Small and Medium-Sized Enterprises, Blended Finance, and Climate Change in Sub-Saharan Africa

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THE ISSUE

- Small and medium-sized enterprises (SMEs) in sub-Saharan Africa are often those most affected by climate change, especially in the agriculture and water systems sectors.
- SMEs are also integral in addressing climate change since they make up most of the private sector in sub-Saharan Africa.
- In many cases, the technology required to adapt to climate change is expensive and SMEs will require blended finance to be able to adopt these technologies.
- Blended finance has the potential to counter the effects of climate change by promoting inclusive and sustainable development.

Climate change will have a disproportionate effect on those least responsible. Sub-Saharan Africa is the best example of this. Sub-Saharan Africa has only been responsible for .55 percent of total global CO2 emissions, yet the continent is expected to suffer greatly from climate change. Warming temperatures will increase the incidence of natural disasters and have a negative effect on economic and health outcomes. Natural disasters are already more frequent: most countries in Africa experienced a drought every 2.5 years between 2007 and 2016 compared to every 12.5 years between 1982 and 2006. Some regions, like the Sahel and Horn of Africa, are also simultaneously devastated by flooding from increased rainfall.

Beyond the direct environmental effects of natural disasters, climate change will bring severe economic costs. Agriculture, the source of 52.9 percent of employment in sub-Saharan Africa, will suffer decreased productivity because of changes to the environment. Temperature increases of one to four degrees Celsius by 2030 are projected to cause Africa’s GDP to decline by 2.25–12 percent. Estimates suggest that this will cause up to 720 million more people to enter extreme poverty between 2030 and 2050. Rising temperatures will also harm health outcomes. Droughts and declining agricultural productivity already cause increased food insecurity. There is also evidence that the outbreak of climate-sensitive infectious diseases will become more frequent.

African small and medium-sized enterprises (SMEs) can play an important role in mitigating the effects of climate change. According to the Organization for Economic Cooperation and Development, SMEs are independent firms that employ less than a given number of employees. For example, a medium-sized enterprise employs under 200–250 employees, while small firms have less than 50 employees. A microenterprise typically employs 10 people or less, so this includes smallholder producer groups. SMEs are responsible for about 80 percent of employment in Africa. Even though SMEs are not responsible for the large-scale, low-carbon infrastructure that larger companies can
Support, they still have a significant potential for helping mitigate the impact of climate change. Since African SMEs make up most of the agricultural sector, implementing climate-smart agriculture will be vital. According to the United Nations Food and Agriculture Organization, climate-smart agriculture is an agricultural approach that strives to transform agricultural systems in order to protect food security and development from climate change. The three objectives of climate-smart agriculture are “sustainably increasing agricultural productivity and incomes, adapting and building resilience to climate change, and reducing and/or removing greenhouse gas emissions.” The World Bank has already committed $2.5 billion to climate-smart agriculture projects globally and works with the Adaptation of African Agriculture Initiative to increase investment in climate-smart agriculture. For example, the World Bank’s Climate Smart Agriculture Investment Plans helped design the $50 million second phase of the Smallholder Agricultural Development Project in Lesotho that helped smallholding farmers adopt climate-resilient practices. The World Bank also helped formulate the Comprehensive Africa Agriculture Development Programme’s National Agriculture Investment Plans in Zimbabwe and Zambia. The West Africa Initiative for Climate Smart Agriculture (WAICSA) provides blended finance to smallholder farmers and agribusinesses so that they can adopt climate-smart agriculture practices. According to WAICSA, the project could improve the food security of 90,000 households while also converting 185,000 hectares of land to climate-smart agriculture.

Incorporating SMEs into supporting alternative renewable energy sources is a positive step. This will help channel SMEs’ contributions to the nationally determined contributions of the sub-Saharan African countries, which are at the heart of the Paris Agreement and a step toward achieving long-term goals. It will also establish distribution channels and funding streams from social impact investors. This could initiate an economic growth paradigm that incentivizes responsible consumption along with a sustainable standard of living.

SMEs cannot do this on their own, and estimates predict that about 75 percent of financing for climate investments will come from the private sector. Just like low-carbon infrastructure, SMEs face significant financing difficulties on the climate side. Their small size, limited experience, and lack of collateral, in addition to the underdevelopment of African markets, mean that private finance can be unaffordable or inaccessible. Without enough working capital, African SMEs cannot invest in off-grid energy sources or more sustainable practices. They often lack formal training programs, which would help employees adapt to greener business methods. Using blended finance would enable African SMEs to address the effects of climate change and generate growth opportunities for firms.

THE IMPACT OF CLIMATE CHANGE ON SMES

WARMING TEMPERATURES AND EXTREME WEATHER EVENTS

The majority of agricultural firms in Africa are SMEs, which are significantly dependent on weather. Warming global temperatures will have an especially acute impact on the agricultural sector, and therefore affect SMEs in sub-Saharan Africa. Warming temperatures are expected to increase the frequency of natural disasters, negatively impacting agriculture. Extreme weather events will also impact SMEs. Unpredictable rainfall and changes in seasons will make it difficult for smallholder producers to plan ahead, leading to lower yields. There will also be increased costs for farmers to adapt to extreme weather events for several reasons, including increased prices of raw materials, declining markets, disrupted supply chains, and increased insurance costs. Changing weather patterns impact agricultural SMEs in three ways: they destabilize markets, scare agricultural investors, and curb economic growth. Avoiding these disastrous consequences will require limiting the rise in average global temperatures to less than two degrees Celsius by 2050, the target set by the Paris Agreement. Many crops in Africa are highly volatile and already close to their limits on declining returns in revenue generation. Without adaptations to climate change, some simulations predict that climate change will lead to an 8 percent reduction in crop yields by the year 2050.

Changing weather patterns impact agricultural SMEs in three ways: they destabilize markets, scare agricultural investors, and curb economic growth.

HEALTH IMPACTS

The Covid-19 pandemic has highlighted the potential impacts of health on economies and businesses, including SMEs. Changing weather patterns will harm health outcomes, such as extreme weather events causing
physical harm. Further, weather changes could lead to increases in diseases such as cholera through diminished water quality, and increases in malaria from changes in vector technology. There is evidence to suggest that the outbreak of climate-sensitive infectious diseases will become more frequent. These negative health outcomes will impact the workforce and, by extension, SMEs.

As the negative health impacts of climate change intensify, SMEs in Africa will be gravely affected. A study done by the European Agency for Safety and Health at Work found that SMEs are likely to suffer substantial losses due to health disruptions globally. For example, between 40 and 60 percent of South African SMEs are expected to experience financial losses of more than 5 percent due to the Covid-19 pandemic. In a region with poor healthcare infrastructure and a high prevalence of diseases like HIV/AIDS, the health impacts of climate change could worsen the situation even further.

**ECONOMIC IMPACTS**

Beyond the direct effects of natural disasters, climate change will bring severe economic costs, including detrimental impacts to Africa’s GDP, as well as increases in poverty on the continent. To help curb the negative effects of climate change, African SMEs need to adapt the technologies they use to prevent further degradation and effectively adjust to changing conditions. While many African SMEs are already taking measures to adapt to the challenges of climate change, there are still many barriers SMEs face in employing new technologies and strategies. The largest barrier for many African SMEs in adapting to climate change is access to affordable credit and finance. For example, in a 2018 study, 25 percent of African SMEs listed access and availability to finance as their greatest constraint. Only 16.9 percent of SMEs in Senegal and Kenya stated they were able to get a loan to finance climate change adaptation, and only 27.6 percent of agricultural SMEs in the two countries were able to switch to a more climate-resilient crop. As a result of limited access to financing and credit, 16 percent of Senegalese and Kenyan SMEs made ineffective changes, such as reducing the number of employees, to counter the negative effects of climate change. Examples like this show the need for more support by development actors and local financial intermediaries to prepare SMEs for climate change. By increasing access to finance and technical assistance, development actors can promote sustainable practices and help prepare African SMEs for a future with climate change.

**IMPORTANT SECTORS**

**ENERGY**

Sub-Saharan Africa currently has the lowest energy access rates in the world and dramatic variability in climatic conditions is adding to energy poverty. The International Energy Agency estimates that electricity demand in Africa is growing twice as fast as the global average and it forecasts the total demand for electricity in Africa to increase at an average rate of 4 percent each year through 2040. Africa’s population is among the fastest growing and youngest in the world. One in two people added to the world population between today and 2040 is set to be African, and the continent will become the most populous region by 2023, overtaking China and India. A critical task for policymakers is to address the persistent lack of access to electricity and the unreliable electricity supply, which have acted as brakes on the continent’s development. Despite progress in several countries (e.g., Kenya, Ethiopia, Ghana, Senegal, Rwanda), current and planned efforts to provide access to modern energy services barely outpace population growth. Clean energy pathways in sub-Saharan Africa are urgently needed to win the fight against energy poverty. A green strategy will catalyze delivering on the promises of the UN 2030 Agenda for Sustainable Development’s Sustainable Development Goals (SDGs) and the Paris Agreement. It is critical to develop financial models that can accelerate this progress in sub-Saharan Africa. SMEs have a large role to play in this process. With access to finance, SMEs in sub-Saharan Africa can help create innovative technology that develops clean energy pathways and thereby reduces the reliance on traditional forms of energy. These efforts will not only help move the continent toward delivering on SDGs, but also benefit SMEs.

**AGRICULTURE**

The impact of climate change on agriculture, food, and livelihoods in sub-Saharan Africa will be extreme. Agricultural SMEs are at particular risk for climate-related incidents, and the agriculture sector employs 53.3 percent of the sub-Saharan African population. Temperature increases are projected to reach a level above tolerance range for most of the current crop varieties, cultivars, and livestock species. Smallholder farmers in Africa already face a series of negative impacts due to climate variability and change on agriculture, leading to loss of major livelihood defenses and cyclic poverty. Whereas sub-Saharan Africa is generally perceived to have fertile soils, farming practices escalate the degradation of these soils through nutrient-
mining activities. There also needs to be a strategic and systemic implementation of options that yield multiple benefits, such as adopting climate-smart agriculture, investing in capacity building at both the technical and farmer level, and creating opportunities for investment capital, including providing smallholders with credit and mobilizing private financing. Also of vital importance is investing in the development of functional early warning systems, strengthening agricultural value chains through a strategic focus on agribusinesses, and strengthening political commitment through a focus on policy and governance in agricultural frameworks and processes.

While climate change will impact the production capabilities of agricultural SMEs in rural areas, the effects of a changing climate will also impact urban populations and SMEs along the value chain. The *Africa Agriculture Status Report 2019* by the Alliance for a Green Revolution in Africa finds that only about 20 percent of food consumed in sub-Saharan Africa is produced by subsistence farming. Agricultural SMEs grow the vast majority of food, then it is processed, packaged, and transported by other SMEs for rural and urban consumers. The ability of agricultural SMEs to adapt and respond to climate change is imperative considering their importance to the greater sub-Saharan African economy.

Some SMEs already seeing the impact of climate change have begun to adapt their practices. Aoulaye Sesame, an SME that grows white sesame in Niger, restored 100 hectares of degraded land by planting trees. This planting helped the business’s crops withstand the recent increased rainfall and flooding, as the trees absorb water. Another strategy that agricultural SMEs use to address the impacts of climate change is crop diversification. Eden Field Agri-Seed Enterprise, an Ethiopian SME, supplies its customers with drought-tolerant Sudan grass seeds. These new seeds help restore grass for cattle feeding, and so, protect the livelihoods and food security of those depending on livestock for food and sources of income. Crop diversification can reduce the vulnerabilities of agricultural SMEs by ensuring that the SMEs are not reliant on one crop, protecting them from climate-related crop failure. Other agricultural SMEs in sub-Saharan Africa should adopt such practices.

**WATER SYSTEMS**

Climate is an important factor driving water stress in Africa and around the world. As climate change makes rainfall more erratic and increases the risks of floods and droughts, investing in improved water management and infrastructure is even more important. These investments can strengthen economies. When targeted at the poorest people, they offer a triple dividend: alleviating poverty, supporting jobs and growth, and reducing vulnerability to climate change. For sub-Saharan Africa to achieve the SDGs for water and sanitation (universal and equitable access to safe and affordable drinking water and to adequate and equitable sanitation and hygiene by 2030), it will require consistent investment in water infrastructure, operations, and maintenance; efficient management of water resources; and strengthened policy and regulatory frameworks. Investing in green infrastructure will play a huge role in providing safe, clean, and regular water flows.

In 2015, there were more than 282 million rural Africans without access to water, and 455 million people without access to sanitation facilities in rural areas across sub-Saharan Africa that are vulnerable to climate change's adverse impacts on the continent’s water supply. African SMEs feel the impact of these water disruptions on their business operations and economic output. The majority of SMEs in sub-Saharan Africa reported water supply disruption as their largest obstacle to business operations in a World Bank Enterprise Survey. For example, 97 percent of SMEs in Gaborone, Botswana, experienced reduced water supply because of El Niño. Gaborone’s reduced water supply caused restaurants, cleaning and sanitation SMEs, and other service-oriented SMEs to come to a standstill, and more than a third of SMEs in Gaborone reported less profits than the year before in 2016. To ensure that African SMEs have access to reliable sources of water, African governments, development actors, and SMEs should work together in the face of climate change. While countries like Benin have made water connection free for SMEs in the country, more action is needed to shore up water supply systems as droughts and flooding become a consistent reality.

**TRANSPORTATION**

Sub-Saharan Africa ranks at the bottom of developing regions in virtually every dimension of infrastructure performance. The region scores a 2.91 in the infrastructure category of the World Economic Forum’s 2019 *global competitiveness report*. Combined with traffic jams, poor governance, and the increasing cost of living, public transport mobility in sub-Saharan cities is having a tremendous impact on their livability by increasing air pollution and hampering citizens’ development aspirations. Relatively poor infrastructure conditions place many sub-Saharan African producers and exporters
of goods and services at a competitive disadvantage in regional and global export markets, increasing costs and compromising product quality. This renders both merchandise and services exports less competitive vis-à-vis exporters that may not be similarly disadvantaged.

Africa’s rapidly growing population will increase the strain on existing urban areas and will require climate-resilient infrastructure to sustain them. Transportation infrastructure has become one of the key development factors in urban centers of sub-Saharan Africa, but also plays a significant role in rural areas, especially for SMEs. Limited access to transportation and lagging infrastructure remains a large barrier for many African SMEs. Only one-third of Africa’s rural population lives within two kilometers of an all-season road. As temperatures rise and flooding increases due to climate change, the already-insufficient transportation infrastructure in Africa will become more vulnerable and require more maintenance.

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Since most passenger transportation in Africa is based on informal motorcycle taxis, tuk-tuks, and minibuses, several actors are taking advantage of the situation and working to increase sustainable transportation options. There are many African startups providing app-based services to connect passengers with electric motorcycles. Additionally, electric cars such as the Nissan Leaf are making their way to African markets. City governments, such as those in Johannesburg, South Africa, have launched plans to set up electric bus systems to provide sustainable public transportation. The United Nations Environment Programme’s Electric Mobility Programme has 12 projects in Africa that provide business support and financing for the shift to electric transportation. Further investment into electric two- and three-wheeled vehicles and further green transportation could help create jobs in Africa, while also providing the goods and employees of African SMEs a sustainable option to get to markets and work.

Challenges associated with improving land transport and city development are tremendous; in many cases no single government or donor organization can address these issues alone. Many governments in sub-Saharan Africa have developed regional partnerships to address infrastructure constraints and improve infrastructure conditions. Because capital requirements for upgrading infrastructure are significant, major infrastructure projects increasingly rely on a combination of public- and private-sector financing and regional cooperation initiatives to pool capital and share investment costs. To improve the access and durability of African transportation infrastructure, international organizations such as the World Bank are working with African governments and SMEs. As of 2017, the World Bank’s Africa Climate Business Plan has helped secure $6.9 billion in funding for sustainable projects. For example, the World Bank began a project in the Central African Republic to build and upgrade the durability of...
existing rural roads, while considering its climate resiliency and impact. Projects like these will allow SMEs to have access to a larger labor pool and reliable transportation, while also preparing for and mitigating some of the adverse effects of climate change.

**BARRIERS SMES FACE**

**ACCESS TO MARKETS AND ACCESS TO FINANCE**
Sub-Saharan African SMEs face many barriers to sustainable growth and climate change mitigation. Two major constraints are lack of accessibility to both markets and finance. Because SMEs in Africa are frequently informal, they find it **difficult to access financial markets**. Only **between one-third and one-fifth** of SMEs in sub-Saharan Africa have a bank loan or line of credit. This fact means that an estimated **28.3 percent** of firms in the region are fully credit constrained.

Even when sub-Saharan African SMEs do have access to loans, these are usually offered at high interest rates. Local bank interest rates are often 20–25 percent while alternative lenders often have interest rates of 40–50 percent. High interest rates **often deter SMEs** from even trying to apply for financing. Currently, **51 percent** of SMEs in sub-Saharan Africa need more funding than they have access to. Because African SMEs frequently lack access to financing, by extension, projects that address the effects of climate change face significant barriers to finance.

Development finance institutions (DFIs) have five blended finance tools available to provide to SMEs. Loans are offered to SMEs at concessional terms that have lower interest rates than those offered by commercial and local lenders. Additionally, other blended finance tools such as equity, grants, technical assistance, and guarantees increase the SMEs’ ability to gain access to loans from the private sector and investors. These blended finance tools help de-risk many SMEs so that they can attract more private investment. The barriers to affordable finance show the significant need for financial intermediation in sub-Saharan Africa.

**ACCESS TO LOGISTICS**
Many African SMEs lack the capacities and access to logistics for addressing the effects of climate change on their own. This inaccessibility of logistics includes a lack of financial knowledge, training, and resources. Many entrepreneurs operating at the SME level in sub-Saharan Africa are not familiar with the kinds of financing available to them, and they lack the capacity to negotiate in the blended finance space. Therefore, development actors can use financial intermediation to help these African SMEs obtain blended finance that will help them adapt to the realities of climate change. To increase employee training and knowledge, technical assistance has proven effective. Technical assistance grants can fund employee training programs and increase African SMEs’ capacity for climate resiliency. Additionally, development actors such as the Global Infrastructure Facility provide technical assistance on infrastructure programs that benefit the environment and SMEs.

**ACCESS TO TECHNOLOGY**
Another stark barrier for African SMEs is the inaccessibility of green energy and infrastructure. Similar to the inaccessibility of affordable finance, the cost of green energy is too high for many African SMEs who have lower energy demands than larger companies. While African SMEs might not have the resources or be responsible for the large-scale, low-carbon infrastructure that larger companies can support, SMEs still have significant potential for positively impacting the environment if they are given greater access to green infrastructure. At a general level, **green infrastructure can help SMEs** and communities prepare for the adverse effects of climate change, while mitigating the impact of energy production and agriculture on the environment. Green infrastructure can help reduce the risk of floods, which heavily affect populations and businesses in their wake. Additionally, green infrastructure can reduce water usage and runoff from agriculture and food production. Green infrastructure can also increase energy efficiency and assist renewable power plant energy production while reducing greenhouse gas emissions. Decreased flooding and access to sustainable agriculture and energy benefit both SMEs and the environment. There is great opportunity to extend access to many African SMEs—primarily agricultural ones—as Africa’s huge infrastructure gap ($130–$270 billion) could be filled by green agriculture. Blended finance can help African SMEs invest in green infrastructure and adopt certain green agricultural practices by lowering costs.

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BLENDED FINANCE TOOLS

GUARANTEES
Guarantees are an important tool for creating greater access to finance for African SMEs. Rather than providing capital to SMEs directly, guarantees are contracts whereby development actors take responsibility for potential future liabilities that otherwise would have been suffered by commercial lenders. This action can de-risk investments or financing for SMEs, and it can encourage private and commercial lenders to invest. For example, **between 2012 and 2018**, guarantees were the blended finance tool responsible for mobilizing the most private finance in developing countries. The United Nations Capital Development Fund (UNCDF) uses several financial instruments, such as price guarantees, to promote private investment in African SMEs. To encourage green and sustainable investments, UNCDF considers both the financial and climate impact of an investment. With the help of development actors such as UNCDF, African SMEs can obtain greater private and commercial investment while also using these investments for climate change adaptation in the agriculture, water, and energy sectors.

JUNIOR EQUITY
Junior equity is another blended finance tool that can help de-risk investments in African SMEs and offer the financial assistance needed to make many SMEs greener and more sustainable. **Junior equity** is when a public or philanthropic partner buys ownership in the investment, but accepts a subordinate position in the structure, effectively accepting higher risk for lower returns. An example of this took place in August 2020 with **Energy+**, a Malian-owned and -managed off-grid solar company. The Energy+ deal structure included equity and enterprise development services (EDS) from VentureBuilder and debt from Cordaid Investment Management (Cordaid). The deal also included grant financing from the U.S. African Development Foundation (USADF). Energy+ strives to deliver affordable and reliable energy to off-grid households in Mali, where 60 percent of people live without access to modern electricity services. Through further equity investments such as the one in Energy+, African SMEs can benefit and scale up production while reducing their reliance on greenhouse gases.

SUBORDINATED DEBT
**Subordinated debt** has also been considered for de-risking investments in many SMEs. It has helped meet debt service cover required by senior lenders to offer non-recourse project financing to first-generation projects in markets with no track record and support projects with low leverage. Using the strategy of subordinated debt, loans are offered on **concessional terms** or in local currency (which should become the primary form) in order to make them more accessible to SMEs, with the goal of transitioning to commercial lending. For example, Nithio, a venture-backed energy finance platform, acts as an intermediary for financing energy systems in Africa, working with local private companies and SMEs to offer financing tailored to meet their needs. USADF has partnered with Nithio on some of its projects, providing grants and technical assistance to grantees. Nithio and USADF’s experience in Kenya show the need for further technical assistance for SMEs in the green energy space.

TECHNICAL ASSISTANCE
Technical assistance is vital to helping African SMEs adapt to the changes and pressures of climate change. Technical assistance refers broadly to grant support for a specific project or country program in the form of technical advice, research and data sharing, and skills training, among other activities. Technical assistance is frequently deployed alongside other financing. Its main goal is to strengthen a firm or investment opportunity to make it more attractive to investors. In the context of climate change, the United States Agency for International Development (USAID)’s Power Africa, for example, provides technical assistance to African SMEs by providing access to solar energy and supporting the greening of business operations. USADF also has the capabilities to carry out technical assistance and is currently implementing it through local partners on the ground. One example is USADF’s local partner in Nigeria, Diamond Development Initiative (DDI). When USADF provided a $5,000 grant to Agricultura & Value Addition Multi-Purpose Ltd (AVAMCU) in southern Nigeria to improve its rice production, DDI was able to provide technical support through project management and training on the ground.

Grants are an important aspect of technical assistance as well. USADF provided **$1.4 million** in solar energy grants for African businesses in 2020 alone. USADF also funded **Deevabits Green Energy** in Kenya to provide solar home systems for residents and businesses. In 2021, USADF partnered with All On to provide **$2 million** in blended finance to promote the use of off-grid renewable energy solutions in Nigeria. Examples like these show how technical assistance and grants promote greener business practices and help improve African SMEs for the future.
RECOMMENDATIONS
Investment into SMEs and the private sector in sub-Saharan Africa has the potential to (1) help mitigate the negative impacts of climate change by strengthening markets through competition and opportunities, (2) allow SMEs to acquire technologies to adjust to changing climate patterns, and (3) improve livelihoods through job creation and reducing negative health outcomes. Blended finance can play a central role in catalyzing private finance to expand access to affordable capital for SMEs. Considering the significant number of SMEs in sub-Saharan Africa, and the limited capital, private investors and development actors should adapt a targeted approach that focuses on specific sectors, supports innovation, and identifies SMEs with potential for growth.

FOCUS ON SPECIFIC SECTORS

Energy
Until now, fossil fuels and hydroelectric power have provided the primary sources of electricity generation in sub-Saharan Africa. While fossil fuels are the main contributor to global warming (and hence, climate change), hydroelectric plants could be rendered impractical in dry spells and droughts. Climate variabilities will give rise to heating or cooling requirements and lead to increased energy consumption. In sub-Saharan Africa, nearly 70 percent of the rural population does not have access to electricity. Wood, charcoal, crop/animal waste, coal, and kerosene used for cooking and heating not only impose health and literacy costs on households, but also contribute to a wide range of negative economic and environmental effects. Replacing carbon-intensive energy sources with green energy options will help reduce global warming emissions and combat climate change.

Fortunately, SMEs in sub-Saharan Africa can be catalysts for adopting alternative energy sources. SMEs can help in the rapid implementation of off-grid renewable sources like solar, wind, and other sources, especially in rural areas that are not yet connected to the national grid. Establishing the SME renewable energy value chain will ensure that villages and rural areas can have their own source of energy, eliminating the need to build a distribution line from a large plant. Some benefits could include reduced carbon footprint, elimination of transmission costs, employment creation, and the creation of subsidiary cooperative organizations at the local level, making all these reforms sustainable. De-risking capital through blended finance tools can make green energy infrastructure more investable. It will also help achieve the goals of the Economic Commission for the SDG7 Initiative for Africa, which aims to use the principles of blended finance to provide 10,000 megawatts of renewable energy by 2025.

Agriculture
Food insecurity is a significant issue facing 257 million Africans. Providing climate-resilient financing for agricultural SMEs will play an important role in addressing this issue. Agricultural productivity is especially vulnerable to climate change, impacting the largest sector of SMEs in sub-Saharan Africa. To improve SME resilience, vertical integration is key to
adding value to basic agricultural commodities, and it remains critical to strengthening value chains. The water sector is significant on its own but is also an important part of the agricultural sector. Many African countries vacillate between the extremes of drought and flooding, meaning there is a significant need for resilient water infrastructure. Africa’s rural populations are heavily reliant on local ecosystems both economically and as a source of climate resilience. Blended finance can smooth the transition from basic subsistence to a more modern, sustainable, and resilient agriculture system.

SUPPORT FOR INNOVATION

Technology
There are many financing opportunities that would promote innovation and increase access to new technologies to strengthen African SMEs’ ability to adapt to and mitigate the effects of climate change. Both agricultural and energy SMEs could benefit from new, cleaner, and more sustainable approaches with the help of multistakeholder partnerships and blended finance. Many agricultural SMEs have already entered partnerships with larger private companies to adapt to the impact of climate change. In Uganda, Café Direct provides financial and technical assistance by supplying disease-resistant tea plants to SMEs that grow tea for the company, and the company installs water tanks to harvest rainwater. The Conservation Agriculture for Food Security (CA4FS) partnership links agricultural SMEs to agriculture fabricators and buyers to support the adoption of climate-friendly agricultural methods, such as reducing tillage, which increases the organic matter and water in soil. Additionally, the partnership helps SMEs and producers access agricultural inputs on credit and trains workers in conservation agriculture. Innovative partnerships like the one with Café Direct and CA4FS offer SMEs the ability to prepare for the adverse impacts of climate change through technical assistance and access to markets and supply chains.

Access to reliable electricity remains a significant challenge for many African SMEs and households, as more than 590 million Africans lack access to electricity. Increased investment in off-grid solar energy technology and distributed energy access—primarily mini-grids—would benefit the livelihoods of many Africans while also reducing their dependency on fossil fuels. Most modern mini-grids are powered by solar panels and combined with battery storage and a local distribution system. The mini-grids then supply energy access to homes, small businesses, and industries that are in areas beyond the reach of the main grids. The Energy Sector Management Assistance Program, a technical assistance program run by the World Bank, projects that more than $220 billion is needed to connect 490 million people to mini-grids globally. In Africa, there are already active financing projects to increase access to off-grid energy solutions and mini-grids. The BUILD Fund, created in partnership with UNCDF and Bamboo Capital Partners, recently provided $500,000 for Mwezi Ltd., a Kenyan distributor of solar products that target rural Kenya. Financing projects like the BUILD Fund could be transformative for SMEs throughout sub-Saharan Africa while promoting clean energy.

Innovative Approaches
While many African SMEs and DFIs are working together to adapt to and mitigate the effects of climate change, there is still room for innovation and improvement. One area for further innovation and focus is climate information services (CIS). CIS provide SMEs with reliable climate and weather information, allowing them to prepare for weather conditions that could impact their businesses. Unfortunately, current CIS systems in Africa are lacking. While projects like the PREPARED Project in Kenya exist, DFIs and development actors such as USAID should continue increasing their efforts to improve the space and promote public-private partnerships (PPPs) in the region. USAID funded the Assessing Sustainability and Effectiveness of Climate Change Information Services in Africa project, which strives to implement innovative CIS PPPs on the continent. PPPs have proven successful in other sectors, so these partnerships could also help African governments and SMEs strengthen their climate preparedness and resiliency in the future.

In addition to increased financing of innovative and sustainable technology, development actors and SMEs should also adopt new innovative approaches as they prepare for the adverse impacts of climate change. There needs to be innovation in programming and regulations. One such approach is crop insurance. For example, the aforementioned PREPARED Project in Kenya invests in upgrading weather stations and capacity building within the Kenyan Meteorological Department. This effort supports insurance companies’ abilities to determine viable insurance premiums for poor farmers. Examples such as the PREPARED Project show that simple, yet inventive adaptations can prepare African SMEs for the future and promote sustainability. Many DFIs and development actors currently focus their funding directly on SMEs in sectors such as agriculture.
and energy. However, an increased focus on green supply chain management could help support the missing middle and promote sustainable practices. **Green supply chain management** is defined as a “strategic capability consisting of strategies, practices, and policies that concentrate on managing the environmental impact of supply chain operations.” For example, supporting green supply chain management is essential, as the **vast majority** of Africa’s food that is grown by agricultural SMEs is then processed, packaged, and transported by other SMEs along the supply chain. To implement green supply chain practices, most SMEs will need additional funding and technical assistance because they lack the **employee training** or financial resources to implement green supply chain management practices.

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