



CATALYST CLIMATE RESILIENCE FUND

INSTRUMENT ANALYSIS
SEPTEMBER 2023

Catalyst Climate Resilience Fund

LAB INSTRUMENT ANALYSIS

September 2023

DESCRIPTION & GOAL

Catalyst Fund is the leading impact fund and accelerator supporting pre-seed tech startups that are building a climate resilient future in Africa.

SECTOR

Climate Resilience

FINANCE TARGET

Grants: Development finance institutions, foundations

Concessional Investments: Development finance institutions, impact investors, family offices

Commercial investments: Institutional investors, commercial banks

GEOGRAPHY

For pilot phase: Africa

In the future: Expansion to Latin America and Asia

The Lab identifies, develops, and launches sustainable finance instruments that can drive billions to a low-carbon economy. The 2023 Lab cycle targets two thematic areas (gender and adaptation), three geographic regions (Brazil, India, and East & Southern Africa), and one global open slot.

AUTHORS AND ACKNOWLEDGEMENTS

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SUMMARY

The Catalyst Climate Resilience Fund (CCRF) is an impact fund and accelerator to support pre-seed startups in Africa that are focusing on improving the climate resilience of vulnerable communities, across adaptation-relevant sectors. Africa is highly susceptible to climate change, with extreme weather patterns threatening livelihoods, food security, and health. The fund will address these challenges by supporting innovative solutions in financial services such as insurance, agriculture, fisheries management, and essential services like access to water to build the adaptive capacity of vulnerable populations.

Assessed against the Lab criteria, CCRF is:

- **Innovative:** CCRF introduces a unique approach as the only pre-seed equity fund in Africa with a focus on climate adaptation.
- **Financially Sustainable:** The fund offers pre-seed investments and potential follow-on funding opportunities at Seed and Series A, targeting a net return of 18% IRR to investors, leveraging first loss/philanthropic capital to mitigate commercial risk, and utilizing a compelling impact case to attract like-minded investors.
- **Catalytic:** CCRF capitalizes on the growing recognition of the importance of adaptation financing. Its ability to scale, both in terms of size and target geographies, enables it to tap into a wide range of sectors.
- **Actionable:** The implementation of the fund involves a strong and experienced team, with initial anchor funding already secured and the first round of 10 pre-seed investments already completed.

CCRF is currently in the pilot stage, with instrument development nearly complete. The team just completed the crucial first close of the fund, with known institutional investors including FSDA. This initial closing will provide the necessary financial support and momentum for the fund's operations. Subsequently, the final close will mark the completion of the fundraising process. The fund's model has high scalability. Thus, there is potential for its application in other regions, including Latin America and Asia. CCRF seeks to leverage this potential and expand its impact on a global scale.

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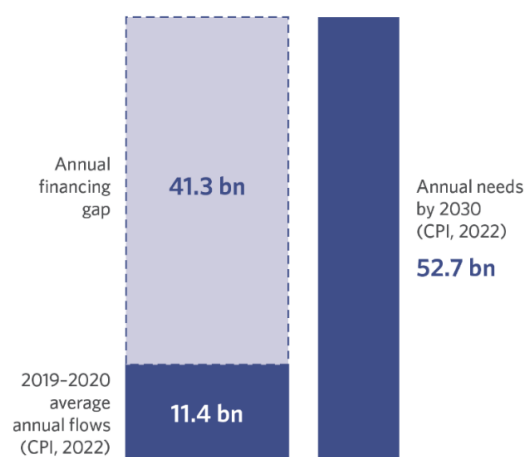
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CONTEXT

Africa's climate vulnerability demands resilient solutions as climate risks worsen, threatening smallholder agriculture, food security, and livelihoods. Innovative strategies like improved seeds, irrigation, advisory services, logistics, and fisheries management are essential for building resilience in African communities.

Nearly half of Africa's GDP is vulnerable to extreme climate patterns. Critical sectors such as agriculture, water, and infrastructure are particularly vulnerable to climate change risks. In Sub-Saharan Africa, 95% of arable farming is reliant on rainfall, underscoring its climate vulnerability. The water infrastructure sector has the most significant financing gap among all infrastructure sectors in Africa, with over 90% of current investments lacking climate resilience. Furthermore, an annual investment of approximately USD 92 billion is required, more than double the current urban expenditure, which stands at around USD 45 billion.

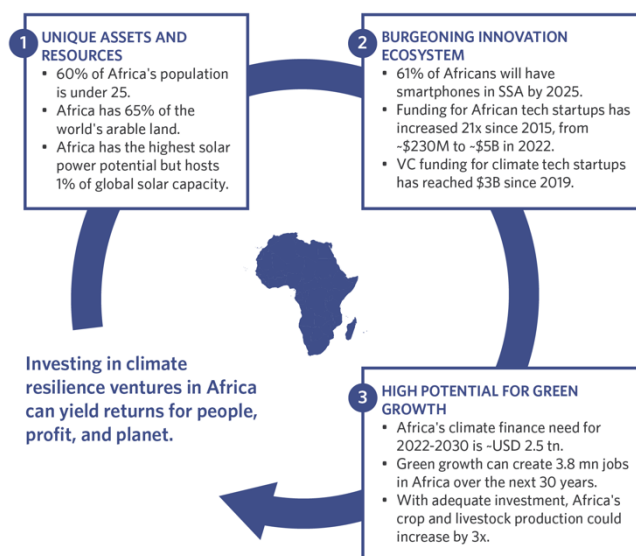
Figure 1. Annual Adaptation Flows and Financing Gap



Africa faces a serious and urgent shortfall in funding for climate adaptation, even as the costs of delayed action rise. An annual average of USD 11.4 billion was tracked in adaptation finance to Africa in 2019–2020. If this trend were to continue through 2030, adaptation finance would total USD 125.4 billion through 2030, far short of the USD 579.2 billion (or approximately USD 52.7 billion annually) in estimated needs, according to Nationally Determined Contributions (NDCs). To tap a wide range of potential actors, it is necessary to build an enabling environment for adaptation investment and aggressively deploy innovative finance instruments at scale toward adaptation activities.

Despite the significant challenges, Africa holds the potential to become a leader in climate action. Its expanding population and valuable natural resources, such as abundant land and renewable energy potential - underscores the continent's opportunities. These advantages, coupled with growing digital inclusion and technological advancements, are creating opportunities for game-changing innovations that attract substantial climate adaptation investment. For instance, venture investing in Africa reached nearly USD 5 billion in 2022 and funding for climate tech startups more than doubled from 2021 to 2022. Figure 2 illustrates additional trends and opportunities for the sector.

Figure 2. Trends and Opportunities for Investment in Adaptation in Africa



CONCEPT

1. INSTRUMENT MECHANICS

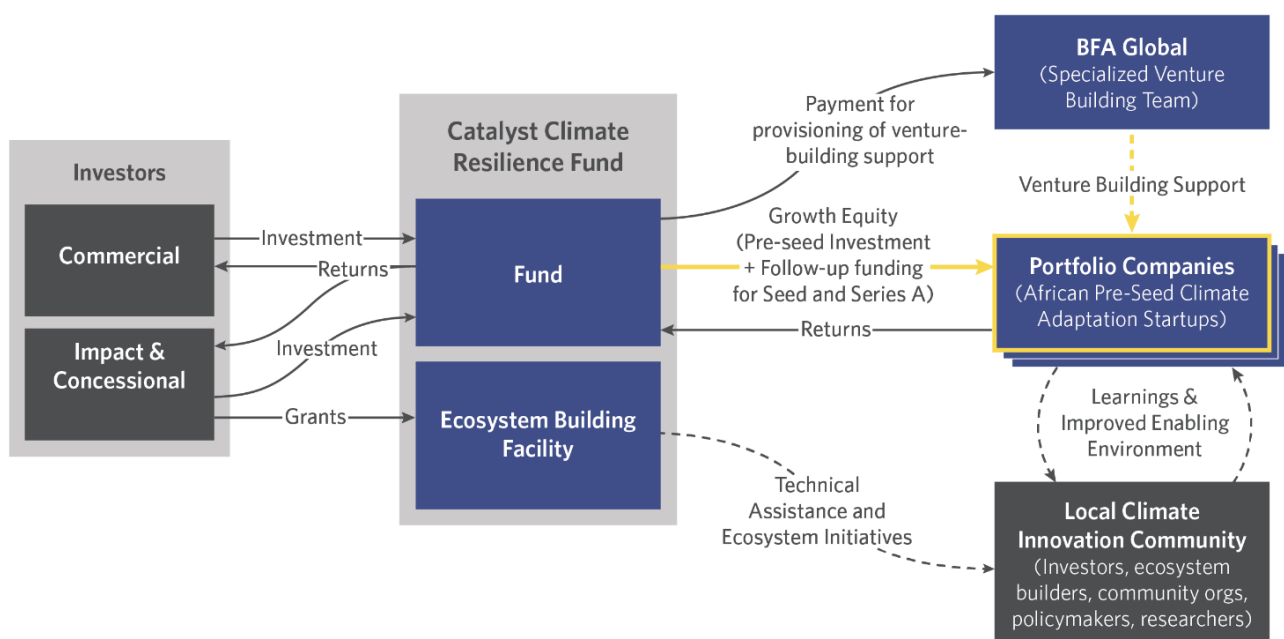
An impact fund and accelerator to support pre-seed climate adaptation startups that improve the resilience of vulnerable communities in Africa.

Catalyst Impact Partners – the proponents of the Catalyst Climate Resilience Fund (CCRF) – are an investment management firm part of BFA Global group, a social impact consultancy focused on equitable and inclusive finance for the world's most vulnerable communities. For nearly 20 years, BFA Global has conducted research and provided specialized advisory services on topics such as gender finance, digital inclusion, and climate resilience from their offices across Africa, Europe, and the Americas.

While BFA Global has managed two Catalyst Fund Accelerators over the past seven years, CCRF represents their first venture into the private equity space, as their previous two funds were entirely grant-based. Nonetheless, the experiences and learnings gleaned from these previous funds – as well as the considerable private equity experience of core team members – have contributed significantly to the new vision, goals, and early success of the CCRF.

The CCRF operates broadly as a standard private equity fund. As illustrated in Figure 3 below, the fund receives investments from concessional and commercial investors in a blended finance structure, which it then uses to invest an initial USD 200,000 in selected portfolio companies at pre-seed financing stages; with significant reserves for follow-on investments up to USD 1.3m at Seed and Series A stages. This initial investment, however, is more unique in structure. USD 200,000 at pre-seed takes the form of a post-money SAFE (simple agreement for future equity), but USD 100,000 is disbursed in cash and the remaining USD 100,000 is paid directly to specialist partner BFA Global advisory in exchange for venture building support by a dedicated team of technical specialists and operators.

Figure 3. Instrument Mechanics Diagram



With the cost of venture building support built-in to the initial pre-seed investment, CCRF provides early-stage partner companies with product, data, technological, operational, growth marketing, and fundraising support that is crafted based on the startups' unique needs.

The fund keeps significant remaining capital in reserves to follow on in successful portfolio companies as they move through Seed and Series-A funding rounds. The fund also includes an accompanying, grant-funded ecosystem-building facility, which aims to engage with local climate innovation communities to share relevant learnings, best practices, and provide additional technical assistance to startups aimed at user research and impact measurement. In doing so, the facility is intended to support the development of a more vibrant adaptation investment ecosystem across Africa and bolster engagement from key stakeholders ranging from investors, accelerators, corporates, and more.

2. INNOVATION

Catalyst Climate Resilience Fund is the only pre-seed equity fund with an adaptation investment thesis operating in Africa.

2.1 BARRIERS ADDRESSED: OVERCOMING KEY CHALLENGES IN FINANCING ADAPTATION

The growth pathways of adaptation and resilience solutions in Africa face a range of barriers that require comprehensive interventions to address. These barriers include: 1) the absence of substantial investment flows, 2) the need for technology uptake and transfer to fuel demand, combined with limited capacity in logistics and distribution channels, and 3) critical talent and ecosystem gaps. These challenges arise from overall foundations characterized by limited access to finance, resources, and expertise, hindering the development and implementation of climate resilience solutions. To overcome these barriers, early-stage capital and bespoke venture building support are essential to bridge the gaps, foster innovation, and promote the growth of investment-ready adaptation solutions.

By providing early-stage support, the fund plays a crucial role in cultivating a robust pipeline of well-developed and investment-ready adaptation solutions. This support not only bridges the gap between innovative ideas and market viability but also enhances the prospects of attracting private investment and facilitating the scaling of impactful climate resilience solutions. Additionally, the fund's expertise in scaling resilient technologies and facilitating tech transfer across sectors addresses the urgent need for climate adaptation. Leveraging a team of subject matter experts with startup experience in emerging markets, the fund ensures that cohort startups receive valuable guidance and mentorship, enabling them to navigate challenges, optimize their approaches, and achieve significant outcomes in building climate resilience.

2.2 INNOVATION: THE FUND IS UNIQUELY FOCUSED ON EARLY-STAGE ADAPTATION STARTUPS

Though the mechanics of the fund are not drastically different from a typical venture capital fund, the fund's innovation is its unique targeting of 1) pre-seed, 2) Africa-based, and 3) adaptation & resilience-focused start-ups. Additionally, the fund's approach - integrating venture building support as part of the initial pre-seed investment – provides a unique value

proposition for startups. Following an extensive review of more than 30 comparable initiatives, the specific targeting across the three differentiators above indeed appears unique. The examples captured below illustrate the fund's innovation, while additional examples can be found in the Annex:

Table 1

Similar instruments	Description	Differentiation
GSMA Innovation Fund 2.0	Global grant fund providing pre-seed support, with a focus on mobile technologies improving resilience and adaptation	<ul style="list-style-type: none"> • Financing is grant-based • Thesis is focused solely on mobile technology
Factor[e] Ventures	VC firm with accompanying venture studio providing pre-seed support for anti-poverty and climate solutions	<ul style="list-style-type: none"> • Vast majority of portfolio is mitigation focused • Specific focus on East Africa and India
Lightsmith Climate Resilience Partners (CRAFT)	Global private equity fund focused on climate adaptation and resilience solutions	<ul style="list-style-type: none"> • Later stage funding: Series A-C • Global focus
Novastar Ventures	VC firm whose <i>Africa People + Planet</i> fund focuses on seed-stage resilience solutions	<ul style="list-style-type: none"> • Later stage funding: Seed through Series A-C

These examples also help illustrate how CCRF's early-stage pipeline development will provide broader ecosystem benefits by complementing and feeding into later-stage adaptation ventures investing post Series-A, such as Lightsmith Climate Resilience Partners and Novastar Ventures.

1.1 CHALLENGES TO INSTRUMENT SUCCESS

Core challenges to instrument success are largely those that hinder overall adaptation investment in the region. Shifting policy priorities or broad-targeted National Adaptation Plans (NAPs) without specific sectoral information can make certain investments less feasible. Additionally, the lack of regulatory incentives for climate-smart agriculture and mal-incentives in regulatory environments with subsidies for non-adaptive crops pose a risk to CCRF.

The critical lack of climate data, particularly in regions with limited funding and technical resources, may also challenge the fund's ability to build a business case for climate resilience measures and investments, hindering the assessment of adaptation-relevance and impact measurement. Linked to the limitations of data, the value or benefit, especially in terms of resilience outcomes, of certain technologies or financed interventions is not well-known or articulated by the investee companies. Limited assessment of value or impact may limit the development of a compelling case to impact investors, as the value of adaptation technology is often less uniform than mitigation technology.

MARKET TEST AND BEYOND

3. IMPLEMENTATION PATHWAY AND REPLICATION

Catalyst Climate Resilience Fund to invest USD 40 million in African climate adaptation startups, with plans to expand to Asia and Latin America.

3.1 MARKET ANALYSIS

Catalyst Climate Resilience Fund has a pan-Africa mandate. However, it has identified nine countries in Africa as primary target markets. Rwanda, Kenya, Egypt, South Africa, and Morocco exhibit strong commitments and well-established frameworks, while Senegal and Uganda face challenges that require attention to enhance their climate investment landscape. Nigeria and Ghana show progress and potential for further policy and institutional development. Further details are available in the Annex.

Table 2

Country	Overview
Egypt	Has historically shown interest in energy sector investments, with a strong emphasis on renewable energy and energy efficiency in climate frameworks. While energy-related projects remain in high demand, there is a large gap in the implementation of initiatives related to water and agriculture. Given importance of private sector involvement in the country's green and resilient transition, Egypt has developed frameworks and initiated several partnerships.
Ghana	Ghana has identified agriculture, human settlements, water, transport, and health as priority sectors for investment in climate adaptation. However, the country faces challenges in mobilizing sufficient funds for these efforts. There is limited capacity and a fragmented approach to climate finance proposals, which hinders progress in adaptation financing. The government aims to attract private sector funds.
Kenya	Kenya demonstrates a strong political commitment to addressing climate change. Kenya has enacted comprehensive strategies and policies, making it an attractive partner for international climate finance investments. Various funders, including foreign private sector actors and philanthropic foundations, have invested in renewable energy, adaptation, health, water, and other climate sectors in Kenya.
Morocco	Morocco has made significant progress in climate action, with well-defined strategies and frameworks in place. Water scarcity, water-energy nexus, agriculture and energy represent Morocco's priority sectors for future socio-economic development. The country has also initiated a structural transformation of its agricultural sector and aims to double its share in GDP while creating new jobs.
Nigeria	Nigeria has recently shown a shift in its domestic agenda towards climate positive policies. The policy landscape in Nigeria includes initiatives at all levels of government, focusing on sectors like finance, agriculture, and energy. Nigeria's adaptation-mitigation ratio is relatively balanced, and efforts are being made to address agriculture and waste management.
Rwanda	Rwanda's policies prioritize water, agriculture, and forestry sectors, which are crucial for the country's economy. The agriculture sector accounts for a significant portion of GDP and household subsistence, making it a priority area for climate action. Rwanda has also shown dedication to adaptation, with substantial development finance commitments in this area.
Senegal	Senegal's focus on its oil and gas sectors overshadows its growing commitment and interest in agriculture and resilience. Significant opportunities exist in the agriculture sector, particularly with adaptation-related projects.
South Africa	While South Africa has prioritized energy and decarbonization projects there's has been a recent shift to sectors like water and waste management. This creates an opportunity for targeted investments in Climate-Smart Essential Services related to waste and water management.

Uganda	Uganda's increasing focus on climate adaptation is constrained by a lack of investment-ready projects, particularly in agriculture and water sectors. The landscape provides an emerging opportunity for fintech solutions and smart agriculture.
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3.2 STAKEHOLDER MAPPING

A diverse set of stakeholders will be involved in the implementation of the Catalyst Climate Resilience Fund including the below.

Table 3

Stakeholder Category	Activity to Date and Planned Engagement
Startups	The fund de-risks the journey of early-stage climate adaptation startups by backing them with USD 200,000 in pre-seed investment, providing bespoke venture building support, and connecting founders with a community of 190+ emerging market co-investors.
Development finance institutions	Will invest equity in the first-loss tranche of the fund as well grant capital in the ecosystem building facility.
Impact investors (incl. high-net worth individuals)	Will invest equity in the mezzanine loss tranche of the fund.
Donors	Will invest equity in the first-loss tranche of the fund as well grant capital in the ecosystem building facility.
Commercial banks	Will invest equity in the senior tranche of the fund.
Policymakers	Form a key component of the climate innovation community which creates an enabling environment for startups.

3.3 IMPLEMENTATION PATHWAY

The CCRF team has already made significant progress in fund formation, early fundraising, as well as initial investments. After receiving initial anchor funding from an African DFI in December of 2022, the team moved quickly to make their first investments (USD 200,000 each) in 10 pre-seed start-ups across Egypt, Kenya, Morocco, Senegal, Uganda, and Nigeria.

With these initial investments completed, and with start-ups already accessing venture building services through the BFA Global partnership, the fund has maintained its focus on further fundraising as well as pipeline building for the last seven months. These efforts have yielded progress: the fund successfully achieved its first close at the beginning of September 2023 with additional commitments from four new investors.

Looking to the future, one key implementation milestone for the short term is a final addition to the fund's investment committee. With identification efforts already underway, the team intends to finalize this decision within the next few months. An additional short-term milestone – although one likely to be revisited and adjusted as necessary over the life of the fund – is a selection of initial key metrics for tracking and reporting of economic and environmental impacts of its investments. The fund has built a robust impact measurement methodology but is refining the set of metrics that will roll up at the portfolio level. For more details on these efforts, please see Section 5 below.

In terms of longer-term implementation, two remaining key activities clearly stand out: additional fundraising, and pipeline development.

1. **Additional fundraising:** With a first close of approximately USD 8.5 million completed in August 2023, the CCRF team now intends to continue pursuing additional fundraising throughout 2024 in order to reach the intended fund total of USD 40 million. While philanthropic and/or concessional investors will remain an important target for purposes of first loss protection, securing support from commercial investors – primarily family offices and aligned impact investors – for the fund's junior and senior equity tranches will also be key. The fund aims to finalize its capital acquisition in the near future, which will enable it to pursue additional pre-seed investments in the subsequent years.
2. **Pipeline Development:** With 10 of the 40 intended pre-seed investments completed, pipeline development and investment diligence will remain key areas of focus until 2026. While a potential shortage of eligible investment opportunities remains a key risk of which the CCRF team is keenly aware, the team's strong network of partners, entrepreneurs, and alumni – as well as its organizational reputation – so far appears to have mitigated this risk. The CCRF team has reviewed over one thousand additional potential investment opportunities since October 2022 and has recently received approval from their Investment Committee for five new investments and continues due diligence for assessing other opportunities.

Once all initial pre-seed investments are complete, the fund intends to reinvest in select portfolio companies at Seed and Series-A funding stages, at which point the fund will turn its attention to managing potential exits for the remainder of the harvesting period. For more information on investment timing and envisioned ticket sizes, please see Section 4 below.

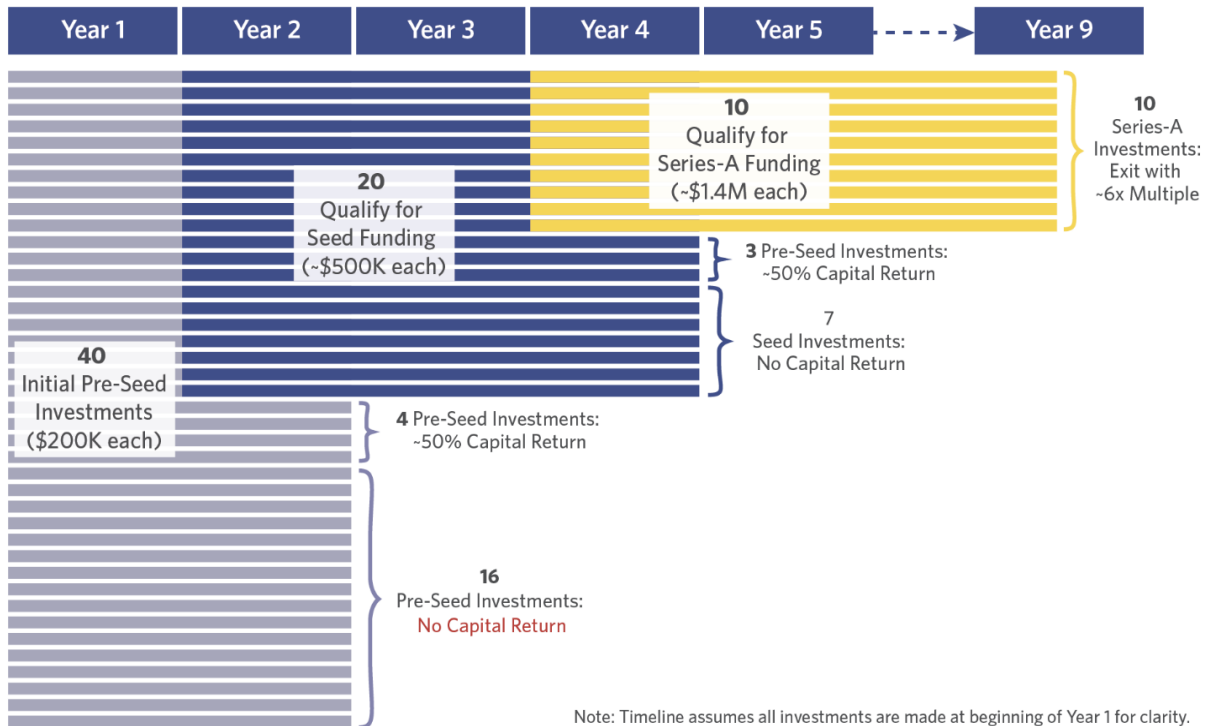
4. FINANCIAL VIABILITY AND COMMERCIAL MOBILIZATION

4.1 QUANTITATIVE MODELING

4.1.1 MODELING OVERVIEW

Fund modeling reflects a standard 10-year fund timeline, including an initial five-year investment period followed by a five-year harvesting period. Additionally – although understandably not included in the model - there is also the potential for two extensions of one year each to be used at the discretion of the General Partner (GP), in line with typical private equity structures. The following subsection describes key model assumptions, which are also visualized below in Figure 4.

Figure 4. Timeline of Investment Assumptions



Model Assumptions

The CCRF team intends to make a total of 40 pre-seed investments of USD 200,000 over the first and second years of fund operation (2023-2024). Current modeling then assumes that half of these initial investments are in turn deemed eligible for follow-up seed-stage funding in the amount of USD 500,000 twelve months after the initial pre-seed investment. Pre-seed investments that do not receive follow-up Seed funding are assumed to be exited 24 months after initial investment with either 50% or 0% of capital returned to the fund.

Of the 20 companies receiving Seed investment, 10 are then assumed to receive the final Series-A funding of USD 1.4 million each, while the other 10 are assumed to be exited, again with either 50% or 0% of capital returned to the fund. Finally, all ten companies receiving Series-A funding are assumed to be exited after an additional five and a half years at multiples of 6x. With a total investment basis – across all three funding rounds – of USD 2.1 million, these final exits result in USD 105 million in realized gains for the fund.

Model Results

Using the assumptions described above, financial modeling suggests an IRR of approximately 20%. It is also worth noting that the pre-multiple value of USD 2.1 million for each Series-A investment is intentionally conservative, reflecting only the total of investments made across the three rounds, and therefore not accounting for the likely increase in value resulting from the post-money SAFE conversion of the initial pre-seed investment amount. As a result, these IRR estimates can also likely be considered conservative.

4.1.2 STRESS TESTING

As is typical amongst venture capital funds, the overall success of the fund is highly reliant on strong exits at high multiples from a handful of the most successful investments in the fund's portfolio. In the case of the CCRF, these exits are provided by the Series-A investments, as described in the previous section. Model stress testing therefore focused on this category of

investments and assumes (in line with details above) that Series-A investments represent a total investment basis of USD 2.1 million each, with final exits for all investments – all at the same multiple – occurring five and a half years later.

The Table below presents the resulting overall fund IRR as determined by 1) the number of Series-A investments (and corresponding exits) completed, and 2) the corresponding exit multiple achieved for these exits. The results below clearly illustrate that as long as strong average multiples of 3x or higher can be achieved, it is likely that the fund will be able to maintain a positive IRR, and thereby ensure that principal investment amounts – at the least – are ultimately returned to LPs.

Figure 5: Stress Testing IRR Results

		Series-A Investment Count				
		6	7	8	9	10
Assumed Exit Multiple	2x	-4.1%	-2.26	-0.8%	0.5%	1.6%
	3x	2.4%	4.2%	5.7%	7.2%	8.3%
	4x	7.1%	8.9%	10.5%	12%	13.2%
	5x	10.8%	12.6%	14.2%	15.9%	17.1%
	6x	13.9%	15.7%	17.4%	19.1%	20.4%

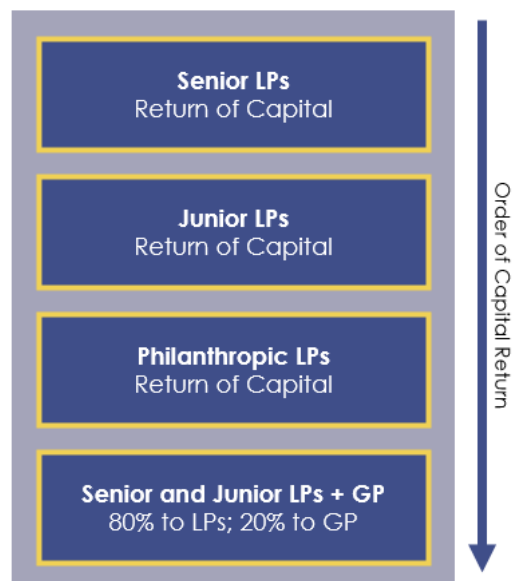
4.2 PRIVATE FINANCE MOBILIZATION AND REPLICATION POTENTIAL

The CCRF intends to utilize between USD 15-20 million in concessional capital in the form of junior and philanthropic equity tranches to provide first-loss protection to commercial investors. As participants in the senior equity tranche, commercial investors are entitled to receive back their principal investment amounts ahead of all others in the capital stack, thereby mitigating the likelihood of investment loss. It is worth noting however that the fund structure is not intended to provide any further capital enhancement; as such, once principals are returned to all limited partners (LPs), additional returns are shared equally across the tranches (as well as with the GP through carried interest), as illustrated in Figure 6.

The CCRF team's significant experience in managing two prior funds – similarly focused on pre-seed fintech and tech startups in Africa – should further alleviate concerns that might otherwise limit private participation in the structure. Despite being entirely grant-based, the 61 companies that received funding through these prior funds went on to raise over USD 800 million in follow-on capital, with the CCRF team estimating a resulting hypothetical IRR of over 25%. The potential for similarly strong returns, combined with first-loss protection as well as growing appetites for value-aligned investment portfolios together suggest that the CCRF should be an attractive opportunity for private investors, particularly for family offices and impact investors.

In terms of replicability, as a private equity vehicle operating on a continental scale, the approach employed is highly scalable to other

Figure 6: Indicative Waterfall Structure



countries on the continent in the short term, all of which currently face extreme climate vulnerabilities. Additionally, the Catalyst Fund team has expressed interest in future fund replication to other climate vulnerable countries in emerging market geographies like Latin America and Asia. A replication such as this would be a welcome contribution to broader efforts to scale adaptation-focused finance, which currently falls far below estimated needs. Assuming success of the initial USD 40 million fund, the fund intends to reduce reliance on first-loss protection as the adaptation investment thesis is proven.

5. CLIMATE AND SOCIO-ECONOMIC IMPACT

Catalyst Climate Resilience Fund aims to respond to the substantial investment gap and opportunity for adaptation in Africa through support for a generation of founders who can build new startups with climate resilience as the driving thesis.

The core mandate of CCRF is to build the climate resilience of vulnerable communities. The team seeks to achieve this mandate by building adaptive capacity, promoting actions that reduce the negative impact of climate change, and taking advantage of potential new opportunities to build long-term resilience. CCRF defines climate resilience as per the U.K. Foreign Commonwealth and Development Office (FCDO): the ability to “*manage change by maintaining or transforming living standards in the face of shocks or stresses without compromising their long-term prospects.*”

The fund is invested across three thesis verticals: fintech for resilience, sustainable livelihoods, and climate-smart essential services.

- Fintech for Resilience focuses on startups that are responding to accelerating chronic and acute climate risks through financial service and fintech infrastructure innovations that can help groups vulnerable to climate risks manage and recover more effectively. The three key product verticals identified are emergency payments, insurance, and carbon finance.
- Sustainable livelihoods focus on startups that are responding to increasing climate-related hazards facing individual and community sources of income and/or subsistence. The four key product verticals identified are ag tech and food systems, fishery management, and land restoration.
- Climate-smart essential services focus on startups that are responding to climate-related stressors on essential services like energy, water, healthcare, and cooling. Increasing climate resilience of essential services is critical to supporting households and businesses adapt to and manage the effects of climate change. The four key product verticals identified are water management, cooling and cold storage, healthcare, and waste management.

CCRF investments also contribute to a range of Sustainable Development Goals (SDGs):



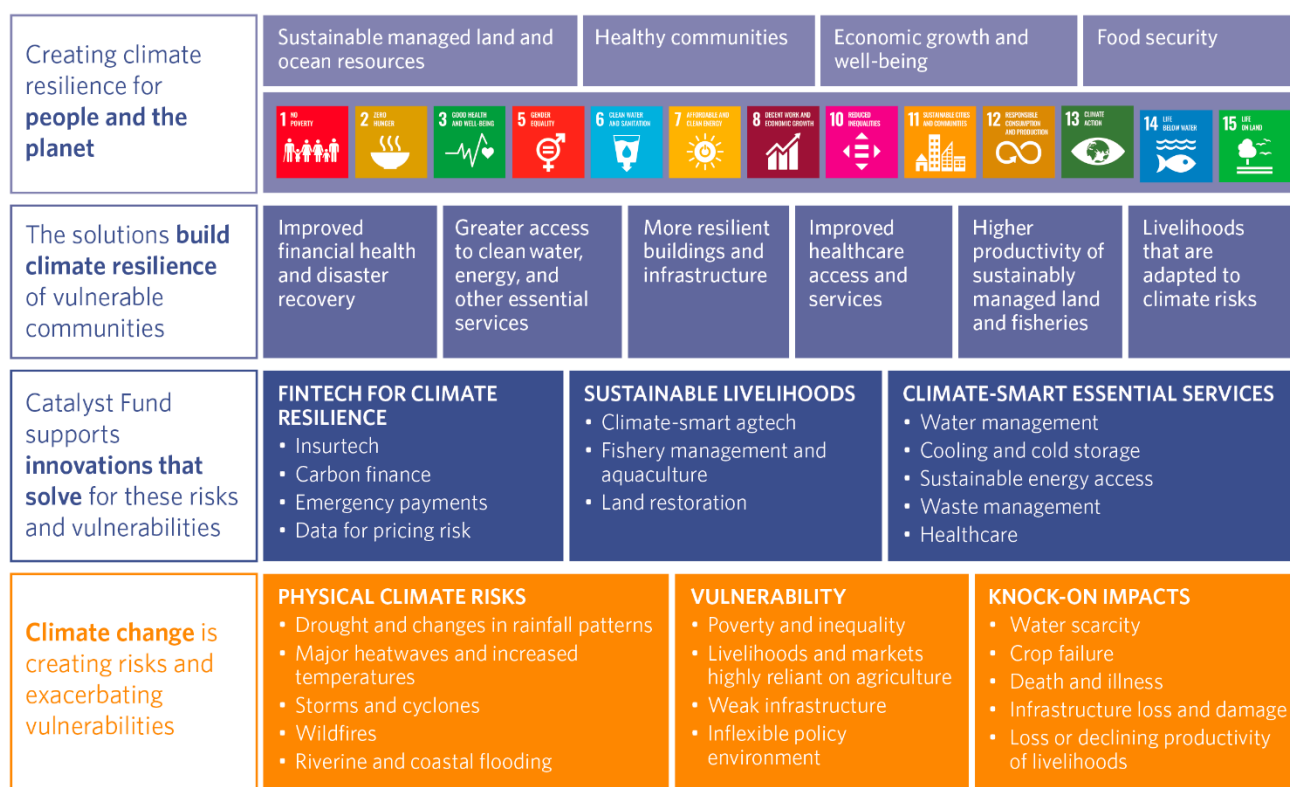
The CCRF team has built an impact measurement framework, aligned with industry best practices. The framework has three core components (inclusion and resilience, environment, and diversity and gender) where impact is managed at three levels (fund, portfolio companies, and end-users) across each component, as described below. The fund also has a set of impact key performance indicators at the portfolio and company level, captured in Annex 8.11.

- **Inclusion and resilience:** Impact assessed against low-income users, users that are remote/rural, first-time users of formal financial services, and the elderly, disabled, or otherwise underserved segments.
 - **Fund:** Code of Conduct outlines the team’s values, guiding principles, and procedures for whistleblowing, safeguarding, harassment, etc.
 - **Portfolio companies:** Support portfolio companies in developing codes of conduct that outline the startups’ values and guiding principles.
 - **End users:** Startup solutions build climate resilience of end users to increase their ability to anticipate climate risks, manage disasters and adverse conditions, and adapt to long-term challenges brought about by climate change.
- **Environment:** Impact assessed against greenhouse gas emissions reduced, mitigation and sequestration measures, use of renewable energy, and use of water and natural resources.
 - **Fund:** Implement a sustainability lens for travel and use of technology and purchase carbon offsets for all travel.
 - **Portfolio companies:** Assess the environmental impact of startup operations including resource efficiency, pollution, diversity, and risk. During venture building, the team promotes strategies that mitigate emissions and environmental impact.
 - **End users:** Assess the environmental impact solutions have on users and their environments.
- **Diversity and gender:** Impact assessed against team size and number of women, number of users and percentage of women users, and gender-disaggregated reporting on relevance of produce usage.
 - **Fund:** Employ diversity policies for hiring and managing people and job descriptions are screened for gendered language.

- **Portfolio companies:** Commit to selecting at least 40% women founders and to 80% of the portfolio being led by local co-founders.
- **End users:** Target models that disproportionately serve women and where possible, assess gender-disaggregated data provided by the startup.

The portfolio of startups supported by the fund facilitates management of risks, adaptation of livelihoods, and building long-term resilience. The theory of change below captures the core climate impact thesis of the fund.

Figure 7: Theory of Change



6. NEXT STEPS

CCRF is currently in the pilot and fundraising stage, with primary instrument development largely complete. The next crucial step for the CCRF is to reach its second close in 2023, securing at least another USD 5 million. This will provide the necessary financial support and momentum for the fund's continuing operations.

Subsequently, the final close is scheduled for Q4 2024, marking the completion of the fundraising process. Recognizing the scalability of the fund's model, there is potential for its application in other regions, including Latin America and Asia. The CCRF seeks to leverage this potential and expand its impact on a global scale, reaching USD 100M+ in assets under management.

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8. ANNEX

8.1 COMPARATIVE INSTRUMENTS DETAIL

Fund/Instrument Name	Description	Differentiation
GSMA Innovation Fund 2.0	Global grant fund providing pre-seed support, with a focus on mobile technologies improving resilience and adaptation.	<ul style="list-style-type: none"> • Financing is entirely grant-based • Thesis is focused solely on mobile technology
Factor[e] Ventures	VC firm with accompanying venture studio providing pre-seed support for anti-poverty and climate solutions.	<ul style="list-style-type: none"> • Vast majority of portfolio is mitigation focused • Specific focus on East Africa and India
Lightsmith Climate Resilience Partners (CRAFT)	Global private equity fund focused on climate adaptation and resilience solutions.	<ul style="list-style-type: none"> • Later stage funding: Series A-C • Global focus
Novastar Ventures	VC firm whose <i>Africa People + Planet</i> fund focuses on seed-stage resilience solutions.	<ul style="list-style-type: none"> • Later stage funding: Seed through Series A-C
Katapult VC	VC fund with accelerator supporting climate startups.	<ul style="list-style-type: none"> • Global focus • Broader climate focus (mitigation and adaptation)
Ambo Ventures	VC fund supporting African climate startups, partnered with an accompanying TA facility through the Challenge Fund for a Just Transition.	<ul style="list-style-type: none"> • Broader climate focus (mitigation and adaptation)
Digital Africa Ventures	Women-led South African VC fund supporting early-stage tech entrepreneurs.	<ul style="list-style-type: none"> • Later stage funding: Seeds through Series A and later • No specific climate focus
Microtraction	Fund providing pre-seed support to African tech entrepreneurs.	<ul style="list-style-type: none"> • No specific climate focus • Later stage funding (seed and Series A) not provided
4di Capital	Early-stage technology VC fund, focused primarily on East and Southern Africa.	<ul style="list-style-type: none"> • Later stage funding: Seed through Series C • No specific climate focus (mitigation or otherwise)
Dot Exe Ventures	VC spin-out of IBL Group, focused on Africa tech start-ups and recently partnered with 4di Capital (above).	<ul style="list-style-type: none"> • Later stage funding: Seed through Series C • No specific climate focus (mitigation or otherwise)
Beyond Capital Ventures	Emerging markets VC investor (with an accompanying non-profit fund) investing across fintech, health, and climate adaptation.	<ul style="list-style-type: none"> • Focused on markets across India and Africa • Adaptation – although a focus area – shares prioritization with broader fintech and health startups
Equator VC	Africa-focused VC fund investing in tech startups in the agriculture, energy, and mobility sectors.	<ul style="list-style-type: none"> • Broader climate focus includes both mitigation and adaptation • Later stage funding: Seed and Series A
Partech	A global tech investment platform that launched their second Africa-focused fund in 2018.	<ul style="list-style-type: none"> • Later stage funding: Series A & B • No specific climate focus (mitigation or otherwise)
Ticom Capital	Fund investing in early to growth-stage technology start-ups in Sub-Saharan Africa.	<ul style="list-style-type: none"> • No specific climate focus (mitigation or otherwise)

Norrskan22 Africa Tech Growth Fund	Fund implemented by the Norrskan Foundation and a team of PE investors and unicorn founders, focused on growth-stage tech startups.	<ul style="list-style-type: none"> • No specific climate focus (mitigation or otherwise) • Later stage funding: Series A, B, and C • Primary focus on Ghana, Nigeria, Kenya, and South Africa
Algebra Ventures	Africa-focused fund supporting startups in logistics as well as health, agricultural, educational and fintech sectors.	<ul style="list-style-type: none"> • No specific climate focus (mitigation or otherwise) • Later stage funding: Seed to Series B • Primary focus on Egypt
Fuzé (Digital Africa)	Early-stage, Africa-focused investment facility with a broad tech focus.	<ul style="list-style-type: none"> • No specific focus on fintech or climate (mitigation or otherwise) • Focused primarily on Pre-Seed investments; little (if any) indicated support at Seed or Series A stages
Africa Climate Ventures	Venture studio focused on supporting and building African climate businesses.	<ul style="list-style-type: none"> • Broad climate focus (including both mitigation and adaptation) • Provides funding only at Pre-Seed stage
Persistent	Mitigation focused fund and venture builder, focused primarily on innovative clean energy solutions in emerging markets.	<ul style="list-style-type: none"> • Global focus, with investments across Africa, Europe, and South Asia • No adaptation focus
Ingressive Capital	Africa-focused PE fund supporting tech startups, providing additional support through their sister company "Ingressive for Good".	<ul style="list-style-type: none"> • Smaller check sizes at Pre-Seed and Seed stages; no direct support at Series A • No specific climate focus (mitigation or otherwise)
FirstCheck Africa	VC fund focused specifically on African most exceptional woman-led startups.	<ul style="list-style-type: none"> • No specific climate focus (mitigation or otherwise) • Focused on providing Pre-Seed funding only
Alitheia Capital	Nigeria-based VC firm focused on cleantech, financial services, and real estate sectors.	<ul style="list-style-type: none"> • Focused primarily on Nigeria • Later stage funding: Series A – C • No focus on climate adaptation
Janngo Capital	Sector agnostic, Africa-focused social startup studio investing across several high growth sectors.	<ul style="list-style-type: none"> • No specific climate focus (mitigation or otherwise) • Later stage funding: Seed – Series C
Aruwa Capital Management	Female-founded, early-stage growth equity fund.	<ul style="list-style-type: none"> • No specific climate focus (mitigation or otherwise) • Later stage funding: Seed – Series C
Future Africa	Investment platform providing capital, coaching and community for impact-focused entrepreneurs in Africa.	<ul style="list-style-type: none"> • No specific climate focus (mitigation or otherwise)
Speed Invest	VC fund focused on technology startups across Europe.	<ul style="list-style-type: none"> • No Africa focus • No specific adaptation focus; climate tech is just one of many focus areas, including FinTech, Biotech, SaaS, and Crypto
Safgana	Climate-focused venture capital fund investing across Africa and Europe.	<ul style="list-style-type: none"> • No funding available past Seed stage • Broad climate focus (including both mitigation and adaptation) • Invests in Europe as well as Africa
UM&P	Africa-based early-stage venture firm currently operating two funds focused on Deep-tech and Digital Transformation.	<ul style="list-style-type: none"> • No specific climate focus (mitigation or otherwise) • Invests across Africa and Israel

212 Founders	Morocco-based, sector agnostic incubator and accelerator program supported by CDG Invest.	<ul style="list-style-type: none"> No specific climate focus (mitigation or otherwise) Later stage funding: Seed & Series A
Alliance for Impact Ventures	Venture fund supporting impact-focused entrepreneurs solving environmental and social challenges.	<ul style="list-style-type: none"> Broad climate focus (including both mitigation and adaptation) Focused only on Europe
VentureSouq	MENA-based VC fund manager with thematic funds focused on climate and fintech.	<ul style="list-style-type: none"> Broad climate focus (including both mitigation and adaptation) Global portfolio with no specific focus on Africa
Acumen Resilient Agriculture Fund	Impact fund designed to support the climate resilience of smallholder farmers in Africa.	<ul style="list-style-type: none"> Sole focus on the agricultural sector and smallholder support in East and West Africa
Aqua Spark	Investment fund supporting sustainable aquaculture companies around the world.	<ul style="list-style-type: none"> No specific Africa focus Broad climate focus (including both mitigation and adaptation)
Congruent Ventures	Venture fund investing in early-stage climate-tech entrepreneurs across sectors and business types.	<ul style="list-style-type: none"> No adaptation focus Invests only in teams based in North America
EMURGO Africa	Investment platform that partners with startups and accelerators to develop socially impactful, blockchain-based solutions.	<ul style="list-style-type: none"> No specific climate focus (mitigation or otherwise)

8.2 EGYPT: COUNTRY ADAPTATION RESEARCH

Research focus	Description
Policies and priority sectors	<ul style="list-style-type: none"> As part of this initiative, the Ministry of Finance introduced Egypt's first sovereign green bond. Fifty-four percent of the 2020 green bond proceeds, or roughly USD 400 million, have been spent on 14 water and wastewater projects including desalination and sludge treatment facilities. The remaining 46 percent has been spent on clean energy. Egypt is part of the FAO and UNDP program: Scaling up Climate Ambition on Land Use and Agriculture through NDCs and NAPs (SCALA). It supports countries to enhance climate action in land-use and agriculture, together with partners. Egypt's National Strategy for Adaptation to Climate Change and Disaster Risk Reduction focuses on coastal areas, water resources, agriculture, health and population, and tourism, and ends with a presentation of the risks related to food security. Egypt has focused on integrating the agriculture sector into its national climate change processes, such as its NDC. Furthermore, Egypt is currently developing a NAP framework to further enhance its climate resilience strategies.
Sectoral drivers trends and future	<ul style="list-style-type: none"> Insurance penetration is concentrated in a few major markets, including Egypt. The NDC outlines the need for USD 246 billion in investments and financial support for adaptation and mitigation by 2030. Three sectors hold significant potential for green practices: agriculture, transport, and power markets. The Egyptian government is particularly focused on attracting investment in agricultural projects, including the ambitious 1.5-million-hectare land reclamation and development project.

Funders overview	<ul style="list-style-type: none"> • The GCF is co-financing the “Enhancing climate change adaptation in the North Coast and Nile Delta Regions in Egypt 2018-2025” project aimed to reduce coastal flooding risks in Egypt’s North Coast due to the combination of projected sea level rise and more frequent and intense extreme storm events. • EBRD, EU, and GCF launch a new credit line under the Green Economy Financing Facility in Egypt. A total of USD 175.5 million will be made available to local financial institutions to on-lend to the private sector for investments in climate change mitigation and adaptation projects. Investments to cover sustainable land management, circular economy, and resource efficiency. • African Development Bank Strategy: Priorities include building resilience to achieve food and water security and energy efficiency. To this end, the Bank’s support will target the industry, transport, water, and energy sectors. Bank support will also address the cross-cutting themes of climate change, gender equality, and economic governance.
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8.3 GHANA: COUNTRY ADAPTATION RESEARCH

Research Focus	Description
Policies and priority sectors	<ul style="list-style-type: none"> • As part of the Nationally Determined Contributions (NDCs), the country has estimated its adaptation finance needs to be USD 12.8 billion from 2020 to 2030. Agriculture, human settlements, water, transport, and health have been identified as key sectoral priorities for investment in adaptation. • Ghana will mobilize USD 4.21 billion (34 percent) at the domestic level for adaptation and is seeking the remaining USD 8.29 billion from international sources to cover the remaining cost. • Limited in-country capacity and a fragmented approach to climate finance proposals across government ministries have been identified as challenges for adaptation finance. • To strengthen national capacities for climate finance planning, delivery, and monitoring, Ghana launched the Green Climate Fund Readiness Program in 2021. This program aims to support the government and enhance private sector capacity in climate finance (mitigation and adaptation investment strategies, programs, and projects).
Sectoral drivers trends and future	<ul style="list-style-type: none"> • The country also has issued sovereign bonds with adaptation components (Ghana’s 2030 bond with an International Development Association guarantee of 40 percent for adaptation). • Adaptation projects that do not have commercial precedent or are not financially viable, but serve an important public service, are more difficult to fund directly, as is project/program preparation; e.g., water and sanitation infrastructure need long-term local currency financing whilst finance, when available, is mostly short term. • The forestry sector is one of the most important sectors of the Ghanaian economy. It is a source of job creation, income for local communities, foreign exchange through timber product export, and environmental protection. Ghana’s forest landscape offers climate financiers ample opportunity to invest in carbon markets. • Solid waste and wastewater management pose major challenges in most cities in Ghana and contribute 7.5 percent of the country’s total GHG emissions. Solutions and implementation plans aim to support and increase ongoing efforts to improve landfill and biological treatment of waste, which are the country’s major technologies for final waste disposal. • The agriculture sector is natural resource-based, with extensive crop and livestock production systems, hunting, rain-fed agriculture, and fishing from natural water bodies.

	There is an ongoing need to improve and modernize production and processing and improve efficiency of value chains.
Funders overview	<ul style="list-style-type: none"> Some of the key flagship public programs and actions, at various stages of implementation, to mitigate and support adaptation include the following: Committing The Forestry Commission to deliver six million tons of greenhouse gas emissions reduction under the Ghana Cocoa Forest REDD+ Programme with the World Bank in 2019. Investing more than USD 100 million since 2016 in the northern drylands to build the resilience of smallholder farmers and the fragile ecosystem they depend on for a livelihood. City-wide resilient infrastructure planning, including an investment of USD200 million in the Greater Accra Resilient Integrated Development Project to improve flood risk and solid waste management in the Odaw River, led by the Ministry of Water Resources and Sanitation with funding from the World Bank. Commercial banks will normally not invest in an untested and cash flow-free project. Thorough project design and preparation as well as additional sources of funds should be targeted to support the generation of the cash flows needed to attract investment by commercial banks.

8.4 KENYA: COUNTRY ADAPTATION RESEARCH

Research Focus	Description
Policies and priority sectors	<ul style="list-style-type: none"> Kenya is a leader in addressing climate change and was one of the first countries in Africa to enact a comprehensive law and policy to guide national and subnational climate action. Kenya's priorities as articulated through multiple instruments include: adaptation, afforestation and reforestation, landscape restoration, climate-smart agriculture, geothermal and clean energy development, energy efficiency, and drought and flood risk management. County Climate Change Funds (CCCF) is a mechanism through which counties can create, access, and use climate finance from different sources to build communities' resilience and reduce vulnerabilities to a changing climate in a more coordinated way. The CCCF has emerged as an effective and potentially sustainable mechanism for crowding in finance for food systems adaptation at the local level. It delivers a reliable domestic finance stream to finance adaptation. Under the government-led mechanism, public funds from the Kenyan government (via the Exchequer) are directed towards adaptation initiatives by the government. The Kenyan government seems to be more sensitive to adaptation compared to other investors in Kenya. About 30% of climate finance channeled through the government's central budget was committed to adaptation projects. Generally, Kenya is an attractive partner for international climate finance, as it has well-defined climate policies and strategies. For example, the Climate Smart Agricultural (CSA) Strategy (2017-2026) seeks to sustainably increase agricultural output and income, adapt to and build resilience to climate change, and reduce and/or eliminate greenhouse gas emissions in agriculture.
Sectoral drivers trends and future	<ul style="list-style-type: none"> Grant funding for climate and nature could double in the longer term, especially in the light of new commitments to biodiversity arising. The share of commercial bank lending to agriculture in Kenya is 4% and interest rates are particularly high for smallholder farmers. Different sectors in Kenya have received adaptation finance, with the agriculture, forestry and fishing sectors receiving the largest chunk of this finance (USD 1.01 billion (31.3%) in committed funds) between 2002 and 2022.

	<ul style="list-style-type: none"> • However, there is also a shortage of finance for food systems adaptation in Kenya. For instance, when the expected funding needed for adaptation in the forestry, wildlife, tourist, and food and nutrition security sectors. • Agriculture is the main contributor to Kenya's Gross Domestic Product (GDP) contributing an average of 32.9% between 2015-2019. Kenya is heavily reliant on natural resources, with at least 50% of its GDP derived from climate related sectors. • Investment in climate adaptation projects attracted 11.7% of all climate finance tracked in 2018. This finance was largely targeted at strengthening the country's water and agricultural resilience in the country.
Funders overview	<ul style="list-style-type: none"> • Foreign private sector actors invested predominantly in renewable energy projects (99.7% of the total). Beyond renewable energy, philanthropic foundations are the only international private actors that have invested in other climate sectors, in particular supporting adaptation, health, and water projects in Kenya. • There is also an urgent need to increase finance for the forestry and disaster-risk management sectors, as both will build Kenya's resilience against drought and flooding. • Approximately 79% of international climate finance was delivered through debt, 19% through grants, and 2% with different types of equity. International grants were largely used to finance adaptation and projects with cross-cutting adaptation and mitigation outcomes. • USAID has helped Kenya improve protection of key forested watersheds and strengthen rangeland management in community conservancies. Facilitate private finance and investment for working capital needs of smallholder farmers and MSMEs that are integrating climate-smart solutions. • Despite the pressing need to adapt to climate change in Kenya's food systems, efforts are insufficient to offset the negative impacts of climate change. Although the EU and the Netherlands provide adaptation finance to Kenya via various initiatives, more funding is still required to meet the needs.

8.5 MOROCCO: COUNTRY ADAPTATION RESEARCH

Research Focus	Description
Policies and priority sectors	<ul style="list-style-type: none"> • The ambitious 2050 National Water Plan (PNE) mostly relies on “engineering” actions to increase water mobilization and improve water productivity. The PNE plans to increase water mobilization by 4.6 billion m³/year by 2050 through: wastewater use, rainwater harvesting, desalination, and dam construction. The PNE also provides for private sector participation in certain investments (desalination and wastewater treatment, as well as certain irrigation programs). • Morocco has initiated a structural transformation of its agricultural sector, with a decline in agricultural employment and a corresponding rise in employment in the agri-food value chains (agribusiness). With the new Green Generation 2020-2030 strategy, the government of Morocco intends to accelerate this structural transformation by unleashing the potential of job creation all along the agricultural value chains (both upstream and downstream). The new strategy aims to double the share of the agricultural sector in Morocco's GDP and create 350,000 new jobs. • Morocco's Finance Minister said the country must adapt its economy to meet the escalating threat from climate change, with more frequent droughts requiring investment in water technologies (March, 2023). • For financing its overall mitigation contribution, Morocco's needs are estimated at USD 50 billion, of which 24 billion would be conditional on receiving international support. For adaptation, Morocco estimates a minimum USD 35 billion (for the water, forestry, and agriculture sectors). • While Morocco has developed and executed various projects and initiatives on climate change adaptation and climate risk management, these were executed through isolated projects and in a disconnected fashion, each tackling a specific issue (water, agriculture,

	<p>disaster risk, monitoring framework, data, capacity building, etc.). Today, climate change risks and adaptation needs are still not systematically considered when planning development and making investment decisions, particularly at the regional level.</p>
<p>Sectoral drivers trends and future</p>	<ul style="list-style-type: none"> • The country still depends heavily on the agriculture and fisheries sectors, which account for about 15-20 percent of GDP, but employs 40 percent of the national population, and close to 80 percent of the rural population. • Water scarcity could impact almost every aspect of Morocco's future socio-economic development. Rainfed agriculture still represents 80 percent of the country's cultivated area and employs most of the agricultural workforce. Economic growth in Morocco has long been tied to rainfall because one-third of the population works in agriculture. • The deployment of water infrastructure at a massive scale has been a critical contributor to Morocco's recent development. Investment in infrastructure is a necessary but not sufficient condition for coping with the challenge of water scarcity; and a change of paradigm is needed. • Managing the water-energy nexus is of central importance for development in Morocco. The interdependencies between the water and energy systems have become a core dimension for Morocco's development. • Despite major advances in water use efficiency in agriculture, the sector remains a source of macro volatility. • While Morocco has made progress in agricultural insurance, the penetration rate is still low; only 17 percent of agricultural areas are insured against climate risks, and there is limited access for small farmers (less than 3 percent). The agricultural sector represents only 13 percent of GDP. • Morocco has also identified priority sectors towards which climate finance should be directed, namely: renewable energy and energy efficiency, agriculture, forestry and land use, water, and transparency of climate action.
<p>Funders overview</p>	<ul style="list-style-type: none"> • Private investment in adaptation and innovation should be incentivized. The transformation of the agricultural sector promoted under the Green Generation 2020-2030 strategy has the potential for opening new opportunities for the private sector through the development of innovative technologies and digital services. • The European Bank for Reconstruction and Development, GCF, and EU will partner on a finance package of up to 25 million to Banque Centrale Populaire (BCP) to support green transition in Morocco. BCP will extend sub-loans to the private sector, particularly small and medium-sized enterprises, to foster investment into climate change mitigation and adaptation strategies. BCP central and regional staff will also be trained on gender-responsive green finance to address gender-specific supply and demand obstacles. • The scale of investment in risk reduction and insurance coverage remains insufficient. • From 2016 to 2019, development finance to Morocco that targeted climate change totaled USD 4.34 billion. From 2016 to 2019, development finance commitments targeting climate adaptation totaled USD 1.46 billion. Top sectors: agriculture, forestry and fishing (34.2%), disaster prevention (26.1%), water supply (25.9%), other (5.8%). • The Agency for Agricultural Development of Morocco (ADA) is a national public entity based in Morocco, which provides action plans and value-added solutions to address agricultural needs at the local and national levels. ADA has developed a comprehensive portfolio of climate change related projects and programs worth approximately USD 33 million, which has been financed by bilateral and multilateral organizations.

8.6 NIGERIA: COUNTRY ADAPTATION RESEARCH

Research Focus	Description
<p>Policies and priority sectors</p>	<ul style="list-style-type: none"> • The National Adaptation Plan Framework prepared in 2020 shows some guiding principles on adaptation priorities but no costing was provided. • Current adaptation finance flows are USD 663 million, adaptation finance is not consistent with the extent of the country's vulnerability to climate change. • The Nigerian policy landscape includes initiatives at each tier of government – federal, state, and local – with efforts for both vertical (global-national-local) and horizontal (between MDAs - ministries, departments, and agencies) integration to harness synergies between workstreams and deliver effective, ambitious climate action. • In November 2021, the Nigerian President signed the Climate Change Act 2021 ("Climate Act") into law. The Climate Act has a number of objectives, one of which includes reducing the level of carbon emissions, promoting inclusive green growth and sustainable economic development, facilitating the mobilization of finance and other resources necessary to ensure effective action on climate change, and ensuring the close out of climate change actions and incorporating it into Nigeria's national development priorities.
<p>Sectoral drivers trends and future</p>	<ul style="list-style-type: none"> • Priority Adaptation Sectors: Agriculture, Water Resources, Health, Transport. • Nigeria's adaptation-mitigation ratio is relatively balanced, compared to the global climate finance adaptation-mitigation split, but total adaptation finance is falling short. At USD 1.1 billion, mitigation finance committed to Nigeria accounted for the majority of the tracked total (56%). Adaptation finance – almost entirely funded by public actors - lagged at USD 663 million (34%), with dual benefits finance accounting for USD 186 million (10%). • AFOLU follows as the second largest contributor to total GHG emissions (25%), primarily from agricultural activities, and is a priority within both mitigation and adaptation strategies. • Key adaptation strategies identified for the sector include: expanding and optimizing irrigation infrastructure; introducing drought-tolerant crop varieties; expanding the country's storage facilities to reduce loss and improve food security; as well as offering agricultural insurance and promoting alternatives to traditional livestock production. Agriculture dominates as the largest employer of labor. • The long-term vision, as articulated by the Department of Climate Change, is for all large-scale farmers and 75% of smallholder farmers, to adopt climate-smart agricultural practices by 2050. • Key adaptation strategies identified for the waste and water sector include efforts to reduce water loss from dams and evaporation on parts of Lake Chad; adopting more efficient irrigation practices; enhancing water storage capacity in reservoirs; and recycling wastewater; parallel to improving water management strategies and governance. • A study that evaluated the Government's financial and adaptation strategies, indicates the overwhelming preference for flood control, erosion control and irrigation projects as core adaptation strategies.
<p>Funders overview</p>	<ul style="list-style-type: none"> • Similar to the Climate Finance Accelerator, the Nigeria Climate Innovation Center, set up in 2018 by the World Bank and the Federal Government, also works to develop and deploy solutions to climate change by providing venture-development and capacity-building support for viable green businesses across the renewable energy, waste management, water, and agricultural sectors. • As a member of the Economic Community of West African States (ECOWAS), Nigeria will be able to access WAICSA, the only West Africa-led blended finance fund specifically focused on increasing uptake of CSA by smallholder farmers (of between 1-10 hectares). WAICSA is structured as a blended finance fund with a target size of USD 80 million. • Concessional debt is predominantly used to channel climate finance (46%), followed by non-concessional debt (25%). Grant- and equity-based finance currently play a relatively minimal role in Nigeria's climate finance ecosystem, at 5% and 12% respectively. Private sector investment significantly lags behind public investment, accounting for 23% of total climate finance committed in 2019/2020.

8.7 RWANDA: COUNTRY ADAPTATION RESEARCH

Research Focus	Description
<p>Policies and priority sectors</p>	<ul style="list-style-type: none"> The updated Rwandan NDC is one of the most comprehensive and detailed NDCs produced to date on adaptation. It was based on a detailed analysis of the risks of climate change in Rwanda, and considered the various adaptation options to address these. It includes adaptation measures in priority sectors, including water, agriculture, land, forestry, human settlement, transport, health, mining, and cross-sectoral (e.g., access to finance and disaster risk monitoring). The recent NDC update emphasizes green private sector investments. Rwanda's Third National Communication highlights the need to engage the private sector to support climate-resilient and low-carbon projects in the face of increasing climate-related vulnerability and risk. There is high-level ownership and commitment to adapting to the effects of climate change and Rwandan institutions, and the Ministry of Environment (MoE), the National Implementing Entity, have excellent experience from implementing a number of projects that support adaptation. All the necessary policies and legal frameworks are in place. While Rwanda has been quite successful in securing and delivering top-down adaptation financial flows and projects, there is a lack of access to finance for investments at the sub-national level. Nonetheless, Rwanda Green Fund (FONERWA) has tried to address this issue with an Enhanced Direct Access modality, providing climate finance for adaptation projects (USPs) for sub-national organizations, and has existing expertise, staff, operational experiences, processes and safeguards. The Government of Rwanda has extensively included gender in law, as cited in UNDP Gender Mainstreaming Strategy (2018-2023). FONERWA, recognizes that gender mainstreaming is key to successful institutional and organizational transformation, and a prerequisite for successful interventions for environmental conservation and climate change mitigation and adaptation.
<p>Sectoral drivers trends and future</p>	<ul style="list-style-type: none"> There is a large adaptation challenge, and country needs are high. These costs are predominantly due to the impacts of changing climate extremes (extreme rainfall in the west and droughts in the east) and slow onset change (national) in the water-land-agriculture nexus, and have particularly high impacts for rural communities. Rwanda is ranked the first of all African countries in terms of natural resource dependency and is also highly vulnerable to projected climate change impacts on natural resource-dependent sectors. Adaptation. Development finance commitments targeting climate adaptation totaled USD 426 million from 2016 to 2019. Top sectors for adaptation investment in Rwanda 2016-2019: water (47%), agriculture (16.7%) multi-sector (i.e. finance) -- (10.3%), general environmental protection (6.2%). Top instruments (2016-2019): multilateral development bank loans (72%), ODA grants (24.6%), others (3.4%). Rwanda's prioritization of climate action in the agricultural sector, which accounts for a third of domestic economic activity, typifies its comprehensive "win-win" NDC strategy. The potential of this decisive plan is magnified by near maximal household subsistence on traditional agriculture (90%), especially in rural areas where over three-quarters of the population is concentrated on traditional agriculture (90%), especially in rural areas where over three-quarters of the population is concentrated. Medium term budget estimates for 2023/24-2025/26: Key investments in education, healthcare, ICT, and agriculture will be at the forefront of the ongoing government effort to invest in Rwanda's future, through the National Strategy for Transformation.
<p>Funders overview</p>	<ul style="list-style-type: none"> "Transforming Eastern Province through adaptation" (TREPA) with co-financing from the Government of Rwanda. Cordaid (NGO) has joined forces with four microfinance institutions namely RIM Ltd, Duterimbere IMF, Umutanguha Finance PLC, and Goshen

	<p>Finance Company. The project is also developing climate resilient markets and supply chains to incentivize public and private investments in forests, increase the capacity of communities to renew and sustainably manage forests and agroforestry resources, and support smallholder farmers to adopt climate-resilient agriculture.</p> <ul style="list-style-type: none"> • The Rwanda Green Fund – known as FONERWA— provides strategic financing with a view to accelerating Rwanda’s commitment to building a strong climate resilient and green economy. The Fund has committed investments of just under USD 40 million to 35 projects. It facilitates direct access to international climate finance and streamlines and rationalizes external aid and domestic finance. Considered the main agency for mobilizing and coordinating climate finance in Rwanda. • The Ministry of Finance and Economic Planning (MINECOFIN) and the Rwanda Green Fund (FONERWA) are responsible for mobilizing resources for NDC-related initiatives. • (At COP26, the GCF Executive Director remarked that: “When I’m asked about a country that is accessing climate finance and utilizing it well, my first thought goes to Rwanda”.
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8.8 SENEGAL: COUNTRY ADAPTATION RESEARCH

Research Focus	Description
Policies and priority sectors	<ul style="list-style-type: none"> • Progress in implementing adaptation policies according to several priority sectors under the NDC. The fisheries and livestock sectors have already finalized their respective national adaptation plans and stakeholders are developing climate resilience projects to mobilize funding. The agriculture, infrastructure, food, and health sectors are supported by the National Adaptation Plan – Global Environment Facility programme (NAP-GEF) to carry out studies. • Nonetheless, since 2022 Senegal has been having some relevant financial news: President Macky Sall and GCA CEO Patrick Verkooijen, joined forces to unlock USD 1bn in climate finance for Senegal under the Africa led and Africa owned Africa Adaptation Acceleration Program (AAP). Aligned with Senegal’s National Plan for an Emerging Senegal (PSE), the AAP puts youth empowerment for entrepreneurship and job creation at the center of adaptation. • IMF staff and the Senegalese authorities have reached a staff-level agreement on economic and financial policies to be supported by a new 36-month financing arrangement under the Extended Fund Facility (EFF) and Extended Credit Facility (ECF) of about USD 1.526 billion, combined with the Resilience and Sustainability Facility (RSF) of about USD 327.1 million. The RSF will support Senegal’s climate change mitigation objectives, accelerate the country’s climate change adaptation, and support work to mainstream climate change considerations into the budget process. (May 2023) • The Ministry of Environment and Sustainable Development (MEDD) is the lead institution for climate change. Within the MEDD, the National Committee on Climate Change (COMNACC) coordinates climate action in Senegal. The current Minister is from ENDA Energie, one of the main civil society organizations.
Sectoral drivers trends and future	<ul style="list-style-type: none"> • Senegal’s overarching policy framework is set out in its 2035 Plan for an Emerging Senegal (PSE). The PSE is implemented through five-year priority action plans (PAPs) The 2019-2023 PAP has a clear emphasis on climate adaptation, which is one of its key goals and developing the oil and gas sector, though it does include a GHG emissions limit for 2023 and a reference to implementing the country’s NDC. The government sees adaptation and resilience, especially in the agriculture sector, as the priority. • As part of the implementation of the Priority Action Plan of the Emerging Senegal Plan (PSE) 2014-2018, several sectors’ finances considered adaptation and climate action. The agriculture sector with USD 412.5 million to support family farming, the water and sanitation sector with USD 386.4 million. • Senegal’s strategic climate investments opportunities are mainly drawn from the country’s GCF program (2018 – 2022) based on two pillars: 1. Mitigation pillar: energy and low-carbon investment; sustainable management and use of land and forests – strengthening

	<p>of carbon stocks; 2. Adaptation pillar: strengthening the resilience of vulnerable communities and social protection (strengthening resilience to food, water and health insecurity and strengthening the protection of the livelihoods of individuals and communities); resilience of infrastructures, habitats and natural ecosystems (promotion of a sustainable environment, habitat and infrastructures, management, and restoration of ecosystems).</p> <ul style="list-style-type: none"> • While the government supports the deployment of renewable energy, both the Ministers of Petroleum and Energy have stressed the need to develop the country's fossil gas and not just focus on expanding renewable energy (before Q2 2022). • Job creation is a key issue for the government, with close to one quarter of the population unemployed. • Agriculture accounts for almost half of its emissions, followed by energy. The industry and waste sectors contribute about an equal amount; both represent less than 10% of emissions. Emissions for all sectors are projected to grow over the course of the next decade under a business-as-usual scenario, with the fastest growth coming from the energy sector.
<p>Funders overview</p>	<ul style="list-style-type: none"> • The USD 1 billion finance facility is set to be channeled into the AAAP's four pillars namely, Climate-Smart Digital Technologies for Agriculture and Food Security, Africa Infrastructure Resilience, Youth Empowerment for Entrepreneurship and Job Creation as well as Innovative Financial Initiatives. Aims include reaching 30 million farmers; bolstering 26 African countries' food security by increasing agricultural productivity by 40-70%; to influence USD 93 billion of infrastructure funding so that half might be specifically targeted towards enhancing climate resilience; to develop the skills of 1 million African youths; unlocking USD 500 million in credit for adaptation actions from youth-led enterprises; and to strengthen direct access to funds, mobilizing more than USD 3 billion in new concessional finance across more than 20 African countries. • Senegal is advanced in some areas of climate finance preparedness, while others still need work. Senegal has two national entities (Centre de Suivi Écologique and La Banque Agricole) accredited to the GCF, and is involved in twelve approved projects with a total budget of USD 160 million.

8.9 SOUTH AFRICA: COUNTRY ADAPTATION RESEARCH

<p>Research Focus</p>	<p>Description</p>
<p>Policies and priority sectors</p>	<ul style="list-style-type: none"> • As set out in South Africa's National Development Plan (NDP), the Government has committed to investing 10% of gross domestic product (GDP) within three key areas, namely, transport, energy, and water, until 2030. • South African government (combined national, provincial and local) accounted for ZAR 9.2 billion or 15% of the tracked disbursements in the South African landscape (2018). More than 80% of these direct South African Government disbursements were focused on adaptation and dual benefit sectors. Of the 80% that is focused on adaptation and dual benefits, ZAR 6.2 billion was disbursed into: Reduction of climate change linked risk (storm hardening, crop resilience etc.), disaster response post-climate change linked impact and natural resource conservation and management. • It is apparent that the South African Government is playing this role of "seeding" the adaptation market (mentioned in a 2020 report). • The National Climate Change Adaptation Strategy (NCCAS) aims to support a "transition to a climate resilient South Africa". The NCCAS has an initial cost of USD 4.7 billion (ZAR 87.6 billion in 2019 values) to implement. • Whilst adaptation needs can be articulated through local plans informed by vulnerability assessments, they are rarely costed, which impedes them being financed. • The current best option for subnational governments is to mainstream climate into their development plans and use domestic finance to fund their adaptation interventions. Risk

	<p>abatement is reportedly a positive driver of municipal appetite for adaptation interventions and to fund the incremental adaptation costs of development.</p> <ul style="list-style-type: none"> • South African National Biodiversity Institute (SANBI) has successfully achieved accreditation with the Adaptation Fund and GCF. SANBI has a pipeline of USD 100-120 million; their focus is on biodiversity-related adaptation projects, which may inadvertently exclude other adaptation areas. • Green economy policies are strong. The National Climate Change Response White Paper (NCCRWP), the NDP, and the Industrial Policy Action Plans emphasize the necessity of the development and growth of the green economy to realize an equitable transition to a low carbon economy.
<p>Sectoral drivers trends and future</p>	<ul style="list-style-type: none"> • Five growing sectors are currently leading the mainstreaming of climate-resilient development in South Africa. These are clean energy, low carbon transport, smart water (supply and demand), circular economy, and smart agriculture. These sectors represent a sizable and significant economic and development opportunity for local and international investors. • The South African waste economy continues to grow, and there is growing interest in the uptake of alternative waste treatment solutions and associated value chains, with beneficial impacts on employment opportunities. • Although climate finance flows are currently dominated by renewable energy, qualitative responses indicate that shifts are starting to occur. Interviews with experts highlighted that there is a gradual shift towards the clean transport, water, and waste sectors. • Primary agriculture contributed a relatively small share of the total GDP (2.6% in 2018) in South Africa but is significant in providing employment. • Conservation agriculture solutions continue to offer opportunities for investors and businesses in the agriculture sector. Emerging opportunities with significant growth potential include regenerative agricultural practices and technologies for undercover, precision, and urban agriculture. • Mitigation activities tracked in 2017 and 2018, accounted for 81% of climate finance tracked during that period. Adaptation activities tracked for this report in 2017 and 2018 accounted for 7% of climate finance tracked during that period. • The cross-sectoral investment was the largest area of adaptation climate finance, reaching an annual average of ZAR 1.8 billion in 2017-2018. This represents 41% of the total adaptation focused climate finance that was tracked in the South African climate finance landscape. During the 2017-2018 period, the water conservation, supply & demand sector was the second-largest recipient for adaptation finance, averaging ZAR 1.3 billion annually or 30% of tracked adaption finance.
<p>Funders overview</p>	<ul style="list-style-type: none"> • Approximately 90% of the ZAR 4.3 billion per year of adaptation activities tracked in 2017 and 2018 was funded from public sources, with the remaining 10% being supported by blended finance. No private sector investments were tracked in adaptation sectors. • Although clean energy remained a dominating sector for blended finance, more than 45% of the tracked investments were made into adaptation, and dual benefit uses. Development sectors like water conservation, supply and demand saw more than ZAR 2 billion worth of annual investments

8.10 UGANDA: COUNTRY ADAPTATION RESEARCH

Research Focus	Description
<p>Policies and priority sectors</p>	<ul style="list-style-type: none"> • The National Climate Change Policy (NCCP-2015) is Uganda's integrated response to climate change. The following sectors are identified as adaptation priority areas of the NCCP: agriculture and livestock; water; fisheries and aquaculture; forestry; wetlands; biodiversity and ecosystem services; health; energy; wildlife and tourism; human settlements and social infrastructure. • Despite adaptation being a priority climate action response in Uganda, the country is still in the nascent stages of defining its medium and long-term adaptation needs and actions. • Uganda has submitted both a NAPA and NDC. Uganda's NAPA includes a list of eight priority projects, which fall under the following sectors: 1) Land and land use; 2) Farm forestry; 3) Water resources; 4) Health; 5) Weather and climate information; 6) Information and Knowledge documentation and awareness creation; 7) Policy and legislation; and 8) Infrastructure. • Uganda has also developed a NAP for the agriculture sector, and is currently developing its country-wide NAP. Additionally, Uganda's third National Development Plan emphasizes that climate change management is essential for the reduction of loss and damages, increasing household incomes and improving the quality of life of Uganda's population. • A new USD 2.9 million initiative has been launched in Uganda (June, 2023) to address the growing impacts of climate change by developing a National Adaptation Plan (NAP). The project will also develop five-year expenditure frameworks for five Ministries and collate/ disseminate lessons learned from the NAP process. Contributions under this Intended Nationally Determined Contribution include cross-cutting respect for human rights and gender-responsive climate change actions. The protection of vulnerable groups, including women, is a cross-cutting priority. • The recently launched Local Climate Adaptive Living (LoCAL) Facility LoCAL supports local governments integrate climate change adaptation into their development plans and budgets, through a participatory and gender-responsive manner, with pilots to begin in Kasese, Nwoya, Nebbi and Zombo districts. The LoCAL facility is also expected channel increased climate finance for climate-smart and resilient investments, working with communities at the local level. As of end 2021, with commitments from Belgium for LoCAL roll-out in Uganda, over USD 125 million has been mobilized to support locally-led climate adaptation actions. • With the support of the SCALA programme, Uganda is moving towards the implementation of its agriculture and land use transformative priorities in its NAP and updated NDC. The country aims to further mainstream gender-responsiveness in the implementation of both the agriculture NAP and the updated NDC, through multi-stakeholder engagement in the cattle corridor.
<p>Sectoral drivers trends and future</p>	<ul style="list-style-type: none"> • Uganda estimated in May 2023 that it will need USD 28.1 billion to adapt to the effects of climate change and cut emissions until the end of the decade. The funding, which will be managed through a newly established climate finance unit, is required for adaptation and mitigation measures in sectors such as energy, forestry and agriculture. It plans to raise at least USD 4 billion domestically and source the balance externally. • The largest share of adaptation costs will be in infrastructure and health with energy, agriculture and water as median values. • The agricultural production in Uganda is almost entirely rain-fed, as only 0.5% of the potential area suitable for irrigation is currently irrigated in Uganda. • Uganda's economy is heavily dependent on agricultural commodities such as coffee and other food crops, grown mainly by smallholder farmers with limited inputs, resources and information about adequate adaptive strategies, and who are almost entirely dependent on rain-fed agriculture. • The agriculture sector provides more than half of all exports and about one-quarter of GDP. It also employs 70% of Uganda's predominantly young population. Coffee accounts for the bulk of export revenues, contributing 15% of total goods exported from Uganda.

	<ul style="list-style-type: none"> • With 81 percent of the population engaged in rain-fed subsistence farming for food and cash income, the country's reliance on rain-fed agriculture remains a risk to economic growth, income of farmers, as well as export earnings.
Funders overview	<ul style="list-style-type: none"> • The bulk of the climate change adaptation funding to Uganda is funded via 87 bilateral funds, with only eight via multilaterals, and four via climate change funds. This suggests an unmet opportunity for Uganda to access a larger proportion of international climate finance through climate funds. • The AgrInvest initiative in Uganda is co-financed by the European Union and FAO to assist the Uganda Development Bank (UDB) in developing responsible private sector investments in the agriculture and agribusiness sectors. The project's expected impact is to increase and enhance the UDB loan portfolio. This will benefit small-scale producers in terms of improved access to finance, enhanced regulatory framework and a broader scope for sustainable and profitable value chain investments. • Private sector companies exist in areas of agriculture, credit, and finance provision, services provision to farmers, yet in water and irrigation construction and value additions of agricultural products, the enabling environment (incentives) and partnership between private sector and government agencies and local farmers remain inadequate to meet the needs of the farmers. • Uganda has been benefiting from access to more concessional international development support. Uganda is one of the largest recipients of official development assistance (ODA) in Africa (7th) and the world (18th).

8.11 FUND IMPACT KPIS AT PORTFOLIO AND COMPANY LEVEL

All Portfolio Companies	Specific Portfolio Companies
<ul style="list-style-type: none"> • Number of users with improved resilience to climate change (households, businesses) • Percentage of users who are women • Inclusivity <ul style="list-style-type: none"> ○ Percentage of users who are low-income or rural ○ Percentage of users who are smallholder farmers 	<p>Insurtech</p> <ul style="list-style-type: none"> • gross written premium • claims ratio • percentage of user accessing insurance for the first time <p>Agtech</p> <ul style="list-style-type: none"> • yield or income improvements • hectares sustainably managed • hectares insured • liters of water/agrochemicals conserved <p>Carbon captured/removed</p>