new economic opportunities. The majority of African countries have committed to a cleaner growth path, as illustrated by the NDC commitments. Becoming a low-carbon economy has competitive advantages on which African countries can capitalise. For instance, renewable energy deployment can contribute to a 0.2% to 4% annual GDP growth.[51] Additionally, depending on the country's policies, jobs could increase by thousands to over a million in 2030.[52] Such jobs would mainly arise from fuel supply, installations, equipment, and manufacturing. Reflecting the standing of mitigation activities globally, financing for mitigation is high. However, adaptation is also critical for Africa, given the region's relatively low GHG emissions at 3% of global GHG emissions and vulnerability to climate change. Despite this significance, funding targeting adaptation was only about half of the mitigation financing in the 2014 - 2018 period (USD 16.5 billion).[53] Significantly more investments will be needed in the future.

Overall, the most impactful opportunities will be in the highest emissions sectors. In Africa, the highest GHG emissions are from land-use change and forestry, followed by agriculture. While there are variations between countries, land-use change emissions in African countries are generally driven by deforestation from the expansion of croplands and grasslands and fuel production (e.g., charcoal).[54] Agriculture emissions are mainly driven by the livestock sector, mainly from cattle and their manure, as well as crop production and management activities.[55]

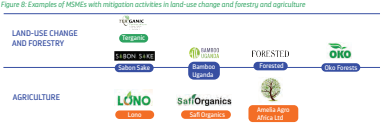
Figure 7: Africa's GHG emissions by sector, 2019[56]



51. IRENA (2016), 'Renewable Energy Benefits: Measuring The Economics'. IRENA, Abu Dhabi. 52. Ibid. 53. Georgia Savvidou and Christopher Trisos, Five ways in which finance for climate adaptation in Africa falls short, 2021 54. World Resources Institute, Everything You Need to Know About Agricultural Emissions, 2014; 56. Climate Analytics, National 1.5°C-compatible emissions pathways and consistent power sector benchmarks in Africa, 2022 55. International Livestock Research Institute, Corporate Report: 2016–2017. 2018; Balgis Osman-Elasha (Ph.D.) and Diego Fernández de Velasco, Drivers of Greenhouse Gas emissions in Africa: Focus on agriculture, forestry and other land use, 2020 56. Climate Watch Historical GHG Emissions. 2022. Washington, DC: World Resources Institute. Available online at: https://www.climatewatchdata.org/ghg-emissions; This includes historical GHG emissions of 48 countries in Sub-Saharan Africa and five North African countries (Algeria, Egypt, Libya, Morocco, and Tunisia)

There are already MSMEs seeking to solve emissions in the agriculture and land-use change and forestry sectors. Over 100 of the 500 circular businesses in Africa featured in Footprints Africa's database are from the agriculture/food sector.[57] Some examples of MSMEs focused on mitigation activities are highlighted in Figure 8.[58] Sabon Sake in Ghana is converting agricultural waste from sugarcane into microbe-enriched biochar, contributing to the proper management of agricultural waste.[59] Safi Organics in Kenya provides affordable organic fertiliser to smallholder farmers, increasing yields by at least 30%. Terganic in Mauritius designs closed-loop ecosystems for farms, urban homes, and gardens with a focus on water harvesting, land restoration, energy, and waste management.

Figure 8: Examples of MSMEs with mitigation activities in land-use change and forestry and agriculture



Finance in agriculture, land-use change, and forestry in Africa is particularly challenging; therefore, particular emphasis will be needed to enable MSMEs operating in this space to develop. The demand for green finance for MSMEs in these sectors is not being met. African agri-SMEs face an annual financing gap of ~ USD 65 billion.[60] Lenders are particularly hesitant to serve MSMEs in the agriculture sector due to compounded effect of having both a high level of informality and perceived sector risk from factors such as weather shocks and crop diseases. Lenders face twice the risk in agri-SME funding compared to other sectors. Generally, the risk is also twice as high in Africa compared to Latin America. On the other hand, land-use change and forestry initiatives, such as forest plantations and ecosystem restoration (e.g., biodiversity), typically require long-term capital investments.

57. Footprints Africa and Knowledge Hub, Case Studies, accessed July 2022 58. Some examples provided are from sources other than Footprints Africa's database 59. Knowledge Hub, Sabon Sake – Regenerating Soil, 2022 60. ACEI Africa, Bridging the Financing Gap: Unlocking the Impact Potential of Agricultural SMEs in Africa, 2020

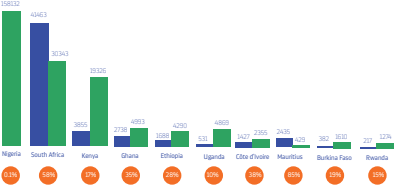
III. CHALLENGES TO GREEN FINANCE FOR MSMEs

III. CHALLENGES TO GREEN FINANCE FOR MSMEs

TYPICAL MSME CHALLENGES

MSMEs in Africa struggle to access finance due to the low supply of finance from financial institutions to such businesses. The average supply of MSME finance in the 10 focus countries is around 30% of the potential demand. Countries such as Nigeria, Uganda, Rwanda, Kenya, Ethiopia, and Burkina Faso receive less than the 30% of potential demand.[61] The gap is substantially higher in Nigeria, where financial institutions only supply 0.1% of demanded MSME finance. South Africa and Mauritius are the only two countries with a supply of finance greater than 50% of the finance required by MSMEs. The lack of financing makes it difficult for MSMEs to grow or adopt sustainable production processes.

Figure 9: MSME finance gap [61]



This is a function of inter-related challenges across supply, demand and enabling environment. From a demand perspective, MSMEs are small with undeveloped, or informal, systems, which makes them difficult for financial institutions to assess. MSMEs are also unaware of financing options and opportunities, further limiting their access to available funding. Supply-side challenges include: MSMEs are viewed as risky and expensive to serve; underdeveloped market infrastructure limits exit opportunities for investors, particularly those looking to make equity investments; and generally low private sector lending by banks. Finally, enabling environment issues related to inefficient intermediaries, burdensome regulation such as collateral requirements, lack of collateral registries and political risk, and macroeconomic instability dampen private investors.

61. World Bank, MSME Finance Gap: Assessment of the Shortfalls and Opportunities in Financing Micro, Small, and Medium Enterprises in Emerging Markets, 2017 62. Ibid.

Figure 10: MSMEs challenges

Challenges to green finance for MSMEs

MSMEs face an array of challenges in accessing finance. The state of MSME green finance is constrained by various challenges in its demand, supply, and enabling environment, as highlighted in Figure 2.

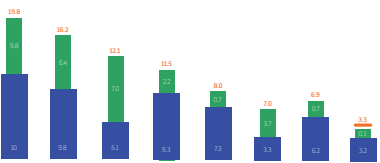
In supply, financial services providers (FSPs), on average, lend relatively little to the private sector in African economies. Due to low savings rates, banks in Africa have negligible capital to lend to the private sector. The gross savings rate as a percentage of GDP in the focus countries is 19%, compared to 41% in Singapore.[63] As such, banks have few deposits to draw on for lending to the private sector. On average, credit to the private sector as a percentage of GDP in the focus countries is 32%, driven by Mauritius and South Africa. The high rates of private sector lending from the latter countries are driven by well-developed financial systems, as both countries are ranked top two in the ABSA Africa financial markets index.[64] Rwanda, Cote d'Ivoire, Ethiopia, Ghana, and Nigeria are below the Sub-Saharan Africa average, as depicted in the figure below.

Figure 11: Domestic credit to the private sector by banks[65]

63. World Bank, Gross savings (% of GDP), accessed July 2022 64. Statista, Absa Africa Financial Markets Index 2021, 2022 65. World Bank, Domestic credit to private sector by banks (% of GDP), accessed July 2022

Coupled with this, capital is typically expensive – driven by the high rates of government borrowing and generally inefficient intermediaries/local financial institutions. Borrowing costs for governments, measured by the treasury bill rate, are significantly high in Africa compared to the United States. On average, countries of focus borrow at 4.36% (5.82% excluding Ethiopia and Mauritius) compared to 0.1% in the United States.[66] Globally, investors require higher returns to invest in emerging market debt due to perceived challenges with issues such as stability and governance. This is driven by poor credit ratings from rating agencies such as Fitch Ratings, Moody's, and Standard & Poor. On average, credit ratings of the focus countries reflect the perception that they are risky due to macroeconomic issues, political stability, governance, and overall economic strength which requires higher adjusted returns to access capital. Local financial institutions factor in the treasury bill rate and a risk premium to derive the lending rate charged to customers. On average, the 10 countries of interest have a risk premium of 6.8% compared to 3.2% in the USA. This implies that banks in Africa generally view the private sector as riskier, resulting in a high cost of borrowing. A higher risk premium and treasury bill rate results in a higher lending rate, as seen particularly in Uganda and Rwanda in the figure below.

Figure 12: Risk premium and treasury bill rate[67]



With their available capital, banks generally prefer to lend to larger corporates and projects. Bank lending in Africa has been concentrated toward larger corporates and governments.[68] For example, MSMEs only account for 8% of banking sector lending in South Africa.[69] Even in cases where banks in South Africa were provided with a ZAR 200 billion (USD 11.9 billion) government-backed guarantee during the COVID-19 pandemic to lend to MSMEs, banks only disbursed 8% of the funds. As a result, banks have continued to finance large ticket size projects as they are deemed more profitable than small ticket size projects that are also subject to the same assessment process, which can be lengthy.[70] For example, a small energy project requires the same process as a large project in acquiring government permits. This can discourage investors as returns will be reduced by the cost incurred. Additionally, a preference for larger ticket-size projects reinforces gender disparities, further

66. World Bank, Lending interest rate, accessed July 2022; World Bank, Risk premium on lending, accessed July 2022; Dalberg analysis, 2022 67. Ibid. 68.EIB, Banking in Africa, 2020 69. McKinsey & Company, A credit lifeline: How banks can serve SMEs in South Africa better, 2020 70. AfDB, Potential for Green Banks & National Climate Change Funds in Africa – Scoping Report, 2021

excluding women-owned SMEs from accessing finance compared to their male counterparts. While women constitute 58% of Africa's self-employed population[71], women-owned or led SMEs are typically smaller, have fewer employees and are 34% less profitable compared to their male counterparts.[72] Hence, they are much more unlikely to require large-ticket size financing.

On the other hand, MSMEs are perceived to be risky and often relatively costly to assess. MSMEs have high failure rates, particularly when they are a relatively new business. In South Africa, for example, over 70% of MSMEs are expected to fail within the first 5 to 7 years.[73] This failure rate implies that banks will have a lower appetite for financing MSMEs as the likelihood of loan repayments are low. MSMEs are also less likely to have robust reporting and underlying systems (e.g., governance and accounting frameworks), making it harder for financial service providers to assess underlying business performance and stability. Lack of information such as financials or identification is one of the main obstacles to banks' funding of MSMEs.[74] In addition, the risk of default by MSMEs was cited as an obstacle in financing MSMEs by 17% of financial institutions.

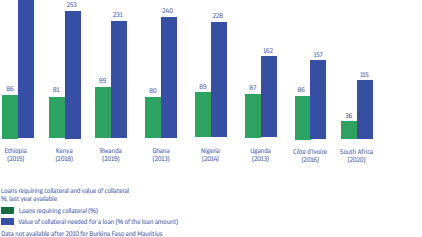
There are also systematic gaps in the knowledge and awareness of MSMEs of financing options and opportunities available. For example, a survey conducted by Banking Sector Education and Training Authority (BANKSETA) in South Africa shows that 81% of MSME respondents do not know about support programs available for small businesses.[75] In Kenya, Allos Finance, a financial institution believes that MSMEs are unaware of asset financing products available to them[76], limiting their access to asset-backed financing. The financial literacy gaps are also driven by limited knowledge of bank requirements for financing and mistrust of banks in general.[77] A review of bank products and services across the 10 countries of focus revealed that on-lending facilities, funded mostly by development finance institutions (DFIs), are not well advertised.[78] They are either on a news article or the proposal document of the funding DFI.

These challenges are exacerbated by the regulatory regime surrounding lending. On average, 80% of loans disbursed by banks required collateral in the countries of interest, with a collateral value of around 210% of the loan's value, as depicted in the figure below.[79] It is often difficult for MSMEs to provide traditional collateral, which excludes them from accessing credit from the banking sector.[80] An important alternative could be using valuable moveable assets (e.g., vehicles) as collateral. However, this requires effective tracking of these assets through a register. Few African countries have introduced movable collateral registries to improve access to finance for MSMEs and individuals. For example, Ghana's online collateral registry has enabled the banking sector to disburse loans worth USD 3 billion through moveable assets.[81] Uganda also introduced a collateral registry in 2019, which will help increase MSME financing.[82]

71. This only includes the working population in non-agricultural sectors. 72. Finance Competitiveness Innovation (FCI) & Gender Innovation Lab (GIL), Profiting from Parity - Unlocking the Potential of Women's Businesses in Africa, 2019 73. ResearchGate, The causes and impact of business failure among small to micro and medium enterprises in South Africa, 2019 74. World Bank, Global Financial Development Database, 2021 75. BANKSETA, Promoting financial inclusion of informal businesses through effective delivery of financial education and consumer protection in South Africa, 2018 76. Oxford Business Group, Kenya banks lending more to small and medium-sized enterprises (SMEs), accessed July 2022 77. AFI, Financial Education for the MSMEs: Identifying MSME Education Needs, 2020 78. Dalberg analysis, 2022 79. World Bank, Global Financial Development Database, 2021 80. AFI, Policy Catalogue on MSME Financing in Africa, 2021 81. Verdant Capital, Collateral Registry for Movable Assets: Helping unlock access to finance for MSMEs across Africa, 2020 82. IFC, Market Bite Uganda, 2021

Photo courtesy of UNEP

Figure 13: Collateral requirements[83]



Loans requiring collateral and value of collateral
%, last year available

Loans requiring collateral (%)

Value of collateral needed for a loan (% of the loan amount)

Data not available after 2010 for Burkina Faso and Mauritius

GREEN MSME CHALLENGES

Green MSMEs are still perceived as traditional MSMEs by local financial institutions and therefore attribute the same challenges MSMEs generally face. As we elaborate on below, they also face other challenges limiting their ability to grow and access finance.

Traditional financial service providers are less willing to lend to businesses with risks that are unfamiliar to them. Most financiers do not have dedicated skills allocated to understanding and assessing new climate-related business models and are generally wary of lending to or investing in business models and markets they do not understand.[84] In addition, most financiers are banks providing debt, so they do not get any upside should the high-risk opportunity result in exceptional growth. They may be inclined to charge a higher interest rate to account for the higher perceived risk or not invest at all.

In addition, critical sectors for green businesses tend to be difficult to lend to, with agriculture being particularly challenging. Despite the agricultural sector accounting for at least 15% of Africa's GDP[85] and being connected to the livelihoods of over 65% of the African population, the sector receives less than 3% of banking credit.[86] Agriculture, Forestry and Other Land Use (AFOLU) also contribute about 57% of Africa's emissions due to unsustainable practices.[87] If current practices continue, the United Nations (UN) estimates that within 60 years, topsoil would be lost and therefore result in a shortage in the food supply.[88] However, an array of emerging business models seeks to address these challenges by offering alternative production processes, revenues for protecting or restoring land or incentivising different behaviours. For such practices to scale, banks will need to increase their financing to the sector.

Another example is Integrated Waste Management which is highly regulated and informal, and the presence of the government as an off taker brings about market risks. The waste management sector is dominated by informal waste pickers, who are responsible for recovering 4% of the recycled waste generated in Africa.[89] For example, 85% of waste collectors in South Africa are informal.[90] This implies

83. Ibid. 84. EIB, Finance in Africa: For green, Smart and Inclusive Private Sector Development, 2021 85. EIB, Development Solutions: Opportunity for the vulnerable, 2020 86. Making Finance Work for Africa, Agricultural Finance, accessed July 2022 87. AFDB, Drivers of Greenhouse Gas emissions in Africa: Focus on agriculture, forestry and other land use, 2020 88. Reuters, Only 60 Years of Farming Left If Soil Degradation Continues, 2014 89. UNEP, Africa Waste Management Outlook: Summary for decision-maker, accessed July 2022 90. Plastic SA, Growth in South African plastics recycling sector, 2013

banks will find it challenging to finance the sector. This perspective is likely to affect the livelihoods of women significantly, given that there is a high representation of women as informal waste pickers in South Africa and the region at large.[91] In cases where financing is available, investors are not confident about achieving returns on their investments as the government does not fully understand project costing and cost recovery.[92]

GREENING MSME CHALLENGES

In addition to the traditional challenges facing MSMEs, there are three additional challenges related to financing greening investments. First, MSMEs lack the requisite skills to develop greening production processes for their business. Second, there is a limited business case for MSMEs to adopt green practices, which often require large capital expenditure. Finally, the demand for green products is still low, and few consumers are willing to pay a premium for such products - particularly when cheaper substitutes exist.

1. LACK OF SKILLS BY MSME PERSONNEL IN GREENING PRODUCTION

MSMEs do not have the requisite skills internally for greening their production processes. They also do not have enough revenue to afford hiring dedicated capacity to help with greening operations. MSME management is also entirely focused on the core operations of the business and therefore does not have knowledge of the benefits and trade-offs of going green. As such, MSMEs are unlikely to consider greening options in the short-to-medium term. It is, therefore, important to link greening options to the core business bottom line, or net profit, to scale sustainable practices. For example, creating policy incentives (i.e., less tax) or access to markets (i.e., off taker agreements).

SWITCH Africa Green provided capacity building on implementing Industrial Symbiosis and resource efficiency and clean production (RECP) to Sky Fat Tannery Company Limited, a leather processor and exporter in Uganda. The company received further technical support on Industrial Symbiosis from the Uganda Cleaner Production Center (UCPC).

The company faced challenges with solid waste management, resulting in air pollution. The foul smell from items like leather splits and offcuts being dumped in the environment generated complaints from residents of the area.

After receiving support, Sky Fat Tannery was able to divert waste from landfill for other purposes and create 250 green jobs. Financial benefits include the generation of USD 1 080 800 annually from selling the hides, offcuts and splits, and the elimination of USD 1 120 daily (USD 380 800 annual) waste disposal costs. Such savings enabled a further investment of USD 6 million to increase the value of resources in the productive cycle, allowing the company to stop exporting waste to South Africa and China and process it internally.

Box 1: SWITCH Africa Green Industrial Symbiosis and RECP interventions
Source: UNEP, Green Manufacturing in Africa: Focus on Micro, Small and Medium Enterprises (MSMEs), 2020

91. Department of Trade, Industry and Competition (DTIC), Department of Women, Youth and Persons with Disabilities, and UN Women, Policy Assessment for the Economic Empowerment of Women in Green Industry – Executive Summary: South Africa, 2022; Taron, A. Drechsel, P., and Gebrezgabher, S., Gender dimensions of wastewater and liquid waste management for reuse in agriculture in Asia and Africa, 2021 92. L. Godfrey et al., Solid Waste Management in Africa: Governance Failure or Development Opportunity?, 2019 93. Dalberg, Stakeholder interviews, 2022

2. LIMITED BUSINESS CASES FOR GREENING PRODUCTION PROCESSES

There are limited – and lack of awareness of – business cases for MSMEs to green their production processes. Despite the long-term positive implications for energy efficiency that can reduce business costs, MSMEs may not fully understand the economics of converting to sustainable practices. In some African countries, electricity is subsidised[94] and therefore does not create a good business case to go green in the short-to-medium term. However, electricity can be unreliable, resulting in the use of unsustainable alternative energy sources such as diesel. For example, generators powered by petrol, diesel, and gas account for over 48% of electricity use in Nigeria.[95] However, the use of solar has been found to improve operating hours of MSMEs by 20–40% in Nigeria and reduce smallholder farmer post-harvest losses by 30% using solar-powered cold storage.[96] Increasing awareness of such business cases can speed up the adoption of sustainable practices by MSMEs.

Greening a business also requires large sums of capital that MSMEs are unlikely to afford. The upfront cost that is required to green business practices is a major constraint for MSMEs.[97] For example, greening a household with solar energy of at least 10 kilowatts (KW) in South Africa can cost up to ZAR 188 000 (USD 11 150), which can be relatively expensive for an MSME with high energy usage. With inadequate access to financing, MSMEs are unlikely to use their limited revenue for greening their production processes.

3. LIMITED DEMAND FOR GREEN PRODUCTS IN AFRICA

Consumer demand for and awareness of eco-friendly products is weak in Africa, resulting in the low adoption of greening practices by MSMEs. Increasing product awareness of sustainably produced products can drive demand and improve the greening of MSME production processes. In Kenya, for example, 53.7% of respondents were not aware of sustainable products in a recent survey by the HORTI-GREEN consortium.[98] MSMEs are, therefore, not incentivised to develop sustainably produced products. Increasing product awareness of sustainably produced products can drive demand and improve the greening of MSME production processes.

Green products are often expensive, limiting demand as consumers are seemingly unwilling to pay the 'green premium' associated with sustainably produced products. Producers of green products face high manufacturing costs due to a lower supply of inputs in the market.[99] These producers also incur certification costs for their green products, which must be factored into the final price. As a result, the cost of green products can be 75–85% more expensive than traditionally produced products (which follow a linear model of 'take-make-waste')[100]. African consumers may not be willing to pay this 'green premium'. This disposition may partly be a consequence of the region's high rates of poverty, where 40% of people live on less than USD 1.90 per day.[101] For example, over 32% of respondents in the Kenya survey cited high costs as a major constraint to purchasing green products.[102] However, globally, consumers are demanding products and services that are sustainably produced, which can create an export market for MSMEs looking to green their production.[103] For MSMEs to cater to this market, export finance challenges will need to be addressed as the majority of exports in Africa are dominated by large multinationals.[104] Products produced will need to be green-certified and meet international safety standards. The SWITCH Africa Green programme provides eco-labelling and standards support to MSMEs. For example, SWITCH Africa Green provided capacity-building support to producers and service providers on the implementation of eco-labelling practices.

94 World Bank, Electricity Access in Sub-Saharan Africa, 2023 95. Punch, Generators provide 48.0% of electricity in Nigeria – NBS, 2021 96. IEA, Solar energy in Nigeria has powerful impact on socio-economic status, 2022 97. The Small Business Site, Green building: a golden opportunity for South African SMEs, 2022 98. HORTI-GREEN consortium, Analysis of consumers' point of view regarding sustainability issues in Kenya, 2019 99. The Sustainable Living Guide, Why Are Eco-Friendly Products More Expensive?, 2021 100. Kearny, Why today's pricing is sabotaging sustainability, 2020 101. World Bank, The number of poor people continues to rise in Sub-Saharan Africa, despite a slow decline in the poverty rate, 2020 102. Ibid. 103. First Insight, The Sustainability Disconnect Between Consumers & Retail Executives, 2022 104. The Africa Report, Africa: Expanding access to trade finance is necessary for SMEs, 2021 105. UNEP, Awareness creation and capacity building on ecolabelling for the agricultural sector, accessed July 2022

SWITCH Africa Green has supported various beneficiaries with awareness creation and capacity building on eco-labelling in the agricultural sector. This includes supporting SKC Surat & Co Ltd, an importer of fresh fruits and vegetables to Mauritius, with a project to promote the MauriGAP (Mauritius Standard for Good Agricultural Practices) certification of the company's products.

MauriGAP is a framework for good agricultural practices on local horticultural farms by the Mauritius Standards Bureau, aiming to promote food safety and efficient and sustainable production practices. It covers efficient use of resources, adoption of environmentally sound practices for natural resources, biodiversity preservation, pre and post-harvest best practices, workers' health and safety, and agricultural waste recycling.

The framework is adapted from the international standards, GLOBALG.A.P. Local producers may find it challenging to meet GLOBALG.A.P criteria. The first two levels of MauriGAP (Level 1 and Level 2) introduced are intended to act as steps towards Level 3, which corresponds to GLOBALG.A.P certification.

Box 2: SWITCH Africa Green eco-labelling interventions
Sources: UNEP, Green Manufacturing in Africa: Focus on Micro, Small and Medium Enterprises (MSMEs), 2020;
UNEP, Report of the SWITCH Africa Green Regional Sector Meeting on Sustainable Agriculture, 2019; Government
Portal of Mauritius, Agro-Industry Minister launches National campaign on MauriGAP Standard (MS 196:2015) Level 1, 2016

Photo courtesy of UNEP

IV. THE OPPORTUNITY: KEY GREEN FINANCING TRENDS

IV. THE OPPORTUNITY: KEY GREEN FINANCING TRENDS

Two key trends present an opportunity for financing green MSMEs in Africa. First, the flow of green financing from development partners and the private sector has been increasing in Africa. This presents an opportunity for green MSMEs and MSMEs looking to green their production to access finance. Second, carbon credit volumes have been increasing globally. Demand for such credits presents new revenue opportunities for MSMEs, particularly for those in the agricultural sector, i.e., agroforestry.

Development and private sector financing toward climate action has been increasing over the past five years. Climate-related financing has increased from USD 463 billion in 2015/16 to USD 632 billion by 2019/20.[105] The financing has been driven by development partners such as donors, development finance institutions (DFIs), and governments. Development actors have also recognised the lack of green financing for MSMEs. They have rapidly stepped up their focus on green-oriented MSME financing in recent years, spurring a range of innovations.

The maturing of carbon markets globally is providing new pools of green-oriented financing. Volumes of voluntary carbon offsets have increased with a compound annual growth rate (CAGR) of 21.8% between 2019 and 2020 in Africa.[107] Volumes and prices are expected to grow at least 20 times by 2035.[108] The growth will be driven by commitments made by global companies to meet net zero by 2050.[109] This growth presents a new set of revenue opportunities for MSMEs, particularly those in the agricultural and forestry sector.

GREEN FINANCE FOR MSMES

FLOWS GREEN DEVELOPMENT FINANCE FOR MSMES IN AFRICA

Providers of development financing have prioritised climate in recent years in response to globally recognised needs. Development actors, primarily development finance institutions (DFIs), have provided 8.7% of green finance in Africa.[110] Recognising the need to speed up climate action, DFIs and other public sector actors have increased financing in Africa from USD 4.2 billion in 2015 to USD 14.5 billion by 2020[111], reflecting a compound annual growth rate (CAGR) of 28%.

Data from the Organisation for Economic Co-operation and Development (OECD)- Climate Change: OECD Development Assistance Committee External Development Finance Statistics is used to estimate MSME green financing. The data is primarily from development actor financing (e.g., donors, multilateral banks, and DFIs) and excludes financing from the private sector. Private sector green financing only accounts for 12% of total green finance flows in Africa.[112] Therefore, using development actor financing does not bias results. The data was also not explicitly tagged for MSME green financing, requiring further analysis to estimate such finance flows.

Box 3: Data analysis methodology

105. Climate Policy Initiative, Global Landscape of Climate Finance 2021, 2021 107. Ecosystem Marketplace, State of the Voluntary Carbon Markets 2021, 2021 108. EY, Essential, expensive and evolving: The outlook for carbon credits and offsets, 2020 109. UNFCCC, Race to zero, accessed July 2022 110. Ibid. 111. OECD, Climate Change: OECD DAC external development finance statistics, accessed June 2022 112. Ibid.

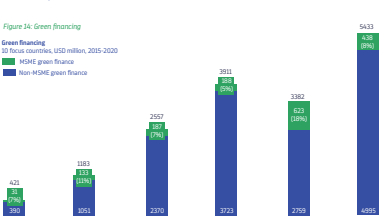
1. MSME tagging: The analysis involved going line by line through OECD data and categorising whether the financing was MSME-oriented based on project description and data tagging.

2. Agricultural financing: Agricultural financing is typically associated with multiple activities, such as capacity building for the government and extension agencies. Such actions have been excluded from the financing.

3. Banking & Financial Services: The assumption is that funding channelled to the banking sector was targeting MSMEs.

There have been significant increases in climate-related flows that have an explicit MSME strengthening objective. Development finance institutions (DFIs), donors and other public development partners have been increasing climate financing targeting green and greening of MSMEs. On average, an estimated 10% of public sector financing for climate action has been channelled to MSMEs in the 10 focus countries between 2015 and 2020.[111] Climate financing to these countries has increased by a CAGR of 67%, while that of MSME financing has increased by over 70% in the same period.

Figure 14: Green financing

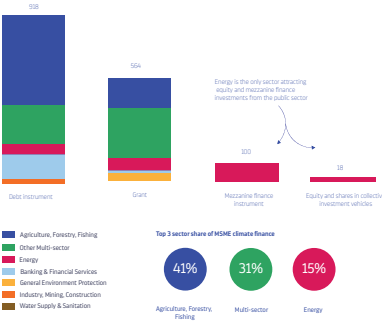


The bulk of these flows is through concessional debt, with grants the next largest category and the balance in equity. An assessment of MSME green finance from the OECD between 2015 and 2020 in the focus countries shows that 41% of the financing has been concessional debt, primarily from development partners, donors, and DFIs.[114] Grants account for 35%, while equity and mezzanine financing account for less than 8% of total climate financing.[115]

113. Dalberg analysis, 2022 114. Dalberg analysis, 2022 115. Equity and mezzanine are mostly subscribed by the private sector and Dalberg has excluded analysis of this group (private sector) as explained in the box above

Figure 15: MSME climate financing by sector and instrument

Annual MSME climate-related development finance commitments by instrument and sector
10 focus countries, Million USD, 2015-2020



Most of the financing has been through debt and grants that flow into agricultural MSMEs, while green financing in the countries of focus has been directed toward energy (24%) between 2015 and 2020. Most of this energy financing was on transmission and distribution (centralised grids) and policy support to the government, excluding the majority of MSMEs. Climate financing for MSMEs has benefitted those in the agricultural sector as over 40% of the financing has been assumed by the sector. It is worth noting that climate financing to the banking sector has increased from USD 1.7 million in 2016 to USD 53 million by 2020, a 136% CAGR. This is important in increasing bank appetite for financing green and greening MSMEs when accompanied by capacity and/or technical assistance to help banks understand the sector better. As mentioned, one of the barriers banks face in financing the green economy is a lack of tools and models in understanding the green economy sector.

Several providers are taking the lead in extending this finance: The top five (5) MSME climate financiers include the World Bank, the Green Climate Fund (GCF), International Fund for Agricultural Development (IFAD), African Development Bank (AfDB) and Global Environment Facility (GEF). These financiers account for 89% of MSME green finance in the 10 countries of focus, with the World Bank accounting for 52% of total financing.

Figure 16: Top five MSME climate financiers

Key: High Medium Low

Annual MSME climate-related development finance commitments by top five providers 10 focus countries, Million USD , 2015-2020	The top 5 financiers account for 87% of MSME climate finance flows in the 10 countries of focus, with World Bank assuming 46% of total green MSME financing	Levels of concessionality
WORLD BANK 731	More than 88% of financing has been allocated to agriculture (46%) and multi-sector (43%). Major projects/programmes include the Lowlands Livelihood Resilience Project in Ethiopia and the COVID-19 Action Recovery and Economic Stimulus Program in Nigeria. The latter is aims to support the recovery of MSMEs in the agriculture sector, while the former finances farmers' adoption of green practices.	
GCF 308	Energy (45%) and multi-sector (35%) account for over 80% of green financing. Major projects include the Resilient Landscapes and Livelihoods Project in Ethiopia and the Embedded Generation Investment Programme ("EGIP") in South Africa. EGIP provides financing to small-scale renewable energy projects, while the former offers support to farmers to adopt green practices aimed at avoiding soil degradation.	
IFAD 162	Over 60% of the financing has been allocated to agriculture, followed by multi-sector at 27%. Major projects include Ethiopia's Participatory Small-scale Irrigation Development Programme and Kenya Cereal Enhancement Programme Climate Resilient Agricultural Livelihoods Window. The former works on developing irrigation schemes for farmers, and the latter aims to help farmers become commercial while adopting climate-resilient practices.	
GEF 96	88% of the financing has been allocated to general environmental protection (42%), agriculture (32%) and energy (13%). Major projects include the Food Systems, Land Use and Restoration Impact Program (FOLUR) in six of the ten focus countries and the Sustainable Land and Water Management Project in Ghana. Both these projects aim to increase the adoption of green practices by farmers	
AfDB 96	64% of the financing has been allocated to the banking sector for on-lending, while the remainder has been channelled to the agricultural sector. Major projects include the Green Zones Development Support Project and KCB on-lending project, both in Kenya. The former project is aimed at improving forest cover and the value chains of smallholder farmers.	

Programme sources: World Bank, NIGERIA: COVID-19 Action Recovery and Economic Stimulus Program, accessed July 2022; World Bank, Lowlands Livelihood Resilience Project, accessed July 2022; GCF, Resilient Landscapes and Livelihoods Project, accessed July 2022; GCF, Embedded Generation Investment Programme (EGIP), accessed July 2022; IFAD, Participatory Small-scale Irrigation Development Programme, accessed July 2022; IFAD, Kenya Cereal Enhancement Programme Climate Resilient Agricultural Livelihoods Window, accessed July 2022; AfDB, Kenya - Green Zones Development Support Project – Phase II, 2022; GEF, Food Systems, Land Use and Restoration Impact Program, 2021; GEF, Food-IAP- Sustainable Land and Water Management Project, Second Additional Financing, accessed July 2022

Meanwhile, a range of other providers has shifted their priorities to focus more on green-oriented finance. For example, the European Investment Bank (EIB) has committed to allocating 25% of its lending support to climate action.[116] Importantly, EIB has channelled this funding in the 10 focus countries through the banking system for on-lending to green and greening MSMEs, further supporting banks to build expertise in financing the green economy. The IKEA Foundation also plans to spend EUR 1 billion for five years on climate action, particularly renewable energy.[117] The Rockefeller Foundation recently committed USD 1 billion to finance the green economy in developing countries, particularly renewable energy.[118] USAID has also mobilised over USD 111.3 million in green finance through its buy-in mechanism INVEST[119] and is looking to play a more leading role by catalysing private sector financing through blended finance in climate action.[120] Bloomberg also launched the Climate Finance Leadership Initiative (CFLI), which mobilises public and private capital for climate action.[121]

POTENTIAL FLOWS OF INTERNATIONAL GREEN PRIVATE SECTOR CAPITAL

International financiers are increasingly targeting green investments and projects as a tool to decarbonise economic activities. For example, a number (over 450) of financial institutions have formed a coalition, the Glasgow Financial Alliance for Net Zero (GFANZ), to help countries and companies meet their net-zero ambitions. Such initiatives are changing financing patterns from financial institutions toward the green economy, from which MSMEs can benefit.

116. EIB, Finance for climate action, accessed July 2022 117. IKEA Foundation, IKEA Foundation Plans to Spend €1 Billion to Reduce Greenhouse Gas Emissions, 2021 118. RSF, The Rockefeller Foundation commits USD 1 billion to green recovery in developing countries, 2020 119. USAID, Climate Finance Portfolio, 2021 120. USAID, Catalysing Private Finance for Climate Action: Learning Brief, 2021 121. Bloomberg, About the CFLI, accessed July 2022 122. GFANZ, About us, accessed July 2022

International financiers are increasingly targeting green investments and projects as a tool to decarbonise economic activities.

One powerful way that this trend is playing out in financing is significant increases in the volume of green-oriented bonds being floated on the market.

Photo courtesy of UNEP

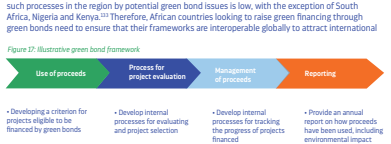
Globally, private sector investment in green financing has increased from USD 267 billion in 2015[123] to over USD 340 billion by 2020.[124] However, more action is needed to increase private sector financing in Africa, where it only accounts for 12% (USD 2.3 billion) of total green financing.[125]

One powerful way that this trend is playing out in financing is significant increases in the volume of green-oriented bonds being floated on the market. Green bonds are an instrument through which governments, corporates, and projects can raise debt at scale to finance green investments. The green bond market has increased from USD 26 billion in 2015 to over USD 508 billion in 2021.[126] The growing demand for green bonds has often resulted in oversubscription. For example, Euro-denominated bonds are, on average, oversubscribed 3.4 times.[127]

Green bonds present an enormous opportunity for African financiers to tap into global pools of private capital to serve green projects, including for MSMEs, but traction has been slow. African banks are short on capital to lend to the private sector (see figure above on private sector lending to the private sector), and this can be addressed using green bonds. Despite growth in green bonds, Africa accounts for less than 1% of the green bond market, with only a few countries (e.g., South Africa, Nigeria, Kenya, and Ghana) having issued such instruments. In cases where they have been issued, bonds in Africa have been channelled toward energy, green buildings, and transport, similar to global trends.[128] Green bonds have also been developed recently for green MSMEs in Africa. For example, British International Investment (BII) has issued a USD 75 million green bond to finance MSMEs in Africa, South and Southeast Asia engaged in areas such as renewable energy and energy-efficient technologies and agriculture.[129] Nedbank, a South African commercial bank, has also issued a USD 116 million bond to finance about 20 000 MSMEs in South Africa.[130]

To attract green bond financing, issuers need to have an internally recognised framework on how funds will be used. There are globally recognised Green Bond Principles (GBP) that issuers need to adhere to when developing a green bond; they are governed by the British and US laws based on International Capital Market Association (ICMA).[131] The framework needs to provide guidelines on the use of proceeds accompanied by a pool of projects eligible to be financed by green bonds, how the project will be evaluated and selected, management of proceeds and reporting.[132] Familiarity with such processes in the region by potential green bond issues is low, with the exception of South Africa, Nigeria and Kenya.[133] Therefore, African countries looking to raise green financing through green bonds need to ensure that their frameworks are interoperable globally to attract international

Figure 17: Illustrative green bond framework



Source: RebelGroup East Africa Ltd et al., SADC Green Finance Demand Study, 2022

123. Climate Policy Initiative, Global Climate Finance: An Updated View 2018, 2018 124. Climate Policy Initiative, Global Landscape of Climate Finance 2021, 2021 125. Ibid 126. Climate Bonds Initiative, Market data, accessed July 2021 127. Responsible Investor, Latest figures show investors will paying up for green bonds, 2021 128. SEI, Scoping the green bond landscape in Africa, 2021 129. Ecofin Agency, BII, Symbiotics to assist African green MSMEs, 2022 130. AfDB, African Development Bank concludes R2 billion investment in Nedbank SDG-linked bonds, 2020 131. Rebelgroup East Africa Ltd et al., SADC Green Finance Demand Study, 2022 132. Ibid. 133. PIDA Africa, Developing green bond markets for Africa, 2021

There are also regulatory gaps in Africa that can dampen investor confidence in investing. The regulation governing the issuing of green bonds in Africa is weak, with only Egypt, Tunisia and Ghana in policy preparatory stages and Kenya, South Africa, Morocco and Nigeria in advanced stages. There are also international collaborations between central banks on setting regulations on the effects of climate change (which can affect the ability to issue green bonds), such as the Network for Greening the Financial System, which only the South African Reserve Bank (SARB) is a member in the region. Such a network can help central banks and regulators in the region to set regulations that are interoperable with international standards.

Further, because of significant transaction costs, green bond raises need to be large ticket sizes. The average size of an individual green bond globally has increased from USD 170 million in 2020 to USD 250 million in 2021. Bonds issued in Africa have been far below the global average. For example, bonds issued by both the City of Cape Town and Johannesburg in South Africa have been below USD 140 million. Nigeria also issued two sovereign bonds, which were both below USD 42 million. Such small ticket sizes, accompanied by a lack of certification, can discourage investors from subscribing to such bonds. Investors also incur transaction costs such as second-party opinions (SPOs), which provide a review of the "greenness" of green bonds and full assessment of the issuers (including use of proceeds, management of proceeds, governance, and transparency). Issuers also have to track, monitor and report (including impact studies) on the use of proceeds, which adds additional transaction costs.

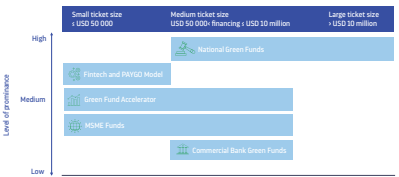
These challenges a layer of complexity for banks considering using green bonds to finance MSME lending. Given the costs associated with raising a green bond, banks will need to be confident in a single green or greening MSME market segment large enough to justify raising a single green bond. As aforementioned, the market is still nascent in the region, with only six countries having issued 17 bonds worth USD 2 billion, the majority of which is South Africa (USD 1.5 billion). Alternatively, banks need to develop green bonds that can serve multiple green or greening MSME segments. However, this can add to the complexity of measuring 'greenness' across various types of segments.

FINANCIAL SERVICE PROVIDERS INNOVATING IN GREEN FINANCE FOR MSMES

Five archetypes of intermediaries are emerging, each of which plays a different role for various types of MSMEs. MSME funds typically have small ticket sizes and are often grant-based or provide guarantees for on-lending purposes. Commercial banks provide medium ticket loans to green businesses, often financed and/or backed with guarantees by development actors. National green funds are financed by governments and other public and private funders for on-lending to green businesses. National funds typically have medium to large ticket sizes offering a variety of instruments such as loans and equity. Pay-As-You-Go (PAYGO) funds help to finance small ticket-size green assets such as solar kits. Green accelerator funds help prepare MSMEs for financing from other funders by providing capacity building and training to MSMEs, usually through grants.

134. Stockholm Sustainable Finance Centre, Scoping the Sustainable Finance Landscape in Africa: The Case of Green Bonds, 2020 135. RebelGroup East Africa Ltd et al., SADC Green Finance Demand Study, 2022 136. Climate Bonds Initiative, Market data, accessed July 2021 137. G. Dorfleitner et al., The pricing of green bonds: external reviews and the shades of green, 2022 138. Climate Bonds Initiative, Explaining green bonds, accessed August 2022 139. SEI, Scoping the green bond landscape in Africa, 2021

Figure 18: Green financiers by ticket size[140]



MSME FUNDS

MSME funds have a mix of public and private capital channelled to green projects. These funds can have a specific thematic area of focus, such as renewable energy, biodiversity, and land degradation. They tend to also focus on greening MSMEs, particularly those developed by development actors. Few private MSME funds, such as Novastar, can finance green MSMEs. These funds have the flexibility of instruments but typically target MSMEs that can absorb slightly bigger ticket sizes, particularly those that offer equity finance looking for MSMEs with a strong growth path. The funds often struggle with the pipeline as limited MSMEs are big or advanced enough to justify investments. However, some funds, such as Novastar, target early-stage businesses and often provide growth capital in later stages.

140. Level of prominence is based on qualitative assessment through country desk review and stakeholder interviews

Figure 19: Illustrative green and greening MSME funds

FUND NAME	KEYS FUNDERS	DESCRIPTION
Compact with Africa Green Business Fund (CwA)	International Climate Initiative (IKI), Nature Conservation and Nuclear Safety (BMU), World Bank, International government, IMF, AfDB	**Overview:** Established in 2017 to increase private sector investments in Africa. For MSMEs, CWA provides capacity building and catalyse private investment in low-carbon innovations through blended financing instruments. Sector priorities for MSME financing includes food security and rural economy, energy, water security, resilient cities and green mobility **Sectors:** Agriculture, energy (including renewable energy), infrastructure, manufacturing, tourism etc. **Location (focus countries):** Africa (Burkina Faso, Cote d'Ivoire, Ethiopia, Ghana, Rwanda) **Ticket size:** Unknown **Financial instruments:** Guarantees, green bonds, equity, concessional and commercial loans **Fund size/prominence:** USD 2k million (initial capital in hopes of unlocking more private sector financing). For example, the fund hopes to catalyse USD 2.42 billion of investments in Cote ˆIvoire in solar energy, biomass, mini-hydro etc. .
Coalition for a sustainable and inclusive recovery of the private sector	AfDB, (West-African Development Bank, Development Finance Institute Canada (DFIC), U.S. Development Finance Corporation (DFC) etc.	**Overview:** Established in 2020 by a group of DFIs to increase financing to MSMEs, including green MSMEs **Sectors:** Agriculture, manufacturing, and services **Location (focus countries):** Africa **Ticket size:** Unknown **Financial instruments:** Not stated, but will channel some of the funding through FSPs for on-lending to MSMEs **Fund size/prominence:** USD 5.55 billion has been committed by 20 DFIs, including AfDB and West African Development Bank (BOAD), to finance MSMEs in Africa
Novastar	FMO	**Overview:** Established in 2014 as a venture capital fund, providing early-stage and growth capital to innovative businesses, including MSMEs **Sectors:** Renewable energy, transport, agriculture, weather analytics, reforestation/agroforestry. **Location (focus countries):** Africa (Kenya, Ethiopia, Uganda, Nigeria, Ghana) **Ticket size:** Flexible – can make seed funding of less than USD 1 million and growth capital of USD 5 million (multiple capital rounds) **Financial instruments:** Venture capital financing (Series A, B etc.) **Financial/prominence:** Has total capital of USD 200 million having recently closed its USD 108 Africa Fund II
BioCarbon Fund	Germany, Norway, Switzerland, United Kingdom, USA	**Overview:** Established in 2013 to fund REDD+ projects such as limiting deforestation, sustainable agriculture, smart land-use planning etc. **Sectors:** Agriculture, afforestation/ reforestation, forest management **Location (focus countries):** Global with a focus on developing countries (Ethiopia) **Ticket size:** Results-based payment on emission reductions **Financial instruments:** Grants, results-based payments **Fund size/prominence:** USD 367 million
Kawisafi Ventures	Acumen, GCF, AXA Investment Managers	**Overview:** A venture capital fund, investing in off-grid solar companies **Sectors:** Renewable energy **Location (focus countries):** East Africa (Kenya, Rwanda) **Ticket size:** USD 2-10 million **Financial instruments:** Equity, grant **Fund size/prominence:** USD 130 million
Land Degradation Neutrality Fund (LDN Fund)	Governments of France, Luxembourg, Norway, Rockefeller Foundation, EIB, French Development Agency, and other public and private investors	**Overview:** Established in 2017 to catalyse private sector investment in land management **Sectors:** Agriculture, sustainable livestock management, agro-forestry, forestry **Location (focus countries):** Global, with a focus on developing countries **Ticket size:** Unknown **Financial instruments:** Mezzanine, equity, loans **Fund size/prominence:** The fund has received commitments of USD 100 million against a target of USD 300 million

Sources: World Bank, Compact with Africa Green Business Fund, 2021; G20 Compact with Africa, Home, accessed July 2022; Compact with Africa, CWA Monitoring Report, 2022; Compact with Africa, CWA Toolkit, 2022; AfDB, Compact with Africa Presentation (Este d'ivoire), 2018; AfDB, Global development finance coalition commits over $5.5 billion for MSME in Africa, 2022; Finance In Common, Coalition for a sustainable and inclusive recovery of the private sector, 2020; Tech Crunch, Novastar Ventures becomes $200M African VC fund after $130M raise, 2020; Novastar, Portfolio, accessed July 2022; GCF, KawiSafi Ventures Fund, accessed July 2022; UNCCD, Land Degradation Fund, accessed July 2022; Mirova, Land Degradation Fund, 2017

COMMERCIAL BANK GREEN FUNDS ANDPRODUCTS

Commercial banks often finance green projects with funding from DFIs for on-lending to green and greening MSMEs. They offer debt financing through loans or asset financing and are unlikely to provide equity financing. Banks tend to fund the greening of MSMEs, such as renewable energy and energy efficiency. Funding for the green economy is typically sourced from development actors for on-lending purposes. They have a far greater reach through their branch network than other green funds. They often do the most lending in most African countries.

Figure 20: Illustrative commercial banks with green MSME funds

BANK NAME	SOURCE OF FUNDING	DESCRIPTION
Banque Agricole et Commerciale du Burkina	Government, GCF	**Overview:** The bank was launched in 2019 by the government of Burkina Faso to increase access to credit for rural population, particularly smallholder farmers. The bank has a dedicated green financing product for renewable energy and energy efficiency, solar pumping, biogas, improved stoves etc. The bank also worked with the GCF for on-lending to MSMEs in the Great Green Wall project to reverse land degradation **Sectors:** Agriculture, renewable energy (solar pumping, biogas, improved stoves, etc) **Location:** Burkina Faso **Ticket size:** Unknown **Financial instruments:** Loans and syndicated credit **Fund size/prominence:** BAGF is part of the USD 178.2 million GCF project to reverse land degradation. The bank was launched in 2019 with capital of 14 billion CFA francs (USD 21.9 million)
Kenya Commercial Bank (KCB)	GCF, IFC	**Overview:** KCB is one of the few banks in Africa accredited by the GCF for on-lending of climate projects between KSH 5 – KHS 25 billion. **Sectors:** Renewable energy, manufacturing, waste management, low carbon technologies, infrastructure, and climate-smart agribusiness **Location:** Kenya **Ticket size:** Recently provided KSH 5 billion (USD 42 million) climate financing to an infrastructure company **Financial instruments:** Loans and asset financing **Fund size/prominence:** KCB can finance projects of up to KHS 25 billion (USD 211 million) through the GCF and has received USD 150 million from IFC for SME climate financing
Mauritius Commercial Bank (MCB)	AFD, EU	**Overview:** The bank has an on-lending facility for green MSMEs funded by the Agence Française de Développement (AFD) and the European Union (EU) **Sectors:** Renewable energy and energy efficiency **Location:** Mauritius **Ticket size:** Project dependent **Financial instruments:** Loans **Fund size/prominence:** EUR 75 million
Finance Trust Bank	Uganda Energy Credit Capitalization Company (UECCC)	**Overview:** The bank has two key in-house green products (Solar Yange Loan and Women's Renewable Energy Loan), both of which finances renewable energy. **Sectors:** Renewable energy **Location:** Uganda **Ticket size:** USD 250 000 – USD 500 000 **Financial instruments:** Loans, asset financing **Fund size/prominence:** This is a bigger program by UECCC, providing concessional loans to other financial institutions such as Finance Trust Bank, Centenary Bank, Stanbic Bank Uganda and Post Bank Uganda

Sources: BASF, BASF Innovations and Services, accessed July 2022; Business Daily, KCB to lend Shilloh in first big green loan financing, 2022; MCB Group, Agence Française de Développement (AFD) grants a new green line of credit of €75 million (Rs 3 billion) to MCB and SBM, 2018; Finance Trust Bank, Solar Yange Loan, accessed July 2022; Finance Trust Bank, Women's Renewable Energy Loan, accessed July 2022; The Exchange, Finance Trust Bank introduces Solar Yange loan product, 2020; UECCC, Solar loan program, 2022.

NATIONAL GREEN FUNDS

National green funds have a strong government mandate as they are often publicly financed. Their ticket sizes are often large, which can exclude the majority of MSMEs. However, some funds reserve a portion of funding for MSMEs, such as the Development Bank of Southern Africa (DBSA). They offer a myriad of instruments, such as debt and equity financing. In other cases, they offer grants to help build a business case for further financing from other local financial institutions or DFIs, donors and development partners. They also have guarantees to help increase bank lending to the green economy.

Figure 21: Illustrative national green funds

FUND NAME	SOURCE OF FUNDING	DESCRIPTION
Development Bank of Southern Africa's Green Fund and Climate Finance Facility (South Africa and Southern Africa)	Government of South Africa, GCF	**Overview:** DBSA manages the Green Fund that was established by the Department of Forestry, Fisheries and Environment (DFFE). DBSA also has a Climate Finance Facility and Embedded Generation Investment Programme (EGIP) in partnership with the GCF **Sectors:** Renewable energy, storage, green buildings, transport, water, and waste **Location:** South Africa **Ticket size:** Up to USD 70 million for the Green Fund **Financial instruments:** Grants, equity, loans and guarantees **Fund size/prominence:** Green Fund – USD 58 million (ZAR 1.1 billion); Climate Finance Facility – USD 170.6 million; EGIP – USD 537 million
FONERWA (Rwanda)	Government of Rwanda, UNDP, World Bank, KFW, GCF etc.	**Overview:** Developed by the government of Rwanda in 2012 to help mobilise and finance climate action **Sectors:** Water, renewable energy, CSA, biomass replacement, transport, waste, and green cities **Location:** Rwanda **Ticket size:** Up to USD 300 000 (25% match funding required) **Financial instruments:** Grant, innovation grant and credit line **Fund size/prominence:** USD 247 million mobilised to finance 46 projects
Uganda Energy Capitalization Credit Company (UECCC)	Government of Uganda, Private Sector Foundation of Uganda (PSFU)	**Overview:** Developed by the government of Uganda to finance renewable energy projects and rural electrification **Sectors:** Renewable energy **Location:** Uganda **Ticket size:** Unknown **Financial instruments:** Partial risk guarantee, bridge financing, subordinated debt finance, liquidity refinancing, solar financing **Fund size/prominence:** UECCC has worked with 14 FSPs to finance over 10 000 solar systems worth USD 1.3 million; provided USD 636k for working capital and guarantees; provided 68 loans for biogas through EBO Sacco. To date, UECCC has facilitated over 14 000 loans/energy connection benefitting over 871 000 people in Uganda

Sources: Tech Crunch, M-KOPA raises $75M as it clocks 2 million customers across four African markets, 2022; M-KOPA, About, accessed Jul 2022; Disrupt Africa, Nigerian energy start-up secures investment from Shell-owned fund, 2020; Dalberg, Stakeholder interviews, 2022; EcoPost, Products and Services, accessed July 2022

PAYGO GREEN PRODUCTS

Given that MSMEs may not qualify for some of the funds above, PAYGO models have been targeting businesses requiring small ticket sizes. This model often does not require collateral as the financing is backed by an asset, such as a solar kit. Their small ticket size means they are accessible to most MSMEs. PAYGO providers are often private companies that pool funds from both development actors and private investors.

Figure 22: Illustrative PAYGO solutions for green products

FUND NAME	SOURCE OF FUNDING	DESCRIPTION
M-KOPA	CDC, Lightrock, LocalGlobe, HEPCO Capital Management etc.	**Overview:** M-KOPA provides renewable energy product through a pay-as-you-go (PAYG) model. **Sectors:** Renewable energy **Location:** Kenya, Uganda, Nigeria and Ghana **Ticket size:** Repayments can cost at least USD 218 for a solar product **Financial instruments:** Asset financing **Fund size/prominence:** M-KOPA has provided solar lighting, energy efficient televisions and fridges etc. to over 1 million customer. The company recently raised USD 75 million to increase its geographical reach and product offering
InfiBranches	All On (Shell), IFC, Power Africa, Shell Foundation etc.	**Overview:** Offers PAYG model for renewable energy products **Sectors:** Renewable energy **Location:** Nigeria **Ticket size:** Unknown **Financial instruments:** Asset financing **Fund size/prominence:** InfiBranches has provided renewable energy products to over 1 million customers worth USD 120 million. The company recently secured USD 2 million funding to increase its operation i.e. network agent expansion, product development etc.
EcoPost	Opes Impact Fund and Blue Haven Initiative	**Overview:** Established in 2009 as a company that converts plastic waste into other materials such as post and rail fencing, pallets, picket fences etc. EcoPost started offering start-up kits (shredder, weighing scale, and smartphones) to other recyclers on a PAYGO model **Sectors:** Waste management **Location:** Kenya **Ticket size:** 30% upfront fee (value of the kit) **Financial instruments:** Asset financing **Fund size/prominence:** MSMEs EcoPost has supported to acquire waste management assets have increased their income 3 times within 6 months. The company has recycled and/or facilitated recycling of over 3kg of plastic and hopes to recycle over 20.9 million kgs over the next 10 years

Sources: Tech Crunch, M-KOPA raises $75M as it clocks 2 million customers across four African markets, 2022; M-KOPA, About, accessed Jul 2022; Disrupt Africa, Nigerian energy start-up secures investment from Shell-owned fund, 2021; Salberg, Stakeholder interviews, 2022; EcoPost, Products and Services, accessed July 2022

GREEN ACCELERATOR FUNDS

Green dedicated accelerators also target MSMEs who often struggle to get financing. Accelerators help prepare MSMEs to access financing from other financial institutions and offer business development services (BDS) that help MSMEs prepare bankable projects, often through grants sourced from development actors.

Figure 23: Illustrative green accelerator funds

FUND NAME	SOURCE OF FUNDING	DESCRIPTION
Uganda Green Enterprise Finance Accelerator	EU, Adelphi, SEED, Finding XY	**Overview:** UGEFA was established in 2020 to help facilitate MSME financing from the banking sector by creating bankable projects through BDS **Sectors:** Renewable energy, manufacturing, waste management, tourism, transport **Location:** Uganda **Ticket size:** Covers 1/3 of the value of a loan offered to an MSME by a bank **Financial instruments:** Grant **Fund size/prominence:** The accelerator is expected to support 200 MSMEs
The Land Accelerator (Africa)	World Resource Institute (WRI), AFR100, Findje	**Overview:** Established in 2018 to help connect MSMEs/farmers involved in restoring degraded forests, farmland and pasture to access financing through boot camps (training on sustainable practices) and personalised mentorship **Sectors:** Agriculture, forestry **Location:** Africa (Ghana, Kenya, Ethiopia, Rwanda, South Africa, Uganda) South Asia, and Latin America Ticket size USD 5 000 and private and public sector investments **Financial instruments:** Innovation grant **Fund size/prominence:** The project has received over 1 400 application in Africa and has restored 127 000 hectares of degraded land globally

Sources: UGEFA, About, accessed July 2022; Dalberg, Stakeholder interviews, 2022; WRI, The Land Accelerator, accessed July 2022; WRI, Our Companies, accessed July 2022

THE CRUCIAL ROLE OF GUARANTEES IN CATALYSING GREEN FINANCE FOR MSMES

Guarantees can help cover the risk of lending to market segments deemed risky by traditional financiers to increase financing in that market segment. To attract private capital that would not invest in a specific sector (e.g., MSMEs) or assume the amount of project risk on its own, guarantees provide credit enhancement and take on a portion of the risk in the case of losses or default.[141] Guarantees, therefore, become important in increasing financing to MSMEs that have often struggled to access funding from financial institutions. They are also important in funding business models that do not have a proven track record, such as those offered by green MSMEs. To increase financing to green MSMEs and greening MSMEs, development partners can offer below-market rate guarantees that can increase the participation of financial institutions in the green economy.
Guarantees and risk insurance have been effective in catalysing green finance from public and private actors in Africa. Two key guarantee funds have been instrumental in attracting private capital to finance the green economy and MSMEs in Africa.

- **The Africa Clean Energy Finance Initiative** (ACEF) raised over USD 400 million from public and private actors to finance 27 early-stage clean energy projects.[142] The Overseas Private Investment Corporation (OPIC), now part of DFC, provided political risk insurance and loan guarantees of up to USD 250 million, enabling ACEF to mobilise USD 30 of financing for every USD 1 from DFC.
- **The African Guarantee Fund** (AGF), recently formed, has mobilised USD 2.7 billion in private sector capital for SME financing, of which USD 200 million has been for green financing.[143] The guarantee has been effective in ensuring FSPs increase SME financing, particularly for SMEs unable to provide collateral. AGF has partnered with over 160 FSPs in 40 countries, extending financing to SMEs. Capacity development and preparation grants have been critical success factors of these guarantee funds.

141. USAID, Catalysing Private Finance for Climate Action: Learning Brief, 2021 142. DFC, OPIC's Africa Clean Energy Financing Facility Supported 27 Early Stage Projects Since 2012, 2017 143. AGF, Annual Report & Financial Statements, 2020

Figure 24: Illustrative key guarantee funds in Africa

NAME	MAIN FUNDER(S)	GUARANTEE AND RISK INSURANCE MODEL	MOBILISATION EFFECTS
Africa Clean Energy Finance Initiative (ACEF)	U.S. International Development Finance Corporation	ACEF provided USD 20 million grant funding for clean energy project preparation i.e. project design and technology assessment, legal and third-party costs DFC provided political risk insurance and loan guarantees of up to USD 250 million to de-risk investments from public and private sector actors The insurance covered government interference such as expropriation, changes in laws, breach of contract by government off-takers, political violence and currency inconvertibility	Overseas Private Investment Corporation (OPIC), which is now part of DFC committed USD 389 million for financing clean energy projects and providing guarantees and risk insurance for investors The de-risking instruments enabled DFC to catalyse USD 434 million from both public and private sector actors This implies DFC was able to mobilise USD 30 for every USD 1 they spent on the project
African Guarantee Fund (AGF)	Ministry of Foreign Affairs of Denmark, Aecid, African Development Bank Group, AFD, IFU, Nordic Development Fund and KFW	AGF has four guarantee products for investments made to SMEs and funds acquired by FSPs for SME on-lending Loan Individual Guarantee: covers 50% (limit of USD 2.5 million) of the financing value to SMEs Loan Portfolio Guarantee: covers 50% (limit of USD 10 million) of the financing value to SMEs Bank Fundraising Guarantee: guarantees funds requested by FSPs from external investors through issuing of bonds (donors, DFIs etc.) for SME on-lending. Cover 50-100% of requested funds, with a limit of USD 10 million Equity Guarantee: first capital loss on equity investments to SMEs. Covers 50% of equity investments with a limit of USD 1 million	The Green Guarantee Facility has catalysed about USD 200 million of private capital for SME investments in clean energy and production, climate smart agriculture (CSA) etc. Overall, AGF has mobilised USD 2.7 billion in private capital and partnered with 169 financial institutions in 40 countries providing financing to SMEs AGF has also partnered with other providers of guarantees such as AFREXIM, ATI, ARIZ/AFD, GUARANTCO and SIDA. In total these partners have provided USD 156 million in guarantees The guarantee has also mobilised funding to hard-to-reach areas, where 50% of SMEs financed are

Sources: Africa Guarantee Fund, Annual Report & Financial Statements, 2020; Africa Guarantee Fund, Our Products, accessed July 2022; DFC, OPIC's Africa Clean Energy Financing Facility Supported 27 Early-Stage Projects Since 2012, 2021; OPIC, ACEF Fact Sheet, n.d.

The guarantees provided by ACEF and AGF have been accompanied by capacity building to ensure they are successful in catalysing public and private sector financing. ACEF provided a USD 20 million project preparation grant to early-stage clean energy companies, supporting them with project design, assessment of their technologies and feasibility studies.[144] AGF provides capacity building to FSPs to help mitigate operational risk associated with lending to the SME sector. To further reduce the risk to the banking sector, AGF provides capacity building to SMEs, such as improving their governance, human capital management, quality control, packaging, financial management, and marketing.[145]

CATALYSING INCREASED FSP UPTAKE OF GREEN FINANCE FOR MSMES

African banks see the potential for green finance as a commercial opportunity. The EIB Banking in Africa survey, published in 2021[146], shows that 54% of African banks apply green finance practices, such as developing stand-alone climate change strategies or integrating climate change into existing ESG strategies.[147] For instance, in line with the KCB Green Agenda, the bank's Sustainability Report highlighted its intention to increase the green finance portfolio by 15% over five years.[148] KCB (Kenya)

144. OPIC, ACEF Fact Sheet, n.d. 145. AGF, Our Products, accessed July 2022 146. The European Investment Bank (EIB) surveyed 78 banks in sub-Saharan Africa in early 2021 147. European Investment Bank, Finance in Africa for green, smart and inclusive private sector development, 2021 148. KCB, 2020 Sustainability Report, 2020

also joined two other African banking institutions, Investec Group (South Africa) and Commercial International Bank (Egypt), as members of the Net-Zero Banking Alliance committed to aligning their lending and investment portfolios with net-zero pathways by 2050 or sooner.[149] The survey also highlights that banks recognise that having and publicising formal climate strategies helps reduce climate-related reputational risks and financial risks. Green products and portfolios such as green credit and green bonds are seen as means to open up opportunities to expand their product offerings and diversify their funding base. In fact, 60% of the surveyed banks see future opportunities to expand their funding through the green bond issuance and green credit lines offered by development finance institutions (Figure 25). Additionally, around 25% of banks provide technical assistance to their clients to assess and mitigate climate risk, a move that has the potential for a positive financial impact on the banks.[150] This is because equipping businesses to address climate change can help them generate higher returns, thus increasing the likelihood of repaying loans.

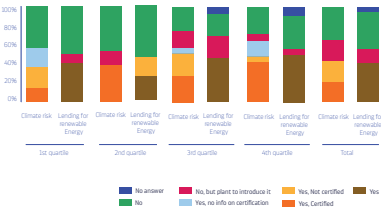
Figure 25: Perception of green finance opportunities for 78 Sub-Saharan African banks

Source: EIB Baking in Africa Survey, 2021

Financial Service Providers (FSPs) are investing in their green finance capacity, particularly for renewable energy and energy efficiency. The 2021 EIB Banking Survey indicates that banks are increasing their capacity to position themselves to take advantage of green finance opportunities. This includes hiring dedicated climate-change personnel, which is especially prevalent in larger banking institutions. Fifty per cent of Sub-Saharan African banks have dedicated staff with a climate-risk focus.[151] Thirteen banks have hired or trained staff with climate risk assessment certifications, such as the Environmental & Social Risk Analysis (ESRA) certification of the United Nations Environment Programme Finance Initiative.[152] Renewable energy and energy efficiency are areas where FSPs see the most apparent opportunities. Green MSME products and services provided by banks typically target renewable energy and energy efficiency.[153] For the renewable energy and energy efficiency sectors alone, 42% of the surveyed banks reported having dedicated staff focusing on opportunities in lending in the sector, and an additional 15% are already considering hiring dedicated staff.

149. UNEP FI, Net-Zero Banking Alliance, accessed July 2022.150. European Investment Bank, Finance in Africa for green, smart and inclusive private sector development. 2021.151. European Investment Bank, Finance in Africa for green, smart and inclusive private sector development, 2021.
152. Ibid. 153. Dalberg analysis, 2022

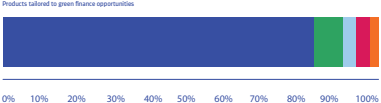
Figure 26: Climate change-specific personnel by bank total assets quartile



Source: EIB Baking in Africa Survey, 2021

Despite this progress, green lending remains a small portion of FSPs' loan portfolio. Only 17% of banks have specific green financing products.[151] Even among these banks, green financing products only account for a small percentage of their portfolio. For 45% of the banks, estimates only amounted to 2% of their portfolio, and for the remaining 55% the figure ranged from 2% to 20%.

Figure 27: Products tailored to green finance for 78 Sub-Saharan African banks

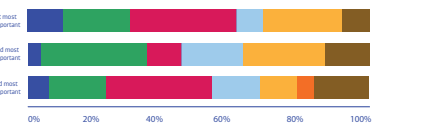


Source: EIB Baking in Africa Survey, 2021

152. Ibid. 153. Dalberg analysis, 2022 154. Ibid.

Three primary drivers limit the banking sector from investing more effort in providing green finance products. The first driver is the lack of demand for green finance products. This was highlighted by 32% of the banks surveyed by EIB as the most important constraint they face in investing in the sector.[155] The local demand for green finance is not mature enough for FSPs to offer green funding.[156] Another limiting driver is the lack of data, tools, and models to assess climate risk, which was reported by 52% of banks. Commercial banks lack the assessment toolkit to assess green projects.[157] Banks also highlight the need to understand the MSME pipeline for green projects, as MSME clients do not typically approach them with green businesses.[158] Finally, lack of expertise in providing such products is seen as a constraint by over 20% of banks.[159] While entities such as the Development Bank of Southern Africa (DBSA) may have the technical expertise in various sectors, allowing them to conduct due diligence, evaluate projects and determine the viability of new business models and technologies, this is not the case for many commercial banks.[160] Commercial banks also report not having internal expertise in the green economy.[161] The bank staff that assess the applications sometimes do not have the ability to evaluate with a green focus.

Figure 28: Main constraints faced by banks in identifying, assessing, and addressing climate risks and opportunities



Source: EIB Banking in Africa Survey, 2021

CARBON FINANCE

FLOWS OF CARBON FINANCE

Globally, there has been a recent surge in voluntary carbon credits in response to climate commitments from large corporates. There have been global initiatives[162] (e.g., Race to Zero, Glasgow Financial Alliance for Net Zero (GFANZ), Net-Zero Banking Alliance, Net-Zero Asset Owner Alliance, and the Net-Zero Insurance Alliance) for companies to meet net-zero targets by 2050 and halve emissions by 2030.[163] Companies are also seeking to get ahead of the curve on anticipated regulation. For example, the European Union (EU) has implemented a Carbon Border Adjustment Mechanism (CBAM), which imposes a "carbon tax" on imported goods such as cement, fertilisers, and electricity

155. European Investment Bank, Finance in Africa for green, smart and inclusive private sector development, 2021 156. Dalberg, Stakeholder interviews, 2022
157. European Investment Bank, Finance in Africa for green, smart and inclusive private sector development, 2021 158. Dalberg, Stakeholder interviews, 2022
159. European Investment Bank, Finance in Africa for green, smart and inclusive private sector development, 2021 160. Dalberg, Stakeholder interviews, 2022
161. *Ibid.* 162. UNEP, The moment private finance promised to lead, 2021 163. UNFCCC, Race to zero, accessed July 2022

generation.[164] Other countries are also developing their own CBAM, such as Canada and Japan, to avoid carbon leakages. In addition, shifting consumer expectations are rapidly pushing companies to decarbonise. A recent survey conducted by First Insight and the Baker Retailing Center shows that over 70% of consumers consider the sustainability of products when making a purchase and are willing to pay more for such products.[165] Such regulatory changes and consumer expectations will increase the demand for carbon credits as importers will need to buy carbon certificates to offset the emission in the production process.

These commitments and regulatory pressure present opportunities for MSMEs in Africa. In Africa, voluntary carbon offset volumes have increased from 5.4 MtCO2e in 2016 at a price of USD 4.1[166] to 23.9 MtCO2e at an average price of USD 5.52 by 2021.[167] This represents an increase in volumes by over 300% and a 35% increase in prices, indicating increased demand. On average, carbon credits prices are higher than those in Asia (USD 1.2 in 2020), and Latin America and the Caribbean (USD 3.8 in 2020) but lower than those in Europe (USD 6.1 in 2020), North America (USD 6.2 in 2020), and Oceania (USD 19 in 2020).

A range of MSMEs are already using this financing to develop new models for growth. Forest and land use presents the highest opportunity as global traded volumes have increased from 36.7 MtCO2e in 2019 with an average price of USD 4.33 per ton to 115 MtCO2e at an average price of USD 4.73.[168] As such, the sector accounted for 52% of traded volumes in 2021 globally, as depicted in the figure below. Despite agriculture accounting for 2% of traded volumes, it is growing. Traded volumes in agriculture have increased by 876% between 2020 and 2021. Given that most GHG emissions come from agriculture and land use change in Africa, MSMEs in the sector can benefit from greening their practices and earn additional revenue through voluntary carbon markets. Agricultural MSMEs in Ethiopia, for example, are already implementing forest and land use practices under the BioCarbon Fund project. These MSMEs are earning revenue through carbon credits and are part of the Nespresso AAA Sustainable Quality Program, where Nespresso sources their coffee beans sustainably.[169] In South Africa, more than forty (40) farmers in over eight (8) agricultural sectors are earning carbon credits through regenerative agricultural practices (e.g., reducing nitrogen use per hectare and tilling) under the AgriCarbon programme managed by the Climate Neutral Group (CNG).[170] Credits are verified by Verra and target European companies looking to offset their emissions.[171] Starsight Energy in Nigeria is earning carbon credits through the greening of companies with solar, battery and diesel hybrid systems.[172]

Box 4: Carbon finance fund

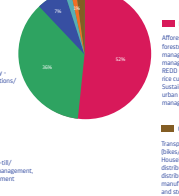
The BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL), launched in 2013, is one of the World Bank Carbon Finance Unit's funds. ISFL provides catalytic funding through grant-based technical assistance, capacity building, and results-based payments for verified emission reductions through an Emissions Reduction Purchase Agreement (ERPA). The fund has programmes in Ethiopia, Zambia, Colombia, Indonesia, and Mexico.
BioCarbon Fund has leveraged USD 98.8 million from donors and private investors. The fund purchases carbon emission reduction credits for private investors through an ERPA from a project. Among other benefits, the programme has proved to have an impact on income and livelihood. Approximately 62,000 people have received access to benefits related to the results-based payments. ISFL expects potential payments for up to 36 million tons of verified emission reductions for four of the five countries.

Sources: USAID, Catalyzing Private Finance for Climate Action: Learning Brief, 2021; BioCarbon Fund, 2021 Annual Report, 2021

164. European Commission, Carbon Border Adjustment Mechanism: Questions and Answers, 2021 165. First Insight, The Sustainability Disconnect Between Consumers & Retail Executives, 2022 166. Ecosystem Marketplace, Prices & Volumes of Traded Carbon, accessed August 2022 167. Ecosystem Marketplace, State of the Voluntary Carbon Markets 2021, 2021 168. Ibid. 169. BioCarbon Fund, 2020 Annual Report, 2020 170. CNG, How it works, accessed July 2022 171. Engineering News, Dairy farmers eye carbon credits while curbing emissions, 2022 172. ESI Africa, Nigeria: Carbon credit certification for clean energy company, 2021

Figure 29: Global volume of voluntary carbon credits and project examples

Voluntary carbon market size. Volume, MtCO2e, 2021



There are further wide-ranging opportunities. Carbon credits can be applied wherever the case can be made that activity either resulted in emissions being avoided or removed, as long as this can be measured with suitable accuracy. This opens up wide-ranging applications for green businesses – e.g., waste businesses that reduce carbon and clean cookstove. For example, the Mariannhill landfill in Durban, South Africa, generates electricity from the landfill gas that replaces electricity generated from fossil fuels in the municipality, reducing emissions from the landfill.[173] The World Bank has already purchased 337 000 carbon credits from this initiative. Clean cookstoves have been estimated to reduce up to 4 tonnes of carbon a year per household through avoided consumption of wood.[174] In Kenya, the Livelihoods-Hifadhi project, which has distributed 60 000 clean cookstoves[175], is expected to earn carbon credits by avoiding over 1 million tons of CO2 for a period of 10 years.[176]

CATALYSING INCREASED FLOWS OF CARBON FINANCE TO MSMES

Historically, several factors have constrained market growth, which are steadily being lifted. The regulatory framework governing the ownership of carbon credits was unclear, resulting in double counting. The demand for carbon credit was weak due to a lack of regulation. Measurement standards were fragmented, resulting in inconsistent measurement regimes. For MSMEs, in particular, setting up carbon credits projects is a lengthy and complex process for which they are unlikely to be well-equipped.

Firstly, there was no global regulatory framework governing the ownership of the decarbonisation rights between governments and the private sector when a private entity undertakes an activity for carbon credits. However, an amendment to Article 6 of the Paris Agreement addresses this issue by eliminating the double counting of credits through an accounting mechanism called 'corresponding adjustments', thereby assigning ownership to an entity or specific government targets.[177] This means that when a host country sells its carbon offsets globally, it must deduct those credits from its national climate targets to be claimed by the purchasing country or company.[178]

173. World Bank, Generating Electricity from Landfill Gas in Durban, 2015 174. EcoAct, Cleaner cookstoves play a vital role in transition to low-carbon economy, 2020 175. EcoAct, Hifadhi-Livelihoods Project, accessed August 2022 176. EcoAct, Kenyan Women Are Frontrunners In The Race For A Carbon Neutral Paris Marathon, 2018 177. Carbon Market Watch, FAQ: Deciphering Article 6 of the Paris Agreement, 2021 178. Compensate, What is double counting and why is it such a big deal?, 2021

Historically, several factors have constrained market growth, which are steadily being lifted.

Photo courtesy of UNEP

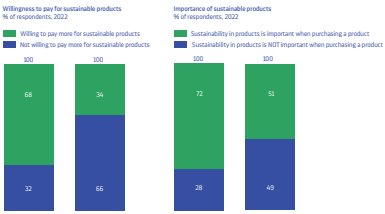
Secondly, there were uncertainties in demand for carbon credits due to a lack of regulatory pressure. However, global commitments, increased regulatory measures and the recent Russia-Ukraine war are increasing the demand for carbon credits. The invasion of Ukraine by Russia has led to increases in gas prices, resulting in the use of coal-powered electricity generation in Europe.[179] This has led to an increase in the demand for European Union's Emissions Trading System (EU ETS) permits, with carbon prices more than doubling to EUR 80 per tonne from 2020 prices.[180] As mentioned, regulatory measures such as Carbon Border Adjustment Mechanism (CBAM) in the EU, Canada, and Japan will also increase the demand for carbon credits. As such, demand for voluntary carbon credits is expected to increase 15 times the current demand by 2030, making it a USD 50 billion market.[181]

Furthermore, markets relied on many small middlemen with inconsistent measurement regimes. As a result, there is a wide variety in prices and quality of credits and distrust from both suppliers and buyers. However, there are now trusted measurement agencies and digital market platforms to improve information flows, such as Verra.

Lastly, setting up carbon credits projects is a complex process that requires expertise that MSMEs are unlikely to possess or access. There are many complex and expensive steps, from first assessing the feasibility of a project to the successful sale of the carbon credits produced.[182] For instance, technical expertise is required to develop the critical Project Design Document (PDD), which highlights the right methodologies for processes such as measurement and calculation of the produced carbon credits and project monitoring, ensuring that the project matches the requirements of the selected certification body, e.g., CDM, Verra, Gold Standard. Moreover, third-party involvement, i.e., independent auditors, is also expected as part of processes such as validation of the project's design (PDD) and verifications of emission reductions as stipulated by the standard(s) of choice. However, initiatives such as the BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL) are offering catalytic capital and funding capacity building for carbon projects.

179. Reuters, Global carbon markets value surged to record $953 bln last year-Refinitiv, 2022 180. Ibid. 181. Carbon Credits, Demand for Carbon Credits Could Increase +15X by 2030 and 100X by 2050, 2021 182. Michiel Arnoldus and Roger Bymolt, Demystifying Carbon Markets – A Guide to Developing Carbon Credit Projects, 2011; WIEGO, Carbon Finance for Waste Picker Organizations: Feasibility and Issues, 2023; Michaelowa A. et al., Overview and comparison of existing carbon crediting schemes, 2019

Figure 29: Global volume of voluntary carbon credits and project examples



As the markets mature, there is an enormous opportunity for Green MSMEs to take advantage of new capital flows but doing so will require support. Carbon finance entails a new set of skills and networks and requires upfront financing to plan and develop measurement frameworks. The BioCarbon Fund project, for example, provided technical capacity-building support in their countries of operation to help set up Measurement, Reporting and Verification (MRV) systems that will ensure emissions are correctly captured for farmers to benefit.[183]

183. Ibid

V. RECOMMENDATIONS

V. RECOMMENDATIONS

This report's recommendations build on the scoping study by the African Development Bank (AfDB) on the potential of Green Banks and Green Funds as critical tools in scaling up green finance on the continent.[184] While the two facility types have differences in how they are structured, they are both capable of directing zero to low-cost finance and capacity building to green or greening projects. As for Green Funds, they mainly provide grants and concessional financing to better catalyse funding from the private sector.[185] By recommending the formation of new green FSPs to serve MSMEs, this report reflects the need to develop these Green Funds. Separately, Green Banks typically provide capital at a cost matching the risk associated with the projects.[186] While Green Banks can be formed as new institutions, an efficient method is to equip existing banks to host the Green Bank. Therefore, this report's second recommendation entails equipping banks to transition to using the Green Bank model.

Three sets of complementary actions are recommended to expand the access of green finance to MSMEs.

1. Develop new, green financial service providers mandated to serve the needs of MSMEs in African countries
2. Strengthen the ability of FSPs in African countries to access the surge of green-oriented finance being made available in Africa
3. Improve the ability of MSMEs to access green finance facilities

CHALLENGE SUMMARY

Financial Service Providers (FSPs) in African countries are recognising and seeing an opportunity in the increasing availability of green-oriented finance. Green finance flows from public actors (such as DFIs, donors, and multilateral banks) have increased by a compound annual growth rate (CAGR) of 28% between 2015 and 2020, increasing from USD 4.2 billion in 2015 to USD 14.5 billion by 2020.[187] Multilateral development banks such as African Development Bank (AfDB) are also starting to have green-oriented funds to finance green companies, including MSMEs. For example, AfDB committed over USD 6.7 billion in green financing in Africa between 2015 and 2020.[188] Commercial banks are also starting to increase green financing, particularly in renewable energy. More than 20% of banks' overall portfolios in East Africa (12%) and Southern Africa (7%) are made up of renewable energy.[189] Over 80% of commercial banks are also looking to have a formal climate strategy to take advantage of opportunities in the green economy.[190]

However, a combination of skill gaps and perceived lack of demand have limited further efforts to take advantage of this opportunity. Most banks in Africa do not have the expertise to finance the green economy. Over 50% of banks in Africa cite a lack of data, tools, and models as a constraint on financing the green economy. This limits their ability to understand the full array of green opportunities and therefore choose not to finance. Moreover, 32% of banks indicate that there is no demand for green products from businesses. As a result, banks are unlikely to develop green products and services.

184. AfDB, Potential for Green Banks & National Climate Change Funds in Africa - Scoping Report, 2021 185. Ibid. 186. Ibid. 187. OECD, Climate Change: OECD DAC external development finance statistics, accessed June 2022 188. Ibid. 189. EIB, Finance in Africa: For green, Smart and Inclusive Private Sector Development, 2021 190. Ibid. 191. EIB, Finance in Africa: For green, Smart and Inclusive Private Sector Development, 2021

Financial sector institutions struggle to serve MSMEs due to perceived risk and costs to do so. The rate of MSMEs in Africa is high, with 70% of MSMEs expected to fail within five to seven years in South Africa, for example.[192] This discourages banks from lending to MSMEs as the likelihood of default is high and cited by 17% of financial institutions as a constraint to lending to MSMEs.[193] MSMEs also tend not to have robust reporting (or, financial records), resulting in limited information for banks to assess risk. This makes them costly to assess and financial institutions prefer not to serve them.

Furthermore, African MSMEs seeking to take advantage of green opportunities are generally new, using technologies that FSPs are uncertain of and have significant market risk. Green MSMEs typically do not have sufficient balance sheets to be considered for financing by local financial institutions or green funds.[194] They also pose traditional MSME market risks such as default and failure rates. Critical green sectors that have a large presence of MSMEs also tend to be difficult to lend to, such as agriculture and integrated waste management. Hence, financial institutions prefer to develop and lend to special purpose vehicle structures with long-term contracts.

- Agriculture: The agricultural sector receives less than 3% of bank credit in Africa[195] despite being responsible for about 57% of Africa's emissions due to unsustainable practices.[196] The risk of financing is twofold:[197]
  - Systemic risks: The sector is prone to environmental risks such as droughts and floods, which may impact revenue and, therefore, ability to repay loans.
  - Market risks: The volatility of prices in the market, trade policies that can negatively impact exports and general access to markets (for example, farmers without storage facilities can experience high post-harvest losses).

- Integrated waste management: The sector is highly concentrated with informal waste pickers and, as a result, unlikely to be financed by banks due to a lack of information, such as financial statements. Investors also lack confidence in investing in the sector as they believe the government does not fully understand project costing and cost recovery.

- Cross-laminated timber (CLT)/Mass timber: The construction sector can use alternative materials such as CLT to avoid emissions from traditional materials (cement). A typical timber house has the ability to lock up 19 tonnes of CO_2,[198] which MSMEs in the sector can use to earn avoided emission carbon credits. However, the technology is still nascent and not widely adopted in Africa. Most CLT is produced in Europe and North America for small to medium-sized multi-family housing and public and industrial facilities.[199] Lack of demand for this technology can discourage local financial institutions from lending to the sector.

192. ResearchGate, The causes and impact of business failure among small to micro and medium enterprises in South Africa, 2019 193. EIB, Banking in Africa, 2020 194. Dalberg, Stakeholder Interviews, 2022 195. Making Finance Work for Africa, Agricultural Finance, accessed July 2022 196. AfDB, Drivers of Greenhouse Gas emissions in Africa: Focus on agriculture, forestry and other land use, 2020 197. *Ibid.* 198. Sustainable Lumber Co., Locking up carbon and unlocking the full potential of timber, 2017 199. Research Gate, L. Muszynski et al, Insights into the Global Cross-Laminated Timber Industry, 2017

1. DEVELOP NEW, GREEN FINANCIAL SERVICE PROVIDERS MANDATED TO SERVE THE NEEDS OF MSMES IN AFRICAN COUNTRIES

National Green Funds that are supported by the government and mandated to prioritise green financing have emerged as a critical tool to expand access to green capital globally, particularly within Africa. Green Funds are catalytic finance facilities designed to facilitate investment in green projects. They help channel finance towards climate change projects that align with the country's distinct context. As Green Funds are not typically aiming for financial return, they are an effective vehicle to deliver zero-to-low-cost financing using grants and concessional financing instruments. Where there is no vibrant banking sector, Green Funds can help accelerate finance to green and greening MSMEs by having a dedicated mandate to serve them.

The DBSA Green Fund and Rwanda Green Fund (FONERWA) are prominent examples of Green Funds in Africa. The Green Fund is a national fund aiming to facilitate South Africa's transition towards a green economy. The fund is managed by the Development Bank of Southern Africa (DBSA)[200], following a Memorandum of Agreement with the Department of Fisheries, Forestry and Environment (DFFE). The fund is designed to prioritise projects which align with climate policies and goals, hence the alignment of its investment criteria with the National Development Plan and the Sustainable Development Goals (SDGs).[201] The fund provides a mix of non-financial as well as financial products such as recoverable and non-recoverable grants, concessional loans, and equity for projects from the early stages of development to when they are scaling up. Rwanda has established the Rwanda Green Fund as a financing mechanism for environmentally sustainable, climate resilient and green economic growth. The fund offers three financing instruments, two of which are accessible to the private sector (i.e., innovation grants and below-market-rate credit lines).

200. DBSA is wholly owned by the South African government and gets its mandate from the country's Department of Fisheries, Forestry and Environment (DFFE)
201. DBSA, Development Bank of Southern Africa Unlocks the Green Fund, n.d.

Figure 31: South Africa's Green Fund and Rwanda's FONERWA

	GREEN FUND	RWANDA GREEN FUND (FONERWA)
ESTABLISHMENT	2012	2012
COUNTRIES	South Africa	Rwanda
MANAGING ENTITY	Development Bank of Southern Africa (DBSA)	FONERWA
INITIAL CAPITALISATION	ZAR 1.1 billion	USD 36 million
INSTRUMENTS	Technical and business support (for any project stage), recoverable grants (for planning & preparation and implementation & launch stages), equity and loans (for implementation & launch and expansion stages), guarantees (for expansion stage)	Innovation grants (25% match funding), credit line (11.45% interest rate and 30% match funding) and grants
TICKET SIZES	ZAR 25 million for project preparation support or feasibilities and technical support; ZAR 70 million for investment funding	USD 300 000
TENOR	Maximum of 15 years adjusted to match the project's economic and risk profile	N/A
FUNDERS (NON-EXHAUSTIVE)	Government of South Africa	Government of Rwanda (GoR), Foreign, Commonwealth & Development Office (FCDO), German Development Bank (KfW), AfDB's Least Developed Countries Fund (LDCF), United Nations Development Program (UNDP), the Green Climate Fund (GCF), World Bank, GIZ, Climate and Development Knowledge Network (CDKN), Development Bank of Rwanda (BRD), Sida, GGGI (Global Green Growth Institute), and Adaptation Fund

Note: FONERWA: FCDO was formerly known as UK Aid Department for International Development (DFID). Grants are only provided to public institutions and non-governmental organisations (NGOs). USD 300 000 is the maximum value for innovation grants.
Sources: DBSA, The Green Fund, accessed August 2022; FONERWA, FONERWA, accessed August 2022; FONERWA, Who We Are, accessed August 2022; FONERWA, Rwanda Green Fund (FONERWA), 2021; AfDB, Potential for Green Banks & National Climate Change Funds in Africa – Scoping Report, 2021

Many African countries have related funds with mandates that are not focused on green financing only. For instance, Ethiopia introduced the Climate Resilience Green Economy (CRGE) Facility in 2012, with a significant amount of resources directed toward climate change adaptation and resilience.[202] Some funds have energy mandates or sit under the broad umbrella of rural electrification funds. This includes the Uganda Energy Capitalisation Credit Company (UECCC) in Uganda, Fonds d'Electrification Rurale (Rural Electrification Fund) in Benin, Fundo National de Energia (FUNAE) in Mozambique, Fonds de Transition Energétique (Energy Transition Fund) in Tunisia, and the Rural Electrification Fund in Zambia.[203] While not explicitly dedicated as Green Funds, these institutions may still fall in the category as they perform services that support climate finance goals.

202. GGGI, GGGI Technical Report No. 9: Review of GGGI's Experience to Design and Operationalize National Financing Vehicles to Finance Climate and Green Growth Policy Implementation, 2019; CDKN Africa, Reflecting on Ethiopia's climate finance readiness journey, 2017 203. AfDB, Potential for Green Banks & National Climate Change Funds in Africa – Scoping Report, 2021

Existing national policies and strategies are critical enablers of the formation of Green Funds. For instance, Rwanda's Organic Law No.4/2005 called for the establishment of FONERWA, and the fund was fully established by law No.16/2012 (the FONERWA Law).[204] DBSA's Green Fund materialised due to a policy commitment to support South Africa's transition to a low carbon and greener economy.[205] The policy commitment led to DBSA working closely with the Department of Environmental Affairs (DEA), and the Economic Development Department and Industrial Development Corporation to identify green economy programmes and resource requirements for the transition. From this process, DBSA published a report that kickstarted the DEA and DBSA's efforts into a financing pathway for the transition, which led to the formation of the Green Fund. As for Ethiopia's Climate Resilience Green Economy Initiative (CRGE) Facility, the fund was formed to mobilise finance required for the CRGE strategy, which was a path to achieve the country's plan to reach middle-income status by 2025 (Ethiopia's Growth and Transformation Plan).

This report recommends that national Green Funds have several defining features in order to serve MSMEs. These include public finance capitalisation, flexible capital offerings, technical expertise, direct investment and on-lending, and independence from the government (Figure 32).

204. Centre for International Development & Training (CIDT), Creation of the National Fund for Climate and Environment (FONERWA): Support to the Fund Management Team, 2010. 205. N Mohamed et al., The Green Fund of South Africa: Origins, establishment and first lessons, 2014. 206. GGGI, GGGI Technical Report No. 9: Review of GGGI's Experience to Design and Operationalize National Financing Vehicles to Finance Climate and Green Growth Policy Implementation, 2019

Figure 32: Defining features of Green Funds

Green Funds can benefit from scale economies by serving multiple segments. Green-oriented funds are expensive to set up due to issues such as transaction costs. To minimize transaction costs, Green Funds can also focus on larger-scale projects aside from MSME initiatives. The funds can serve projects such as the reforestation initiatives of the AFR100 (African Forest Landscape Restoration Initiative) and larger-scale infrastructure investments in renewables.

As a leading actor in green finance in the region, AfDB is continuing its efforts to expand green finance facilities by setting up the African Green Finance Facility Fund (AG3F).[207] The initiative was designed after COP26 and is expected to launch in 2023. The program's pillars include providing technical assistance for local governments and financial institutions to set up green finance facilities, such as Green Funds and Green Banks, by helping to design, set up and capacitate the teams and provide the roadmap to mobilise resources to finance the facility.[208] The second pillar is to provide capitalisation for the green financing facilities through equity participation or subordinated debt. The third pillar is to provide concessional resources and de-risking instruments to enable private investors to participate in green transactions. AfDB is currently mobilising resources to create the fund.

207 FONERWA, Rwanda Green Fund Shares Knowledge And Experience With Burkina Faso, 2019
208. FONERWA, Rwanda Green Fund Shares Knowledge And Experience With Burkina Faso, 2019

However, awareness and momentum are still needed for countries to establish dedicated Green Funds. Building on the recent scoping study by AfDB, "Potential for Green Banks & National Climate Change Funds in Africa", advancing the exploration and development of Green Funds in Africa will require resources. The resources could be used to promote these green finance facilities through a set of supporting actions such as technical assistance, awareness raising, as well as coordination and lesson sharing to allow for replication in more markets. The African Green Finance Facility Fund (AG3F) is a step in the right direction, with activities such as technical assistance. There have also been instances of lesson sharing between different national institutions. For instance, in 2019, the Burkina Faso Environmental Interventions Fund attended a knowledge-sharing workshop to share experience in Rwanda's green growth and climate resilience journey, which included in-depth insight into the working of FONERWA.[219]

There is a need for appropriately mandated institutions to take a leadership role in coordinating and driving initiatives to ensure the rapid uptake of green funds throughout the region. The institutions can help guide and link relevant stakeholders to ensure the successful exploration and development of Green Funds. Such actors include governments and Development Finance Institutions (DFIs). Governments need to ensure clear strategies and investment guidelines exist for the sectors that the private sector should prioritise. The government needs to ensure there is clarity on the national goals, including the Sustainable Development Goals and the Nationally Determined Contributions, and what is needed to achieve the goals. This sends the message to investors that it is safe to invest in certain sectors. In contrast, DFIs need to support financial institutions (FIs) in three stages: start with technical assistance, followed by help with resource mobilisation, and then providing concessional resources and de-risking instruments.

2. STRENGTHEN THE ABILITY OF EXISTING FSPs IN AFRICAN COUNTRIES TO SERVE GREEN AND GREENING MSMEs

While developing new Green Funds is a critical intervention in expanding green finance access for MSMEs, these facilities alone will not be sufficient to address MSME needs.[220] Therefore, it is critical to support existing financial service providers (FSPs) to green their business operations, ultimately enabling these FSPs to create products that reach and solve the needs of green and greening MSMEs. Additionally, Green Funds can provide catalytic capital to support these FSPs in the greening process. Two critical complementary actions are needed to strengthen existing FSPs' ability to serve Green and Greening MSMEs: (1) Equip FSPs to access the increasing flows of green finance and identifying opportunities to put that money to use; and (2) Provide the instruments and technical capability to de-risk green lending to MSMEs.

Equipping FSPs to access green finance

FSPs see a lot of opportunity from the increasing availability of green finance, but struggle to understand the market, are not familiar with the fundraising landscape, and do not have the tools to monitor green outcomes. In this light, equipping FSPs to access green climate flows may entail the following activities:

- **Awareness raising for FSPs: Work with FSPs to deepen understanding of the green opportunity.** This includes providing a taxonomy of green businesses, highlighting immediate opportunities in the country, outlining models and instruments working in other geographies, and providing input on key capabilities FSPs need to serve the new market. Training should seek to introduce harmonized definitions and approaches to facilitate dialogue and shared understanding regionally. As part of this work, analytics presenting historical ROIs of green businesses (where data is available) or potential ROIs based on transparent, reasonable assumptions can be a critical tool for making a case for further investment.

219. FONERWA, Rwanda Green Fund Shares Knowledge And Experience With Burkina Faso, 2019 220. This builds on AfDB's Potential for Green Banks & National Climate Change Funds in Africa Scoping Report which reflects that National Climate Change Funds or Green Funds cannot solve the gap in climate finance alone.

There is a need for appropriately mandated institutions to take a leadership role in coordinating and driving initiatives to ensure the rapid uptake of green funds throughout the region.

Photo courtesy of UNEP

• Opportunity identification: Market assessments to understand and size green and greening finance demand and opportunities. This typically takes place early in the design phase of a climate project to evaluate the model and demand for the technology and/or service.

Figure 33: Illustrative opportunity identification project

Sources: INOCAS, Developing a value chain for sustainable palm oil in Brazil, accessed August 2022; USAID, Catalyzing Private Finance for Climate Action: Case Study Analysis, 2021; Initiative 20x20, Producing sustainable palm oil in innovative silvopasture systems, accessed August 2022

• Product development: Deploy technical experts and draw on global and regional innovations to develop innovative green products for MSMEs, particularly in sectors that are difficult to serve.

Figure 34: Illustrative innovative products developed for green and greening MSMEs

INSTITUTION	PRODUCT DEVELOPMENT DESCRIPTION
KOMAZA	**Sector:** Forestry **Problem statement:** Africa's failure to meet the growing wood consumption needs will ultimately force a reliance on imports and further exploitation of natural forests to cover the deficit if domestic wood production does not increase **Solution:** Komaza's Smallholder Forestry Vehicle proposes using funding from debt and equity investors to make smallholder forestry in Africa commercially viable by establishing a Special Purpose Vehicle (SPV). The SPV will reduce the cost of capital by separating the risks of the growth stage (least risky but longest), from the riskier establishment and harvest stages. Komaza would support farmers and offer a guaranteed market, will a portfolio of tree production contracts to the SPV after the highest tree mortality period in exchange for an upfront payment to help with harvesting and scaling tree planting, and thereafter buy back the tree contracts prior to harvest.
Finance Trust Bank	**Sector:** Solar energy **Problem statement:** The limited electrification rate in Uganda disrupts business activities **Solution:** Solar Yange loan was developed in partnership with Uganda Energy Credit Capitalisation Company (UECCC) to enable businesses to green their operation through solar energy. The product offers financing of solar equipment up to the value of USD 250 000 (this was previously capped at USD 500 000).
Access	**Sector:** Clean cooking **Problem statement:** The use of harmful unsustainable fuel such as diesel is high in Nigeria, impacting the environment negatively **Solution:** Access Bank partnered with SMEFUNDS, an international social enterprise, to develop Green Social Entrepreneurship Programme to help developers of clean cookstoves green households and businesses.

Sources: Coalition for Private Investment in Conservation (CPIC), Reducing deforestation through a smallholder forestry Special Purpose Vehicle, 2020; The Exchange, Finance Trust Bank introduces Solar Yange loan product, 2018; World Finance, Access Bank drives Nigeria's sustainability efforts with corporate green bonds, 2020

• **Fundraising assistance:** Provide technical expertise and surge capacity to help FSPs understand funding sources and navigate the application and fundraising processes. The process can be lengthy and technical, and providing support to FSPs can increase green financing to MSMEs as banks have a strong branch network.

Figure 35: Illustrative requirements of accessing green funds from development partners

KEY GREEN FINANCE FUNDERS	PRODUCT DEVELOPMENT DESCRIPTION
Green Climate Fund	**Accreditation:** To access GCF funding, one has to be accredited or access funding through an accredited institution. For example, a commercial bank can work with AfDB, which is already accredited by GCF, to access green finance for on-lending to MSMEs **Accreditation process:** The process has five key steps: 1) Self-assessment: complete an online question-naire, which test's an institution's legal capacity to access GCF funds, internal systems, policies, procedures and guidelines, and track record on the implementation of systems, policies, procedures and guidelines; 2) Submit an application: After completing the self-assessment, one needs to complete an application to join GCF's Digital Accreditation Platform (DAP). The applicant must also pay an accreditation fee based on the size of projects they want to implement i.e. USD 1 000 application fee for micro projects (up to USD 10 million) and USD 25 000 for large projects (up to USD 250 million); 3) Assessment: GCF Secretariat reviews application for board approval. The application is also sent to an independent reviewer that consists of six experts, who will communicate the results to the GCF board for approval. The assessment process can take at least six months; 4) Board decision: The GCF Secretariate and independent reviewers send their recommendations to the GCF board for approval. The board only meets 3 times a year; 5) **Legal:** Once the application is approved by the board, the applicant signs an Accreditation Master Agreement (AMA), which provides conditions on the use of GCF funds for green projects
African Development Fund	**Preliminary application:** To access any type of funding from the AfDB, one needs to complete a preliminary application with details about the projects such as sector, location, production volume etc. The application must also have cost estimates, financing plan, environmental features, feasibility indicates etc. **Full application:** Once AfDB is satisfied with the information contained in the preliminary application, an applicant will then need to complete a full application with 3 requirements: 1) Feasibility study; 2) Business Plan; 3) Environmental and social impact assessment (depending on the nature of the project) **Financial instruments:** Once application has been approved determine financial instruments to be used. AfDB offers a variety of instruments such as senior debt (1 5 year tenor, including a 5 year grace period), guarantees, subordinated debt (loans or bonds, also with a tenor of 15 years), equity (up to 25%), technical assistance (grants)

Sources: GCF; Entity accreditation, accessed August 2022; AfDB, How to get support from the Bank, accessed August 2022

• **Measurement support:** Provide technical expertise and surge capacity to help FSPs develop efficient, climate-related reporting processes. Development actor funding typically requires reporting on the use of funds and the impact. Banks will therefore need to be equipped with measuring climate and social impact. For example, the Embedded Generation Investment Programme (EGIP) funded by GCF requires details on mitigation and beneficiaries of the project, such as households with access to energy and jobs created.[211]

Harmonised definitions of what green finance entails and how to measure it would make the mea-surement process effective. Therefore, the framework ultimately adopted or used by the banks should draw on and harmonise with relevant existing frameworks used by financiers such as IFC and GCF or other widely-used frameworks like the Task Force on Climate-Related Financial Disclosures (TCFD), CDP, Climate Disclosure Standards Board (CDSB) and Global Reporting Initiative (GRI) frameworks.

Critically, this support should prioritize working with FSPs that have a strong interest in and ability to serve MSMEs. This means working with FSPs that have expressed an explicit interest in sustainable or green financing and those that have a track record of prioritizing and serving the MSME market. Examples of these across regions include Banque Agricole et Commerciale du Burkina and Access Bank in West Africa, Kenya Commercial Bank (GCF accredited) and FONERWA in East Africa, and

211. GCF, Funding proposal: Embedded Generation Investment Programme (EGIP), 2019

Development Bank of Southern Africa and Standard Bank in Southern Africa. A more detailed list can be found in the Annex.

DE-RISKING GREEN AND GREENING MSME LENDING

FSPs continue to see MSMEs as risky and difficult to serve. This is compounded by additional challenges for many green MSMEs, where business models and technologies are new and relying on novel technologies or revenue streams. Separately, businesses seeking to green their operations, and the FSPs that serve them, often face uncertainty as to the commercial payoffs of an investment which makes financing them riskier. In this light, the following targeted activities can be undertaken to de-risk investments:

- **De-risk lending:** Guarantees can be effective in attracting green finance from private investors in sectors that often struggle to attract funding, i.e., agriculture. They cover the partial or full risk of investment. Supporting financial sector providers to link up with providers of guarantees can help increase financing to green MSMEs. The African Guarantee Fund is a good example, where they cover the loan and equity investments up to the value of USD 10 million.

Critically, guarantees cannot be a stand-alone intervention. While they play an important role in de-risking lending, other factors shape the overall uptake of loans – including other transaction costs, awareness, and overall MSME capacity. If these other challenges are not addressed, guarantees risk not being used.

African Guarantee Fund

AGF has four guarantee products for investments made to SMEs and funds acquired by FSPs for SME on-lending

Loan Individual Guarantee: covers 50% (limit of USD 2.5 million) of the financing value to SMEs
Loan Portfolio Guarantee: covers 50% (limit of USD 10 million) of the financing value to SMEs
Bank Fundraising Guarantee: guarantees funds requested by FSPs from external investors through issuing of bonds (donors, DFIs etc.) for SME on-lending. Cover 50-100% of requested funds, with a limit of USD 10 million
Equity Guarantee: first capital loss on equity investments to SMEs. Covers 50% of equity investments with a limit of USD 1 million

Source: African Guarantee Fund, Our Products, accessed July 2022

3. IMPROVE THE ABILITY OF MSMEs TO ACCESS GREEN FINANCE FACILITIES

MSMEs in Africa are small and have underdeveloped systems which makes them unattractive for FSPs to serve. MSMEs are also unaware of financing options and opportunities available to them, which impedes their access to financing. Additional issues such as limited knowledge of bank requirements and mistrust of banks further contribute to the financial literacy gaps. Several targeted activities can support MSMEs to unlock access to green finance:

- **Operational strengthening:** Assessments and targeted communication to MSMEs on key operational gaps (i.e., cashflow management, licensing), with recommendations and resources to strengthen. This can be done through one-stop shops for MSMEs to access an array of offerings from one expert institution or platform. A key example includes SME Mauritius, which has various business development and financing schemes to support SME needs. Another avenue could be technology to strengthen MSME access to green finance. For example, Efie Ni Efie provides financial information through Interactive Voice Response (IVR).

Figure 37: Operation strengthening examples

INSTITUTION	OPERATIONAL STRENGTHENING DESCRIPTION
SME Mauritius	**Theme:** One-stop shop **Problem statement:** The enterprise support ecosystem is scattered, making it overwhelming for enterprises to identify where they can find the support they need **Solution:** SME Mauritius provides a range of services to support SMEs, including but not limited to, providing grants as incentives for greening, capacity building and training, and creating visibility for SMEs through avenues such as providing a digital marketplace for products by SMEs and promoting green SMEs in fairs
Fidelity Bank, UNCDF, Viamo	**Theme:** Technology **Problem statement:** Lack of financial and digital awareness has made access to financial services difficult for Ghanaians living in distant locations. This was also making it difficult for this population to access UNCDF's Green Employment and Enterprise Opportunities in Ghana (GrEEn) **Solution:** Efie Ni Efie (Home Sweet Home in Twi) was developed to provide financial information through Viamo's interactive voice response (IVR) in the local dialect. The product helps users (farmers, green MSMEs, households etc.) to access green financing products offered by the GrEEn

Source: Dalberg, Stakeholder interviews, 2022; UNCDF, GrEEn Project Partners with Fidelity Bank Ghana and Viamo to Improve Access and Usage of Financial Services in Ghana, 2021

• **Project preparation support:** Grant capital available to promising green start-ups to strengthen concepts, build an evidence base, structure projects, and source long-term contracts. The Africa Clean Energy Finance (ACF) is a good example of a preparation support project, in which the United States International Development Finance Corporation provided a USD 20 million grant to help prepare early-stage projects for commercial financing.

Figure 38: Illustrative project preparation support

U.S. International Development Finance Corporation	**Project:** Africa Clean Energy Finance Initiative (ACEF), which provides financing to early-stage renewable energy project. DFC provided a USD 20 million grant to help prepare renewable energy projects for commercial financing **Preparation support activities:** 1) Engineering costs – covers costs on project design, assessment of the technology and feasibility studies; 2) Legal costs – helps green MSMEs prepare any legal documentations such as permits, financing agreements etc.; 3) Consulting costs – funding environmental and impact studies; 4) Third-party costs – covers costs relating to the physical and technical assessment of the renewable technology offered by the green MSMEs

Source: DFIC, ACEF Fact Sheet, n.d.

• **Business case development and testing:** Targeted analytics to assess potential market size, key cost drivers, and risks of an investment. In the case of MSMEs seeking to green their operations, this would entail assessing the potential cost savings or additional revenue that an investment in, for example energy efficiency or organic agriculture, would entail.

Figure 39: Business case for adopting green practices

SME Mauritius	**SME Mauritius provides training and awareness campaigns to encourage the adoption of green practices** • They use grants to finance the greening of MSMEs and certifying them as green businesses • The manufacturing sector has benefitted from this the most as SMEs supported have adopted energy-saving equipment • In the tourism sector, SME Mauritius has been building a business case for businesses operating with boats to adopt electric motors through their grant financing scheme • SME Mauritius is now developing a "green studio" for green businesses to market their products, which can increase the adoption of green practices by other SMEs looking to green their production processes

Source: Dalberg, Stakeholder interviews, 2022

• **Carbon financing support:** Dedicated funding to help MSMEs set up carbon credit projects, which is a complex process for a majority of MSMEs. Developing and registering a carbon reduction project is a lengthy process that involves complex processes such as preparing a Project Design Document (PDD). This necessitates MSMEs to acquire external technical expertise and financial resources to enable MSMEs to sell the produced carbon credits to brokers or directly to companies that are looking to offset their emissions. Carbon financing support provided to carbon project developers, in terms of pre-finance, technical assistance and access to market to help reduce the barriers in the process.

Figure 40: Examples of carbon financing support

Treevive TREEVIVE	Treevive offers forest managers pre-finance and technical assistance covering areas such as project management, implementation and monitoring, to create forest carbon projects or build on existing projects. The company also facilitates access to the carbon market and a network of investors and buyers for forest managers, and provides returns to its investors in the form of carbon credits, financial returns, or both.
African Development Bank Group	The African Carbon Support Program was a two-year programme established by AfDB in 2010 to assist the bank's clients to access carbon finance in order to ensure the commercial viability of their investments. Additional objectives of the programme included providing assistance in developing required documents of the Clean Development Mechanism (CDM) such as Project Information Notes (PIN) and Project Design Documents (PDD) to help lower transactional costs for developers of carbon credits projects. The project also aimed to ensure that project owners can commercialize the carbon potential of projects and monitor and report the emission reductions.

Sources: Treevive, What we offer, accessed August 2022; AfDB, AfDB Launches African Carbon Support Program, 2010

• **Green capital sourcing platform:** A dedicated portal to help green and greening MSMEs identify suppliers of capital. An example of a similar platform is the Green Finance Database, compiled and maintained by Green Cape with the financial support of the Western Cape Department of Economic Development and Tourism (DEDAT), which lists green financing options for companies in South Africa.

Figure 41: Illustrative solution of a portal for green capital sources

INSTITUTION	GREEN CAPITAL SOURCING PLATFORM DESCRIPTION
Greencape GreenCape	GreenCape maintains a South African-focused database of green financing sources The database lists available grant, concessional debt, debt, equity, budget expenditure, and other instruments from governments (local and international), development finance institutions, commercial and other sources The database is directed at companies in sectors in the green space such as clean energy, energy efficiency, and demand side management, low carbon transport, and circular economy GreenCape also maintains other databases with financing opportunities that would be relevant to South African companies seeking funding

Source: GreenCape, Green Finance Databases, accessed August 2022

REQUIREMENTS FOR SUCCESS

Successful implementation of these interventions requires ensuring that the implementing actors possess the right characteristics. These include:

- **Credibility**

- Strong recognition by and credibility with the suppliers of green capital. Development actors providing green finance have stringent requirements for accessing green funds for on-lending. Facilities looking to offer green credit should have strong, sustainable financing mechanisms in place. This will demonstrate the facility's credibility in funding green projects.
- Strong recognition by and credibility with FSPs. This will help in increasing the participation of financing green projects by other FSPs.

- **National networks**

- Relationship with government institutions. Facilities offering green finance need to support the achievement of the country's objectives. This could be through supporting government institutions that are driving the greening of the economy or having strong networks within countries and with country policymakers to help advocate for green finance.

- **Capabilities**

- Strong core technical expertise and budget for specialised capacity. Having dedicated team and personnel for financing green projects can improve the facility's understanding of the array of opportunities in the green economy. This understanding needs to also stem from an in-depth market analysis to determine the investment needs and pipeline of green projects in the country's priority sectors. This, in turn, will increase green financing for green projects.

- Grant-making capability for project preparation support. Green projects can require large sums of capital during the preparatory phase, which private sector actors (including banks) may not finance. Grants can help green MSMEs make their technologies commercially bankable.

- **Gender inclusivity**

- Gender responsiveness. All activities need to be gender inclusive, including the use of gender-responsive data, and implementors need to have the ability to integrate objectives related to green finance with gender equality.

Various regional organisations meet the criteria for success outlined. Such entities are well-positioned to take a leadership role in promoting green finance in Africa. Some of these entities are highlighted below.

- **United Nations entities**

- United Nations Environment Programme (UNEP): UNEP's proximity to policymakers and government institutions can support the promotion of the development of green funds in facilitating MSME green finance.

- United Nations Economic Commission for Africa (UNECA): UNECA can leverage the experience and expertise of its Innovative Finance and Capital Markets Section under the Private Sector Development and Finance Division to support the promotion of innovative green financing models.

- United Nations Capital Development Fund (UNCDF): UNCDF's mandate and focus on providing catalytic funding to the least developed countries (LDCs) to enable them to contribute to the green economy, among other development pathways, can support the capitalisation of green finance facilities and/or help unlock further financing.

212 UNDP, Blending Climate Finance Through National Climate Funds: A Guidebook for the Design and Establishment of National Funds to Achieve Climate Change Priorities, 2011

- **United Nations Development Programme (UNDP):** UNDP's experience as an implementing entity and advisor for National Climate Funds can help in the process of designing and structuring the national green funds.

•Multilateral Development Banks (MDBs)/Development Finance Institutions (DFIs)

- **International Finance Corporation (IFC):** IFC can provide technical assistance and capitalisation through concessional funding and de-risking instruments.

- **African Development Bank (AfDB):** AfDB can provide technical assistance and/or help secure the necessary technical assistance funding for designing and structuring work, including market analysis. As a GCF Accredited Entity, AfDB is well placed to support capitalisation efforts through the fund. AfDB can also support the replication of successful green fund programs in markets with similar needs and priorities.

-Non-Governmental Organisations (NGOs), Intergovernmental organisations, and Civil Society Organisations (CSOs)

- **Financial Sector Deepening Africa (FSD Africa):** FSD Africa can provide financing and/or technical assistance and early-stage capital investments through its investment arm, FSD Africa Investments (FSDAI).

- **Global Green Growth Institute (GGGI):** GGGI can help ensure proper set up of national vehicles and alignment with national priorities, given their close working relationships with government partners and experience in conducting market assessments for national green finance facilities as well as designing and operationalizing them.

- **GCF Civil Society Network and the Adaptation Fund NGO Network:** The CSO members of the networks can promote a vulnerability focus, including gender responsiveness, in the country programmes.

- **United Nations Development Programme (UNDP):** UNDP's experience as an implementing entity and advisor for National Climate Funds can help in the process of designing and structuring the national green funds.

•Multilateral Development Banks (MDBs)/Development Finance Institutions (DFIs)

- **International Finance Corporation (IFC):** IFC can provide technical assistance and capitalisation through concessional funding and de-risking instruments.

- **African Development Bank (AfDB):** AfDB can provide technical assistance and/or help secure the necessary technical assistance funding for designing and structuring work, including market analysis. As a GCF Accredited Entity, AfDB is well placed to support capitalisation efforts through the fund. AfDB can also support the replication of successful green fund programs in markets with similar needs and priorities.

-**Non-Governmental Organisations (NGOs),** Intergovernmental organisations, and Civil Society Organisations (CSOs)

- **Financial Sector Deepening Africa (FSD Africa):** FSD Africa can provide financing and/or technical assistance and early-stage capital investments through its investment arm, FSD Africa Investments (FSDAI).

- **Global Green Growth Institute (GGGI):** GGGI can help ensure proper set up of national vehicles and alignment with national priorities, given their close working relationships with government partners and experience in conducting market assessments for national green finance facilities as well as designing and operationalizing them.

- **GCF Civil Society Network and the Adaptation Fund NGO Network:** The CSO members of the networks can promote a vulnerability focus, including gender responsiveness, in the country programmes.

213. GGGI, GGGI Technical Report No. 9: Review of GGGI's Experience to Design and Operationalize National Financing Vehicles to Finance Climate and Green Growth Policy Implementation, 2019

VI. ANNEX I

FINANCIAL SERVICE PROVIDERS WITH GREEN PRODUCTS AND SERVICES

COUNTRY	FINANCIAL INSTITUTION	KEY GREEN PRODUCTS AND SERVICES
Burkina Faso	Société Générale de Banques au Burkina (SG-BB)	**Products and services:** Loans, leasing, letter of credit, etc. Examples of dedicated green SME products include financing for farmers in the cotton sector with solutions such as CSA, efficient storage facilities to reduce post-harvest losses, water management, irrigation, and soil management. This is in partnership with IFC and BNP Paribas. Additionally, the service "House of SMEs" also assists SMEs with BDS, such as mentoring, advice, and financing. Target sectors: Agriculture. **Source of funding:** IFC, AFD, Proparco, Investisseurs & Partenaires.
	Banque Agricole et Commerciale du Burkina	**Products and services:** Loans and syndicated credit; Examples include the green financing product for renewable energy (solar pumping) and other green products such as biogas, improved stoves, etc.; and (2) on-lending to MSMEs in the Great Green Wall project to reverse land degradation (in partnership with GCF). **Target sectors:** Agriculture
Côte d'Ivoire	National Investment Bank (BNI)	**Products and services:** Loans. The bank is extending financing to MSMEs in sectors such as energy, agriculture, and water, as part of the Great Green Wall project with GCF **Target sectors:** Renewable energy, agriculture, and water **Source of funding:** Government, GCF
Ethiopia	Development Bank of Ethiopia	**Products and services:** Loans and leasing. Product delivery channels include the Off-Grid Renewable Energy & Energy Efficient Program. The program's offerings include a credit line from the World Bank to provide loans to private sector enterprises and microfinance institutions (MFIs) that are interested in developing renewable energy and energy-efficient technologies. **Target sectors:** Renewable energy, waste, agriculture, and manufacturing **Source of funding:** World Bank
	Commercial Bank of Ethiopia	**Products and services:** Loans and asset financing. Products are delivered through the Renewable energy access facility, an energy credit blending facility providing credit to Private Sector Enterprises (PSE), Cooperatives, and Microfinance Institutions (MFIs) for the provision of off-grid energy technologies and productive appliances. Products offered include: (1) a revolving credit facility providing working capital and inventory financing loans to importers, suppliers, and distributors; and (II) loans to end-consumers. **Target sectors:** Renewable energy **Source of funding:** AfDB, Climate Investment Fund (CIF)
Ghana	Ecobank Ghana	**Products and services:** Loans, overdraft, revolving credit, debtor finance, and asset financing. Examples include (1) on-lending to agricultural MSMEs for inputs (solar pumps and efficient irrigation systems) and (2) the recently-launched MSME Academy, which hopes to provide training (on risk management, business sustainability, bankability, etc.) and provide financing of up to USD 2M to MSMEs across countries of operation. **Target sectors:** Agriculture and energy **Source of funding:** AfDB
	Fidelity Bank	**Products and services:** Loans, invoice discounting, and purchase orders. As part of the GREEN project with the EU, UNCDF, and Viamo, the bank is providing skills development and finance that green MSMEs can benefit from. MSMEs looking to green their businesses can also benefit from the energy efficiency refrigerators through asset financing. **Target sectors:** Energy, agriculture, and energy efficiency **Source of funding:** EU, UNCDF, Viamo
Kenya	Kenya Commercial Bank	**Products and services:** Climate-related loans and asset financing. Products include (1) On-lending for medium to large climate projects of KES 5B-25B enabled by GCF loans and guarantees; SMEs need to apply as one entity given the project size. (2) Loans to climate-friendly projects, for energy-efficient solutions, solar installation for lighting and water heating, wastewater management, conservation agriculture, etc. **Target sectors:** Renewable energy, manufacturing, waste programs, low carbon technologies, infrastructure, and climate-smart agribusiness **Source of funding:** GCF, AfDB, IFC, BID, SANAD, Symbiotic, etc.
	CFC Stanbic Bank	**Products and services:** Loans. These include (1) loans for renewable energy projects and green housing mortgage financing. MSMEs can benefit from asset financing green business space and/or financing for construction of green buildings. **Target sectors:** Renewable energy (solar, wind), and green housing **Source of funding:** Standard Bank Group, African Guarantee Fund (loan portfolio guarantee facility), AfDB

COUNTRY	FINANCIAL INSTITUTION	KEY GREEN PRODUCTS AND SERVICES
Mauritius	MauBank	**Products and services:** Equity, and asset financing of green technologies. Products include (1) 90% project value loans (Rs 20M maximum) in various sectors, including biofarming, renewable and green energy, and aquaculture activities with a minimum interest of 0.85% and a tenor of 10 years. A Letter of Intent from SME Mauritius (a BDS provider that enables SMEs to get green financing) and Rs 50M minimum turnover is required. (2) An SME Mauritius scheme supporting SMEs with asset financing for renewable energy for the manufacturing and tourism sectors. The bank provides 100% financing for these assets for a tenure of up to 6.5 years **Target sectors:** Renewable energy, handicraft, biofarming, and transport **Source of funding:** Government of Mauritius
	Development Bank of Mauritius	**Products and services:** Subsidised loans, and asset financing. Some products are delivered through the SME Financing Scheme. The scheme offers 75% of project value loans (Rs 3M maximum) for green activities such as biofarming, aquaculture, setting up of Solar PV systems and rainwater harvesting systems. Conditions include a 6% p.a. interest rate and a 5-year repayment period. **Target sectors:** Renewable energy, green buildings and construction, land use and forestry, and tourism **Source of funding:** Government of Mauritius
Nigeria 	First City Monument Bank Ltd (FCMB)	**Products and services:** Loans. FCMB finances SMEs in the renewable energy sector as part of the recently-signed USD 35M deal with Proparco . The project also prioritises female entrepreneurs. **Target sectors:** Agriculture, education, health, and renewable energy **Source of funding:** Proparco
	Access Bank	**Products and services:** Loans, and asset finance. Specific initiatives include the Green Social Entrepreneurship Programme developed in partnership with SME Funds. The programme supports clean stove SMEs. Thus far, the program has supported over 150 SMEs providing clean stoves to 150 households. Access Bank also issued a USD 41 million green bond to finance low-carbon projects. **Target sectors:** Energy efficiency, and renewable energy **Source of funding:** Capital markets
Rwanda	FONERWA	**Products and services:** Innovation grants, and subsidised loans. The innovation grants of up to USD 300,000 with a required 25% match funding are available for research and development; proof of concept and demonstration. A credit line (Rwanda Green Investment Facility) of at least USD 70,000 is administered by Rwanda Development Bank (BRD) at 11.49% and a 30% match funding requirement. The 30% match funding requirement may however exclude some MSMEs. **Target sectors:** Water, renewable energy, CSA, biomass replacement, transport, waste, and green cities **Source of funding:** Development partners i.e., UNDP, World Bank, GCF, German Cooperation , CDKN, BRD
	Development Bank of Rwanda	**Products and services:** Investment loans, leasing, equity, guarantees, and trade finance. Products are delivered through channels such as (1) the Renewable Energy Fund (BEF) for financing of off-grid systems, through Umurenge Savings, Credit Cooperatives (SACCOs), and commercial banks with Subsidiary Financing Agreements; (2) the Rwanda Green Investment Facility (RIGF) with FONERWA **Target sectors:** Energy, agriculture, housing, exports, and special projects **Source of funding:** Scaling-up Renewable Energy Program (SREP) through the Government of Rwanda, FONERWA, AfDB
South Africa	Development Bank of Southern Africa	**Products and services:** Recoverable grants, equity, and loans. These are delivered through: (1) Green Fund – support initiatives that aid the transition to a green economy through technical assistance and investment funding; (2) the GEF Equity Facility – equity funding targeting MSMEs under the Small Projects Independent Power Producers Procurement Programme (SPPPP); (3) Climate Finance Facility – Blended finance/Credit enhancements (first loss or subordinate debt and tenor extensions) for climate-related infrastructure projects, mainly in water and renewable energy; and (4) Embedded Generation Investment Program – Includes Broad Based Black Economic Empowerment (B-BBEE) funding to support MSMEs in renewable energy generation projects. **Target sectors:** Renewable energy, storage, green buildings, transport, water, and waste **Source of funding:** Government, Green Climate Fund (GCF), Green Environment Facility (GEF)
	CFC Stanbic Bank	**Products and services:** Loans, asset finance, and overdrafts. Specific green products include the new EUR/ZAR-denominated loan portfolio guarantee from Proparco, which partly targets lending to SMEs in the green economy sectors. Current bank loan requirements may exclude MSMEs with turnover of less than R1 million. **Target sectors:** Green economy, agriculture, fintech, and health **Source of funding:** Proparco

COUNTRY	FINANCIAL INSTITUTION	KEY GREEN PRODUCTS AND SERVICES
Uganda 	Equity Bank	**Products and services:** Loans and overdraft. These products are delivered through channels such as: (1) Equi-Green loan program, supported by the UECCC, to provide loans from UGX 200,000 repayable in 6-12 months for the acquisition of clean energy technologies; (2) UGEFA partnership – USD 10,000-100,000 (UGX equivalent) loans to UGEFA's pipeline of 200+ green SMEs, with 33% of the approved loan repaid by UGEFA; (3) Structured Commodity Financing facility – Agribusiness loans of UGX 30M – 5B borrowed against inventory, contracts and land titles at interest rates of 14-22% p.a. **Target sectors:** Agriculture, clean energy, waste management, sustainable tourism, sustainable transport, and green manufacturing **Source of funding:** Uganda Energy Credit Capitalization Company (UECCC); UGEFA (1/3 of SME loan disbursed)
	Finance Trust Bank	**Products and services:** Loans, and asset financing. The bank has two renewable energy products: (1) Solar Yange Loan - used to finance acquisition of solar equipment for households and businesses; (2) Women's Renewable Energy Loan - used to finance clean energy solutions (solar, cooking stoves & biogas) for households or businesses owned by women. **Target sectors:** Renewable energy **Source of funding:** Uganda Energy Credit Capitalisation Company

VII. ANNEX II

STAKEHOLDER CONSULTATIONS

REGIONAL VALIDATION WORKSHOP

VALIDATION WORKSHOP ACCRA, GHANA AUGUST 24-25, 2022				
NO.	COUNTRY	NAME OF ORGANISATION	NAME OF PARTICIPANT	TITLE
1	Burkina Faso	Ministry of Environment, Energy, Water and Sanitation,	Kabore Boukary	
2	Burkina Faso	Ministry of Environment, Energy, Water and Sanitation,	Yacouba Savadogo	
3	Burkina Faso	Private sector – SAG SME	Ezona Bazye	
4	Burkina Faso	Association Jeunesse soldaire pour la Development Veritable (AJSDV)	Yassia Savadogo	Grantee, SAG Phase I
5	Burkina Faso	Minister of Environment, Energy, Water and Sanitation,	Pamoussa Ouedraogo	Focal Point
6	Côte d'Ivoire	Confédération Générale des Entreprises de Côte d'Ivoire (CGECI)	Claude Koutoua	Chairman of the E-QHSE Commission
7	Côte d'Ivoire	Dalberg	Bertrand Yao Assamoi	Associate Partner
8	Côte d'Ivoire	Ministry of Environment and Sustainable Development (MINEDD)	Gustave Aboua	General Director of Sustainable Development
9	Ethiopia	AAIT	Lelissa Daba Butta	Environmental Specialist
10	Ethiopia	EPA Ethiopia	Frenesh Mekuria Gobena	
11	Ethiopia	Ethiopian Environment Protection Authority	Shiferaw Negash Bira	Director General - Environmental and Social Impact Assessment
12	Ethiopia	IPDC - Ethiopia	Mergia Kuma	Head, Environment and Social Safeguard Dept
13	Ethiopia	UNEP/Consultant	Nebiyeleul Gessesse	Consultant
14	Ghana	Ecobank Ghana	Kingsley Adofo-Addo	Head SME Banking
15	Ghana	Energy Commission	Ebenezer Ashie	Project Coordinator
16	Ghana	Environmental Protection Agency	Gertrude Annorbah	
17	Ghana	Ghana National Cleaner Production Centre	Phoebe Anchebah	
18	Ghana	Ministry of Environment, Science, Technology, and Innovation (MESTI)	Oliver Boachie	Special Adviser and Ghanaian ACEA Representative
19	Ghana	Ministry of Finance	Robert Mensah	

20	Ghana	Ministry of Trade and Industry	Michael A. Opoku	Team Leader, Policy, Planning, Monitoring and Evaluation
21	Ghana	Science and Technology Policy Research Institute	Dr. (Mrs.) Wilhelmina Quaye	Chief Research Scientist and Director
22	Ghana	City Waste Recycling	Vivian Ahiayibor	Managing Director
23	Ghana	Environmental Protection Agency	Selina Amoah	Deputy Director
24	Ghana	Ghana National Cleaner Production Centre	Daniel Digber	Principal Programmes Officer
25	Ghana	Ghana National Cleaner Production Centre	Letitia Nyaaba	Deputy Director
26	Ghana	Ministry Environment, Science, Technology & Innovation (MESTI)	Peter Justice Dery	Director, Environment
27	Ghana	Ministry of Trade and Industry	Veronica Akiwele Abagye	NTCC Member
28	Ghana	University of Cape Coast	Daniel Ofori	Lecturer
29	Kenya	Kenya National Cleaner Production Centre	Steve Nyamori	Deputy Director
30	Kenya	KEPSA	Faith Ngige	Senior Public Private Dialogue Office
31	Kenya	Kenya Bureau of Standards	Butichi Samson	
32	Kenya	Ministry of Agriculture, Livestock, Fisheries and Co-operatives	Veronica Ndetu	NTCC Member
33	Kenya	Ministry of Environment and Forestry	Augustine Kenduiwo	Deputy Director Climate Change/ SAG Focal Point
34	Kenya	Ministry of Environment and Forestry	Ayub Macharia	Director, Training, NTCC member
35	Kenya	National Treasury and Planning	Hillary Korir	
36	Mauritius	Consultant	Avinash Venkama	Grantee
37	Mauritius	Consultant	Prof. Toolseeram Ramjeawon	Consultant
38	Mauritius	Ministry of Environment, Solid Waste, and Climate Change	Deochan Ganesh Dookee	Deputy Director, Solid Waste Management Division
39	Mauritius	Lineage Invest	Oumila Sibartie	Co-Founder & Director
40	Mauritius	Ministry of Environment, Solid Waste Management and Climate Change	Moonawwara Begum Outim	Environment Officer
41	Nigeria	Nigeria Circular Economy Working Group	Prof. Francis Ebuta Bisong	
42	Regional	Dalberg	Rym Keramane	Associate Partner

43	Regional	EU	Clemens Beckers	
44	Regional	UNECA	Charles Akol	Environmental Affairs Officer, Green Economy and Blue Economy Section in the Technology, Climate Change & Natural Resource Management Division
45	Regional	UNEP	Angèle Luh	Head, Sub Regional Office for West Africa
46	Regional	UNEP	Sylvia Munuhe	Programme Management Assistant
47	Regional	African Guarantee Fund	Patrick Obadhi Lumumba	Senior Capacity Development Officer
48	Regional	ARSO	Dr. Hermogene Nsengimana	Secretary General
49	Regional	UNEP	Carolyne Cherono	Programme Management Assistant
50	Regional	UNEP	Lawrence Nzuve	Communication Consultant
51	Regional	UNEP	Patrick Mwesigye	Regional Sub-Programme Coordinator, RE and SCP
52	Regional	UNEP	Rhoda Wachira	Programme Management Officer
53	Regional	UNEP	Wycliffe Ogweno	Senior Finance and Administration Assistant
54	Rwanda	Ministry of Finance and Economic Planning	Thierry Watrin	Green Economy and Climate Finance Advisor to the Minister of State/EP
55	Rwanda	Private Sector Federation	Florent Uwacu	Executive Director
56	Rwanda	Rwanda Cleaner Production and Climate Innovation Centre	Sylvie Mugabekazi	Technical Expert, CPCIC/NIRDA
57	South Africa	Dalberg	Scott Hosking	Senior Project Manager
58	South Africa	National Cleaner Production Centre South Africa	Lee-Hendor Ruiters	Business Strategy and Project Development Manager

59	South Africa	National Cleaner Production Centre South Africa	Tanya van Zyl	Quality Manager
60	South Africa	Department of Environment, Forestry, and Fisheries	Elizabeth Ntoyi	Control Environmental Officer G
61	Tanzania	East African Community	Dismas Mwikila	Environment and Natural Resources Management Specialist
62	Uganda	Consultant	Teddy Twine Nsubuga	Consultant
63	Uganda	Ministry of Agriculture, Animal Industry and Fisheries	Evelyn Lutalo	Agricultural Specialist
64	Uganda	Ministry of Finance, Planning and Economic Development	David Kiyingi	Commissoner, Procurement Policy and Management Department
65	Uganda	Ministry of Trade, Industry and Cooperatives	Kassim Semanda	Senior MSME Officer
66	Uganda	Ministry of Water and Environment	Nathan Mununuzi	Senior Environment Officer
67	Uganda	National Environment Management Authority (NEMA)	Richard Mugambwa	SWITCH Africa Green National Focal Point
68	Uganda	Stanbic Bank Uganda	Stephen Segujja	Head, Economic Enterprise Restart Fund
69	Uganda	Uganda Wildlife Authority	Florence Kyalimpa	Warden - Environmental Impact Assessment
70	United Kingdom	Spaanda	Manjula Basant Rai	Founder & CEO
71	Zambia	COMESA Secretariat	Esther Mwimba	Senior Private Sector Development Officer
72	Zambia	Ecowise Solutions	Danny Mwangp	Environmental Expert

STAKEHOLDER INTERVIEWS AND NATIONAL WORKSHOPS

No.	Country	Institution	Participant
1	Burkina Faso	Dalberg / Independent Consultant	Nisha Schumann
2	Burkina Faso	Green Climate Fund (GCF)	Issaka Ouedraogo
3	Burkina Faso	Ministry of Environment, Green Economy and Climate Change	Barnoussa Ouedraogo

4	Burkina Faso	Ministry of Environment, Green Economy and Climate Change	Boukary Kaboré
5	Burkina Faso	Ministry of Environment, Green Economy and Climate Change	Dr. Yacouba Sawadogo
6	Burkina Faso	General Directorate of Green Economy and Climate Change (DGEVCC)/ Ministry of Environment, Energy, Water and Sanitation (MEEEA)	Bonkoungou Jacques
7	Burkina Faso	Association Jeunesse soldaire pour la Development Veritable (AJSDV)	Savadogo Yassia
8	Burkina Faso	BIOPROTECT	Savadogo W Claude Arsene
9	Burkina Faso	Chef Coutumier	Rogambatibila Oumar Naaba Sigri de Saponé
10	Burkina Faso	Cooperative YAMA	Gnankine Alima/Kassamba
11	Burkina Faso	Direction Générale de l'Economie Verte et du Changement Climatique (DGEVCC)/DPEIV	Dao Salimata
12	Burkina Faso	Direction Générale de l'Economie Verte et du Changement Climatique (DGEVCC)	Sawadogo B. Guy Bonaventure
13	Burkina Faso	Faso Attiéké	Bassono Florence
14	Burkina Faso	Féderation Nununa Léo	Yago/ Diasso Diaharatou
15	Burkina Faso	FIE	Bationo B. Polycarpe
16	Burkina Faso	General direction for digital industry development (DGDI) /MDICAPRE	Kinda Adama
17	Burkina Faso	General Directorate for Economic and Environmental Performance (DGPE) /Ministry of Environment, Energy, Water and Sanitation (MEEEA)	Barro Roger
18	Burkina Faso	General Directorate of Green Economy and Climate Change (DGEVCC)	Bambara Antoine
19	Burkina Faso	General Directorate of Green Economy and Climate Change (DGEVCC)/ Ministry of Environment, Energy, Water and Sanitation (MEEEA)	Barro Ali
20	Burkina Faso	General Directorate of Green Economy and Climate Change (DGEVCC)/ Ministry	Bonkoungou Jacques

		of Environment, Energy, Water and Sanitation (MEEEA)	
21	Burkina Faso	Institut 2IE	Sawadogo Marie
22	Burkina Faso	MEEEA/DGEVCC/DPEIV	Gango Jean-Paul
23	Burkina Faso	Minister of Environment, Energy, Water and Sanitation	Savadogo Yacouba
24	Burkina Faso	Ministry of Economy and Finance (MEFP) / General directorate of economy and planification (DGEP)	Sawabogo Boureima
25	Burkina Faso	National Tourism Office of Burkina Faso (ONTB)	Da Leonie
26	Burkina Faso	New-Karikis International-Sarl	Yaméogo Felicité
27	Burkina Faso	Private sector - SAG SME	Ezona Bazye
28	Burkina Faso	Societe Cooperative Wende de Koudougou	Berehoudougou /Zongo S. Monique
29	Burkina Faso	Ministry of Environment, Energy, Water and Sanitation (MEEEA)	Pamoussa Ouedraogo
30	Burkina Faso	General Directorate of Green Economy and Climate Change (DGEVCC)/ Ministry of Environment, Energy, Water and Sanitation (MEEEA)	Sankara Boukaré
31	Burkina Faso	The General Directorate of Green Economy and Climate Change (DGEVCC)/ Ministry of Environment, Energy, Water and Sanitation (MEEEA)	Sawadogo Rihanata
32	Burkina Faso	The Union of Women's Groups Ce Dwane Nyee (UGF/CDN) - Reo	Bahiomé Bationon
33	Burkina Faso	Wend Waoga	W. Georgette
34	Burkina Faso		D. R. Antoine
35	Burkina Faso		Peodiagué Princesse
36	Burkina Faso		Traoré Ali
37	Côte d'Ivoire	Coliba Africa	Yaya Bruno Kone
38	Côte d'Ivoire	Confédération Générale des Entreprises de Côte d'Ivoire (CGECI)	Claude Koutoua
39	Côte d'Ivoire	IFC Cote d'Ivoire	Francis Atin
40	Côte d'Ivoire	Investisseurs & Partenaires	Samuel Monteiro
41	Côte d'Ivoire	Ministry of Environment and Sustainable Development (MINEDD)	Gustave Aboua
42	Ethiopia	Addis Ababa Chamber of Commerce and Sectoral Associations	Bekele Tsegaye
43	Ethiopia	Addis Ababa Chamber of Commerce and Sectoral Associations	Shibeshi Bettemariam
44	Ethiopia	Dalberg	Mukhtar Amin
45	Ethiopia	Ethiopian Environmental Protection Authority	H.E Dr. Getahun Garedew
46	Ethiopia	Ethiopian Environmental Protection Authority	Shiferaw
47	Ethiopia	Global Green Growth Institute - Ethiopia	Dr. Gemedo Dalle Tussie

48	Ethiopia	Industrial Parks Development Corporation	Mergia Kuma
49	Ethiopia	Industrial Parks Development Corporation	Ato Shiferaw
50	Ethiopia	Ministry of Agriculture	H.E. Prof. Eyasu Elias
51	Ethiopia	Ministry of Planning and Development	H.E Dr Nemera Gebeyehu
52	Ethiopia	Consultant	Nebiyeleul Gessesse
53	Ghana	Association of Ghana Industries	Seth Akwaboah
54	Ghana	Association of Ghana Industries	Seth-Twum Akwaboa
55	Ghana	Association of Ghana Industries (AGI)	Ladzaglah E. Atsu
56	Ghana	Association of Ghana Industries (AGI)	Stephen Djaba
57	Ghana	Biogas Association of Ghana	Joshua Bright Amenorfe
58	Ghana	Chaint Afrique	Venan Sondo
59	Ghana	City Waste Recycling	Vivian Ahiayibor
60	Ghana	Council for Scientific and Industrial Research -Science and Technology Policy Research Institute (CSIR - STEPRI)	Dr. (Mrs.) Wilhelmina Quaye
61	Ghana	Ecobank Ghana	David Kukula
62	Ghana	Ecobank Ghana	Gifty Owusu-Nhyira
63	Ghana	Ecobank Ghana	Kingsley Adofo-Addo
64	Ghana	Environmental Protection Agency	Audrey Quarcoo
65	Ghana	Environmental Protection Agency	Daniel Benefor
66	Ghana	Environmental Protection Agency	Frank Alormene
67	Ghana	Environmental Protection Agency	Gertrude Annorbah
68	Ghana	Environmental Protection Agency	Helen Asiamah
69	Ghana	Environmental Protection Agency	Selina Amoah
70	Ghana	Environmental Protection Agency/ Ghana National Cleaner Production Centre	Daniel Digber
71	Ghana	Environmental Protection Agency/ Ghana National Cleaner Production Centre	Letitia Nyaaba

72	Ghana	Environmental Protection Agency/ Ghana National Cleaner Production Centre	Phoebe Anchebah
73	Ghana	FibreWealth Limited	George Annan
74	Ghana	Ministry of Energy & Petroleum	Seth Mahu Agbeve
75	Ghana	Ministry of Finance and Economic Planning	Adwoa Fraikue
76	Ghana	Ministry of Finance and Economic Planning	Idrissu Sharu Deen
77	Ghana	Ministry of Finance and Economic Planning	Mohammed Bash Abdul-Razak
78	Ghana	Ministry of Finance and Economic Planning	Robert Mensah
79	Ghana	Ministry of Tourism, Arts & Culture (MoTAC)	Rev. Reuben Kwadzofio
80	Ghana	Ministry of Trade and Industry	Veronica Akiwele Abagye
81	Ghana	Niche Cocoa Industry Ltd	Belinda Lawson
82	Ghana	Pyramid Upcycling Limited	Ibrahim Yougbore
83	Ghana	Science and Technology Policy Research Institute	Dr. (Mrs.) Wilhelmina Quaye
84	Ghana	University of Cape Coast (UCC)	Rosemond Boohene
85	Ghana	Xtreme Upcycle	Eric Opoku Boakye-Ansah
86	Ghana		Abubakari Osman
87	Kenya	Alisam Products Development and Design	Newton Owimo
88	Kenya	Eco-Post	Lorna Rutto
89	Kenya	EU	Adolfo Cires
90	Kenya	Kenya Bureau of Standards	Joan K. Makhanu
91	Kenya	Ministry of Agriculture, Livestock, Fisheries and Co-operatives	Bernard Kimoro
92	Kenya	Ministry of Agriculture, Livestock, Fisheries and Co-operatives	Jane Njeri Reuben
93	Kenya	Ministry of Agriculture, Livestock, Fisheries and Co-operatives	Veronica Ndetu
94	Kenya	Ministry of Environment and Forestry	Augustine Kenduiwo
95	Kenya	Ministry of Environment and Forestry	Ayub Macharia
96	Kenya	Ministry of Environment and Forestry	Victor K.
97	Kenya	Ministry of Industrialization, Trade and Enterprise Development	Hezekiah Okeyo
98	Kenya	Ministry of Tourism and Wildlife - State Department for Tourism	Lorna Nyamweya

99	Kenya	Ministry of Water, Sanitation and Irrigation	Andrew M. Kinyua
100	Kenya	Ministry of Water, Sanitation and Irrigation	Eng. Simon K. Korir
101	Kenya	Muliru Farmers Enterprise	James Ligare
102	Kenya	N/A	Dickson Khainga
103	Kenya	Nyangorora Banana Processors Ltd	Askah Kerubo Nyakwara
104	Kenya	Palm Prints African Artifacts	Jacob M. Mwangi
105	Kenya	The National Treasury - State Department for Planning	Jackson Kavoi
106	Kenya	The National Treasury - State Department for Planning	Jackson Kiprono
107	Kenya	The National Treasury - State Department for Planning	Kawira Peninah
108	Kenya	The National Treasury - State Department for Planning	Mary Ngenyi
109	Kenya	National Treasury and Planning	Hilary Korir
110	Kenya	World Wildlife Fund (WWF) Kenya	Caroline Njiru
111	Mauritius	SME Mauritius	Dr Michael Pompeia
112	Mauritius	Soge Intl Company Ltd.	Sudesh Somna
113	Morocco	Attijariwafa Bank (AWB)	Youssef Boumaiz
114	Nigeria	Dalberg	Chimdindu Onwudiegwu
115	Nigeria	Jet Motor Company	Joseph Osanipin
116	Nigeria	Jet Motor Company	Sanjay Rupani
117	Regional	Africa Circular Economy Network Foundation (ACENF)	Chris Whyte
118	Regional	African Development Bank (AfDB)	Audrey-Cynthia Yamadyako
119	Regional	Southern African Development Community (SADC) - Secretariat	Domingos Zefanias Gove
120	Regional	Southern African Development Community (SADC) - Secretariat	Sibongile Mavimbela
121	Regional	United Nations Environment Programme (UNEP)	Angèle Luh
122	Regional	United Nations Environment Programme (UNEP)	David Rubia
123	Regional	United Nations Environment Programme (UNEP)	Pamella Camu
124	Regional	United Nations Environment Programme (UNEP)	Patrick Mwesigye
125	Regional	United Nations Environment Programme (UNEP)	Rhoda Wachira

126	Regional	United Nations Environment Programme (UNEP)	Sylvia Munuhe
127	Regional	United Nations Economic Commission for Africa (UNECA)	Charles Akol
128	Regional	United Nations Economic Commission for Africa (UNECA)	Sheng Zhao
129	Regional	United Nations Economic Commission for Africa (UNECA)	Sonia Essobmadje
130	Regional	World Bank	Ernesto Sanchez-Triana
131	Regional	World Bank	Helena Naber
132	Rwanda	Dalberg	Bongiwe Shongwe
133	Rwanda	Dalberg	Vanessa Giramata
134	Rwanda	Enviroserve	Olivier Mbera
135	Rwanda	Ministry of Finance and Economic Planning	Thierry Watrin
136	Rwanda	Private Sector Federation	Eric Murera
137	Rwanda	Private Sector Federation	Steven Karake
138	Rwanda	Private Sector Federation	Theoneste Ntagengerwa
139	Rwanda	Rwanda Environment Management Authority (REMA)	Rachael Tushabe
140	South Africa	Ben Peta Holdings	Ntobeko Boyana
141	South Africa	Dalberg	Salif Ouedraogo
142	South Africa	Dalberg	Scott Hosking
143	South Africa	Dalberg	Thanduxolo Mlanjana
144	South Africa	Department of Trade, Industry, and Competition	Ilze Baron
145	South Africa	Development Bank of Southern Africa	Harold K. Mogale
146	South Africa	Development Bank of Southern Africa	Isang Mabe
147	South Africa	Development Bank of Southern Africa	Livy Nkosi
148	South Africa	Development Bank of Southern Africa	Luyanda Matlala
149	South Africa	Development Bank of Southern Africa	Muhammed Sayed
150	South Africa	GreenCape	Kirsten Barnes
151	Tanzania	Dalberg	Latifah Kinyanyile
152	Uganda	Advocates Coalition for Development and Environment	John Okiira
153	Uganda	Association of Uganda Professional Women in Agriculture and Environment (AUPWAE)	Grace Okiror
154	Uganda	Crown Beverages	John Mary Kayenje
155	Uganda	Let's Go Green	Jesse Collins
156	Uganda	Ministry of Agriculture, Animal Industry and Fisheries	Evelyn Najjemba Lutalo
157	Uganda	Ministry of Energy and Mineral Development	Edward Makana

158	Uganda	Ministry of Finance, Planning and Economic Development	David Kiyingi
159	Uganda	Ministry of Finance, Planning and Economic Development	Simon Nabyama
160	Uganda	Ministry of Trade, Industry and Cooperatives	Kassim Semanda
161	Uganda	Ministry of Trade, Industry and Cooperatives	Rogers Kakuru
162	Uganda	Ministry of Water and Environment	Nathan Mununuzi
163	Uganda	Ministry of Water and Environment	Ruth Ainembabazi
164	Uganda	Msitu Consults Ltd	Janet Mbaka
165	Uganda	National Environment Management Authority (NEMA)	Aguti Caroline Mugisha
166	Uganda	National Environment Management Authority (NEMA)	Dan Kibuuka Kiguli
167	Uganda	National Environment Management Authority (NEMA)	Nsereko Mike
168	Uganda	National Environment Management Authority (NEMA)	Richard Mugambwa
169	Uganda	National Environment Management Authority (NEMA)	Viola Mugisha
170	Uganda	National Environment Management Authority (NEMA)	Waiswa Ayazika Arnold
171	Uganda	Rural Electrification Agency (REA)	Kasigwa David
172	Uganda	Skyfat Tannery	Isingoma Chris
173	Uganda	Stanbic Bank Uganda	Cathy Adengo
174	Uganda	Stanbic Bank Uganda	Stephen Segujja
175	Uganda	Uganda Green Enterprise Finance Accelerator	Camilla Shearman
176	Uganda	Uganda Green Enterprise Finance Accelerator	Christine Meyer
177	Uganda	Uganda Investment Authority	Prossie Kikabi
178	Uganda	Uganda National Council for Science and Technology	Innocent Akampurira
179	Uganda	Uganda Tourism Association	Richard Kawere
180	Uganda	Uganda Wildlife Authority	Florence Kyalimpa
181	Uganda	Consultant	Teddy Twine Nsubuga

VIII. ANNEX III

FIGURES, BOXES AND ABBREVIATIONS

LIST OF FIGURES

LIST OF BOXES

ABBREVIATIONS

ACEF	Africa Clean Energy Finance
AFDB	African Development Bank
AFOLU	Agriculture, Forestry and Other Land Use
AFR100	African Forest Landscape Restoration Initiative
AG3F	African Green Finance Facility Fund
AGF	Guarantee Fund
BANKSETA	Banking Sector Education and Training Authority
BRD	Development Bank of Rwanda
CAGR	Compound Annual Growth Rate
CBAM	Carbon Border Adjustment Mechanism
CFLI	Climate Finance Leadership Initiative
CLT	Cross-laminated timber
CNG	Climate Neutral Group
CO2	Carbon dioxide
CRGE	Climate Resilient Green Economy
CSO	Civil Society Organisation
DAC	Development Assistance Committee
DBSA	Development Bank of Southern Africa
DFC	Development Finance Corporation
DFFE	Department of Fisheries, Forestry and Environment
DFI	Development Finance Institution
EC	European Commission
ECOWAS	Economic Community of West African States
EGIP	Embedded Generation Investment Programme
EIB	European Investment Bank
ESRA	Environmental & Social Risk Analysis
ETS	Emissions Trading Systems
EU	European Union
FEI OGEF	Off-Grid Energy Access Fund
FI	Financial Institution
FONERWA	Rwanda Green Fund/ Fund for Environment and Natural Resources for Rwanda
FSP	Financial Services Provider
GCF	Green Climate Fund
GDP	Gross domestic product
GEF	Global Environment Facility
GFANZ	Glasgow Financial Alliance for Net Zero
GGGI	Global Green Growth Institute
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit/ German Agency for International Cooperation
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IWM	Integrated Waste Management
KCB	Kenya Commercial Bank
KW	Kilowatt
LDCF	Least Developed Countries Fund
MDB	Multilateral Development Bank

MSMEs	Micro, Small and Medium Enterprises
MtCO2e	Metric tons of carbon dioxide equivalent
NDCs	Nationally Determined Contributions
NCCF	National Climate Change Fund
NGO	Non-governmental Organisation
OECD	Organisation for Economic Co-operation and Development
OPIC	Overseas Private Investment Corporation
PAYGO	Pay As You Go
PULSE	Productive Use Leveraging Solar Energy
REF	Rwanda Energy Fund
SCP	Sustainable Consumption and Production
SDGs	Sustainable Development Goals
SMEs	Small and Medium Enterprises
UECCC	Uganda Energy Credit Capitalisation Company
UGEFA	Uganda Green Enterprise Finance Accelerator
UN	United Nations
UNCDF	United Nations Capital Development Fund
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
USA	United State of America
USAID	United States Agency for International Development
USD	United States Dollar
ZAR	South African Rand