



## Acceleration of financial technology-enabled climate resilience solutions

### Part I: Project Information

**GEF ID**

10927

**Project Type**

MSP

**Type of Trust Fund**

MTF

**CBIT/NGI**

CBIT **No**

NGI **No**

**Project Title**

Acceleration of financial technology-enabled climate resilience solutions

**Countries**

Regional, Kenya, Nigeria, Rwanda, South Africa, Uganda

**Agency(ies)**

UNIDO

**Other Executing Partner(s)**

BFA Global

**Executing Partner Type**

Private Sector

**GEF Focal Area**

Climate Change

**Taxonomy**

Focal Areas, Biodiversity, Mainstreaming, Fisheries, Climate Change, United Nations Framework Convention on Climate Change, Climate Change Adaptation, Least Developed Countries, Mainstreaming adaptation, Community-based adaptation, Ecosystem-based Adaptation, Disaster risk management, Livelihoods, Innovation, Private sector, Climate resilience, Influencing models, Demonstrate innovative approach, Stakeholders, Type of Engagement, Partnership, Communications, Awareness Raising, Beneficiaries, Private Sector, SMEs, Capital providers, Individuals/Entrepreneurs, Financial intermediaries and market facilitators, Large corporations, Civil Society, Academia, Gender Equality, Gender Mainstreaming, Gender-sensitive

indicators, Capacity, Knowledge and Research, Capacity Development, Learning, Enabling Activities, Knowledge Generation

**Sector**

Technology Transfer/Innovative Low-Carbon Technologies

**Rio Markers**

**Climate Change Mitigation**

Climate Change Mitigation 0

**Climate Change Adaptation**

Climate Change Adaptation 2

**Duration**

24 In Months

**Agency Fee(\$)**

82,008.00

**Submission Date**

2/23/2022

**A. Indicative Focal/Non-Focal Area Elements**

<b>Programming Directions</b>	<b>Trust Fund</b>	<b>GEF Amount(\$)</b>	<b>Co-Fin Amount(\$)</b>
CCA-1	SCCF-A	517,945.00	5,248,331.00
CCA-1	LDCF	345,297.00	3,551,669.00
<b>Total Project Cost (\$)</b>		<b>863,242.00</b>	<b>8,800,000.00</b>

**B. Indicative Project description summary**

**Project Objective**

To accelerate the financial technology-enabled climate resilience solutions across the target markets.

<b>Project Component</b>	<b>Financing Type</b>	<b>Project Outcomes</b>	<b>Project Outputs</b>	<b>Trust Fund</b>	<b>GEF Amount(\$ )</b>	<b>Co-Fin Amount(\$)</b>
--------------------------	-----------------------	-------------------------	------------------------	-------------------	------------------------	--------------------------

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
1. Accelerating fintech innovations	Technical Assistance	1.1) Fintech startups improving climate adaptation and resilience are accelerated in a way that is gender-responsive and considers environmental and social sustainability	<p>1.1.1) 1 database of fintech startups enhancing resilience is built and analysed with a gender-responsive and environmental and social (E&amp;S) sustainability lens, and from it, startups are selected across the targeted markets (at least 6 startups - at least 30% of ventures, 50% with at least women in the leadership team and at least 20% of ventures offer products/services that target women)</p> <p>1.1.2) At least 6 Startups are accelerated to enhance and scale their innovative solutions increasing climate resilience</p>	SCC F-A	318,150.0 0	3,292,510.0 0

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
1. Accelerating fintech innovations	Technical Assistance	1.1) Fintech startups improving climate adaptation and resilience are accelerated in a way that is gender-responsive and considers environmental and social sustainability	<p>1.1.1) 1 database of fintech startups enhancing resilience is built and analysed with a gender-responsive and environmental and social (E&amp;S) sustainability lens, and from it, startups are selected across the targeted markets (at least 6 startups - at least 30% of ventures, 50% with at least women in the leadership team and at least 20% of ventures offer products/services that target women)</p> <p>1.1.2) At least 6 Startups are accelerated to enhance and scale their innovative solutions increasing climate resilience</p>	LDC F	212,100.00	2,221,394.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
2. Strengthening the global ecosystem around digital finance for climate resilience solutions	Technical Assistance	<b>2.1) The global ecosystem around digital finance for climate resilience solutions is built and strengthened</b>	<p><b>2.1.1) Two investment thesis briefs on digital finance for climate resilience and adaptation solutions (gender-responsive and E&amp;S sustainable) are developed and disseminated, attracting the interest of at least 10 major global investors for startups (with at least 50% with women in their leadership team) who become motivated to deploy capital for digital finance for climate resilience solutions</b></p> <p><b>2.1.2) Talent pipelines are built for future innovation in digital finance for climate resilience startups by placing at least 10 junior experts with startups (at least 50% women)</b></p> <p><b>2.1.3) 9 Learning and insights blogs developed applying a gender lens</b></p>	SCC F-A	136,380.0 0	1,456,621.0 0

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
2. Strengthening the global ecosystem around digital finance for climate resilience solutions	Technical Assistance	2.1) The global ecosystem around digital finance for climate resilience solutions is built and strengthened	<p>2.1.1) Two investment thesis briefs on digital finance for climate resilience and adaptation solutions (gender-responsive and E&amp;S sustainable) are developed and disseminated, attracting the interest of at least 10 major global investors for startups (with at least 50% with women in their leadership team) who become motivated to deploy capital for digital finance for climate resilience solutions</p> <p>2.1.2) Talent pipelines are built for future innovation in digital finance for climate resilience startups by placing at least 10 junior experts with startups (at least 50% women)</p> <p>2.1.3) 9 Learning and insights blogs developed applying a gender lens</p>	LDC F	90,920.00	997,475.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
3. Monitoring approaches enhanced	Technical Assistance	3.1) Progress of the project is tracked and reported	3.1.1) Annual Project Progress Monitoring and reporting as per UNIDO and GEF guidelines, and independent terminal review is conducted	SCCF-A	16,801.00	24,000.00
3. Monitoring approaches enhanced	Technical Assistance	3.1) Progress of the project is tracked and reported	3.1.1) Annual Project Progress Monitoring and reporting as per UNIDO and GEF guidelines, and independent terminal review is conducted	LDCF	11,201.00	16,000.00
<b>Sub Total (\$)</b>					<b>785,552.00</b>	<b>8,008,000.00</b>

**Project Management Cost (PMC)**

SCCF-A	46,614.00	475,200.00
LDCF	31,076.00	316,800.00
<b>Sub Total(\$)</b>	<b>77,690.00</b>	<b>792,000.00</b>
<b>Total Project Cost(\$)</b>	<b>863,242.00</b>	<b>8,800,000.00</b>

Please provide justification

In this project, 60% of the funding comes from SCCF-A and remaining 40% comes from the LDCF.

**C. Indicative sources of Co-financing for the Project by name and by type**

<b>Sources of Co-financing</b>	<b>Name of Co-financier</b>	<b>Type of Co-financing</b>	<b>Investment Mobilized</b>	<b>Amount(\$)</b>
GEF Agency	UNIDO	Grant	Investment mobilized	40,000.00
GEF Agency	UNIDO	In-kind	Recurrent expenditures	100,000.00
Private Sector	To be confirmed by BFA Global	Grant	Investment mobilized	3,500,000.00
Private Sector	To be confirmed by BFA Global	Other	Recurrent expenditures	2,000,000.00
Other	To be confirmed from Development Finance institutions by BFA Global	Grant	Investment mobilized	860,000.00
Other	Financial Sector Deepening Africa (FSDA)	Grant	Investment mobilized	2,300,000.00
<b>Total Project Cost(\$)</b>				<b>8,800,000.00</b>

**Describe how any "Investment Mobilized" was identified**

A co-financing amount of at least ten times of the GEF grant is expected to be mobilized for this project. The team has secured co-funding for \$2.3M from Financial Sector Deepening Africa (FSDA) with a go ahead for further due diligence from their investment arm FSDAi for an additional \$10M investment aimed to be secured by 2022. The Catalyst Fund aims to raise a \$25M Africa Fund, as part of a \$50M global fund that will also invest in Latin America and Asia. This will allow funding of 40 startups in Africa, and 80 startups globally over four years, as well as execution of follow-on seed deals with 50% of the portfolio and series A deals with 10% of the portfolio. In order to close the Africa Fund, BFA Global will need to raise \$12.68M from other funders to reach the target \$25M. In addition, the team will need to secure \$25M for another region. The team's primary focus will be on closing the Africa Fund, first, while in parallel securing commitments to close the other regions in 2023. Discussions are currently underway with existing funders- JP Morgan Chase and the UK Foreign, Commonwealth and Development Office for renewed participation in the programme. In addition, a diverse number of potential limited partners (LPs), including donor investors, institutional investors and family offices have also been engaged. So far, there have also been promising discussions with USAID, DFC, CDC, FMO, Proparco, KfW, PayPal, Blue Haven Initiative and Swiss Capacity Building Facility (SCBF), which are all developing agendas to support climate initiatives and have expressed enthusiasm about the programme. Investments from these players could

range from \$500K from family offices to \$10-15M from larger DFIs. BFA is in conversations with JPMC and the UK Foreign, Commonwealth and Development Office to play a similar role to FSD Africa and FSDAi in other regions, as first loss investors and also supporting the broader ecosystem activities. The team also has active discussions with the IDB team for the LatAm's vehicle on a similar basis. In addition, with co-financing support, the project aims to expand its support to the startups supported through GEF funds by not only providing technical assistance through venture building work, but also offering innovative financing of US\$100,000 in a form such as a simple agreement for future equity (SAFE) note to each of the startups. The SAFE note is a low-risk alternative to a cash grant, with the option for some returns that can be recycled in the project. Given this is a new instrument aimed at financing an emerging sector, the project relies on a slower ramp up while working with a close partner like FSDAi to design and test the investment approach before crowding in more capital. Overall, through co-financing, the project aims to run for five years and ultimately support at least 80 startups who are improving climate adaptation and resilience, accelerating their impacts in a way that is gender-responsive and that considers environmental and social sustainability.

**D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds**

<b>Agency</b>	<b>Trust Fund</b>	<b>Country</b>	<b>Focal Area</b>	<b>Programming of Funds</b>	<b>Amount(\$)</b>	<b>Fee(\$)</b>	<b>Total(\$)</b>
UNIDO	SCCF-A	Kenya	Climate Change	NA	172,648	16,402	189,050.00
UNIDO	SCCF-A	Nigeria	Climate Change	NA	172,649	16,401	189,050.00
UNIDO	SCCF-A	South Africa	Climate Change	NA	172,648	16,402	189,050.00
UNIDO	LDCF	Rwanda	Climate Change	NA	172,648	16,402	189,050.00
UNIDO	LDCF	Uganda	Climate Change	NA	172,649	16,401	189,050.00
<b>Total GEF Resources(\$)</b>					<b>863,242.00</b>	<b>82,008.00</b>	<b>945,250.00</b>

### E. Project Preparation Grant (PPG)

PPG Required **true**

#### PPG Amount (\$)

50,000

#### PPG Agency Fee (\$)

4,750

Agency	Trust Fund	Country	Focal Area	Programmin g of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNIDO	SCCF -A	Kenya	Climat e Change	NA	10,000	950	<b>10,950.00</b>
UNIDO	SCCF -A	Nigeria	Climat e Change	NA	10,000	950	<b>10,950.00</b>
UNIDO	SCCF -A	South Africa	Climat e Change	NA	10,000	950	<b>10,950.00</b>
UNIDO	LDC F	Rwanda	Climat e Change	NA	10,000	950	<b>10,950.00</b>
UNIDO	LDC F	Uganda	Climat e Change	NA	10,000	950	<b>10,950.00</b>
<b>Total Project Costs(\$)</b>					<b>50,000.00</b>	<b>4,750.00</b>	<b>54,750.00</b>

## Meta Information - LDCF

---

LDCF true

SCCF-B (Window B) on technology transfer false

SCCF-A (Window-A) on climate Change adaptation false

---

Is this project LDCF SCCF challenge program?  
true

---

This Project involves at least one small island developing State(SIDS). false

---

This Project involves at least one fragile and conflict affected state. false

---

This Project will provide direct adaptation benefits to the private sector. true

---

This Project is explicitly related to the formulation and/or implementation of national adaptation plans (NAPs). true

---

This Project has an urban focus. false

---

This Project covers the following sector(s)[the total should be 100%]:\*

Agriculture	<b>30.00%</b>
Natural resources management	<b>0.00%</b>
Climate information Services	<b>10.00%</b>
Costal zone management	<b>10.00%</b>
Water resources Management	<b>0.00%</b>
Disaster risk Management	<b>10.00%</b>
Other infrastructure	<b>30.00%</b>
Health	<b>0.00%</b>
Other (Please specify:)	<b>10.00%</b>
Total	<b>100%</b>

---

This Project targets the following Climate change Exacerbated/introduced challenges:\*

Sea level rise false

Change in mean temperature true

Increased Climatic Variability true

Natural hazards true

Land degradation true  
Costal and/or Coral reef degradation true  
GroundWater quality/quantity false

---

## Core Indicators - LDCF

<b>CORE INDICATOR 1</b>	<b>Total</b>	<b>Male</b>	<b>Female</b>	<b>% for Women</b>
Total number of direct beneficiaries	8,000	4,000	4,000	50.00%

<b>CORE INDICATOR 2</b>	
Area of land managed for climate resilience (ha)	600.00

<b>CORE INDICATOR 3</b>	
Total no. of policies/plans that will mainstream climate resilience	7

<b>CORE INDICATOR 4</b>		<b>Male</b>	<b>Female</b>	<b>% for Women</b>
Total number of people trained	378	189	189	50.00%

## Meta Information - SCCF

---

LDCF false  
SCCF-B (Window B) on technology transfer false  
SCCF-A (Window-A) on climate Change adaptation true

---

Is this project LDCF SCCF challenge program?  
true

---

This Project involves at least one small island developing State(SIDS). false

---

This Project involves at least one fragile and conflict affected state. false

---

This Project will provide direct adaptation benefits to the private sector. true

---

This Project is explicitly related to the formulation and/or implementation of national adaptation plans (NAPs). true

---

This Project has an urban focus. false

---

This Project covers the following sector(s)[the total should be 100%]:\*

Agriculture	<b>30.00%</b>
Natural resources management	<b>0.00%</b>
Climate information Services	<b>10.00%</b>
Costal zone management	<b>10.00%</b>
Water resources Management	<b>0.00%</b>
Disaster risk Management	<b>10.00%</b>
Other infrastructure	<b>30.00%</b>
Health	<b>0.00%</b>
Other (Please specify:)	<b>10.00%</b>
Total	<b>100%</b>

---

This Project targets the following Climate change Exacerbated/introduced challenges:\*

Sea level rise false

Change in mean temperature true

Increased Climatic Variability true

Natural hazards true

Land degradation true

Costal and/or Coral reef degradation true

GroundWater quality/quantity false

---

## Core Indicators - SCCF

<b>CORE INDICATOR 1</b>	<b>Total</b>	<b>Male</b>	<b>Female</b>	<b>% for Women</b>
Total number of direct beneficiaries	12,000	6,000	6,000	50.00%

<b>CORE INDICATOR 2</b>	
Area of land managed for climate resilience (ha)	1,000.00

<b>CORE INDICATOR 3</b>	
Total no. of policies/plans that will mainstream climate resilience	25

<b>CORE INDICATOR 4</b>		<b>Male</b>	<b>Female</b>	<b>% for Women</b>
Total number of people trained	522	261	261	50.00%

## Part II. Project Justification

### 1a. Project Description

#### *1a. Project Description:*

#### **1) The global environmental and/or adaptation problems, root causes and barriers that need to be addressed**

##### ? *Global Environmental Problems*

1. Disasters triggered by climate change have increased in both frequency and magnitude, negatively impacting communities and ecosystems through loss of life, reduced quality of life, loss of natural ecosystem services, and financial loss. Between 2003 and 2013, climate change caused US\$1.5 trillion in economic damage globally[1]. These damages disproportionately take place in developing countries, which are more vulnerable to the effects of climate change. To address this vulnerability, protect communities and ecosystems, and avoid accruing further damage, significant public and private investment is needed in climate change adaptation and resilience.

2. Climate change is already having a negative impact on the lives and livelihoods of billions of vulnerable, low-income, and marginalized communities in developing, and particularly least developed, countries ? those who have least contributed to it[2]. Current estimates suggest that at least 3.3 billion people worldwide are already vulnerable to the negative effects of climate change, namely those who depend on natural resources for their livelihoods, those who are poor, and those in particular geographies such as coastal areas and urban settlements. In the short-run, these populations are the most sensitive to climate risks because they are more likely to rely on the physical environment for their livelihoods and food consumption, are more likely to live in disaster-prone areas, and have more of their wealth in physical assets prone to destruction during climate disasters. Moreover, these populations are also the most likely to be excluded from formal financial services and likely do not have access to social or financial safety nets, which limits their adaptive capacity to cope with the expected climate impacts.

3. Women are amongst the most vulnerable to climate change due to traditional social norms and roles, which limit their adaptive capacity. Women cannot be overlooked when it comes to climate change adaptation, sustainable energy, and inclusive sustainable industrial development, as they represent half of the world's population. Involving women in climate change adaptation efforts and sustainable energy not only contributes to more gender equality, but is also economically smart. Research shows that 812 million women out of the 865 million, who could more effectively contribute to the global economy in 2020, will be living in developing countries.[3] The underutilization of women's economic potential is a global challenge, as the female labor force participation is significantly lower than the male labor force participation rate (49.5 percent globally for women compared to 76.2 percent for men).[4] If more women would have paid jobs or be entrepreneurs, they would in turn contribute to state revenues through taxes, contribute to the household income, invest in the education- and health of their children, and overall simply contribute to the development of the

countries they live in by being active members of society. Women entrepreneurs could use their creative and strategic minds to contribute to solutions for many societal challenges, one of them being climate change. When women have more income and access to financial services, their potential to adapt to climate change increases and their vulnerability decreases.

4. Addressing climate resilience is urgent, as shocks continue to threaten the financial health of underserved people - including women and marginalized groups - around the world. Not only do they experience more frequent, more profound shocks, but they are less able to manage their impacts. For example, a study in Rwanda found that poor households and those with more children were most vulnerable to macroeconomic shocks.[5] Another study in Uganda found that poor households and those in rural areas are the most vulnerable to health shocks.[6] The recent pandemic is also illustrative; the World Bank estimates[7] that it has 'pushed 120 million people into extreme poverty', and worsening climate shocks are expected to only compound and worsen this trend in the coming years.

5. According to the UNEP 2020 Adaptation Report,[8] annual adaptation costs in developing countries are currently estimated at US\$70 billion a year, and are projected to reach US\$140-300 billion by 2030 and US\$280-500 billion by 2050. These costs are estimated to be five to 10 times greater than current public adaptation finance flows. It is also important to highlight that according to the Global Landscape of Climate Finance 2021,[9] in terms of uses, mitigation finance continued to dominate at over 90% of total climate finance. Adaptation efforts continue to be underfunded.

6. In 2019, developing countries only received some US\$76.9 billion in climate finance for mitigation and adaptation planning and implementation[10]. Alarmingly, a vast majority of this financing comes from public sources, with very little private capital. This stark gap makes it clear that improving access to finance for adaptation is urgently needed, particularly in developing countries that are most vulnerable to the effects of climate change. Moreover, to bridge the gap in adaptation financing, it is critical to attract private sector investment into adaptation and resilience solutions.

7. One way to increase global investment into adaptation and resilience is to attract private finance into growing startups, and small and medium-sized enterprises (SMEs), that are providing adaptation and resilience solutions. Fortunately, there are existing business models and enterprises focused on enhancing climate change adaptation and resilience through technological products. For example, they are selling technological solutions like water capture tanks, solar pumps, predictive stormwater data, and drip irrigation systems to address water shortages, flooding, and shifting weather patterns. Similarly, agriculturally-focused businesses are selling precision agriculture inputs, vertical farms, and drone and agronomic advisor services to help farmers adapt to climate change. These startups and SMEs are growing, profitable, and achieving transformative outcomes in the face of climate change. In addition, the IPCC states that 'well-functioning markets provide an additional mechanism for adaptation and thus tend to reduce negative impacts and increase positive ones for any specific sector or country'[11]. This substantiates the need for innovative, market-based solutions to improve climate adaptation and resilience in developing countries.

8. Technology-enabled climate resilience solutions can help vulnerable people anticipate, adapt to, and build resilience to the impacts of climate change, if they can be packaged into products and services that are accessible and affordable. However, creating this access is not always straightforward

because vulnerable communities are difficult to serve, as they are largely poor, remote, and excluded from mainstream markets. Fortunately, inclusive technology providers have developed pioneering models to serve excluded populations, allowing startups to improve climate adaptation and resilience using methods that are gender-responsive, and that consider environmental and social sustainability.

9. Leveraging growing connectivity and cheaper mobile devices, many of these models use mobile (smartphone, phone) access, satellite data, and other technologies to give vulnerable people in developing countries access to a range of goods and services. For example, tech-powered biometric systems have helped financial service providers overcome identification requirements that may have otherwise excluded those without formal records, or required costly in-person verification. Similarly, digital payment rails like mobile money in East Africa and Unified Payments Interface (UPI) in India have given those without experience with formal financial services greater access to a wide range of products and services, even when last-mile distribution channels are weak. These innovations are helping to connect the underserved with modern opportunities, and are already increasing equitable outcomes for women and marginalized groups in developing countries across the world[12].

10. Digital finance and fintech can act as critical enablers for climate resilience solutions, to help providers overcome barriers of affordability, access, and appropriateness for vulnerable populations in developing countries. Digital finance has enhanced the scale, depth, and reach of many other technologies targeting these populations, through similar industries like inclusive fintech and PAYGo solar, and has strong potential to play a similar role in the climate resilience and adaptation space.

11. BFA Global is a consultancy company that works closely with the world's leading innovators to help them develop and deploy solutions that can improve the lives of individuals, small businesses, and communities while contributing to more inclusive and sustainable economies. Through **Catalyst Fund**[13] BFA Global works to fill important gaps in the innovation ecosystems across emerging markets, including: lack of patient capital to test and iterate products in-market, lack of resources to rapidly build viable solutions for underserved customers, and lack of networks with global and local investors and corporate partners. Catalyst Fund tackles these challenges by offering a combination of catalytic capital, bespoke venture-building support from market and sector experts, and access to a global network of investors and corporate innovators, while sharing insights, learnings, and toolkits with the broader inclusive tech ecosystem. Catalyst Fund's portfolio companies have had demonstrable success in utilizing fintech products and services to reach underserved and marginalized communities, including in contexts that improve the ability for these groups to adapt and respond to climate change.

12. This project takes a regional approach and has an intentional focus on South Africa, Kenya, Nigeria, Rwanda and Uganda. BFA Global and Catalyst Fund work extensively across Latin America, Africa and Asia (especially India). However, focusing on the African region is strategic because it is the region most vulnerable to climate change and has the lowest level of financial inclusion under traditional channels, but high penetration of mobile technologies. Data from the GSMA shows that by the end of 2020, 46% of sub-Saharan Africa's population (495 million people) subscribed to mobile services, and 120 million more people are expected to subscribe by 2025[14]. This combination of factors means that digital tools, like mobile-enabled financial technology, have the potential to have a more transformative impact in Africa compared to other regions. In addition, there is an incipient local and international entrepreneurship and venture capital sector, particularly in countries such as Kenya

and Nigeria. BFA Global believes that there are sufficient foundations to accelerate and scale ventures with high potential to create impactful climate adaptation and resilience solutions due to these circumstances.

13. The majority of the BFA Global team is based in Africa, with the company's Chief Executive Office and global headquarters in Nairobi, Kenya. The majority of the companies that BFA Global has worked with, via Catalyst Fund, have been African. In particular, BFA Global has extensive experience in either accelerating impactful startup ventures, conducting digital finance research projects, or both, in South Africa, Kenya, Nigeria, Rwanda and Uganda. BFA Global believes that it will be able to implement the program with the best possible outcomes in Africa due to this organizational experience and deep, local expertise.

14. Pursuing a regional approach allows BFA Global to rapidly learn and apply lessons from countries to others that may have similar local contexts, amplifying the reach and impact of the climate adaptation and resilience solutions that will be accelerated by this project. In addition, fintech ventures specifically operate with a platform approach that favors network effects: the value of the fintech solution grows exponentially the more users utilize it, generating economic synergies and social and environmental impact. Such ventures could benefit dramatically if they could leap from one country to another in the region. However, there is no "pan-African" fintech sector due to fragmented regulations and the absence of players playing a regional game plan. BFA Global believes that the project could contribute to building a pan-African vision of the fintech ecosystem for climate change adaptation and resilience by facilitating collaboration between actors from different countries and therefore increasing impact.

15. The focus countries comprise a selection of between countries where Catalyst Fund is already operational (South Africa, Nigeria and Kenya) but where, despite their vibrant fintech ecosystems, there are no specific fintech and climate change adaptation and resilience programs. The other two countries (Rwanda and Uganda) are geographically close to the traditional Catalyst Fund countries, have policies that favor technology entrepreneurship and are in many cases natural territories to bring to scale some of the ventures occurring in South Africa, Nigeria or Kenya. Uganda and Rwanda are also countries with which BFA Global has local expertise and extensive project experience, with team members based in the former.

#### **South Africa:**

16. The Republic of South Africa, located in the southern tip of Africa, is an upper middle-income country, with a relatively stable political environment. In 2020, it had a population of 59.3 million people, with an annual population growth rate of 1.3 percent. The country's population is projected to reach 66.4 million people by 2030 and 72.8 million people by 2050. Over two-thirds of the current population resides in urban areas, a proportion expected to increase to 72 percent and 80 percent by 2030 and 2050, respectively.[15] The impacts of climate change on South Africa's overall economic growth have been predominantly negative as a result of changing rainfall patterns that severely affect farm productivity and livestock health, and droughts exacerbating food insecurity.[16] In the future, climate change in South Africa is anticipated to continue to severely hamper economic growth, energy generation, job creation, and inequality.[17]

17. South Africa is especially vulnerable to climate change given its water and food insecurity, as well as the potential impacts on health, human settlements, infrastructure, and critical natural ecosystem services. The country has integrated climate change strategies into its development framework with robust plans to eliminate poverty and eradicate inequality. A focus of the plans is the sustainability of the environment, water resources, land management, agriculture, and health[18]. South Africa is highly vulnerable to climate variability and change due to the country's high dependence on rain-fed agriculture and natural resources, high levels of poverty, particularly in rural areas, and a low adaptive capacity.[19] The high evaporation rate of already dry soils and the virtual absence of permanent surface water over large parts of the country make water a scarce resource, with some projections indicating that even without climate change, the country is likely to run through its existing surface water resources in the near future. Additional challenges posed by climate change include changing precipitation patterns and increasing population demands. Further, communities in semi-arid areas are vulnerable to food insecurity and unstable livelihoods, which promotes unsustainable agro ecological systems, causing crop failures and reducing the productivity of rangelands.

18. SMEs are the lifeblood of South Africa's economy, and are also the most at risk to climate change impacts. The impact of climate change on SMEs can vary from warming temperatures and extreme weather events, health impacts as well as economic impacts.[20] SMEs across South Africa represent more than 98 percent of businesses, employ between 50 percent and 60 percent of the country's workforce across all sectors, and are responsible for a quarter of job growth in the private sector.[21] South Africa continues to be ravaged by the effects of the COVID-19 pandemic. According to the November 2020 FinFind SA SMME COVID-19 impact report[22], 60 percent of micro, small and medium-sized enterprises (MSMEs) were not able to operate during the highest lockdown levels, and, without access to relief funding from the government, 42.7 percent of small businesses were forced to shut down. Unfortunately, the situation has not improved much, and worsening economic conditions in the country have heightened these negative effects. Not only do micro and small enterprises serve as a critical lifeline for vulnerable households that cannot travel to make purchases, or need to purchase in small amounts, they also provide much-needed income to numerous business owners and employees. Such enterprises include spaza shops, which add approximately US\$7.5 billion to the local economy per year, and contribute 35 percent of total grocery sales in South Africa. Spaza shops offer viable livelihoods to a number of residents in the townships, employing approximately two people per shop. Given the range of challenges spaza shops face when it comes to growth and resilience, fintech innovation can offer promising solutions to provide spaza owners much-needed support, resources, and revenue opportunities. For example, remote ordering and payments solutions can help spaza owners avoid costly travel to purchase stock, and allow them to access bulk pricing and discounts to better compete with supermarket chains. Similarly, digital transaction records help the businesses build a financial footprint so they can then access formal financial services and government relief more easily. Given this range of opportunities, agile fintech innovators can play a central role in enabling spaza shops to recover quickly, improving their resilience as they are able to design and deliver tailored products and services that meet the urgent needs of informal small businesses.

19. More than 200 fintech companies operate in South Africa. This number is expected to grow through support from innovation hubs and the increasing adoption of technology in financial services. The largest and most mature of these segments is the payments segment, with 68 entities actively

operating in SA. This is aligned to international fintech trends, where payment solutions dominate the fintech landscape. In South Africa, innovative payment solutions can solve for the large remittance corridors into the Southern African Development Community (SADC region). The second largest segment is B2B Tech support with 48 active operational entities.[23] To help vulnerable businesses like South Africa's spaza shops recover from the pandemic, rebuild and improve their resilience for the future, inclusive fintech startups like Yebo Fresh, A2Pay, and Vuleka are developing innovative partnerships with FMCG distributors and financial service providers. Through these innovative partnerships, these fintech solutions are helping spaza shop owners access better prices for inventory, improve stock management and business finances, and more easily access valuable financial services. Further acceleration of these kinds of solutions can be expected to in turn improve the adaptation and resilience of vulnerable individuals and communities.

20. Some of the most persistent gaps of the South African technology startup ecosystem are: accelerators predominantly lacking financial technology for financial inclusion skills and expertise, the local startup ecosystem not being connected to the Pan-African ecosystem, no standard measurement criteria e.g. number of startups that received follow-on funding, enterprise development funded accelerators running the risk of focusing on quantity of Black entrepreneurs accelerated rather than the quality of startups (BEE scorecards), and entrepreneurs lacking fundraising expertise and falling short in investor and corporate engagements. BFA Global is uniquely positioned to help address these challenges.

### **Kenya:**

21. The Republic of Kenya, located in East Africa, covers a total land area of 582,646 square kilometers, which includes varied formations of plains, escarpments, and hills, as well as low and high mountains. Kenya, while considered a lower middle-income country, has the largest economy in East Africa. In 2016 the country had a population of 52.6 million people, and a 2.3 percent annual population growth rate.[24] Approximately 27 percent of Kenya's population currently lives in urban areas. This is projected to increase to 33 percent and 46 percent of the population by 2030 and 2050, respectively.[25] Kenya aims to become a newly industrialized country by 2030, which will require expanding climate change resilience efforts while also increasing its domestic energy production, including through the use of renewable sources. Kenya is highly exposed to many natural hazards, the most common being floods and droughts. It is estimated that over 70 percent of natural disasters in Kenya are attributable to extreme climatic events.[26] Adaptation efforts are focused on the country's energy, infrastructure, land use and environment, health, water and irrigation, agriculture and tourism sectors. Kenya is working to meet these goals and adhere to its climate change strategies by investing in strategic actions such as afforestation and reforestation, geothermal energy production and other clean energy development, as well as climate smart agriculture, and drought management.[27]

22. SMEs employ more than 80 percent of the working population in Kenya, and play a central role in its economic and growth strategies. The impact of climate change on SMEs can vary from warming temperatures and extreme weather events, health impacts as well as economic impacts.[28] Efforts to make SMEs more competitive can help the country achieve its development objectives by creating more jobs, strengthening sectors, and developing business models that work.[29]

23. Digital solutions constitute a unique opportunity for businesses to limit physical transactions with customers during the pandemic. According to a report from the IFC, 84 percent of interviewed businesses reported using digital solutions and tools ? small and medium-sized businesses were even more likely to have benefitted from these. Almost 60 percent of the MSME owners interviewed stated they used digital payment services to deal with the COVID-19 pandemic. Other important digital tools and solutions included online marketing, including via social media channels, as well as offering products and services online. Across all business sizes, businesses on average used about two of the different digital tools and solutions included[30].

24. The country has seen skyrocketing mobile penetration rates, with subscriptions surpassing the total population amount by 12 percent, and fintech innovations have followed. For example, the telecommunications giant Safaricom, which contributes 5 percent of the country?s GDP, led the push in 2007 with its M-Pesa money transfer service, which functions much like a limited mobile bank but without the need for an Internet connection. While financial inclusion in Kenya was at just 26 percent in 2006, today 83 percent of the population has access to at least basic financial services.[31]

These extremely high rates of mobile penetration provide an opportunity to connect with marginalized segments of society that can now be reached by digital products and services that can improve adaptation and resilience to climate change. A prime example of this is rural farmers who are now able to access mobile-based agricultural tools through Apollo Agriculture to help them to deal with the impacts of climate change.

25. BFA Global?s research shows that Kenya's inclusive fintech ecosystem faces numerous challenges: many investments come into the ecosystem but the majority goes to only a few companies; an inadequate pipeline of local fintech companies give disproportionate importance to a very small group of startups; and few banks work with financial technologies competently while others are struggling with ?make, buy, partner? decisions as few banks manage to transform from competitions/challenges to real embedded products. Each of these challenges can be addressed by harnessing the unique expertise of the BFA Global team on the delivery of this project.

### **Nigeria:**

26. Nigeria has a land area of 923,768 square kilometers and includes 853 kilometers of coastline. Nigeria in 2020 has an estimated population of 206.14 million people with an annual population growth rate of 2.5 percent. Nigeria's population is projected to reach 262.9 million and 401.3 million people in 2030 and 2050, respectively. Approximately 50 percent of the population currently lives in urban areas and this is projected to increase to 60 percent and 70 percent of the population by 2030 and 2050, respectively.[32] Large pockets of Nigeria?s population still live in poverty, without adequate access to basic services, and could benefit from more inclusive development policies. The lack of job opportunities is at the core of these high poverty levels, as well as regional inequality, and social and political unrest.[33] In Nigeria, the high levels of poverty, low degree of development, and dependence on rainfed agriculture, limits the capacity of poor households and communities to manage climate risk, increasing their vulnerability to climate-related shocks.[34]

27. Nigeria is at risk to numerous natural hazards and prone to floods, storms, ocean surges, droughts and wildfires. Nigeria?s coastal states face extensive risks from storm surge along the entire coast, inland flooding and wildfires in the Niger Delta region, and negative rainfall anomalies in the

southeast. The northern areas of the country face chronic aridity and riverine flooding along the Sokoto River in the northwest and the Komadugu River system in the northeast,[35] as well as transboundary flooding along Niger and Benue rivers. The middle areas of the country are at risk to high exposure from aridity, which is compounded by high tensions between farmers and pastoralists concerning land rights as well as water access.[36]

28. In Nigeria, SMEs contribute 48 percent of national GDP, account for 96 percent of businesses and 84 percent of employment. Despite the significant contribution of SMEs to the Nigerian economy, challenges still persist that hinder the growth and development of the sector. The impact of climate change on SMEs can vary from warming temperatures and extreme weather events, health impacts as well as economic impacts.[37] The banking sector in Nigeria remains attractive, with over US\$9 billion in value pools, but despite high levels of competition, the vast majority of consumers are underserved. Lack of access to services, especially in rural areas, issues of affordability, and poor user experience all contribute to the frustration consumers experience across the customer spectrum. This has created an opening that fintechs have been quick to take advantage of, with many stepping up to develop enhanced propositions across the value chain to address pain points in affordable payments, quick loans, and flexible savings and investments, among others. At the same time, a youthful population, increasing smartphone penetration, and a focused regulatory drive to increase financial inclusion and cashless payments, are combining to create the perfect recipe for a thriving fintech sector.

29. Nigeria is now home to over 200 fintech standalone companies, plus a number of fintech solutions offered by banks and mobile network operators as part of their product portfolio. Between 2014 and 2019, Nigeria's bustling fintech scene raised more than US\$600 million in funding, attracting 25 percent (US\$122 million) of the US\$491.6 million raised by African tech startups in 2019 alone—second only to Kenya, which attracted US\$149 million. As Africa's largest economy and with a population of 200 million—40 percent of which is financially excluded—Nigeria offers significant opportunities for fintechs across the consumer spectrum, notably within the SME and affluent segments and, increasingly, in the mass-market segment. The strength of the fintech sector across very different segments of society demonstrates a capability to leverage this technology to reach target beneficiaries through this project, in order to improve their climate adaptation and resilience.

30. According to BFA Global's internal research, accelerators play a role in trying to mitigate the three key challenges of startups in Nigeria which include access to capital, access to talent, and access to partnerships. Nigeria is currently home to a number of accelerator programs but the entrepreneur support space is a bit more saturated at the incubation stage (i.e. very early stage usually with a minimum viable product (MVP) in development/early deployment). Accelerator programs are fewer in number than incubator programs. There is a wide gap between the number of companies being built and the required support needed to take them further on their journey. This gap is largely around the ability of accelerators to get the startups investment-ready and provide them with adequate capital. This means there is a huge opportunity in later stage quality business acceleration for BFA Global's Catalyst Fund.

## **Uganda:**

31. Uganda is a land-locked country located in East Africa that lies in both the northern and southern hemispheres, with approximate latitudes of 2°S to 5°N and approximate longitudes of 29.5° to 36.0°. The country is approximately 241,500 square kilometers and is bordered by Kenya to the east, South Sudan to the north, Tanzania and Rwanda to the south, and the Democratic Republic of the Congo to the west. 17 percent of the country is covered by water and swamp land. A low-income country, Uganda had a population of over 44.3 million in 2019, with an annual population growth rate of 3.6 percent in the same year.[38] Uganda's population is projected to reach 63.8 million by 2030 and 105.7 million by 2050.[39]

32. Uganda is at risk of climate-induced disasters. The country experiences extreme weather events which lead to mudslides, landslides and flooding, particularly for the country's mountain regions and related districts such as Mbale in the Mt Elgon region.[40] Extreme events leading to disasters such as floods, droughts, and landslides have increased over the last 30 years. Flooding has become more frequent, largely due to more intense rainfall.[41] Over the past two decades, an average of 200,000 Ugandans are affected each year by disasters. Increased intensity of heavy rainfall has led to greater impact of floods and these are causing more damage due to expanded infrastructure, human settlement and general development of the country.[42] Uganda's vulnerability is exacerbated due to its high level of poverty and its high dependence on 'climate sensitive' sectors: agriculture, water, fisheries, tourism, and forestry.

33. SMEs are important contributors to growth and employment in the developing world and create employment for a significant share of the Ugandan labour force, comprising over 90 percent of the private sector. The impact of climate change on SMEs can vary from warming temperatures and extreme weather events, health impacts as well as economic impacts.[43] According to a report from Cambridge Center for Alternative Finance, there are currently around 70 fintech companies operating in Uganda.[44] While this figure is small by global standards, it is anticipated that this number is expected to grow quickly given that the average annual growth rate of fintechs in Uganda has been approximately 35 percent over the past two years. The largest area of fintech in Uganda is payments, with a transaction volume of UGX 17.6 trillion (US\$4.7 billion) in 2016. The next largest fintech sectors in Uganda are banking infrastructure, investment and savings, lending, and markets. In 2017, the total market volume of fintech companies in Uganda was approximately US\$16 million. About 60 percent of the fintechs that currently operate in Uganda are native to the country, 21 percent are more generally focused on sub-Saharan Africa, while the rest are global fintechs with operations in Uganda. This rapid growth of the fintech sector can be harnessed and applied to climate adaptation and resilience solutions, with those addressing the physical impacts of floods in particular being highly likely to improve the lives and livelihoods of climate vulnerable Ugandans.

34. While the fintech sector in the country is small by global standards, the fast-paced nature of technological developments, and their uptake by consumers, means that the authorities in Uganda will need to carefully consider the risks to their regulatory objectives, and the appropriate response, at an early stage. This is all the more important given that the policy and regulatory space tends to move much more slowly than innovation in the sector. BFA Global has produced guides on neighboring regulatory environments, and is uniquely positioned to help evaluate and address these risks in Uganda[45].

## Rwanda:

35. Rwanda is a small landlocked country in Central Africa with a total land area of 26,338 square kilometers. It borders Uganda to the north, Tanzania to the east, Burundi to the south, and the Democratic Republic of Congo to the west and northwest.[46] Rwanda is a low-income country, but still ranks as one of the top 30 places in the world to do business in 2019 and one of the fastest-growing economies in Africa.[47] Rwanda had a population of 12.9 million people in 2020 with an annual population growth rate of 2.5 percent. Approximately 17.4 percent of the population currently lives in urban areas, and this is projected to increase to 20 percent and 29.6 percent of the population by 2030 and 2050, respectively.[48]

36. Despite the country's overall positive growth and development over the past 25 years, Rwanda is still highly vulnerable to impacts from climate change through its high dependence on rain-fed agriculture, as well as the need to improve its road networks, health sector and water resource management.[49] In Rwanda, the high levels of poverty and low degree of development limit the capacity of poor households and communities to manage climate risk, increasing their vulnerability to climate-related shocks. Drought hazards are particularly of concern to the districts of Kayanza, Gatsibo, Kirere, Nyagatare, Rwamagana, Ngoma and Bugesera in the eastern province. Increased food insecurity is also of specific concern following disasters which result in land and infrastructure degradation due to erosion, direct crop failure due to floods and heavy rains, possible nutrient leaching, and fungal growth due to increased humidity. Water availability will be affected by possible periods of drought in southern zones. This is expected to have significant consequences for the hardest hit regions due to poor crop and livestock performance.

37. SMEs are driving Rwanda's economic growth. Today, they account for about 98 percent of businesses and 41 percent of private sector employment[50]. The impact of climate change on SMEs can vary from warming temperatures and extreme weather events, health impacts as well as economic impacts.[51] Fintech startups have almost tripled in the last five years, from 17 in 2014 to 44 in 2019. Most fintech startups in Rwanda (75 percent) focus on "fin" rather than "tech", with payments and remittances being the most common category of fintech applications. On the fintech solutions demand, startups have not been able to unleash the latent demand for diverse financial products and services. There is a high concentration of fintech startups offering payment products and services, while demand in other segments such as insurance or personal finance management remains unmet. Also, low levels of financial literacy and trust in digital solutions limit fintech startups' ability to reach a large proportion of potential customers. The impact and reach of these fintech startups could be accelerated by this project, by helping to build trust with these consumers and reach more underserved segments with climate adaptation and resilience solutions.

38. Similar to other African markets, funding prospects for fintech startups in Rwanda are very limited. In absence of local fintech-focused investors, startups heavily rely on foreign investors, who may lack knowledge and contextual understanding of the local market to interpret business risks on the ground. Also, there are some policies and regulations that increase the entry barriers for fintech startups. For instance, data localization measures impose high data storage and hosting costs to fintech startups. BFA Global, due to their extensive research experience in Rwanda, is in a unique position to educate global

and regional investors on the market and encourage greater levels of funding for fintech-enabled startups addressing climate change with their products.

? *Root causes and barriers that need to be addressed*

39. Across the five countries identified, shared and inter-related problems exist as depicted in the table below. Climate change is causing more extreme weather events, notably flooding and landslides, and increased vulnerability to human, plant and animal diseases. There are increased instances of rising temperatures and increased water stress in some areas. Loss of biodiversity and land degradation on farms is leading to increased vulnerability of agricultural production systems, increased pest and disease risk, and decreased agricultural productivity. Unsustainable land management practices occur in part due to a lack of technical assistance, technology (e.g., weather information, planting material), infrastructure and inputs (seeds, improved varieties). Widespread poverty in these countries means that there is a high level of vulnerability. This stems from a lack of sustainable economic opportunities for communities, including poor connectivity to markets (including poor infrastructure) and reliable buyers. Political unrest, unsecure tenure and gender based discrimination exacerbate these problems. The inexistence of economic safety nets for communities, e.g micro-insurance, savings and pension programs is an additional challenge .

40. Climate change impacts not only threaten those below the poverty line, but also disrupt the development gains of those above the poverty line. A study in India[52] found that crop shocks contributed to long spells of poverty even among relatively affluent households. A regional example can be seen in Nigeria, which remains highly vulnerable as recent water supply is unable to meet demands for domestic, industrial and agricultural purposes. In rural areas, approximately 88 percent of all households use surface water.[53] In South Africa, farmers hit hard by climate shocks are limited in their ability to adapt and respond to these, even when they have good financial back ups[54]. The recent COVID-19 pandemic has similarly wide-ranging impacts, creating a new segment of poor people. The "new poor"[55], as described by the World Bank, include those in urban areas who are more educated and work in the informal economy. In fact, the World Bank predicts that 30 percent of the global new poor will reside in urban areas (as compared to 20 percent of current poor people), and are more likely to be paid employees, rather than self-employed or employed in agriculture. This stresses an increased focus on building climate resilience.

41. Among both, rural and urban, and those just above or below the poverty line, women are the most vulnerable to the effects of climate change. Compared to men, they are more dependent for their livelihood on natural resources that are threatened by climate change. Furthermore, they face social, economic and political barriers that limit their coping capacity. For example, women farmers currently account for 45-80 percent of all food production in developing countries, depending on the region. About two-thirds of the female labour force in developing countries, and more than 90 percent in many African countries, are engaged in agricultural work.[56] In the context of climate change, traditional food sources are becoming less predictable and more scarce. Women face loss of income as well as harvests?often their sole sources of food and income. Related increases in food prices make food more inaccessible to poor people, in particular to women and girls whose health has been found to decline more than male health in times of food shortages. Furthermore, women are often excluded from decision-making on access to and the use of land and resources critical to their livelihood.

42. As detailed in the Climate Change Risks section, adverse climate change impacts are expected across various sectors such as Agriculture, Water, Forestry, Energy, Health, Biodiversity and Tourism and Infrastructure. In addition, the below table showcases data from the Climate Knowledge portal of the World Bank, which depicts the range and distribution of the most plausible projected outcomes of change in temperature and precipitation in the climate system for a selected Shared Socioeconomic Pathway (SSP) across the focus countries, considering a more modest (SSP 2) and more negative (SSP 3) climate scenario. It is evident that even under a modest climate scenario, climate hazards are significant and the expected climate impacts such as those listed below will be severe.

- Sea level rise in combination with extreme weather events is likely to intensify the flooding.
- Land degradation and soil erosion, exacerbated by recurrent floods, will negatively impact agricultural productivity, disproportionately affecting the livelihoods of the rural poor.
- Increased heat will further strain the water resources and impact from changing rainfall patterns will challenge the sustainability of current arable, pastoral and fishing practices.
- Water scarcity and drought conditions are expected to increase the risks of food insecurity.
- Diseases related to heat stress, air pollution, water-borne, food-borne, vector-borne are expected to increase.

Country	Temperature				Precipitation			
	Projected Number of Days Surpassing Heat Index 35°C in December, January, February (2020-2039)		Projected Number of Days Surpassing Heat Index 35°C in December, January, February (2040-2059)		Projected Number of Consecutive Dry Days in December, January, February (2020-2039)		Projected Number of Consecutive Dry Days in December, January, February (2040-2059)	
	DJF SSP 2-4.5	DJF SSP 3-7.0	DJF SSP 2-4.5	DJF SSP 3-7.0	DJF SSP 2-4.5	DJF SSP 3-7.0	DJF SSP 2-4.5	DJF SSP 3-7.0
<i>Kenya</i>	0.59	0.75	2.28	3.51	53.53	52.40	50.81	49.08
<i>Nigeria</i>	2.10	2.13	3.65	4.53	85.52	85.33	85.50	84.54
<i>South Africa</i>	0.07	0.07	0.22	0.28	32.26	31.90	32.41	32.50
<i>Rwanda</i>	0.00	0.00	0.00	0.00	9.70	9.51	9.59	9.93
<i>Uganda</i>	0.00	0.00	0.00	0.00	40.59	39.94	38.19	37.69

Source: Adapted from Climate Knowledge Portal of World Bank (2022)

Note: Shared Socioeconomic Pathways (SSPs) refer to the five possible scenarios that the world could evolve through based on the level of effort made to combat climate change impacts through policy and development. SSP2 is a modest scenario where challenges to mitigation and adaptation are medium, whereas SSP3 is a more negative scenario where challenges to mitigation adaptation are high; Based on World Bank's Climate Knowledge Portal, Heat Index is a measure of apparent temperature that includes the influence of atmospheric moisture. High temperatures with high moisture lead to high

Heat Index. This presents the number of days where the Heat Index surpasses 35°C over the data aggregation period. Heat Index gives insight into seasonal heat risks and changing seasonal heat risks over time?; ?A dry day is defined as any day in which the daily accumulated precipitation is less than 1 mm. This indicator represents the maximum length of a dry spell, computed sequentially for the entire time series, then taking the maximum value during each month in the data period. Consecutive dry days are useful to increase understanding in changing precipitation patterns and/ or changing periods of aridity for an area.?

43. Based on research by BFA Global and the Digital Finance for Climate Resilience Task Force[57], climate resilience solutions and their fintech enablers can be mapped to specific physical impacts of climate change.

44. Extreme weather and natural shocks are the first major impact. These include: i) extreme precipitation, cyclones, floods, and rising sea levels that can damage crops, assets, and infrastructure, and in many cases leading to lack of access to basic services post-disaster; ii) extreme temperatures and drought that cause crop losses, harm livestock, impact health (by heat stress), and lower human productivity; and iii) more, bigger, and more persistent wildfires that can disrupt livelihoods.

45. Solutions would include ways to help communities anticipate and recover from disasters and shocks. Examples of solutions are[58]:

CLIMATE RESILIENCE SOLUTIONS	DIGITAL FINANCE ENABLERS
<p><b>Anticipate &amp; Prepare</b></p> <p>Access climate risk information and early-warning systems</p> <p>Disaster proof housing or housing improvements in vulnerable geographies</p> <p>Planning and prioritization for shocks among small businesses and vulnerable households</p>	<p>Digital payments, automatic deductions, and subscriptions</p> <p>Housing improvement loans, cash for work (G2P) programs to protect communities and assets</p>
<p><b>Respond</b></p> <p>Emergency access to basic services - distributed sanitation, energy, water systems, and food security</p> <p>Build digital infrastructure for safety nets, cash transfers and remittances, for disaster recovery</p> <p>Develop imagery and data for assessing losses (crops, etc)</p>	<p>Digital credit and Pay-as-you-go (PAYGo)</p> <p>Digital G2P payments, remittances, transfers, charitable donations, cash transfers/relief</p> <p>Digital ID, satellite data, and fintech infrastructure</p>

<p><b>Recover</b></p> <p>Insure against disasters (including asset, life, health, and income insurance)</p> <p>Insure (index-based) livelihoods or assets (crop, livestock, income insurance for hot weather days)</p> <p>Products to aid in rebuilding</p>	<p><b>Insurtech</b></p> <p>Digital credit, investments, savings, and PAYGo</p> <p>Digital payments for cash for work rebuilding programs</p>
---	--

46. The second major impact comes from long-run changes to precipitation, temperature, wind patterns, and sea level. Over time, these changes will i) Reduce crop and livestock yields and viability, ii) Reduce freshwater availability and quality, and iii) Increase numbers and types of pests. Ocean acidification and water temperature changes will reduce fishing and aquaculture yields. The rise of sea-levels will make some existing dwellings, commercial space and trade, and transport infrastructure unviable.

47. Helping communities to adapt their household assets and livelihoods, and generally building long-term resilience in markets and communities are the two main solutions for which products and services can be built. Some examples are[59]:

CLIMATE RESILIENCE SOLUTIONS	DIGITAL FINANCE ENABLERS
<p><b>Adapt natural-resource-dependent livelihoods</b></p> <p>Forecasting and advisory services for nature-based livelihoods (e.g., weather, temperature, rainfall, soil, water levels, pests, and disease)</p> <p>Implement climate-smart agriculture, fisheries, aquaculture and other livelihoods (e.g., irrigation, seed, inputs, machinery, and other improved agricultural, and livestock practices)</p> <p>Collect and analyze crop/harvest/yield, weather, and price data</p> <p>PURE solutions that enable resilience</p>	<p>Digital payments, automatic deductions, and subscriptions</p> <p>Digital credit, investments, PAYGo, and crowdfunding</p> <p>Savings products</p>

<p><b>Adapt dwelling and household assets among physically-vulnerable households</b></p> <p>Upgrade dwelling, land, and assets such as land leveling, ventilation, air conditioning, water access, roofing improvements, weather proofing assets</p> <p>Install water access and management systems (drip irrigation, water storage, borewell interventions, etc.)</p> <p>Install energy access solutions that address practices that are directly degrading the environments e.g., clean cooking</p>	<p>Digital credit, investments, and PAYGo</p> <p>Remittances, P2P transfers, social payments</p> <p>Digital G2P/cash for work programs</p> <p>Digital savings</p>
<p><b>Hybrid adaptation-mitigation solutions for ecosystem and resource management</b></p> <p>Market-based conservation, restoration, and reforestation initiatives (carbon markets), and tech-enabled nature-based solutions</p> <p>Build digital supply chains, market linkages, marketplaces, and logistics for climate-vulnerable value chains</p> <p>Imagery and data to monitor and verify carbon mitigation or sequestration to enable marketplaces</p> <p>Sustainable waste management, recycling, and sanitation solutions</p>	<p>Online marketplaces, e-commerce</p> <p>Digital credit</p> <p>Fintech infrastructure</p> <p>Distributed ledger / blockchain based smart contract payments</p> <p>Savings products</p>

48. Financial services and technology solutions may range from digital payments to digital loans/investments to online marketplaces to insurance tech to fintech infrastructure. These innovations can help vulnerable people build resilience, but solutions have yet to reach underserved people in appropriate, accessible, and affordable ways at any real scale.

49. Below are some of the challenges with regards to inclusive fintech startups to date:

<p><b>Barrier</b></p>	<p><b>Information</b></p>
-----------------------	---------------------------

<p>Challenge to reach vulnerable population</p>	<p>Vulnerable populations, especially low-income, thin file, and financially excluded people, pose a number of challenges for startups as solutions need to be low-cost, and understood by those with low literacy and low trust in digital/tech. Furthermore, distribution channels in these areas tend to be weak since infrastructure is often limited and connectivity can be low. As a result, business models that serve them can be difficult and expensive to build. However, as noted, data from the GSMA shows that by the end of 2020, 46% of sub-Saharan Africa's population (495 million people) subscribed to mobile services, and 120 million more people are expected to subscribe by 2025[60]. This combination of factors means that digital tools, like mobile-enabled financial technology, have the potential to have a transformative impact in Africa, and have more opportunity and potential to reach the vulnerable than other methods.</p>
<p>Investor risk aversion</p>	<p>There is still much uncertainty about what fintech models will succeed, what technologies will be needed, and a constant need to test new features and designs. Although fintech is booming as a sector, most of those models serve lower risk populations in higher-income segments. Investors can feel more confident about the type of financial risks they are facing with these segments. Many of these companies are also at later stages of growth, so are less risky than early-stage startups that have yet to prove their models at scale.</p>
<p>Lack of financing instruments for entrepreneurs</p>	<p>Although entities such as the World Bank and the African Development Bank, among others, have pointed out that there is an investment boom in fintech startups in Africa, the number of venture capital funds, venture capital, and angel investors is still small relative to mature startup ecosystems. Furthermore, as the International Trade Center reflects,[61] support networks for startups are still incipient and do not meet the needs of African technology companies. Some actors have also pointed to the lack of institutional funders,[62] which have been key in environments such as Silicon Valley or Israel. More and better adapted financial instruments are needed to meet the needs of local businesses and ensure that tech momentum continues to grow in Africa.</p>
<p>Challenges in recruiting local talent</p>	<p>Fintechs with inclusive models need some of the most sought-after professional profiles in the world: programmers, data scientists or financial experts among others. There is a global shortage for this type of profile that is more urgent in Africa. In countries such as Nigeria, talent is considered the number one challenge for fintech startups.[63] Part of the problem is that high-quality talent considers the sector to be risky and to have low returns, so ventures struggle to attract the talent they need to resolve challenges and grow.</p>

<p>Disconnection between actors</p>	<p>Studies on technological entrepreneurship ecosystems around the world, such as in California, indicate that connections between entrepreneurs, public initiatives (financing or public procurement), universities and training centers and large companies are critical. The most sophisticated entrepreneurship environments feature open innovation cultures where information and knowledge flows fluidly among competitors, companies of different sizes, suppliers and buyers. In the case of the African countries supported in the project, few initiatives build synergies between actors.</p>
<p>Absence of a pan-African fintech ecosystem</p>	<p>Business models based on technological platforms, as is the case of inclusive fintech, depend on "network effects" (the more players who connect to a platform, the more will want to). Such effects are highly exportable and could drive exponential growth (as has been the case with Google, Apple, Facebook, Amazon, and Microsoft) and provide economies of scale.</p> <p>The fintech industry in Africa is being led by local private and public players, but has not facilitated regionally-oriented efforts as laws and regulations for fintech vary greatly between countries. Nor is there a "common marketplace" where practitioners and funders from across Africa can collaborate on pan-African business models. The absence of such a regional market (which does exist in other parts of the world such as Europe or Latin America), limits the growth opportunities for fintechs in Africa.</p>
<p>Measurement challenges</p>	<p>There is no clear set of internationally accepted indicators about fintech and climate resilience. As a result, stakeholders ranging from investors to other funders each have their own methods for measuring impact making it increasingly challenging for the startups to define a set of metrics. It is also difficult for stakeholders to determine which startups are more impactful than others since startups may submit different indicators to them.</p>
<p>Focus on scale instead of impact</p>	<p>Investors in the fintech ecosystem may be sensitive to social and financial inclusion as well as adaptation to climate change. However, their first objective continues to be the creation of profitable and scalable business models as quickly as possible. There is a real risk that investors and entrepreneurs neglect their social and environmental mandates in exchange for growing their companies quickly. To date, focus has not been observed explicitly on climate resilience or climate adaptation in this space.</p>

<p>Inexperience of entrepreneurs</p>	<p>Many entrepreneurs lack experience developing strong business models. Around the globe, 25 percent of companies fail in the first year and over 30 percent of companies [later] fail because their management was not experienced enough to handle issues like finances, hiring, and marketing?.[64] Many fintech startups are run by young people with little experience managing companies, and their lack of experience can be a barrier to growing truly scalable business models.</p>
<p>Regulation challenges</p>	<p>Lack of clear regulation (or sudden changes in regulation) represent a serious obstacle for fintech startups in developing and developed countries alike. For example, fintech solutions are often required to fit into rigid, existing legal frameworks and have to spend time and money to prove legal clarity, certainty, and predictability. Furthermore, they often experience unclear feedback on approvals, categories and other distinctions. Finally, a lack of international coordination means that startups need to coordinate their licenses by themselves, lack access to existing infrastructure or even face unequal treatment, among other challenges.[65]</p>
<p>Lack of sufficient venture capital into climate-focused companies in Africa</p>	<p>Although there has been a rapid growth in venture capital flows in Africa (approx around US\$4.3 billion in 2021 alone[66]), with Kenya, Nigeria, South Africa amongst the highest, very little is flowing to climate-focused companies.</p>
<p>Gender inequality and discrimination</p>	<p>According to the IFC,[67] only 11 percent of seed funding capital in emerging markets goes to companies with at least one woman on their founding teams. The numbers are lower for later-stage funding despite evidence that investing in gender-diverse teams leads to superior business outcomes. In the case of Africa, the World Bank found that in spite of the technological boom, there has been little change in the amount of funding going to all-female founding teams over the past decade and only three percent of early-stage funding since 2013 went to all-female founding teams, compared to 76 percent for all-male teams.[68]</p>

50. Currently there are virtually no programs solely focused on the intersection between fintech and climate change resilience and adaptation. In summary, this project proposes to build a gender-responsive ecosystem for innovation in digital financial tech for resilience by accelerating startups in select developing countries to offer accessible, appropriate, and affordable solutions to un- and under-served populations by addressing barriers to growth, such as the availability of capital, talent and evidence-based knowledge.

## 2) The baseline scenario and any associated baseline projects

### *Relevant Policies in Targeted Countries*

51. In terms of adaptation to climate change, the national adaptation plans reflect the most important goals and policies adopted by the target countries.

#### **Nigeria**

52. Nigeria's Adaptation Communication to the United Nations Framework Convention on Climate Change[69] October 2021 highlights "the diversity of Nigeria's natural ecosystems ranges, from the arid and semi-arid savanna to mountain forests, rich seasonal floodplain environments, rainforests, vast freshwater swamp forests and diverse coastal vegetation. Climate change is expected to affect Nigeria's economy due to loss and damage (to infrastructure, farmland, real estate, etc.) from extreme weather events that have been on a steady increase over the last decade. Adaptation measures are therefore crucial to shield the economy from further climate shocks".

53. As is pointed out in the National Adaptation Strategy and Plan of Action for Climate Change in Nigeria (2015) and National Adaptation Plan Framework (2020)[70], "Nigeria has developed the right policies, strategies and action plans to achieve its adaptation priorities. Adaptation issues are addressed using a sectoral approach. The key sectors given prominence include energy, agriculture, and water resources, forestry and wildlife, education, health, security, and transportation. There are also cross-cutting issues such as gender, finance that affect each of the sectors".

54. The aforementioned plan also mentions a group of priority sectors: "(agriculture, water resources, health and transport) are estimated at US\$3.06 billion per year from 2020 which is expected to rise to about US\$5.50 billion in 2050. This points out the need to leverage funding for adaptation".

#### **South Africa:**

55. The National Climate Change Adaptation Strategy[71] (NCCAS) points out that "South Africa is experiencing significant effects of climate change particularly as a result of increased temperatures and rainfall variability that threatens country advances on the Sustainable Development Goals" and that "the country sees adaptation to climate change as an opportunity to transform both the health and the economy, to strengthen the social and spatial fabric, and to become more competitive in the global market".

56. The NCCAS highlights how "The National Development Plan[72] (NDP) of South Africa seeks to eliminate poverty, deliver environmental protection and promote economic development by 2030. However, the NDP does not test the sensitivity of achieving these goals in light of climate change and variability. The National Climate Change Response Policy[73] (NCCRP), published in 2011, prioritizes both climate change mitigation and adaptation in moving towards a climate-resilient and lower-carbon economy and society (DEA 2011)".

57. The vision of NCCAS is "to transition to a climate resilient South Africa, which will follow a sustainable development path, guided by anticipation, adaptation and recovery from a changing climate and environment to achieve our development aspirations". The plan also describes four strategic

objectives: ?build climate resilience and adaptive capacity to respond to climate change risk and vulnerability; promote the integration of climate change adaptation response into development objectives, policy, planning and implementation; improve understanding of climate change impacts and capacity to respond to these impacts; and ensure resources and systems are in place to enable implementation of climate change responses?.

58. Some measures are discussed in the NCCAS that involve the private sector, but they are less numerous than the ones referring to public sector actors, and they do not contemplate working with technological startups.

### **Kenya:**

59. The Kenya National Adaptation Plan 2015-2030[74] highlights the main goals and activities to create resilience and adaptation to climate change in the country. A first goal is ?devolution?: mainstream climate change adaptation into county integrated development plans and other county plans. Part of this goal is to develop the corresponding national adaptation plans, and create mechanisms for funding the implementation and upscaling of adaptation plans.

60. A second goal is ?energy?, that aims to enhance implementation of an energy generation mix plan that increases the resilience of the current and future energy systems to the impacts of future climate variability and change. As part of this goal, the Kenyan government is promoting energy efficiency and renewable energies. In the long-term, the government of Kenya will promote the rehabilitation of water catchment areas in order to provide sustainable ecosystem services, including energy production.

61. A third goal is ?science, technology and innovations?, which aims to support innovation and development of appropriate technologies and capacity that promote climate resilient development. Some subgoals show interesting synergies with the proposed project: to promote development of locally available technologies in support of adaptation to climate change, to promote and facilitate the transfer of appropriate technologies to the most vulnerable, and to upscale successful technologies.

62. Another relevant goal for the country that interlinks with this project is ?gender, vulnerable groups and youth?, in which some of the subgoals are to enhance access to the youth and women enterprise funds, strengthen and expand social protection and insurance mechanisms against main climate hazards, establish affordable and accessible credit lines for the urban and rural poor, youth and other vulnerable groups and create awareness for climate opportunities that women and youth can access.

63. Kenya places greater emphasis than South Africa on developing climate change resilience solutions associated with technology and entrepreneurship. However, despite being in many ways a regional hub for fintech, it has not been possible to find relevant programs that see an opportunity in the use of fintech as an adaptation tool. The most likely cause is that this opportunity has not been perceived or sufficiently developed by local actors.

### **Rwanda:**

64. The Green Growth and Climate Resilience Strategy[75] (GGCRS), approved in 2011, sets out Rwanda's actions and priorities on climate change relating to mitigation and adaptation to climate change seeking to integrate these concepts into the economic mainstream. As a proof of this willingness of the Rwandan Government to integrate climate change mitigation and adaptation into the economic policies of the country the GGCRS is also embedded in the recently developed National Strategy for Transformation (NST) (2018 ? 2024).

65. The GGCRS is on the roots of the Nationally Determined Contribution (NDC) of Rwanda[76] (2020) that can be considered the current most relevant framework for mitigation and adaptation to climate change. The adaptation contributions aimed by Rwanda take as a reference the GCRS and propose 24 key interventions on 8 sectors (water, agriculture, land and forestry, human settlements, health, transport, mining and cross sectional). An important role for the private sector in areas such as water, agriculture or mining has been pointed out by the NDC.

66. A mechanism of verification with a high degree of transparency and accountability has also been set to ensure the accomplishment and reliability of the achievement of these goals. The funding necessary to accomplish the adaptation priorities is estimated at 5.7 Billion USD.

67. The NDC points out its will to use financial markets and private sector mechanisms to accomplish their adaptation goals: ?Rwanda intends to meet its conditional contribution through the use of climate finance and international market mechanisms where appropriate, building upon the experience of the Clean Development Mechanism (CDM) and other existing market mechanisms.[77]?

68. Some other relevant policies and initiatives for climate change adaptation in Rwanda are[78]: Vision 2020; Economic Development and Poverty Reduction Strategy (EDPRS); National Environmental Policy; National Land Policy; National Agriculture Policy; National Forestry Policy; National Energy Policy; National Strategy and Action Plan for the Conservation of Biodiversity; and the National Strategy and Action Plan to Right against Desertification.

69. An important initiative that has a high level of interaction with the private sector is FOREWA[79]: an environment and climate change Fund, established by the Rwandan Government in 2012. Its mission is to ?Mobilise, Manage, Monitor And Facilitate Cross Sector Access To Green And Climate Finance, And Provide Financial And Technical Support To Catalyse Climate Resilient Development Impacts At Scale[80].? One of the initiatives promoted by FOREWA with chances of collaboration with this project is the Green Growth Hub, Green Growth Hub that ?will aim at incubating startups & accelerating scalable ventures by scaling profitability, creating quality jobs & delivering innovative products & services needed for climate change mitigation & adaptation, quality economic growth thru scalable business models?[81].

#### **Uganda:**

70. Uganda has two approaches to its NAP process[82]. The first approach is based on individual sectors preparing their own NAPs. The second is to include these individual sectors NAP into the National NAP, which is still in process (the last one was approved in 2007) and prepared by the

Ministry of Water and Environment under the Climate Change Department. In parallel, the Ministry of Agriculture, Animal Industry and Fisheries have prepared sector NAPs.

71. Another important national initiative is The Uganda Green Growth Development Strategy [83] (UGGDS) of 2018, part of Uganda Vision 2040 [84], which highlights the importance of building a competitive information and communications technology sector and creating quality jobs around this industry. The UGGDS focuses on five core catalytic investment areas of agriculture, natural capital management, green cities (urban development), transport, and energy. The envisaged outcomes of the UGGDS implementation are: income and livelihood enhancement; decent green jobs; climate change adaptation and mitigation; sustainable environment and natural resources management; food and nutrition security; resource use efficiency; and social inclusiveness and economic transformation at the sub-national and national levels. Many of the fintech models that will be supported by the project will be highly influential in some of these goals (eg. decent green jobs, resource use efficiency, and social inclusiveness and economic transformation).

72. In the documents analyzed there is an absence of references to financial inclusion, the relationship between economic resilience and natural resource use in vulnerable communities and fintech. Many of the sectors highlighted by Rwandan policies are focused on traditional sectors (e.g. agriculture) or highly dependent on state action (e.g. energy and transport). The opportunity to work with fintech and other inclusive technology models is absent and can be leveraged by the project to expand the country's tools to fight climate change.

*Relevant Fintech Baseline and fintech acceleration programs across the target countries:*

### **Nigeria:**

73. Nigeria has one of the most powerful fintech startups ecosystems in Africa and arguably in the world. According to a McKinsey study in 2020 [85], a youthful population, increasing smartphone penetration, and a focused regulatory drive to increase financial inclusion and cashless payments, are combining to create the perfect recipe for a thriving fintech sector. A Forbes article [86] highlighted that the sector raised some US\$439 million in 2020 alone representing 20 percent of the capital raised by all African tech startups. The growth is down to a number of key factors, namely a youthful population, increase in smartphone penetration and a combination of new regulatory frameworks that have increased the use of cashless payments.

74. Payment solutions currently represent around 15 percent of banking revenue pools in the country and continue to grow. Beyond this, consumer lending and, increasingly, asset management are focal points for fintech activity, while insurance, across all segments, is an untapped opportunity for those that can leverage technology to provide affordable healthcare premiums, enhance insurance distribution, and also create differentiated pricing based on customer data.

75. Some examples of Nigerian fintech startups with potential positive impact for the environment can be found, as is the case of Infibranches [87]. However, few fintech companies seem focused on positive environmental impacts and many innovation initiatives for climate change are focused on providing renewable energy off-grid services/products or electric transportation.

76. According to BFA Global's internal research, accelerators play a role in trying to mitigate the three key challenges of startups in Nigeria which include access to capital, access to talent, and access to partnerships. Nigeria is currently home to a number of accelerator programs but the entrepreneur support space is more saturated at the incubation stage (i.e. very early stage usually with a minimum viable product (MVP) in development/early deployment). Accelerator programs are fewer in number than incubator programs.

77. There is a wide gap between the number of companies being built and the required support needed to take them further on their journey. This gap is largely around the ability of accelerators to get the startups investment-ready and provide them with adequate capital. This means there is a huge opportunity in later stage quality business acceleration for BFA Global's Catalyst Fund.

Existing incubator programs	Existing accelerators
? Passion Incubator	? FB Start (Grant - US\$20k)
? CCHub Incubation program	? Ventures Platform Accelerator (follow-on equity investment for maybe 1 per cohort)
? Seedstars	? Greenhouse Labs (follow-on equity investment for maybe 1 per cohort)
? Enspire Incubator	? Itanna (Equity capital - US\$25k)
? Leadpath Nigeria	? Google Launchpad (Grant - US\$10k)
? Wennovation hub	? Labs by ARM (Equity capital - US\$25k)
? Accion Venture lab	
? Startpreneurs	
? Hebron Incubator	
? MEST Incubator	

**Kenya:**

78. Kenya, in particular its commercial and financial hub of Nairobi, is a major player generally from an economic point of view not just in East Africa but the African continent as a whole[88]. Dubbed 'Silicon Savannah', Nairobi has a strong fintech and wider tech and financial services ecosystem, and is also the capital and largest city of the country.

79. Kenya's financial sector is the third-largest in sub-Saharan Africa and it makes a significant contribution to economic growth and job creation. Through Vision 2030, which is the country's own economic development strategy, Kenya aims to create a 'vibrant and globally competitive financial sector'. According to the 2019 FinAccess Household Survey, compiled in collaboration with the Central Bank of Kenya, the Kenyan National Bureau of Statistics and FSD Kenya, 82.9 percent of the adult population has access to at least one financial product. Kenya had the largest fintech funding for its companies in Africa at US\$149 million. The Kenyan parliament has also published a Startup Bill,

aiming to develop a number of government incentives for startups. This is in addition to having a protection for intellectual property, among several interesting provisions.

80. BFA Global's previous research shows that Kenya's inclusive fintech ecosystem faces numerous challenges: many investments come into the ecosystem but the majority goes to only a few companies; an inadequate pipeline of local fintech companies give disproportionate importance to a very small group of startups; and few banks work with financial technologies competently while others are struggling with 'make, buy, partner' decisions as few banks manage to transform from competitors/challenges to real embedded products.

### **South Africa:**

81. South Africa, compared to other African nations, has a relatively high rate of population with access to financial services including insurance. The majority of South Africans (at least 67 per cent) have a bank account[89]. With regards to insurance, South Africa, according to a report from McKinsey, has over 80 per cent of premiums from the entire African continent.[90]

82. South Africa generally has a friendly regulatory framework where the South African Reserve Bank established the Financial Technology Programme, which aims to assess the emergence of financial technology and take into consideration its regulatory implications. The Financial Intelligence Centre, Financial Sector Conduct Authority, National Treasury, South African Revenue Service and the South African Reserve Bank have also released studies on crypto assets.

83. BFA Global has identified a variety of services covered by South African fintechs companies: cross border payments (Mama Money, MFS Africa, Selpal), SMEs digital payments and access to credit (Yoco, Nomanini, Lulalend), new payment rails i.e. QR, chat commerce (Zapper), and access to savings, insurance and investments (Inclusivity solutions, Allife, Oyi). There are also new challenger banks: Discovery Bank, Bank Zero and TymeDigital are challenging traditional financial institutions with accessible, affordable and customer-centric digital financial services.

84. There are a few accelerators such as Alphacode, focused solely on fintech in South Africa, a group of tech accelerators (Grindstone, Akro, Tshimologong) and corporate-funded accelerators (Alphacode, Startupbootcamp, Founders Factory). Impact focussed accelerator such as Global Cleantech Innovation Programme (GCIP South Africa[91]) has worked with entrepreneurs and innovation in the clean technology space while contributing to strengthening the resilience of the complex South African entrepreneurial economy to operate within the global market. However, lack of startup capital exists for early stage entrepreneurs to develop product market fits (family and friends/angels). Few venture capitalists in the South African market invest in early stage fintech companies or have a focus on financial inclusion. Some of the most persistent gaps of the ecosystem are: accelerators predominantly lacking financial technology for financial inclusion skills and expertise, local startup ecosystem not connected to Pan-African ecosystem, no standard measurement criteria e.g. number of startups that received follow-on funding, enterprise development funded accelerators running the risk of focusing on quantity of Black entrepreneurs accelerated rather than the quality of startups (BEE scorecards), and entrepreneurs lacking fundraising expertise and falling short in investor and corporate engagements.

## **Rwanda:**

85. According to the Rwanda Development Board, the financial sector has made significant progress and development to modernize[92]. The Board highlighted that the financial sector overall is stable, profitable, well-capitalised, and liquid. The wider ecosystem has a growing and diversified number and types of institutions, a stock exchange, banks, microfinance institutions, savings and credit cooperatives (SACCOs), insurance companies, and pension funds[93]. In terms of total assets, the banking sector continues to dominate the financial system with banks at 66.1 per cent, followed by the pension, insurance and microfinance with 17 per cent, 9.7 per cent, and 6.4 per cent respectively.

86. In terms of the future growth of the financial services industry in Rwanda, COVID-19 aside, a major example and association in its vision and future has been the Kigali International Financial Centre (KIFC). KIFC is a government initiative that aims to position Rwanda as a major business and financial hub in Africa which involves reforming the nation's financial services. Rwanda also made its headlines by introducing its own Startup Act to help further spur the development and regulation of the ecosystem.

87. On fintech solutions demand, startups have not been able to unleash the latent demand for diverse financial products and services. There is a high concentration of fintech startups offering payment products and services, while demand in other segments such as insurance or personal finance management remains unmet. Also, low levels of financial literacy and trust in digital solutions limits fintech startups ability to reach a large proportion of potential customers. Moreover, startups trying to focus on business-to-business models are faced with complex procurement processes, particularly when engaging with large entities.

88. Similar to other African markets, funding prospects for fintech startups in Rwanda are very limited. In absence of local fintech-focused investors, startups heavily rely on foreign investors, who may lack knowledge and contextual understanding of the local market to interpret business risks on the ground. With limited access to seed and early-stage investors, many startups cannot afford good talent without raising capital. This is particularly because some specific skill-sets may be harder to find in Rwanda.

89. Some policies and regulations increase the entry barriers for fintech startups. For instance, data localization measures impose high data storage and hosting costs to fintech startups. This, along with the annual USSD licensing and telecommunications company (telco) integration fees, raise startups' operational costs and limit their ability to pilot and test products in the market. Besides, given their size and perceived risks, fintech startups do not have direct access to the National Identification database and the payment switch. Startups rely on partner banks and telcos to fulfill know-your-customer requirements and route money. This presents an opportunity for regulators to provide tiered access to the national identification (ID) database to enable efficient verification of fintech companies' customers. On the issue of access to the payment switch, fortunately, the ongoing Rwanda National Digital Payment System project is implementing a layer for an open application programming interface that would enable fintech startups to interact securely with the platform.

90. Some key players identified by UNCDF in the sector are the National Bank of Rwanda, Rwanda Fintech Association, Africa Fintech Network and Rwanda Development Board. NDF has also promoted the creation of FinTech Hub[94] a dedicated accelerator that supports selected local fintech

startups helping them to scale by addressing their needs for skills, partnerships, access to capital and markets. Other promoters of FinTech Hub are the ICT Chamber, Kigali Innovation City, Ministry of ICT and Innovation and Ministry of Trade and Industry. The fintechs supported by this hub are savings, payments, insurance, personal finance, pension, credit scoring, capital markets, lending and digital banking, among others.

### **Uganda:**

91. Continued digitalisation is key to advancing financial inclusion. This is especially relevant in regions, such as East Africa, where IMF research found that even where financial inclusion through traditional banking services was declining,[95]expanded access to digital tools and services increased financial inclusion. Uganda has seen a boom in e-payment solutions in recent years. Between 2015 and 2019, mobile money transactions in Uganda more than doubled in value, from about US\$9 billion to US\$20 billion, according to the country's Central Bank[96]. COVID-19 has amplified the uptake of e-payments and growth of local fintech solutions.

92. This same report indicates that in Uganda, the twin challenges of providing an enabling regulatory environment to support the benefits of fintech, while balancing the emerging risks which it presents, require careful consideration. While the fintech sector in the country is small by global standards, the fast-paced nature of technological developments, and their uptake by consumers, means that the authorities in Uganda should carefully consider the risks to their regulatory objectives, and the appropriate response, at an early stage. This is all the more important given that the policy and regulatory space tends to move much more slowly than innovation in the sector. There are a number of best practices that the regulatory authorities in Uganda could develop while the fintech sector is still relatively small. These best practices will help to balance the mitigation of the potential issues and risks that fintech may present in Uganda. The best practices can also help policymakers and regulators seize the opportunities and benefits that fintech can offer with respect to increased financial inclusion, investment, and growth in both the financial sector and the wider economy.

93. Some key actors of the Ugandan ecosystem: Africa Fintech Network, Bank of Uganda (BoU), Fintech Association of Uganda, and Financial Sector Deepening Uganda (FSDU).

? *Initially associated National baseline projects*

94. The project will act as the intersection between climate change adaptation and fintech acceleration. Some relevant initiatives that show the different efforts in the selected countries in adaptation to climate change are:

### **Nigeria**

95. A UNDP-funded initiative to Mainstreaming Adaptation[97], helps the country to incorporate climate change and resilience within different sectors in the country. Fintech as a tool for climate change can be leveraged as part of that mainstreaming.

96. A UNDP-funded initiative "National Communication"[98], to support the integration of climate change considerations into relevant social, economic and environmental policies and actions. Taking advantage of the activities of this project, fintech as a potential tool to climate change adaptation can be promoted.

97. Down to Earth: Territorial Approach to Climate Change (TACC)[99], for the climate adaptation and resilience of Delta State, supported by both UNDP and UNEP. Some Nigerian startups can add financial resilience and income opportunities to the population from Delta State as there is a clear link between economic opportunity and environmental degradation.

### **Kenya:**

98. The GEF project Adaptation to Climate Change in Arid and Semi-Arid Lands (KACCAL)[100], aims to improve the ability of participating districts and communities in the arid and semi-arid lands to plan and implement climate change adaptation measures. In spite of the difficult geography of this part of Kenya, fintechs can reach this population offering financial services and commercial opportunities for the local population.

99. The World Bank has recently approved the *Financing Locally-Led Climate Action (FLLoCA) Program*. The program's development objective is to deliver locally-led climate resilience actions, and strengthen county and national governments' capacity to manage climate risks[101]. This program can create awareness about the opportunity of climate change as a form of local action to create resilience.

100. With support from USAID, The Kenya Water Tower Climate Change Resilience[102] project helps to develop climate change vulnerability assessments of key watersheds to enable Kenya to develop more resilient watersheds. Some of the potential startups that might be supported by the project have business models based on PAYGo that have proved successful to turn sustainable services such as water and sanitation.

### **South Africa:**

101. USAID has supported several important initiatives in climate change adaptation[103]. The Southern Africa Energy Program (SAEP) provides technical assistance and capacity building to South Africa's clean energy sector as a Power Africa-funded regional Program (US\$69 million, 2017-2022). The South Africa Low Emissions Development Program assisted South Africa in developing the skills and resources needed to build a more sustainable and green economy (US\$15 million, 2015-2020). The project can collaborate with these initiatives connecting startups that use fintech to boost the usage of renewable energies.

### **Rwanda:**

102. The UNDP programme "Reducing Vulnerability to Climate Change by Establishing Early Warning and Disaster Preparedness Systems and Support for Integrated Watershed Management in Flood Prone Areas"[104] aims to reduce the vulnerability of the Gishwati ecosystems and its associated Nile-Congo crest watersheds, and the people that derive their livelihoods from them, to increase floods

and droughts due to climate change. Micro insurances provided by the startups of the project may enhance an upper level of protection for these communities.

103. A six million dollar National Adaptation Planning Process[105] project with GEF support is being implemented by the Rwanda Environment Management Authority. The project's additional partners include the United Nations Environment Programme (UNEP), the Ministry of Environment, Rwanda Forestry Authority (RFA) and the districts of Kirehe, Nyagatare and Rusizi. The project can create awareness about Fintech as a tool for climate change resilience among those actors.

#### **Uganda:**

104. The National Adaptation Plan for the Agricultural Sector[106] presents a framework with climate change adaptation actions for the agriculture sector. A fair number of fintechs supported in the past by Catalyst Fund are focused on supporting this group of beneficiaries.

105. The Green Climate Fund has supported Uganda, enhancing subsistence farmers' ability to deal with climate impacts through the project: Building Resilient Communities, Wetland Ecosystems and Associated Catchments in Uganda[107]. As it was mentioned in previous projects, in spite of dealing with a rural dispersed population, thanks to mobile technology networks inclusive fintechs can provide financial and commercial support to these smallholder farmers.

106. As a summary, based on the above, it is noted that these initiatives related to climate change adaptation and resilience are not yet closely related to the fostering of entrepreneurship or inclusive technologies for the benefit of the vulnerable communities. The project has the opportunity to share with the stakeholders responsible for these initiatives the value of fintech as a tool for climate resilience and adaptation.

#### *International Initiatives*

107. A relevant UN-led initiative is the Sustainable Digital Finance Alliance[108] which has been founded by the UN Environment Programme and Ant Financial Services to address the potential for fintech-powered business innovations to reshape the financial system in ways that better align it with the needs of sustainable development. This initiative is focused on the creation of knowledge and awareness about this topic, and not focused on supporting scalable business models.

108. Another initiative is the Global Cleantech Innovation Programme (GCIP)[109], which is an approved GEF programme, which focuses on ten country child projects, seeks to support and nurture clean energy technology entrepreneurs and help them transform into fast-growing, scalable enterprises that will attract funding. GCIP methodologies for gathering information on outcomes and higher-level impacts/ results are expected to be prepared. This project could explore synergies with the GCIP framework and country projects such as GCIP South Africa and GCIP Nigeria.

109. A recently launched initiative by the GSMA[110] delves into mobile technologies and adaptation to climate change. The GSMA Innovation Fund for Climate Resilience and Adaptation supports startups, SMEs and social enterprises in Africa, Asia-Pacific, the Caribbean, Latin America and Eastern Europe that leverage digital technology, particularly mobile, to deliver climate resilience and

adaptation solutions to and with low-income and vulnerable populations. This new Fund will help accelerate the testing, adoption and scalability of digital innovations that enable the world's most vulnerable populations to adapt, anticipate and absorb the negative impacts of climate change. This initiative is currently sourcing applicants for its first round, so it is not possible to derive conclusions or knowledge from it.

110. The Global Center on Adaptation and the African Development Bank launched the Africa Adaptation Acceleration Programme (AAAP) with the aim to mobilize US\$25 billion to drive adaptation on the African continent to reduce malnutrition for at least 10 million people, support one million youth with entrepreneurship skills and job creation, and integrate climate resilience into about US\$7 billion worth of infrastructure investments, among other results[111].

111. The Africa Adaptation Initiative (AAI)[112] aims to ensure the continent urgently adapts to the adverse effects of climate change in the immediate, short, medium and longer terms. The AAI will: (i) Raise awareness of climate adaptation; (ii) Facilitate knowledge management, capacity building and capacity strengthening; (iii) Support and facilitate resource mobilization for implementation; (iv) Promote cooperation and partnerships (at sub-regional and regional levels) for synergy, scale and maximize shared benefits; and (v) Track progress through monitoring and evaluation of action.

112. Another important program led by the World Bank is The Africa Climate Business Plan[113]. This program calls for countries to seize the opportunity to scale-up climate resilience to grow their economies and reduce poverty, redouble efforts to increase energy access across the region, and take advantage of sustainable and innovative approaches to leapfrog into greener development pathways. The Next Generation Africa Climate Business Plan emphasizes knowledge and innovation to drive catalytic and game-changing trajectories toward low carbon and climate-resilient outcomes, aligned with this project.

113. Another initiative being prepared by UNIDO is the "Unlocking investments in female and youth-led early-growth stage adaptation Micro, Small and Medium-sized Enterprises in Kenya and Uganda"[114]. This project plans to support women and youth-led early-growth adaptation MSMEs through innovative performance-based blended financing and provide bespoke technical assistance and business growth support to ensure that they are able to successfully roll out adaptation solutions and scale up their operations, thereby expanding their businesses and building resilience to climate change.

114. Given the international, regional and national existing initiatives analyzed, it can be concluded that the use of inclusive fintech approaches is a worldwide novelty, and that this type of approach has not been used systematically, further emphasizing the innovative nature of this project.

### **3) The proposed alternative scenario with a brief description of expected outcomes and components of the project**

#### *Project Approach*

115. The project proposes a venture-building facility to accelerate fintech-enabled climate resilience solutions for vulnerable households and small businesses in Africa. This facility is based on the success that BFA Global has had through the Catalyst Fund[115].

116. There is a need for innovative, market-based solutions to improve climate adaptation and resilience in developing countries. Startup-led innovation creates such inclusive tech solutions in developing countries that are more accessible, affordable and appropriate for low-income consumers, and vulnerable communities at large. As the IPCC states, "well-functioning markets provide an additional mechanism for adaptation and thus tend to reduce negative impacts and increase positive ones for any specific sector or country?"[116].

117. This project accelerates startup-led solutions by providing philanthropic capital, tailored venture-building support, mentoring and networks for the startups working to provide them, with the goal of: 1) de-risking the investment for future investors, thus increasing the chances of companies raising capital, and 2) improving the value proposition offered by the companies to get them close to product/market fit, thus increasing the likelihood of customers adopting and using their products. As a result, the program will fuel growth for the companies, improving climate adaptation and resilience thus positively increasing the wellbeing of vulnerable people.

118. BFA Global's Catalyst Fund has established experience delivering such a model, bringing together patient capital, technical assistance including product development best practices (technology development, human-centered design), capacity building of the entrepreneurial ecosystem, and connection with investors all in one program. These actions foster the development of ventures that combine economic and environmental objectives. Catalyst Fund also specifically targets local and female founders, who are usually underrepresented.

119. Via these activities, Catalyst Fund has improved the lives of more than nine million people through its acceleration program in which 55 companies have participated and raised US\$410 million in additional capital. 88 percent of the companies are still operating and for every dollar invested in the program, the startups went on to raise US\$86.

120. Digital finance for climate resilience is a relatively new sector and, as a result, faces various barriers as highlighted in the sections above, including:

1. Those most vulnerable to climate change (farmers, fishers, women and others dependent on natural resources) have limited resources and tools to improve their resilience to the impacts of climate change.
2. These vulnerable communities face both demand-side and supply-side barriers in accessing any existing products and services including low affordability, remoteness, poor connectivity, and others, which can make it more expensive and difficult for financial institutions and other service providers to provide the much needed solutions to the vulnerable communities.
3. Fortunately, tech-enabled startups are leveraging greater, more affordable connectivity and devices to pioneer models to serve these populations, while providing inclusive climate change adaptation and resilience solutions to vulnerable people.
4. However, these markets tend to have underdeveloped venture and startup ecosystems so startup innovations remain underdeveloped and small-scale.

5. Moreover, recognizing the demand and supply side barriers and the complex markets in which vulnerable people tend to be situated, investors perceive models that serve them to be risky.
6. As a result, these vulnerable populations remain largely underserved in a range of sectors.

121. This project addresses these key barriers by derisking startups and accelerating the ecosystem around them to grow the availability of inclusive climate change adaptation and resilience solutions for vulnerable people.

122. The Theory of Change figure below shows how the project will accelerate growth and investment in innovative fintech-enabled climate resilience startups and their surrounding ecosystem which, in turn, will meaningfully contribute to greater resilience to the impacts of climate change among vulnerable populations.

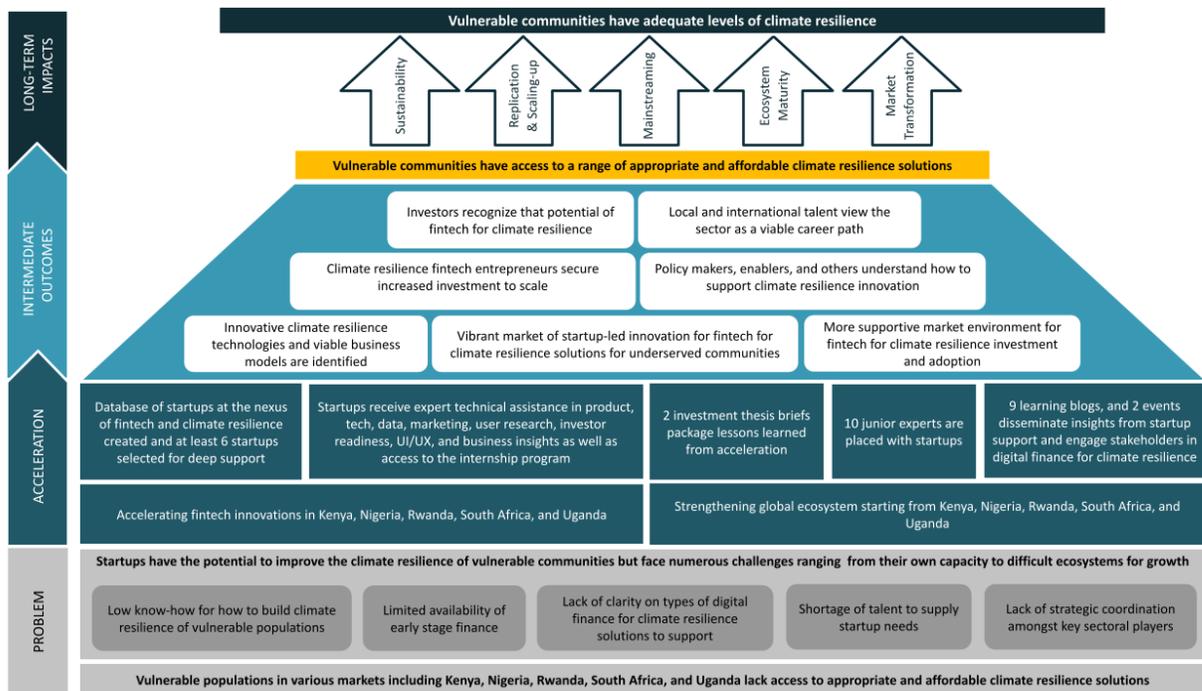


Figure 01: Theory of change

? *Project Description:*

### *Component 1: Accelerating fintech innovations*

123. This component covers the activities to support startups focused on these solutions through tailored venture building support and patient capital. Venture building activities are undertaken with a gender-responsive lens and with consideration of environmental and social sustainability.

*Outcome 1.1: Fintech startups improving climate adaptation and resilience are accelerated in a way that is gender-responsive and considers environmental and social sustainability*

124. Startups with innovative fintech-enabled solutions will serve vulnerable populations, including women, to become more resilient to the impacts of climate change.

*Output 1.1.1: A database of fintech startups enhancing resilience is built and analyzed with a gender-responsive and environmental and social (E&S) sustainability lens, and from it, startups are selected across the targeted countries (at least 6 startups - at least 30% women-led ventures, 50% with at least women in leadership team and at least 20% of ventures offer products/services that target women)*

125. The first major output involves scanning the startup ecosystem to learn about the various solutions at the nexus of fintech and climate resilience. The output will result in a database of startups that will then be analyzed for their potential for impact and scale in the project's target markets. Startups will also be analyzed for their gender-balance within the founding team and also the product's design to support female communities, as well the product's contribution towards promoting overall E&S sustainability.

*Output 1.1.2: At least 6 startups are accelerated to enhance and scale their innovative solutions increasing climate adaptation & resilience*

126. Startups selected from the database will be interviewed and asked to provide demos of their solutions before a final selection for those joining the program will be made. Startups will be selected based on a set of criteria that assess them for their product's design, how they reach underserved communities and help them adapt to climate change impacts, their growth potential to support at least 10,000 individuals by the end of the project, their gender and E&S lens, among other criteria to determine their eligibility for venture building support. Where startups support farming activities for more resilient land management, their potential to serve farms over a dedicated number of hectares will also be considered as part of the selection process. In particular, the criteria include:

1. **Tech-enabled innovation:** Startups have an innovative fintech-enabled product and business model that can meaningfully improve affordability, accessibility, and appropriateness.
2. **Adaptation and resilience impact:** Startups develop climate resilience solutions for underserved individuals and small businesses that are vulnerable to climate change impacts, with a preference for directly targeting and impacting women, and other at-risk groups. Startups may directly address a physical climate risk or hazard - as detailed in our investment categories below - and address E&S sustainability, greening, and other climate change impacts more broadly.

**Financing for disaster proofing:** Financing models (PAYGo, buy now/pay later, lay-away, etc.) can facilitate investments in adapting homes and livelihoods in anticipation of disasters like floods, heat waves, fires, hurricanes and other disasters with products such as cooling solutions, drainage systems, water storage and management, crops storage, anti-flood techniques, and heat wave management.

**Data for pricing disaster risk:** Insurance companies need better sources of data to make decisions about how to price insurance policies and evaluate risk for end users. Governments also need more information about risks to make decisions regarding policies and regulations. Digital finance innovators can leverage satellite data, remote sensors, and advanced analytics to provide them with better information about climate disaster risk. This can take the form of API integrations, data solutions,

analytical programmes or advisory services.

**Emergency payments: providers and enablers:** Emergency payments can help families experiencing a disaster smooth their income and avoid selling off assets in dire times, thereby avoiding poverty traps. Digital payment providers, together with the infrastructure around them (e.g. e-wallets, digital ID and signature, biometric targeting), can help get these payments to those who need them faster, cheaper, and with greater accuracy.

**Insurtech and enablers:** Vulnerable people need insurance coverage when disasters strike, to rebuild their homes and land, to cover health costs, to manage shocks to income, and to pay off debt when things go wrong. Insurtech products and enablers (like parametric data, APIs, alternative data, and analysis) can bring down the price of coverage, as well as enable distribution to underserved people, often through bundled offers. Digitisation also makes it easier for both the insured and the insurer to track claims and receive payouts, which further boosts resilience and trust in insurance.

**Climate-smart livelihoods:** Digital loans and PAYGo models can help vulnerable people access existing techniques and inputs that can make livelihoods more resilient to changes in weather, including precision agriculture (remote sensors, IoT, data analytics), climate-smart inputs, aquaculture methodologies, and others in an E&S sustainable manner. Digital advisory services can also be a powerful model for improving resilience among smallholder producer.

**Adapt dwellings and assets:** Vulnerable families need financing to adapt their homes to long-run changes in weather. Digital loans, alternative credit scoring, digital payments, and digital ID and signature solutions can help them to make their homes more climate resilient.

**Sustainable marketplaces and value chains:** Digital finance solutions can enable a range of marketplace and value chain interventions to improve the resilience of climate-vulnerable sectors. For example, online marketplaces that connect smallholders with higher-priced markets can encourage sustainable farming practices, while also mediating dependence on volatile local markets. Such solutions often vertically integrate to provide producers with climate-smart inputs, and then connect them with suitable customers leveraging digital payments, digital finance, and traceability technologies.

**Carbon payments and enablers:** Fintech solutions like digital payments and e-wallets can help make small payments to smallholders more affordable, and other tech solutions like remote sensors and satellite data can help build the data and monitoring systems needed to support their participation in the broader market for carbon credits.

3. Traction and potential to scale: Startups already have users utilizing the product, and demonstrate potential to scale within their markets or across markets.
4. Stage: Product is at MVP stage or built, company is working to achieve product-market fit, but could be pre-revenue.
5. Geography: Companies must offer services and operate with their teams based in Kenya, Nigeria, South Africa, Rwanda and/or Uganda.

6. **Additionality:** Grant resources would substantially support the startups to test and improve their fintech for climate adaptation and resilience product.
7. **Diversity:** Teams are local with a strong preference for local entrepreneurs, with additional preference for women founders or co-founders.
8. **Learning potential:** Startups must be able to contribute to our learning agenda to advance the collective knowledge of the industry related to adaptation and resilience solutions.

127. At least two startups will be selected **in total** from LDCs (Rwanda and Uganda) and at least three **in total** from non-LDCs to be accelerated through tailored venture-building support.

128. **Selected startups will receive venture-building support, customized to individual startup needs, complementing the venture's existing team to solve urgent product/market fit problems. For this program, that support will include risk assessments at the user level, and a climate resilience module for startups to understand climate impact and vulnerabilities. Other sprints will include: Product design and features development; user experience and user interface; messaging and marketing; data and dashboards; tech architecture and robustness; user research and prototyping; B2B sales and partnerships; Investment readiness and investor connections.**

129. The venture building support will start with a diagnostic sprint zero that comprises a series of sessions to understand the specific startup's business model, operations and strategy in detail. The sprint also aims to build a strong relationship between the startup and the venture building teams. Based on what the team finds from this diagnostic sprint, the first support sprint will be tailored to address the more important challenges the startup may be facing at the time. Subsequent sprints will be designed based on the outcomes of the previous sprints and the team's collective understanding of the direction the startup needs to take to improve its product-market fit. Additionally, through co-financing, the project will aim to offer patient investment capital similar to a SAFE note to the selected startups. The instrument will enable the startups to improve their product and expand operations while providing potential return opportunities to the project which can be used to further support other startups. At initial investment, the instrument will provide the startups with the equivalent of US\$100,000 in local currency. It will represent a 3 percent position in the company and will convert into preferred shares only when the startups raise a priced equity round or debt or grant as approved by the governing committees. The fund to mobilize this instrument is under design as of the date of this PIF submission.

130. **Through these activities, more vulnerable households and small businesses will be reached with products that build climate adaptation and resilience. The financial resources and venture building services will derisk startups for investors, unlocking more investment capital going forward. Through component 2, below, the ecosystem at large will learn from these experiences thereby increasing stakeholder understanding of fintech-enabled climate resilience innovations and how to support them. In the longer term, this will translate into more accessible, affordable and appropriate startup solutions that enhance the resilience of climate vulnerable populations and build an enabling ecosystem, unlocking various pathways for positive impact.**

*Component 2: Strengthening the global ecosystem around digital finance for climate adaptation & resilience solutions*

131. This component focuses on building the ecosystem by engaging investors, talent networks, and sharing learnings for the growth of the industry.

***Outcome 2.1: The global ecosystem around digital finance for climate adaptation & resilience solutions is built and strengthened***

132. Ecosystem stakeholders build up an enabling environment for climate adaptation and resilience solutions so startups can grow and succeed. Investors recognize the potential to invest in such solutions. Startups have talent networks from which to plug in junior professionals who can offer valuable hands-on support, and other stakeholders benefit from learning outputs and publications about inclusive fintech and climate resilience.

***Output 2.1.1: Two investment thesis briefs on digital finance for climate resilience and adaptation solutions (gender-responsive and E&S sustainable) are developed and disseminated, attracting the interest of at least 10 major global investors for startups (with at least 50% with women in their leadership team) who become motivated to deploy capital for digital finance for climate resilience solutions***

133. Two investment thesis briefs that delve into the specific opportunities in the digital finance for climate adaptation and resilience sector will be developed by leveraging learnings from the startup database, selection interviews, and the venture building support offered to startups in LDCs and non-LDCs as part of component 1. The briefs will consider a broad set of opportunities relevant to the target markets and choose the most promising opportunities to highlight using portfolio startups as examples where relevant. These briefs are intended for investors to learn more about the sector and help shape their own investment theses in this sector. They will also be shared broadly with the wider industry including, if possible, at COP28. Briefs of this nature take time to develop as they are evidence based and incorporate learnings from the startups. Investors, a key audience of these briefs, tend to prefer deeper, more focused knowledge products that can catch their attention and therefore it is planned to limit the briefs to two. At least 10 investors (with at least 50 percent with women in their leadership team) will also be engaged and invited to join the ecosystem to support startups and innovative solutions in the space especially by investing in them. We aim to host at least one startups and investors meetup event to foster connections.

***Output 2.1.2: Talent pipelines are built for future innovation in digital finance for climate resilience startups by placing at least 10 junior experts with startups (at least 50% women)***

134. At least two organizations that provide junior experts to startups will be engaged to make them aware of the inclusive fintech for climate resilience sector and to provide aspiring young professionals with opportunities to learn about this area, gain experience working with startups delivering impactful solutions for vulnerable communities and potentially even convert their work into full-time roles. Via an internship program, BFA Global's Catalyst Fund exposes more young professionals to career opportunities in the sector, which will grow and equip the inclusive innovation talent pipeline of the future while providing much needed hands-on support to the startups working to improve climate adaptation and resilience.

135. Junior experts can support the startups through an internship period of roughly six months across a range of opportunities including data analysis, market research, building marketing and messaging material to engage with the startups' users, helping to manage specific engagements as project

managers, and more. This output aims to match at least 10 junior experts with startups and will aim for at least 50% of the junior experts to be women. This output also aims to support startups that are actively looking for talent and hands-on support to help them with their climate adaptation and resilience solutions.

**Output 2.1.3: 9 learning and insights blogs developed applying a gender lens approach**

136. The team will produce at least nine learning blogs about the product area, with at least one specific blog about each of the startups selected for the program. These outputs will share a variety of learnings that will be valuable to the industry about the opportunity of the climate adaptation and resilience space, the startups the program selects to accelerate, as well as gender-based learning about product development and startup support. Where possible, the blogs will include infographics, and be leveraged at stakeholder convenings to unlock greater dialogue about the space.

137. BFA Global's Catalyst Fund also plans to engage the Circle of Investors through various activities and dialogues that increase their understanding of the sector and help them shape their investment approaches. This will improve their perceptions of risk, and build the community of investors to fund solutions for climate adaptation and resilience.

**Component 3: Monitoring approaches enhanced**

138. This component brings value addition to the implementation and execution of this project

**Outcome 3.1) Progress of the project is tracked and reported**

**Output 3.1.1) Annual Project Progress Monitoring and reporting as per UNIDO and GEF guidelines, and independent terminal review is conducted**

139. The monitoring of project progress is essential for the adequate and timely delivery of results. A detailed monitoring plan for tracking and reporting on project time-bound milestones will be prepared by UNIDO in collaboration with BFA Global and project partners at the beginning of project implementation and periodically updated. In order to mainstream the gender dimensions, detailed gender analysis including gap analysis will be conducted during the PPG phase. Following this, a detailed gender action plan will be developed and operationalized throughout the project implementation to support project contribution for enhancing gender equality and women's empowerment (GEEW). The operationalization of the action plan will be monitored and evaluated according to data and indicators incorporating gender dimensions including sex-disaggregated data collection, performing gender analysis, etc.

140. An independent final review will be conducted six months prior to the terminal review meeting. The final evaluation will look at the impact and sustainability of results, including the contribution to the capacity development and the achievement of adaptation benefits. The final evaluation will also provide recommendations for follow-up activities.

**4) Alignment with GEF focal area and/or Impact Program strategies**

141. This project supports the GEF Programming Strategy on Adaptation to Climate Change in the LCDF and SCCF's goal of strengthening resilience and reducing vulnerability to the adverse impacts

of climate change in developing countries, and supporting their efforts to enhance adaptive capacity. The project supports mainly Objective 1 "reducing vulnerability and increasing resilience through innovation and technology transfer for climate change adaptation". This initiative boosts the use of technology and enhances the role of innovators, in this case fintech startups, promoting a role for entrepreneurs (fintech startups) as agents of change for resilience and adaptation to climate change by strengthening their technological and business models, as well as their connections in local technological entrepreneurship ecosystems. The project has been one of the awardees in the Challenge Program for Adaptation Innovation of 2021 by GEF, which seeks to identify, test and highlight innovative adaptation approaches with potential to be replicated and scaled up.

142. This project is designed to be scaled, and as such involves "technological, social, and instructional innovation" that can be "transferred, adapted, and deployed across the developing world." Through investment partnerships, co-investment facilitation, and finance access, it involves "leveraging non-GEF partners and initiatives to deliver great impact and scaled-up finance in vulnerable countries." This project also enhances national level initiatives and capacity while supporting the NAP's of Kenya, Nigeria, South Africa, Uganda and Rwanda.

143. The proposed project is aligned with several of the priority themes of the Challenge Fund, namely: "Developing lines of credit, lending products and methodologies to produce inclusive finance products with microfinance partners for localized climate adaptation action by micro, small and medium-sized enterprises (MSMEs)", "to develop strategic multi-stakeholder partnerships, alliances, and incubators as catalyzers of larger scale financing and market developers", and to develop "innovative business models and investment approaches, seed funding and venture capital approaches to improve access to finance for the private sector."

144. The project focuses on the regional level, with particular focus on the targeted countries (as mentioned in para 12); however, once proven this model itself can be adapted and replicated in countries or other regions globally. The project will mitigate risk and create enabling conditions for innovative climate resilience concepts in digital financial technology startups within developing countries. In addition, this project will "raise the capacity of local private actors" through enterprise development and "support national and global platforms for enhanced coordination and pooling of support" through the coordination of investment partners and the development of a panel of experts. As described in previous sections, this project is also complementary to national programs and priorities, and those of existing baseline projects.

##### **5) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing**

145. Currently, many countries lack the technical capacities necessary to design and implement effective responses to climate change impacts. For application of the Theory of Change, this project assumes that without GEF support, countries will continue to suffer from technical capacity deficits and a weak enabling environment, leading to poor outcomes with respect to supporting digital financial technology startups that focus on climate resilience solutions. Furthermore, LDC countries will continue to struggle to formulate and design fundable climate change adaptation projects, and because of this the bottlenecks in channeling climate change financing to LDCs will persist. Moreover, it is

assumed that without GEF support, most LDCs will continue to experience difficulties in identifying new sources of financing and engaging the private sector in climate resilience and adaptation activities.

146. As noted in the *Global Environmental Problems* section, there is a paucity of climate financing directed towards adaptation, more so from the private sector. In addition, development of startups in general and climate-resilience oriented businesses needs special attention, especially in least developed economies which also tend to be most vulnerable to climate change. There is no enterprise development program or accelerator program that specifically targets fintech enterprises for climate resilience solutions. In the absence of this program, the adaptation sector in general and adaptation enterprises in particular will suffer from a lack of financing or mature as investable assets. The sector will continue to lag behind in funding and its ability to provide adaptation-focused innovation.

147. Co-financing: A key value proposition for this project is its alignment and integration with BFA Global. This allows this project to benefit from the combined expertise, infrastructure, work activity and partnerships already established within UNIDO and BFA Global and notably, its Catalyst Fund. Co-financing is expected to come from UNIDO, the private sector through grants or investment capital, as well as grants from the public development finance institutions.

148. If SCCF and LDCF funding is not provided, it is very unlikely that fintech innovations with a focus on climate resilience will be adequately developed in these economies (or only at a very low level, distributed at the national level). Barriers for entrepreneurs lacking business skills will remain and supporting mechanisms to fully commercialize their innovative products will not be developed. This will result in many unrealized opportunities in adapting to climate change, strengthening partnerships with the private sector keen on investing in climate resilience technologies, commercialisation of digital financial technology for climate resilience startups and entrepreneurs, and ultimately missed opportunities for green economic growth and jobs.

## 6) Estimation of Adaptation Benefits (LDCF/SCCF)

149. The adaptation benefits of the proposed project are in line with the strategic objectives of the LDCF and SCCF, by reducing vulnerability and increasing resilience through innovation and technology transfer for climate change adaptation.

150. At least 20,000 beneficiaries, the total number of end-users including individuals; households; and businesses, will be served by the five startups supported across the LDCs and non-LDCs. Given the early-stage of the startups being supported, they will have a small number of direct beneficiaries to start with. We estimate that the startups on average will grow to serve at least 1,000 beneficiaries each by the end of the project. We also assume that each beneficiary would have an average of four members in the household and therefore the total number of beneficiaries per startup would be 5,000.

151. A total of thirty-two plans will be created to mainstream climate resilience. Two of these are investment briefs that will be read by investors and industry stakeholders to deepen their understanding of high-potential businesses that can increase community resilience to climate change impacts. There will also be thirty dedicated sprint plans for each of the climate-focused startups being supported to outline their pathway to product/market fit. 152. We anticipate supporting at least one agritech startup

originating from the non-LDCs and one from the LDCs. Based on FAO data cross-checked with an existing Catalyst Fund alumni agritech startup, we estimate a smallholder farmer to manage an average of 1 Hectare of farmland in the non-LDCs. In LDCs, we estimate a smallholder farmer to manage an average of 0.6 Hectares of farmland. As a result, we estimate the project to cover a total of 1,600 Ha of land - 1,000 Ha of land in non-LDCs, and 600 Ha of land in LDCs.

153. Roughly 900 individuals will also be trained during this project ranging from the startup teams that will be directly involved, along with interns that are connected with the startups, to investors and other stakeholders engaged in developing investment briefs and ecosystem stakeholders engaged through events to share our learnings from accelerating startups. All these projections will be further refined during the PPG phase.

154. Women's empowerment is considered critical to this project. We will aim to support at least 10,450 women through various channels. These include improving the livelihoods of women beneficiaries that use the startups' climate adaptation and resilience products and services, building capacity for women founders or co-founders of these climate-focused startups being accelerated, training youth including young women as interns that would join the startups, and also training women investors and other stakeholders in the startup ecosystem to grow their awareness around climate adaptation and resilience solutions. This number will be further refined through the gender assessment done in the project development phase.

## **7) Innovation, sustainability and potential for scaling up**

### ***Innovation***

155. This project is highly innovative in attracting one of the most dynamic and technologically advanced sectors in Africa (fintech) to find in climate change resilience a joint opportunity for inclusion and business. As mentioned in the *Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing* section, there are currently no programs solely focused on the intersection between fintech and climate change resilience and adaptation. As also shown in the *Theory of Change* figure, this project is designed to support local entrepreneurs and their surrounding ecosystem such that they can meaningfully contribute to greater resilience to the impacts of climate change among vulnerable populations.

156. The project not only provides the much needed deep, tailored support to startups building solutions for vulnerable communities to adapt to the effects of climate change, but also engages various ecosystem actors like investors, corporates, talent pools to strengthen the ecosystem for fintech and climate resilience. The program also has a built-in learning agenda to extract and disseminate learnings and insights from the work done especially from supporting high potential startups in the space. The learning agenda ensures that the wider industry can grow alongside the program. Additionally, through co-financing, startups receive patient capital to help them continue to grow beyond the program's support.

157. The project will also be innovative at several levels:

- *The project will introduce innovations and improvements on how fintech ecosystems work in Africa.* This project, through BFA Global's Catalyst Fund, will develop entrepreneurship ecosystems around climate change adaptation and resilience, aiming to launch an ecosystem of innovation around this neglected but critical topic. This is innovative because most of the acceleration programs have an exclusive focus on supporting the growth of young companies.
- *The project will introduce climate change adaptation and resilience as an opportunity for the fintech ecosystem.* Existing inclusive fintech accelerator programs do not typically consider environmental impact or the intersection between financial inclusion and climate change resilience and adaptation. This program integrates both aspects in a novel way by accelerating climate change adaptation and resilience solutions that also allow vulnerable communities to grow economically.
- *The project will innovate in how the selected startups are chosen and supported, serving as a reference for other climate change adaptation and resilience technology programs.* BFA Global's Catalyst Fund is innovative in its design in several ways: 1) the sourcing of startups is currently done on the basis of suggestions from experienced impact investors (which ensures that startups serve low-income communities with limited to no access to fintech solutions and can improve their resilience to climate change, by facilitating scale and performance); 2) the approach is comprehensive in technical assistance (technology development, business model, design thinking, seed capital); and 3) it has a pool of over 100 investors who can help these startups unlock funding, and represents an strong opportunity to deploy more capital into the climate adaptation and resilience space.

### ***Sustainability***

158. The wide network of allies including multilateral and private investors, and a long and successful track record of supporting startups and offer clear perspectives of sustainability for this project.

- Companies supported by BFA Global's Catalyst Fund show a high survival rate. On the side of the companies supported by the program, 88 percent of the startups supported by Catalyst Fund are still in operation and an important number of them have reached series A funding, overcoming the "Valley of Death" (the funding gap between seed capital and a round of investment that consolidates the operations of a startup). Catalyst Fund is, therefore, an approach to business acceleration that ensures the long-term sustainability of the supported companies. Through this project, Catalyst Fund will also ensure the targeted companies provide the expected climate adaptation and resilience benefits to the beneficiaries, so any sustainability and growth will therefore benefit climate vulnerable populations.

- *A wide and powerful network of funders.* It is important to highlight that BFA Global's Catalyst Fund has existed since 2016 and has built an important circle of more than 100 investors (impact investors, aid organizations, large NGOs, etc) that invest in the accelerated companies. This vast network has seen startups make returns of US\$86 for each US\$1 invested in Catalyst Fund. This network of funders is interested in offering support to Catalyst Fund as it is a fundamental mechanism for their investments.

- *Introduction of new financial instruments.* Present and future editions of BFA Global's Catalyst Fund will be partially funded by grants as they allow flexibility and speed in terms of supporting young companies and building the ecosystem around them. However, to foster lasting partnership toward longer term climate resilience outcomes, the technical assistance offered by BFA Global will be complemented with an innovative financial instrument similar to a simple agreement for future equity

(SAFE) note. A SAFE note is a legally binding agreement that converts into a specified number of equity shares at an agreed-upon price upon the startup successfully raising their first round of funding. Such flexible financial instruments are still very limited in availability to startups despite their potential to offer maximum value to entrepreneurs by giving them time to grow and setting returns expectation only once the startups have reached a particular milestone. This further incentivizes selected startups to explore and identify appropriate ways to deliver the expected climate adaptation and resilience impact for vulnerable communities instead of finding approaches to grow quickly.

### *Scaling Up*

159. Achieving scale is a key component of Catalyst Fund's success. As mentioned before, for each dollar invested by a donor in grants, US\$86 has been raised. More than US\$410 million has been raised by startups and 9.5 million low income people have been reached by the products and services of the companies supported. This proven impact of Catalyst Fund will be applied to exponentially grow climate adaptation and resilience solutions for vulnerable communities in the countries targeted, harnessing the success and experience of securing follow-on investment. BFA Global is also currently in active conversations with various stakeholders including USAID, DFC, CDC, FMO, Proparco, KfW, PayPal, Blue Haven Initiative and Swiss Capacity Building Facility (SCBF), which are all developing agendas to support climate initiatives and have expressed enthusiasm about the programme. BFA Global will additionally look at ways to engage with existing Green Climate Fund projects in the countries the team will operate in to start engaging with GCF. This approach will undergo further iterations during the PPG phase.

160. The project is going to expand Catalyst Fund's impact in Africa from a select group of large countries (Nigeria, South Africa and Kenya) to smaller countries or nations with more incipient fintech ecosystems such as Rwanda and Uganda. The potential for positive climate impact is huge.

---

[1] [The impact of disasters on agriculture and food security | FAO - Food and Agriculture Organization of the United Nations](#)

[2] [IPCC 2014 \(Fifth Assessment Report, Working Group 2, Part A\) Fifth Assessment Report ? IPCC](#)

[3] [World Bank \(2018\), An operational guide to women's entrepreneurship programs in the World Bank](#)

[4] [Ibid.](#)

[5] [nhdr2020\\_rwanda.pdf \(undp.org\)](#)

[6] [Uganda Bureau of Statistics. \(2018\). Uganda National Household Survey 2016/17](#)

[7] [Shocks and vulnerability to poverty in middle-income countries \(worldbank.org\)](#)

[8] [Adaptation Gap Report 2020 | UNEP - UN Environment Programme](#)

- [9] [Global Landscape of Climate Finance 2021 - CPI \(climatepolicyinitiative.org\)](#)
- [10] [Dramatic boost needed in climate adaptation: UN Environment Agency \(un.news.org\)](#)
- [11] [IPCC 2014 \(Fifth Assessment Report, Working Group 2, Part A\) Fifth Assessment Report ? IPCC](#)
- [12] [GSMA - 2020 Mobile Industry Impact Report](#)
- [13] [Catalyst Fund Inclusive Tech Accelerator Program- BFA Global](#)
- [14] [GSMA - 2021 The Mobile Economy Sub-Saharan Africa](#)
- [15] [World Bank Open Data, Data Retrieved April 2021. Data Bank: Population Estimates and Projections, South Africa.](#)
- [16] [World Bank \(2021\) Climate Risk Country Profile: South Africa](#)
- [17] [Department of Environmental Affairs \(2018\). South Africa's Third National Communication under the United Nations Framework Convention on Climate Change.](#)
- [18] [South Africa \(2016\). Nationally-Determined Contributions.](#)
- [19] [Adaptation Partnership \(2011\). Review of Current and Planned Adaptation Action. South Africa.](#)
- [20] [210830\\_Runde\\_SMEs\\_Climate\\_Change.pdf \(csis-website-prod.s3.amazonaws.com\)](#)
- [21] [Mckinsey Insights \(2020\) How South African SMEs can survive and thrive post COVID-19](#)
- [22] <https://knowledge.findex.co.za/the-sa-smme-covid-19-impact-report>
- [23] [Fintech Scoping in South Africa 2019 \(treasury.gov.za\)](#)
- [24] [World Bank Data Bank \(2020\). World Development Indicators, Kenya.](#)
- [25] [World Bank Data Bank \(2020\). Population estimates and projections, Kenya.](#)
- [26] [World Bank \(2021\) Climate Risk Country Profile: Kenya](#)
- [27] [Ministry of Environment and Natural Resources \(2016\). Kenya's Nationally Determined Contribution.](#)
- [28] [210830\\_Runde\\_SMEs\\_Climate\\_Change.pdf \(csis-website-prod.s3.amazonaws.com\)](#)
- [29] [Promoting SME Competitiveness in Kenya \(intracen.org\)](#)
- [30] [Navigating through COVID-19: A snapshot on how the pandemic affected MSMEs in Kenya \(ifc.org\)](#)

- [31] Kenya Is Becoming a Global Hub of fintech Innovation (hbr.org)
- [32] World Bank Data Bank (2021). Population estimates and projections, Nigeria.
- [33] World Bank (2021). Nigeria ? Overview.
- [34] Nigeria (2016). Nationally-Determined Contributions.
- [35] Echendu, A (2020). The impact of flooding in Nigeria?s sustainable development goals. J. or Ecosystem Health and Sustainability. 6(1). DOI.
- [36] USAID (2018). Fragility and Climate Risks in Nigeria.
- [37] 210830\_Runde\_SMEs\_Climate\_Change.pdf (csis-website-prod.s3.amazonaws.com)
- [38] World Bank Open Data (2021). World Development Indicators. Uganda.
- [39] World Bank Data Bank (2021). Health Nutrition and Population Statistics: Population estimates and projections ? Uganda.
- [40] Ministry of Agriculture, Animal Industry and Fisheries (2018). Guidelines for Mainstreaming Climate Change Adaptation and Mitigation in Agricultural Sector Policies and Plans.
- [41] Ministry of Water and Environment (2014). Guidelines for the Integration of Climate Change in Sector Plans and Budgets.
- [42] Department of Disaster Preparedness and Management (2011). The National Policy for Disaster Preparedness and Management.
- [43] 210830\_Runde\_SMEs\_Climate\_Change.pdf (csis-website-prod.s3.amazonaws.com)
- [44] Fintech in Uganda (cam.ac.uk)
- [45] BFA Global - Fintech regulation in emerging markets
- [46] Republic of Rwanda (2020). Updated Nationally Determined Contribution.
- [47] Nzohabonimana, D. (2019). What makes Rwanda one of Africa?s fastest growing economies? TRTWorld [17 January 2019].
- [48] World Bank Data Bank (2021). Population estimates and projections, Rwanda.
- [49] Netherlands Commission for Environmental Sustainability (2015). Climate Change Profile ? Rwanda.
- [50] TL4-SMECO-2019\_Clare Akamanzi2.pdf (intracen.org)

- [51] [210830\\_Runde\\_SMEs\\_Climate\\_Change.pdf \(csis-website-prod.s3.amazonaws.com\)](#)
- [52] [Vulnerability, shocks and persistence of poverty: estimates for semi-arid rural South India: Oxford Development Studies: Vol 32, No 2 \(tandfonline.com\)](#)
- [53] Abubakar, I. (2019). Factors influencing household access to drinking water in Nigeria. *Utilities Policy*. 58. pp. 40-51. URL: <https://www.sciencedirect.com/science/article/abs/pii/S0957178718302856>
- [54] [Determinants of small-scale farmers' choice and adaptive strategies in response to climatic shocks in Vhembe District, South Africa](#)
- [55] [The new poor are different: Who they are and why it matters \(worldbank.org\)](#)
- [56] [FAO. Women and Food Security. FAO FOCUS http://www.fao.org/FOCUS/E/Women/Sustine.htm](#)
- [57] [Digital Finance for Climate Resilience \(DF4CR\) Solution section https://www.df4cr.org/](#)
- [58] [Digital Finance for Climate Resilience \(DF4CR\) Solution section https://www.df4cr.org/](#)
- [59] [Digital Finance for Climate Resilience \(DF4CR\) Solution section https://www.df4cr.org/](#)
- [60] [GSMA - 2021 The Mobile Economy Sub-Saharan Africa](#)
- [61] <https://www.intracen.org/news/Angel-investing-is-on-the-rise-in-Africa/>
- [62] <https://ventureburn.com/2019/08/vc-africa-seed-funding-follow/>
- [63] <https://techpoint.africa/2021/05/05/attracting-talents-fintech-nigeria/>
- [64] <https://www.cleverism.com/why-do-startups-fail/>
- [65] These problems are described in detail in <https://digital.sandiego.edu/cgi/viewcontent.cgi?article=1063&context=ilj>
- [66] <https://thebigdeal.substack.com/p/2021-in-21-numbers>
- [67] [20200216-VC-WeFi-Research-Snapshot.pdf \(ifc.org\)](#)
- [68] <https://blogs.worldbank.org/allaboutfinance/african-venture-capital-booms-are-female-founders-losing-out>
- [69] [Nigeria's Adaptation Communication to the United Nations Framework Convention on Climate Change \(unfccc.int\)](#)

- [70] Nigeria's National Adaptation Plan Framework ([napglobalnetwork.org](http://napglobalnetwork.org))
- [71] National Climate Change Adaptation Strategy ([dffe.gov.za](http://dffe.gov.za))
- [72] National Development Plan 2030 ([gov.za](http://gov.za))
- [73] National climate change response white paper ([gov.za](http://gov.za))
- [74] Kenya National Adaptation Plan 2015-2030 ([unhccc.int](http://unhccc.int))
- [75] <https://www.greengrowthknowledge.org/national-documents/rwanda-green-growth-and-climate-resilience-national-strategy-climate-change-and>
- [76] <https://www.ndcs.undp.org/content/ndc-support-programme/en/home/impact-and-learning/library/rwanda-enhanced-ndc.html>
- [77] Page 7: <https://www.ndcs.undp.org/content/ndc-support-programme/en/home/impact-and-learning/library/rwanda-enhanced-ndc.html>
- [78] [https://www.climatelinks.org/sites/default/files/asset/document/rwanda\\_adaptation\\_fact\\_sheet\\_jan2012.pdf](https://www.climatelinks.org/sites/default/files/asset/document/rwanda_adaptation_fact_sheet_jan2012.pdf)
- [79] <http://www.fonerwa.org/index.php/who-we-are>
- [80] <http://www.fonerwa.org/index.php/who-we-are>
- [81] <https://twitter.com/GreenFundRw/status/1223176100387459072?s=20>
- [82] <https://www.adaptation-undp.org/experiences-ugandas-national-adaptation-plans-process>
- [83] <https://www.undp.org/content/dam/LECB/docs/pubs-reports/undp-ndc-sp-uganda-ggds-green-growth-dev-strategy-20171204.pdf>
- [84] <https://www.greengrowthknowledge.org/sites/default/files/downloads/policy-database/UGANDA%29%20Vision%202040.pdf>
- [85] <https://www.mckinsey.com/featured-insights/middle-east-and-africa/harnessing-nigerias-fintech-potential>
- [86] <https://www.forbesafrica.com/cover-story/2021/08/06/nigerias-fintech-frenzy-onwards-and-upwards/>
- [87] <https://www.infibranches.com/#/>
- [88] [https://issuu.com/fintechtimes/docs/the\\_fintech\\_times\\_fintech-middle\\_east-africa\\_2021\\_](https://issuu.com/fintechtimes/docs/the_fintech_times_fintech-middle_east-africa_2021_)

- [89] [https://www.theglobaleconomy.com/South-Africa/percent\\_people\\_bank\\_accounts/](https://www.theglobaleconomy.com/South-Africa/percent_people_bank_accounts/)
- [90] <https://thefintechtimes.com/overview-of-insurance-and-insurtech-in-africa/>
- [91] ? About (cleantechopen.org)
- [92] <https://dfsobservatory.com/sites/default/files/Ministry%20of%20Finance%20and%20Economic%20Planning%20of%20Rwanda%20-%20Final%20Report%20-%20Rwanda%20Financial%20Sector%20Strategy%202013-2018.pdf>
- [93] [https://issuu.com/fintechtimes/docs/the\\_fintech\\_times\\_fintech-middle\\_east-africa\\_2021\\_](https://issuu.com/fintechtimes/docs/the_fintech_times_fintech-middle_east-africa_2021_)
- [94] <https://fintechub.rw/about/>
- [95] Another reference in this sense is this report from the Bank of International Settlements:  
<https://www.bis.org/publ/bppdf/bispap117.pdf>
- [96] [https://issuu.com/fintechtimes/docs/the\\_fintech\\_times\\_fintech-middle\\_east-africa\\_2021\\_](https://issuu.com/fintechtimes/docs/the_fintech_times_fintech-middle_east-africa_2021_)
- [97] <https://www.adaptation-undp.org/mainstreaming-adaptation>
- [98] <https://www.adaptation-undp.org/national-communications-ncs>
- [99] <https://www.adaptation-undp.org/projects/dc-nigeria-tacc>
- [100] <https://projects.worldbank.org/en/projects-operations/project-detail/P091979>
- [101] <https://www.worldbank.org/en/news/press-release/2021/10/26/new-us-150-million-program-to-strengthen-kenya-s-resilience-to-climate-change>
- [102] <https://www2.cifor.org/corporate-news/findings-and-recommendations-from-the-kenya-water-towers-climate-change-resilience-program/>
- [103] <https://www.climatelinks.org/sites/default/files/asset/document/2021-09/USAID-Climate-Change-Fact-Sheet-South-Africa.pdf>
- [104] <https://www.adaptation-undp.org/projects/ldcf-reducing-vulnerability-rwanda>
- [105] <https://www.thegef.org/project/building-capacity-rwanda-s-government-advance-national-adaptation-planning-process>
- [106] <https://www.agriculture.go.ug/wp-content/uploads/2019/09/National-Adaptation-Plan-for-the-Agriculture-Sector.pdf>
- [107] <https://www.greenclimate.fund/project/fp034>
- [108] <https://www.sustainabledigitalfinance.org>

[109] [Global Cleantech Innovation Programme \(GCIP\) to accelerate the uptake and investments in innovative cleantech solutions | GEF \(thegef.org\)](#)

[110] <https://www.gsma.com/mobilefordevelopment/the-gsma-innovation-fund-for-climate-resilience-and-adaptation/>

[111] <https://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/africa-adaptation-acceleration-program>

[112] <https://africaadaptationinitiative.org/>

[113] <https://www.worldbank.org/en/programs/africa-climate-business-plan>

[114] [Unlocking Investments in Female and Youth-Led Early-Growth Stage Adaptation Micro, Small and Medium-Sized Enterprises in Kenya and Uganda - Adaptation Fund \(adaptation-fund.org\)](#)

[115] <https://bfaglobal.com/catalyst-fund/#:~:text=Catalyst%20Fund%20is%20an%20accelerator,the%20local%20ecosystems%20around%20them.>

[116] [IPCC 2014 \(Fifth Assessment Report, Working Group 2, Part A\) Fifth Assessment Report ? IPCC](#)

---

## **1b. Project Map and Coordinates**

**Please provide geo-referenced information and map where the project interventions will take place.**

The project is a regional project with focus on five countries.

**South Africa:** 30.5595° S, 22.9375° E

**Uganda:** 1.3733° N, 32.2903° E

**Rwanda:** 1.9403° S, 29.8739° E

**Nigeria:** 9.0820° N, 8.6753° E

**Kenya:** 0.0236° S, 37.9062° E



**2. Stakeholders**

Select the stakeholders that have participated in consultations during the project identification phase:

**Indigenous Peoples and Local Communities** Yes

**Civil Society Organizations** Yes

**Private Sector Entities** Yes

If none of the above, please explain why:

**In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement**

??

<b>Stakeholders</b>	<b>Envisaged role</b>
Local communities	Primarily the end-users of startup products and services. Some communities were engaged as part of qualitative and quantitative user research to learn about the opportunity of inclusive fintech and climate vulnerability which helped shape the scope of this project. Some communities that use the products and services of the startups selected by the project may be engaged for their insights on how the solutions are faring or how they might be enhanced. This engagement, if it occurs, will be designed appropriately keeping the communities? local context in mind.

UK Foreign & Commonwealth Development Office	Consulted and engaged for co-financing.
J.P. Morgan Chase & Co.	Consulted and engaged their Philanthropy division for co-financing.
PayPal	Consulted and engaged their Social Impact team for co-financing.
Digital Finance for Climate Resilience (DF4CR) Task Force	The taskforce includes BFA Global, UN Race to Resilience, WRI, CGAP, and Paypal, which collectively built the foundational investment opportunities and frameworks for stakeholder action at the nexus of digital finance and climate resilience, and ultimately helped shape the concept for this project. To date they have engaged with 50+ additional organizations interested in tech for climate adaptation and resilience. The taskforce will be a critical partner for managing and disseminating knowledge generated through this project.
Accion Venture Lab (AVL)	As a leading investor supporting early-stage inclusive tech startups in emerging markets, and closely connected with Accion, AVL has a deep understanding of vulnerable communities and business models that can support them. AVL has been Invited to join the inclusive fintech for climate resilience ecosystem, and will be engaged to help nominate high-potential startups that can potentially be supported by the project.
Mercy Corps Ventures	Another leading investor supporting various African markets and with a deep understanding of the agricultural sector through their portfolio companies and through Mercy Corps' Agrifin Accelerate program, this investor will be invited to join the inclusive fintech for climate resilience ecosystem, and engaged to shape the ecosystem's investment approaches.
Acumen East Africa	One of the pioneers of impact investing, Acumen in East Africa includes agriculture and energy in their core investment areas. They will be invited to join the inclusive fintech for climate resilience ecosystem, and engaged to shape the ecosystem's investment approaches.
EFInA (Nigeria)	A financial sector development organization built to promote financing inclusion in Nigeria and, as a result, has built a deep knowledge base about the state of vulnerable communities in Nigeria, and the design and use of digital financial services. They will be consulted for local market insights, and regulatory updates for fintech solutions.
GreenHouse Lab (Nigeria)	Housed with a leading local investor, GreenHouse Capital, GreenHouse Lab is Nigeria's first tech accelerator supporting women-led startups. The Lab will be consulted to build a stronger pipeline of women-led startups.
Semicolon (Nigeria)	Semicolon tackles youth unemployment by training youth in software engineering making them ready for work opportunities among tech startups in Nigeria. The organization will be engaged to create opportunities for youth to join startups on a part-time or full-time basis.

Financial Sector Deepening Kenya (FSDK)	Leading organization with strong local market knowledge on digital financial services and builds solutions to improve resilience for underserved groups like women and youth including in low-income households and enterprises. They will be consulted for local market insights, and regulatory updates for fintech solutions.
Kenya Climate Ventures	A local investment management company that supports climate-tech startups in Kenya. They will be consulted for building a strong pipeline of startups to source from.
Moringa School (Kenya)	The School offers software development and data science training to youth making them ready for a career with tech companies. They will be engaged to create opportunities for youth to join startups on a part-time or full-time basis.
FinMark Trust (South Africa)	A financial sector development organization in South Africa that promotes financial inclusion as well as regional financial integration. They will be consulted for local market insights, and regulatory updates for fintech solutions.
Alpha Code (South Africa)	A leading local incubator and accelerator that supports sustainable and impactful ideas and startups. They will be consulted for building a strong pipeline of startups to source from.
Financial Sector Deepening Uganda (FSDU)	A financial sector development organization in Uganda working with women and youth, MSMEs, smallholder farmers, refugees and other vulnerable communities to improve their financial health and resilience. They will be consulted for local market insights, and regulatory updates for fintech solutions.
Women in Technology Uganda (WITU)	A local organization providing girls and women with training in digital skills, business and leadership. They will be engaged to connect women with startups looking to hire team members on a part-time or full-time basis.
Access to Finance Rwanda (AFR)	A financial sector development organization in Rwanda with deep market insights on resilience and financial inclusion, finance for jobs and growth, and digital financial services infrastructure. They will be consulted for local market insights, and regulatory updates for fintech solutions.
Carnegie Mellon University Africa (Rwanda)	CMU Africa can provide strong tech candidates with an ambition to learn about and work in the startup ecosystem. The academic institution will be engaged to create more awareness of this sector and connect interns with startups being supported by the project.
Women in Tech Africa (WITA)	WITA aims to bring more women into the tech space in Africa. It has a member-base spanning 30 African countries and its projects include incubating entrepreneurs and building a database of women tech talent that companies can look to for hiring purposes. WITA will be engaged to connect women with startups looking to hire team members on a part-time or full-time basis.
UNIDO	Implementing entity and will provide guidance to BFA Global in executing this project.
Startups	Receiving direct support from the program.

### 3. Gender Equality and Women's Empowerment

**Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).**

161;UNIDO recognizes that gender equality and the empowerment of women have a significant positive impact on sustained economic growth and inclusive and sustainable industrial development (ISID), which are drivers of poverty reduction, social integration and environmental sustainability. Therefore, the project will mainstream gender dimensions across project activities and develop gender-responsive measures wherever possible, in order to address the importance of gender equality and women's empowerment in the targeted sectors.

162. In defining the gender mainstreaming strategy of the project, the UNIDO Energy Department's Guide on Gender Mainstreaming Energy and Climate Change and the GEF requirements (GEF Gender Implementation Strategy (GEF/C.54/06 Policy on Gender Equality (GEF/C.53/04)) will be taken into account.

163. Initial analysis of the project has identified the following gender specific entry points to be monitored and evaluated throughout the project implementation period. This will be reviewed again during the PPG.

- *Gender analysis of the project:* Prior to the start of the project (during the PPG Phase) and with the support of the Gender team, an analysis of the project from a gender perspective will be carried out in an attempt to identify those improvements and recommendations that could guarantee greater inclusiveness within the design of the project. Based on this a gender mainstreaming action plan will be developed.
- *Gender-based analysis of startups:* While building the database of startups within the inclusive tech and climate resilience sector, an analysis will be performed to understand the demographics (including gender and age) of current startup founders and the gender-lens of their solutions. We will ask questions like: how many startups have female founders or co-founders, how many startups have a women-focused product/solution, do startups provide gender disaggregated data of user base, how are these startups spread out across various markets, do the products/ services offered by the startups particularly benefit women or vulnerable groups. This analysis will help provide deeper insights into the existing startup base.
- *Gender-responsive startup selection:* To select startups to be accelerated, the sourcing team will include a gender lens to ensure that startups with female founders, co-founders, or women in the management team are prioritized where possible. In addition, startups with products and services aimed to improve the climate resilience of women will also be considered favorably. This will include targeted outreach e.g. through women's groups and associations to reach women

founders and social entrepreneurs. Wherever possible, active conversations with investors will also be held to raise their awareness on gender-related issues as they link to the impacts of climate change and what models to support.

- *Gender disaggregation of the project indicators:* The various beneficiaries of the project (startups, investors, students, etc.) will be counted with a gender-disaggregated lens, with an aim to reach an equitable participation of men and women in startup support and ecosystem engagement for gathering and sharing balanced insights. The project recognizes the difficulty of finding this balance in a traditionally male-oriented sector. As Fintech Diversity Radar points out,[1] nine out of 10 fintechs in the world have no women on their direction team and just 2 percent are founded by women.

- *Knowledge products will be gender-responsive.* The different knowledge products generated in the framework of the project will make a "gender lens" analysis to understand the gender opportunities and challenges that both the Catalyst Fund process and the startups see, and suggestions on how to move forward in this dimension. In particular, the team will seek and share lessons about women's use of products and any barriers therein, as well as promote women founders among investors to progress their access to funds. The project will pursue thorough gender responsive communication and ensure stakeholder involvement at all levels, with special regard to involving women and men, as well as civil society and non-governmental organizations promoting gender equality. This shall mitigate social and gender related risks, promote gender equality, create a culture of mutual acceptance, and maximize the potential contribution of the project to improving gender equality in this field.

- *Awareness and knowledge on gender dimensions.* The project will also aim to build and enhance awareness on gender dimensions in the sector and make the case for gender-lens investing. Moreover, the capacity of stakeholders will be built to apply a gender lens to their activities, investments, and initiatives.

- *Gender-sensitive recruitment will be practiced at all levels where possible, especially in selection of project staff, researchers and experts, as well as technical staff.* Gender responsive TORs will be used to mainstream gender in the activities of consultants and experts. In cases where the project does not have direct influence, gender-sensitive recruitment will be encouraged. Furthermore, whenever possible existing staff will be trained and their awareness raised regarding gender issues.

- *Existing and new staff will be trained and their awareness raised on gender issues when possible.*

---

[1] <https://findexable.com/wp-content/uploads/2021/11/Fintech-Diversity-Radar-Media-Kit-FINAL-23Nov21.pdf>

**Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes**

**closing gender gaps in access to and control over natural resources;**

**improving women's participation and decision-making; and/or Yes**

**generating socio-economic benefits or services for women. Yes**

**Will the project's results framework or logical framework include gender-sensitive indicators?**

Yes

#### **4. Private sector engagement**

**Will there be private sector engagement in the project?**

Yes

**Please briefly explain the rationale behind your answer.**

164. This project will be executed by a private sector entity, BFA Global, and will be instrumental not only in catalyzing the Ecosystem for Digital Finance for Climate Resilience by supporting early-stage for-profit startups but also attracting private sector capital to substantially move the needle on access to climate resilience solutions for the world's most vulnerable communities.

165. The proposed project is designed in line with the GEF policy on Stakeholder Engagement that sets out the core principles and mandatory requirements for stakeholders.

166. Successful private sector engagement in adaptation will catalyze greater and more frequent investments, which could lower the costs, accelerate the replication of climate-resilient technologies and approaches in core development sectors, especially in developing countries. With BFA Global itself being a private sector entity, this project can bring these learnings to the entire private sector ecosystem that is essential to building more resilient societies.

167. The project will also carry out activities (e.g., workshops, research) to strengthen the ecosystem of tech and fintech startups for climate change adaptation, beyond those startups in the portfolio. Startups in the ecosystem will benefit from events, networks, and insights generated by the program. 168. In addition to directly supporting climate-focused startups, Catalyst Fund also benefits investors, other accelerators, and other stakeholders who are supporting climate adaptation and resilience solutions. The acceleration program derisks startups so private sector financiers (venture capital firms, impact investors, family offices and others) can invest their capital and achieve financial, social and

environmental returns. Furthermore, the program builds knowledge and networks among investors so as to attract more of them to the sector and build their confidence.

169. The project expects to raise funds from the private sector in at least two ways. First, through contributions from foundations and social impact initiatives of large companies in the financial or technology sector, among others. Second, through investments made by members of our Investors Circle, where a large number of impact investors are grouped together. As an example, previous editions of Catalyst Fund have raised more than US\$410 million between grants and direct investment in startups.

170. Together, through technical assistance, network building, and knowledge generation, the capacities of companies, investors and students will be strengthened to build climate resilience.

**5. Risks to Achieving Project Objectives**

**Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)**

???

Identified Risks	Risk Rating	Mitigation Measures
Inability to reach vulnerable populations	Low	Vulnerable populations, especially low-income, thin file, and financially excluded people, pose a number of challenges for startups as solutions need to be low-cost, and understood by those with low literacy and low trust in digital/tech. Furthermore, distribution channels in these areas tend to be weak since infrastructure is often limited and connectivity can be low. As a result, business models that serve them can be difficult and expensive to build. However, as noted, data from the GSMA shows that by the end of 2020, 46% of sub-Saharan Africa's population (495 million people) subscribed to mobile services, and 120 million more people are expected to subscribe by 2025[1]. This combination of factors means that digital tools, like mobile-enabled financial technology, have the potential to have a transformative impact in Africa, and have more opportunity and potential to reach the vulnerable than other methods.

<p>A COVID-19 related global economic downturn will diminish momentum towards building climate adaptation.</p>	<p>Low</p>	<p>This project will accelerate solutions to investment readiness, building user-centric products that deliver tangible value and generate revenue. It will also demonstrate that adapting to extreme weather using cost-effective, profitable solutions can contribute to rebuilding after the pandemic.</p>
<p>The COVID-19 environment will make international travel for project execution and outreach difficult.</p>	<p>Low</p>	<p>BFA Global routinely works electronically with partners, using teleconference platforms and online tools to engage stakeholders, discuss priorities, co-design, share results and explore next steps. We also have a distributed team, making it easier to access various regions as restrictions ease.</p>
<p>Environmental and social safeguard-related risks.</p>	<p>Low</p>	<p>According to the UNIDO Environmental and Social Safeguards Policy and Procedures (ESSPP), the proposed project is likely to have minimal or no adverse social and/or environmental impacts. No further specific environmental and/or social assessment is required during Project Formulation. While no further specific environmental and/or social assessment is required, the project will develop an Environmental and Social Management Framework (ESMF) - a project-level tool to apply when selecting individual startups (i.e. sub-projects). This will ensure that the project avoids, minimizes, and/or mitigates potential adverse E&amp;S impacts that may emerge from the selected startup sub-project activities and interventions across all stages of the selected sub-project cycle (planning, implementation, post- implementation). This project will use the Adaptation Solutions Taxonomy (ASAP) to determine whether applicants for the Catalyst Fund support qualify as 'Adaptation SME' based on the type(s) of technologies, products and services offered. Those that qualify as 'Adaptation SME' will further be further classified as a specific type (By tupe of activity performed, by targeted sector, by targeted climate hazard and related risks and by targeted geography). Furthermore, this project will build on the preliminary considerations and the initial framework recommended in ASAP for evaluating the contribution of Adaptation SMEs to adaptation and resilience outcomes. In addition to this, the ESMF will also encompass information about the exclusionary criteria as well as the Environmental and Social risk assessment and mitigation framework, taking inspiration from the EU Taxonomy and other relevant frameworks. This approach will be further refined during the PPG phase.</p>

Failure to identify adaptation business or investment opportunities.	Medium	BFA Global's local presence in Ghana, Nigeria, Kenya and Uganda provides considerable technical knowledge and local relationships to identify impactful investment themes and businesses. BFA Global will also work in partnership with relevant partners to identify investible value propositions in the target countries and has pre-identified a number of potential startups for its pipeline.
Failure to develop and disseminate investment theses that can attract and motivate investors to deploy capital for digital finance for climate resilience solutions.	Low	BFA Global, through its Catalyst Fund, has experience developing investment theses, leveraging existing research, input from key stakeholders and consulting with startup leaders. In particular, BFA Global counts on a wide network of investors and catalytic funders to develop and disseminate the investment theses and other knowledge products.
Failure to garner sufficient interest from investment and other key partners.	Low	Catalyst Fund has improved the lives of more than nine million people by accelerating 55 companies, which have raised US\$410 million in additional capital. 88 percent of the companies are still operating and for every dollar invested in the program, the startup raised US\$86.
Inability to deliver transformational adaptation outcomes and/or scale up.	Medium	Catalyst Fund portfolio companies have reached more than 9.5 million beneficiaries and raised more than US\$410 million in follow on capital. The Catalyst Fund acceleration model has struck a balanced approach between supporting promising startups, while also selecting companies that are not yet attractive for investors.
Lack of absorptive capacity by the national counterparts.	Low	This project is in line with national policies and will thus be executed in close coordination with the respective ministries and key stakeholders.
Lack of effective coordination between various project partners.	Low	The Project Steering Committee will ensure effective coordination and collaboration among project partners and key stakeholders.

Incentive and financial support systems are insufficient.	Medium	The climate adaptation and resilience sector is still new and incentive and financial support systems are not yet fully built to address the needs in this space. This is changing, however, with increased government-level commitments towards climate action and active conversations leading to an increase in investor-funding in climate-tech startups. This project will engage investors and other stakeholders to continue the dialogue and help shape investment approaches for startups in this sector.
Climate change risks.	Low	To mitigate potential climate change risks to project activity sites, the project will include criteria related to such risks, and if a risk is identified, develop a mitigation strategy before implementation begins.
Gender Risk	Low	The project will develop and implement the Gender Mainstreaming action plan and ensure risks are mitigated.

#### ? *Climate Change Risks*

171. This project supports business acceleration, ecosystem development and connections with the investors for fintech startups focused on climate resilience solutions. In this context, a consideration of climate risks will be needed so as to develop solutions that deliver resilience to climate shocks, but also to ensure that the outcomes and consequent impacts of the project are enduring.[2] Mainstreaming climate risks in project design takes cognizance of both GEF STAP guidance[3].

#### **Kenya [4]**

172. Approximately 85 percent of Kenya's land area is classified as fragile arid and semi-arid ecosystems, which are largely pastoral.[5] The country's highlands are home to the majority of the population and also host significant farm lands. Kenya, while considered a lower/middle-income country, has the largest economy in East Africa. In 2016 it had a population of 52.6 million people and an annual population growth rate of 2.3 percent.[6]

#### *Observed and projected temperature changes*

173. According to the World Bank[7], while temperatures vary across Kenya, a distinct warming trend is evident, particularly since the 1960s, with inland areas registering increasingly higher minimum and maximum temperatures. During this time the annual mean increase has risen by approximately 1.0°C, at an estimated average rate of 0.21°C per decade.[8] The most significant rise in temperature was observed during the start of the primary rainy and humid spring season (March to May), in the arid and semi-arid regions of the country.[9] Temperatures in Kenya are projected to continue rising by 1.7°C by the 2050s and by approximately 3.5°C at the end of the century.[10] Additionally, the number of hot

days and nights will increase, occurring between 19 to 45 percent of days by mid-century. Cold days and nights are expected to become increasingly rare.

#### *Precipitation trends*

174. Precipitation trends in Kenya are highly variable, with significant geographical diversity in observed rainfall trends. Extreme rainfall events are occurring with greater frequency and intensity. Increased aridity and droughts have also been observed; moderate drought events were recorded every three to four years on average, and major droughts every ten years though prolonged droughts have become more common since 2000.

#### *Climate related Natural Hazards*

175. Kenya is highly exposed to many natural hazards, the most common being floods and droughts. It is estimated that over 70 percent of natural disasters in Kenya are attributable to extreme climatic events. Major droughts occur approximately every ten years, and moderate droughts or floods every three to four years. Repeating patterns of floods and droughts in the country have had large socio-economic impacts and high macroeconomic costs. Droughts have affected more people and had the greatest economic impact (8 percent of GDP every five years). As many as 28 droughts have been recorded in the past 100 years, and these appear to be increasing in frequency. Droughts are often nation-wide, but normally have the most severe impacts in the country's highly arid zones.[11] Drought also remains a significant concern to Kenya's agricultural sector.[12] Arid and semi-arid areas comprise 18 of the 20 poorest counties and are particularly at risk from increased aridity and periods of drought.[13]

#### **South Africa[14]**

176. According to the World Bank[15], "South Africa comprises a large central plateau that is home to extensive grasslands, a continuous escarpment of mountain ranges that surrounds the plateau on the west, south and east, and a narrow strip of low-lying land along the coastline. The country is located within what is considered a "drought belt" and is the fifth most water scarce country in sub-Saharan Africa. Approximately 50 percent of the country's water supplies are used by its extensive industrial agriculture sector". In addition, "South Africa is highly vulnerable to climate variability and change due to the country's high dependence on rain-fed agriculture and natural resources, high levels of poverty, particularly in rural areas, and a low adaptive capacity." [16]

#### *Observed and projected temperature changes*

177. The World Bank notes that[17] "South Africa has already seen considerable temperature increases since the 1960s, when average temperatures have increased by 1.5°C, with more marked increases across arid, inland areas of the country. Both maximum and minimum daily temperatures have risen, across all seasons"[18]. It's also noted that[19], "one of the most serious consequences of increased heat for South Africa is the projected increase in the number of "hot days" (maximum temperature >35°C). By mid-century, the Northern Cape, North West and Limpopo will all likely see an increase of

?hot days? of 20 and 40 days per year; while projections suggest that hot days will occur more than 120 days per year across the country?s interior by the end of the century.?[20]

#### *Precipitation trends*

178. World Bank data on South Africa?s climate shows[21] that ?precipitation trends have continued to exert a high degree of inter-annual variability for South Africa, as they have for southern Africa as a whole. Since the 1960s, a marginal reduction in rainfall was experienced during the autumn months.[22] While annual rainfall trends are weak overall, observations indicate significant potential decreases in the number of rain days across almost all hydrological zones, implying a tendency towards an increase in the intensity of rainfall events, coupled with prolonged dry spells.[23] High inter-annual rainfall variability is evident in the historical record, with above average rainfall value received during 1970s, late 1980s and mid-to-late 1990s. However, below average rainfall values were observed in the early 2000s.?

#### *Climate related Natural Hazards*

179. The World Bank explains[24] that as ?South Africa is likely to become hotter and drier in the future, with rainfall variability continuing and temperatures rising, the country will continue to experience extreme events like droughts, floods, and other climate-related hazards.[25] This will likely result in adverse environmental impacts including soil erosion, deforestation, recurrent droughts, desertification, land degradation, and the loss of biodiversity including the country?s unique wildlife populations. As droughts become more frequent and severe water supplies, biodiversity, and agriculture are likely to suffer. A potentially simultaneous increase in floods poses a serious threat to water quality, affecting the integrity of wetland ecosystems as well as agriculture and livestock communities.?[26]

#### **Nigeria [27]**

180. The World Bank states[28] that ?Nigeria is currently dealing with a wide range of environmental challenges, some of which are exacerbated by climate change, and negatively affect every sector, particularly agriculture, water resources, and infrastructure. Other challenges facing the country are deforestation and de-vegetation, causing biodiversity loss and land degradation; floods, erosion, drought and desertification which are degrading the environment especially in the semi-arid areas of the country resulting in conflicts; environmental pollution ? namely air, water, land and noise; waste generation; mineral exploration and exploitation and the accompanying environmental degradation as well as limited access to safe water and poor sanitation. Climate change impacts in Nigeria are expected to have significant impacts on livelihoods and the broader economy.[29] Rising temperatures, extreme heat, and changing precipitation patterns will induce new challenges and exacerbate existing ones.?

#### *Observed and projected temperature changes*

181. As the World Bank explains[30], ?Nigeria?s mean annual temperature ranges between 17°C to 37°C in the south to 12°C to 45°C in the north. For the country, temperature increases of 0.03°C per

decade were observed between 1901-2016, with stronger increases occurring over the last 30 years of 0.19°C per decade. The highest temperatures in Nigeria occur during the dry season, and vary little from the coast to inland the country's areas.[31] Nigeria has observed the gradual drying of Lake Chad over the last 40 years, from a land area of over 40,000 km<sup>2</sup> to currently just 1,300 km<sup>2</sup> as well as the encroachment by the Sahara Desert, which has been attributed largely to the country's increasing temperatures.[32]

#### *Precipitation trends*

182. In the World Bank's profile of Nigeria's climate[33], it's explained that "precipitation trends have a high degree of variability and the last several decades have observed a decrease in the predictability for seasonal rains across the country. Overall, rainfall has decreased incrementally across the country since the 1960s. Rainfall for the country varies from a very wet coastal area with annual rainfall greater than 3,500 mm to the Sahel region in the northwest and north-eastern parts, which receive an annual rainfall less than 600 mm. The annual variation of rainfall, particularly in the northern parts, is large. This has resulted in climatic hazards, especially floods and droughts.[34]

#### *Climate related Natural Hazards*

183. In addition, "Nigeria is at risk to numerous natural hazards and prone to floods, storms, ocean surges, droughts and wildfires. Nigeria's coastal states face extensive risks from storm surges along the entire coast, and inland flooding and wildfires in the Niger Delta region, and negative rainfall anomalies in the southeast. The northern areas of the country face chronic aridity and riverine flooding along the Sokoto River in the northwest and the Komadugu River system in the northeast,[35] as well as transboundary flooding along Niger and Benue rivers. The middle areas of the country are at risk to high exposure from aridity, which is compounded by high-tensions between farmers and pastoralists concerning land rights as well as water access.[36] Nigeria is classified as one of the ten most vulnerable countries to the impacts of climate change and natural hazards.[37]

### **Rwanda**

184. The World Bank notes[38] that Rwanda's "four climatic seasons are marked by a long rainy season, March to May, and a short rainy season, September to November. These seasons alternate with the long dry season: June to August, and short dry season: December to February.[39] Increased seasonal variability and longer-term climate change are likely to exacerbate the country's existing vulnerabilities from high poverty, food insecurity, as well as potential for internal displacement and conflict along its eastern and southern borders. Food security and progress of the agricultural sector are of primary concern as the majority of the country's agriculture is rain-fed and produced by small-holder farmers.[40]

#### *Observed and projected temperature changes*

185. In Rwanda, the World Bank notes[41] that "the high degree of interannual and interdecadal climate variability, and lack of historical records have made climate trends in the country difficult to determine.[42] Rwanda's average annual temperature ranges between 15°C to 17°C in high altitude

areas and up to 30°C in lowlands in the east and southwest.[43] Regional temperatures for central-east Africa saw average increases of 0.29°C per decade from 1985 to 2015?.

#### *Precipitation trends*

186. The World Bank explains that Rwanda's rainfall trends have shown more frequent extremes since the 1960s across various regions of the country with the El Niño Southern Oscillation influencing precipitation trends during those years. The annual rainfalls in Rwanda exhibited high fluctuations since 1961 to 2016. Over this period, mean rainfall significantly decreased in January, February, May and June, but with a significant increase September to December across the country. Over this period, Rwanda's eastern region has experienced frequent dry episodes.[44] In the country's northern and western provinces, rainy seasons are becoming shorter and more intense, which has resulted in increased erosion risk in these mountainous areas of the country?.[45]

#### *Climate related Natural Hazards*

187. In the same report[46], Rwanda is also explained to be at risk to numerous natural hazards and include droughts, floods, earthquakes, landslides, storms (windstorms, lightning, rainstorms and thunderstorms), wildfire, diseases, and epidemics. These events have had significant impacts on the lives and livelihoods of Rwandans. Since the early 2000s, the frequency and severity of disasters, particularly caused by floods, landslides and droughts, have significantly increased, with increasing impact of human casualties as well as economic and environmental losses.[47] In Rwanda, the effects of flood hazards have worsened as recent population growth and land scarcity have pushed people to settle in flood-prone areas. Heavy rainfall events and at times flash flooding, have become increasingly common. Heavy rainfall events are especially common in northern and western provinces, and cause flooding, flash flood events and can trigger landslides and mudslides, leading to infrastructure damage and death?.[48]

### **Uganda**

188. The World Bank explains[49] that Uganda's climate is largely tropical with two rainy seasons per year, March to May and September to December. The northern region, which forms one quarter of the country, lies outside the tropical belt, and hence experiences only one rainy season, March to October. The rest of Uganda lies within a relatively humid equatorial climate zone, and the topography, prevailing winds, and lakes and rivers cause large differences in rainfall patterns across the country.[50] Its location in the tropics and across the equator results in the country's weather and seasons being determined by the large-scale Indian Monsoon, Congo air mass, Indian Ocean Dipole (IOD) and the Inter Tropical Convergence Zone (ITCZ) systems. Uganda also experiences the El Niño Southern Oscillation (ENSO) phenomena, which are principal driving forces of intra-annual to inter-annual rainfall variability. Specifically, the most pronounced impacts for Uganda are during the rainy season, September to December, where the El Niño is often equated to floods rather than La Niña that is often equated to droughts.[51] Southern Uganda can receive between 600 to 2,200 mm of rainfall annually, while the northern part of the country receives between 400 and 1,600 mm per year?.

#### *Observed and projected temperature changes*

189. The World Bank also notes [52] that "average temperatures in Uganda have increased by 1.3°C since the 1960s. Notably, minimum temperatures have increased 0.5°C for this period with maximum temperatures increasing by 0.6°C. Increased average temperatures have been observed at 0.28°C per decade since 1960. Daily temperature observations since 1960 show significantly increasing trends in the frequency of the number of hot days, and much larger increased trends in the frequency of hot nights". [53] Increased temperatures are expected for East Africa and specifically for Uganda. "Under a high-emission scenario, monthly temperature change is expected to increase by 1.8°C for the 2050s and by 3.7°C by the 2090s. Increased temperatures will also impact increased aridity and the length and severity of the dry season (December to March)". [54].

#### *Precipitation trends*

190. The same country profile explains [55] that precipitation for Uganda "is highly variable, but overall, Uganda has experienced a statistically significant reduction in annual as well as seasonal rainfall. Seasonal rainfall for March, April, May has been most affected, with decreases of 6.0 mm per month, per decade. [56] Decline in rainfall has been observed in some Northern districts: Gulu, Kitgum, and Kotido. While trends in extreme rainfall conditions are more difficult to define due to the lack of data and seasonal variability, droughts have increased in Uganda over the past 60 years. Under a high-emission scenario, monthly annual precipitation is expected to increase in some areas of the country, with decreases in others, notably the northern and north-eastern areas. Rainfall is predicted to increase significantly and consistently for the western shores of Lake Victoria and the central western region; the Mount Elgon region; and the region extending from Mount Rwenzori to the southern parts of Lake Kioga. The greatest change in the intensity and frequency of extreme rainfall events is likely to take place between the current and the midcentury period in this region, which is likely to impact major agriculture and livestock zones and transportation routes."

#### *Climate related Natural Hazards*

191. Uganda is at risk of natural disasters. The World Bank explains [57] that Uganda "experiences extreme weather events which lead to mudslides, landslides and flooding, particularly for the country's mountain regions and related districts such as Mbale in the Mt Elgon region. [58] Extreme events lead to disasters such as floods, droughts, and landslides have increased over the last 30 years. Flooding has become more frequent, largely due to more intense rainfall. [59] Over the past two decades, an average of 200,000 Ugandans are affected each year by disasters. Increased intensity of heavy rainfall has led to greater impact of floods and are causing more damage due to expanded infrastructure, human settlement and general development of the country. [60] Uganda's vulnerability is exacerbated due to its high level of poverty and its high dependence on "climate sensitive" sectors: agriculture, water, fisheries, tourism, and forestry. The country is at high-risk to natural disasters such as flooding, drought, and landslides, however, its topographic diversity and highly marginalized segments of the population, make it additionally vulnerable. Additional, non-climate stressors such as inadequate infrastructure to handle the increasing population are also impacting the vulnerability to natural disaster sensitivity and climate change vulnerability."

#### *Outcome-based climate risk analysis (scale: low, moderate and high)*

Key Project Outcomes	Potential effect of climate risks on project implementation and outcomes	Risk Level	Mitigation Measures
<p>Fintech improving resilience accelerated.</p> <p>startups climate are</p>	<p>? The project is unable to select high-quality startups to accelerate.</p> <p>? Venture building is not conducted fully due to possible travel restrictions as a result of the COVID-19 pandemic or other local conflict/hazard.</p>	<p>Low</p>	<p>? Perform a market-wide scan and engage with investors by leveraging Catalyst Fund's existing global circle to learn about potential startups they might have crossed. Also consult investor advisors for final startup candidate reviews to ensure that the models selected are investable.</p> <p>? Venture build is designed so that it can be fully offered remotely in the case that teams cannot meet in person. Leverage remote working tools like Zoom for online conferences and Miro for team brainstorming sessions.</p>

<p>The ecosystem around digital finance for climate resilience solutions is created and strengthened.</p>	<p>? The fintech ecosystem does not believe in the opportunity of climate change adaptation and resilience.</p> <p>? Fintech companies emerging from local fintech ecosystems have no real impact on climate change adaptation.</p> <p>? Regulation and/or lack of financing prevents the growth and development of the ecosystem.</p> <p>? The ecosystem lacks the talent to develop the technology and business models needed to reach scale.</p>	<p>Low</p>	<p>? Share resources and insights (in the form of blogs and stakeholder convenings) that can enhance visibility, credibility and understanding of identified solutions in the ecosystem.</p> <p>? Use data-driven venture building to support the selected startups so they can see how they can continue to address climate change adaptation even after the projects conclude.</p> <p>? Facilitate direct connections between startups and ecosystem stakeholders like investors to increase engagement between them and help investors build a pipeline for investments.</p> <p>? Increase impact tracking and monitoring of Climate resilience through development of methodology.</p> <p>? Raise awareness with PMUs to assess climate risk on an annual basis.</p> <p>? Build talent pipelines by connecting interns with startups exposing interns to the sector and supporting growth for future innovation in digital finance for climate resilience.</p>
---	---	------------	--

192. Technical and institutional capacity and information needed to address climate risks and resilience enhancement measures

Potential responses to the climate risks include:

- ? Ensuring favorable market conditions for climate resilience technologies (e.g., support an enabling environment for climate resilience solutions; identification of incentives for innovation).
- ? Policy environment to regulate climate resilience solutions in certain sectors and in the digital and financial economy.
- ? Planning infrastructure should take into account mitigation of and adaptation to climate risks. Buildings can be designed using features that promote adaptation, for example to enable circulation of

air for cooling, and with shaded windows in the direction of the sun ? whilst also being constructed with energy-efficient materials.

? Land-use planning (e.g. protect high-yield agricultural land, environmentally sensitive areas and natural landscapes from urban sprawl; plan greater inter-connectivity between different land uses and transport; intensify land uses where appropriate; revise flood lines).

? Soft adaptation options, e.g. livelihood protection, social safety nets, support towards cleantech SMEs that target the promotion of women and women's needs.

? Encouraging opportunities for innovation in these sectors and technology areas could provide alternative mitigation and adaptation benefits in the future.

? Insurance companies need better sources of data to make decisions about how to price insurance policies and evaluate risk for end users. Similarly, governments need more information about risks to make decisions about where to build and under what conditions, for example to develop adequate construction standards.

? Digital finance innovators can leverage satellite data, remote sensors, and advanced analytics to provide them with better information about climate disaster risk.

? Awareness-raising and education, communication of climate information and early warning systems are important adaptations across all sectors. These require institutional cooperation and coordination across sectors, particularly in planning and development practices that reduce vulnerability to climate hazards.

#### COVID-19 Risk Analysis

<u>Risk</u>	<u>Rating</u>	<u>Mitigation</u>
Technical expertise is not readily available due to the pandemic. For example, if the designated technical expert falls ill from COVID-19 or has to step away for some time due to care responsibilities.	Low	Necessary efforts will be made to identify alternative technical experts in case it is required. Planning will be flexible enough to reschedule activities if necessary.

Possible reinstatement of COVID-19 containment measures limits available capacity or effectiveness of project execution/implementation.	Low	The capacity of stakeholders, and especially the startups, for remote-work and online interactions will be strengthened by securing access to commercially available conferencing systems. The current design of the venture building support for entrepreneurs is based on online interactions and deliverables, using webinars and web platforms.
Some project supporters, co-financiers or beneficiaries may not be able to continue with project execution/ implementation. For example, supporters or co-financiers may decide to change their work direction to support COVID-19 specific projects; beneficiaries may contract the infection and may not be available for active project feedback.	Low	The situation will be closely monitored in order to find alternate supporters or co-financiers, or to readjust the list of beneficiaries if needed.
Price increases for procurement of goods/services.	Medium	The project team will undertake efforts needed to find alternative providers and make sure that competitive pricing is obtained.

#### COVID-19 Opportunity Analysis

<u>Opportunity</u>	<u>Opportunity Level</u>	<u>Opportunity optimization measures</u>
New business opportunities created in response to COVID-19 related restrictions and measures.	High	Response to COVID-19 restrictions, such as remote working arrangements and no-contact business modalities will require solutions that can be turned into new business models. These opportunities will be analyzed and shared.
New business opportunities to build back better for business continuity and economic recovery post-COVID-19.	High	By design, this project engages the private sector to promote and scale up climate resilience solutions. Information on relevant new business opportunities as well as policies/regulations will be added to the curriculum so that the entrepreneurs are fully informed of the market and policy trends.

- 
- [1] GSMA - 2021 The Mobile Economy Sub-Saharan Africa
- [2] GEF and UN Environment. (2019) *STAP guidance on climate risk screening*.
- [3] *ibid*.
- [4] 15724-WB\_Kenya Country Profile-WEB.pdf ([worldbank.org](http://worldbank.org))
- [5] National Environment Management Authority (2015). Kenya- Second National Communication to the United National Framework Convention on Climate Change, Executive Summary. URL: [https://unfccc.int/sites/default/files/resource/Kenya%20SNC\\_Executive%20Summary.pdf](https://unfccc.int/sites/default/files/resource/Kenya%20SNC_Executive%20Summary.pdf)
- [6] World Bank (2019). Internal Climate Migration Profile ? Kenya. 5 World Bank Data Bank (2020). World Development Indicators, Kenya. URL: <https://databank.worldbank.org/source/worlddevelopment-indicators>
- [7] World Bank (2020). Climate Risk Country Profile Kenya. URL: [https://www.acaps.org/sites/acaps/files/key-documents/files/climate\\_risk\\_country\\_profile\\_kenya.pdf](https://www.acaps.org/sites/acaps/files/key-documents/files/climate_risk_country_profile_kenya.pdf)
- [8] National Environment Management Authority (2015). Kenya- Second National Communication to the United National Framework Convention on Climate Change. URL:<https://unfccc.int/sites/default/files/resource/Kennc2.pdf>
- [9] USAID (2018). Climate Change Risk Profile ? Kenya. URL:[https://www.climatelinks.org/sites/default/files/asset/document/2018\\_USAID-ATLAS-Project\\_Climate-Risk-Profile-Kenya.pdf](https://www.climatelinks.org/sites/default/files/asset/document/2018_USAID-ATLAS-Project_Climate-Risk-Profile-Kenya.pdf)
- [10] Ministry of Environment and Natural Resources (2016). Kenya National Adaptation Plan, 2015?2030. URL: [https://www4.unfccc.int/sites/NAPC/Documents%20NAP/Kenya\\_NAP\\_Final.pdf](https://www4.unfccc.int/sites/NAPC/Documents%20NAP/Kenya_NAP_Final.pdf).
- [11] Republic of Kenya (2013). Sector plan for drought risk management and ending drought emergencies, Second medium-term plan: 2013?2017. URL: <https://www.ndma.go.ke/index.php/resource-center/send/43-ending-drought-emergencies/4271-ed-mediumterm-plan-2013-2017>
- [12] Republic of Kenya (2013). National Climate Change Action Plan, 2013?2017: Vision 2030. URL: <https://cdkn.org/wp-content/uploads/2013/03/Kenya-National-Climate-Change-Action-Plan.pdf>
- [13] World Bank (2018). Disaster Risk Management Development Policy Financing with a Catastrophe Deferred Drawdown Option. URL:<http://documents.worldbank.org/curated/en/131661529811034069/pdf/KENYA-DDO-NEWPAD-2-05312018.pdf>

[14] [https://climateknowledgeportal.worldbank.org/sites/default/files/2021-08/15932-WB\\_South%20Africa%20Country%20Profile-WEB\\_0.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-08/15932-WB_South%20Africa%20Country%20Profile-WEB_0.pdf)

[15] World Bank (2021). South Africa Climate Data Historical. URL:  
<https://climateknowledgeportal.worldbank.org/country/south-africa/climate-data-historical>

[16] Adaptation Partnership (2011). Review of Current and Planned Adaptation Action. South Africa. URL: [https://www.preventionweb.net/files/25785\\_southafrica.pdf](https://www.preventionweb.net/files/25785_southafrica.pdf)

[17] World Bank (2021). South Africa Climate Data Historical. URL:  
<https://climateknowledgeportal.worldbank.org/country/south-africa/climate-data-historical>

[18] USAID (2018). Building Urban Resilience to Climate Change ? A review of South Africa. URL:  
[https://www.climatelinks.org/sites/default/files/asset/document/180327\\_USAID-ATLAS\\_Building%20Urban%20Resilience%20to%20CC\\_South%20Africa\\_to%20CL\\_rev.pdf](https://www.climatelinks.org/sites/default/files/asset/document/180327_USAID-ATLAS_Building%20Urban%20Resilience%20to%20CC_South%20Africa_to%20CL_rev.pdf)

[19] World Bank (2021). South Africa Country Profile. URL:  
[https://climateknowledgeportal.worldbank.org/sites/default/files/2021-08/15932-WB\\_South%20Africa%20Country%20Profile-WEB\\_0.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-08/15932-WB_South%20Africa%20Country%20Profile-WEB_0.pdf)

[20] Department of Environmental Affairs (2018). South Africa's Third National Communication under the United Nations Framework Convention on Climate Change. URL:  
[https://unfccc.int/sites/default/files/resource/South%20African%20TNC%20Report%20to%20the%20UNFCCC\\_31%20Aug.pdf](https://unfccc.int/sites/default/files/resource/South%20African%20TNC%20Report%20to%20the%20UNFCCC_31%20Aug.pdf)

[21] World Bank (2021). South Africa Country Profile. URL:  
[https://climateknowledgeportal.worldbank.org/sites/default/files/2021-08/15932-WB\\_South%20Africa%20Country%20Profile-WEB\\_0.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-08/15932-WB_South%20Africa%20Country%20Profile-WEB_0.pdf)

[22] Department of Environmental Affairs (2018). South Africa's Third National Communication under the United Nations Framework Convention on Climate Change. URL:  
[https://unfccc.int/sites/default/files/resource/South%20African%20TNC%20Report%20to%20the%20UNFCCC\\_31%20Aug.pdf](https://unfccc.int/sites/default/files/resource/South%20African%20TNC%20Report%20to%20the%20UNFCCC_31%20Aug.pdf)

[23] USAID (2018). Building Urban Resilience to Climate Change ? A review of South Africa. URL:  
[https://www.climatelinks.org/sites/default/files/asset/document/180327\\_USAID-ATLAS\\_Building%20Urban%20Resilience%20to%20CC\\_South%20Africa\\_to%20CL\\_rev.pdf](https://www.climatelinks.org/sites/default/files/asset/document/180327_USAID-ATLAS_Building%20Urban%20Resilience%20to%20CC_South%20Africa_to%20CL_rev.pdf)

[24] World Bank (2021). South Africa Country Profile. URL:  
[https://climateknowledgeportal.worldbank.org/sites/default/files/2021-08/15932-WB\\_South%20Africa%20Country%20Profile-WEB\\_0.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-08/15932-WB_South%20Africa%20Country%20Profile-WEB_0.pdf)

[25] Department of Environmental Affairs (2018). South Africa's Third National Communication under the United Nations Framework Convention on Climate Change. URL:  
[https://unfccc.int/sites/default/files/resource/South%20African%20TNC%20Report%20to%20the%20UNFCCC\\_31%20Aug.pdf](https://unfccc.int/sites/default/files/resource/South%20African%20TNC%20Report%20to%20the%20UNFCCC_31%20Aug.pdf)

- [26] USAID (2016). Climate Change Risk Profile ? Southern Africa. Regional Fact Sheet. URL: <https://www.climatelinks.org/sites/default/files/asset/document/2016%20CRM%20Fact%20Sheet%20-%20Southern%20Africa.pdf>
- [27] [https://climateknowledgeportal.worldbank.org/sites/default/files/2021-07/15918-WB\\_Nigeria%20Country%20Profile-WEB.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-07/15918-WB_Nigeria%20Country%20Profile-WEB.pdf)
- [28] World Bank (2021). Nigeria Country Profile. URL: [https://climateknowledgeportal.worldbank.org/sites/default/files/2021-07/15918-WB\\_Nigeria%20Country%20Profile-WEB.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-07/15918-WB_Nigeria%20Country%20Profile-WEB.pdf)
- [29] Nigeria (2020). Nigeria's Third National Communication under the UNFCCC. URL:<https://unfccc.int/documents/226453>
- [30] World Bank (2021). Nigeria Country Profile. URL: [https://climateknowledgeportal.worldbank.org/sites/default/files/2021-07/15918-WB\\_Nigeria%20Country%20Profile-WEB.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-07/15918-WB_Nigeria%20Country%20Profile-WEB.pdf)
- [31] GERICS (2015). Climate-Fact-Sheet, Nigeria. URL: [https://www.climate-service-center.de/products\\_and\\_publications/fact\\_sheets/index.php.de](https://www.climate-service-center.de/products_and_publications/fact_sheets/index.php.de)
- [32] Nigeria (2020). Nigeria's Third National Communication under the UNFCCC. URL:<https://unfccc.int/documents/226453>
- [33] World Bank (2021). Nigeria Country Profile. URL: [https://climateknowledgeportal.worldbank.org/sites/default/files/2021-07/15918-WB\\_Nigeria%20Country%20Profile-WEB.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-07/15918-WB_Nigeria%20Country%20Profile-WEB.pdf)
- [34] GERICS (2015). Climate-Fact-Sheet, Nigeria. URL: [https://www.climate-service-center.de/products\\_and\\_publications/fact\\_sheets/index.php.de](https://www.climate-service-center.de/products_and_publications/fact_sheets/index.php.de)
- [35] Echendu, A (2020). The impact of flooding in Nigeria's sustainable development goals. J. or Ecosystem Health and Sustainability. 6(1). DOI: <https://doi.org/10.1080/20964129.2020.1791735>
- [36] USAID (2018). Fragility and Climate Risks in Nigeria. URL:[https://pdf.usaid.gov/pdf\\_docs/PA00TBFK.pdf](https://pdf.usaid.gov/pdf_docs/PA00TBFK.pdf)
- [37] World Bank (2021). Nigeria Country Profile. URL: [https://climateknowledgeportal.worldbank.org/sites/default/files/2021-07/15918-WB\\_Nigeria%20Country%20Profile-WEB.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-07/15918-WB_Nigeria%20Country%20Profile-WEB.pdf)
- [38] World Bank (2021). Rwanda Country Profile. URL: [https://climateknowledgeportal.worldbank.org/sites/default/files/2021-09/15970-WB\\_Rwanda%20Country%20Profile-WEB.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-09/15970-WB_Rwanda%20Country%20Profile-WEB.pdf)

- [39] Ministry of Environment (2018). Third National Communication under the United Nations Framework Convention on Climate Change. URL:  
[https://unfccc.int/sites/default/files/resource/nc3\\_Republic\\_of\\_Rwanda.pdf](https://unfccc.int/sites/default/files/resource/nc3_Republic_of_Rwanda.pdf)
- [40] Ministry of Environment (2018). Third National Communication under the United Nations Framework Convention on Climate Change. URL:  
[https://unfccc.int/sites/default/files/resource/nc3\\_Republic\\_of\\_Rwanda.pdf](https://unfccc.int/sites/default/files/resource/nc3_Republic_of_Rwanda.pdf)
- [41] World Bank (2021). Rwanda Country Profile. URL:  
[https://climateknowledgeportal.worldbank.org/sites/default/files/2021-09/15970-WB\\_Rwanda%20Country%20Profile-WEB.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-09/15970-WB_Rwanda%20Country%20Profile-WEB.pdf)
- [42] GERICS (2015). Climate-Fact-Sheet, Burundi ? Malawi ? Rwanda ? Tanzania
- [43] GERICS (2015). Climate-Fact-Sheet, Burundi ? Malawi ? Rwanda ? Tanzania
- [44] Ministry of Environment (2018). Third National Communication under the United Nations Framework Convention on Climate Change. URL:  
[https://unfccc.int/sites/default/files/resource/nc3\\_Republic\\_of\\_Rwanda.pdf](https://unfccc.int/sites/default/files/resource/nc3_Republic_of_Rwanda.pdf)
- [45] World Bank (2021). Rwanda Country Profile. URL:  
[https://climateknowledgeportal.worldbank.org/sites/default/files/2021-09/15970-WB\\_Rwanda%20Country%20Profile-WEB.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-09/15970-WB_Rwanda%20Country%20Profile-WEB.pdf)
- [46] Ibid.
- [47] Ministry of Disaster Management and Refugee Affairs (2016). National Contingency Matrix Plan. URL: [http://minema.gov.rw/uploads/tx\\_download/NATIONAL\\_DISASTER\\_CONTINGENCY\\_MATRIX\\_.pdf](http://minema.gov.rw/uploads/tx_download/NATIONAL_DISASTER_CONTINGENCY_MATRIX_.pdf)
- [48] Flood List (2021). Rwanda. URL: <http://floodlist.com/tag/rwanda>
- [49] World Bank (2021). Uganda Country Profile. URL:  
[https://climateknowledgeportal.worldbank.org/sites/default/files/2020-06/15464-WB\\_Uganda%20Country%20Profile-WEB\\_v1.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2020-06/15464-WB_Uganda%20Country%20Profile-WEB_v1.pdf)
- [50] USAID (2013). Uganda Climate Change Vulnerability Assessment Report. URL:  
<https://www.climatelinks.org/sites/default/files/asset/document/ARCC-Uganda%2520VA-Report.pdf>
- [51] Ministry of Water and Environment (2014). Uganda Second National Communication to the United Nations Framework Convention on Climate Change. URL:  
<https://unfccc.int/resource/docs/natc/uganc2.pdf>
- [52] World Bank (2021). Uganda Country Profile. URL:  
[https://climateknowledgeportal.worldbank.org/sites/default/files/2020-06/15464-WB\\_Uganda%20Country%20Profile-WEB\\_v1.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2020-06/15464-WB_Uganda%20Country%20Profile-WEB_v1.pdf)

- [53] Ministry of Water and Environment (2015). Uganda National Climate Change Policy. URL: <https://www.mwe.go.ug/sites/default/files/library/National%20Climate%20Change%20Policy%20April%202015%20final.pdf>
- [54] World Bank (2021). Uganda Country Profile. URL: [https://climateknowledgeportal.worldbank.org/sites/default/files/2020-06/15464-WB\\_Uganda%20Country%20Profile-WEB\\_v1.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2020-06/15464-WB_Uganda%20Country%20Profile-WEB_v1.pdf)
- [55] Ibid.
- [56] McSweeney, C., New, N. and Lizcane, G. (2010). Uganda, UNDP Climate Change Country Profiles. URL: [https://www.geog.ox.ac.uk/research/climate/projects/undp-cp/UNDP\\_reports/Uganda/Uganda.hires.report.pdf](https://www.geog.ox.ac.uk/research/climate/projects/undp-cp/UNDP_reports/Uganda/Uganda.hires.report.pdf)
- [57] World Bank (2021). Uganda Country Profile. URL: [https://climateknowledgeportal.worldbank.org/sites/default/files/2020-06/15464-WB\\_Uganda%20Country%20Profile-WEB\\_v1.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2020-06/15464-WB_Uganda%20Country%20Profile-WEB_v1.pdf)
- [58] Ministry of Agriculture, Animal Industry and Fisheries (2018). Guidelines for Mainstreaming Climate Change Adaptation and Mitigation in Agricultural Sector Policies and Plans. URL: <https://www.agriculture.go.ug/wp-content/uploads/2019/09/Guidelinesfor-Mainstreaming-Climate-Change-Adaptation-and-Mitigation-in-the-Agricultural-Sector-Policies-Plans-1.pdf>
- [59] Ministry of Water and Environment (2014). Guidelines for the Integration of Climate Change in Sector Plans and Budgets. URL: <http://ccd.go.ug/wp-content/uploads/2018/04/National-Climate-Change-Mainstreaming-Guidelines-.pdf>
- [60] Department of Disaster Preparedness and Management (2011). The National Policy for Disaster Preparedness and Management. URL: <https://reliefweb.int/sites/reliefweb.int/files/resources/1.%20National%20Policy%20for%20Disaster%20Preparedness%20%26%20Management.pdf>

## 6. Coordination

**Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.**



- ? Annual work plan tracking, updates and budgeting (in consultation with PSC)
- ? Annual progress reports (in consultation with PSC)
- ? Periodic thematic reports (as and when required by UNIDO)
- ? Technical reports (as prepared by engaged experts/sub-consultants)
- ? Project publications (as prepared by engaged experts/sub-consultants)
- ? Progress report on the gender mainstreaming action plan and issues related to environmental and social safeguards

196. The PEE provides all related information to the evaluation experts for final evaluation. Project management will be funded in part by the GEF budget as well as in-kind funding and co-financing from the project counterparts. During the implementation period of the project, UNIDO will provide the PMU with the necessary management and monitoring support. Amendments to the project scope will be undertaken in line with the criteria and procedures established in the GEF/C.39/Inf.

#### Project Steering Committee

197. To ensure proper oversight and Government and institutional as well as local ownership and buy-in of the Project, a Project Steering Committee (PSC) will be established . A representative from each targeted country, as designated by the respective GEF Operational Focal Point, will be members of the PSC. The GEF Secretariat as well as providers of co-financing will be invited to join the PSC. UNIDO will chair the PSC, and the PMU will serve as Secretariat to the PSC.

198. The PSC is set up to provide advisory inputs for the project, and facilitate the implementation. The PSC will meet once per year virtually to review the project implementation and execution progress and confirm the work plan for the subsequent year. Any changes/amendments proposed to the project and/or to the work plans and budgets by the Project Steering Committee are done in accordance with the approved project document, the GEF policy, and UNIDO rules and regulations. Minutes of meetings are cleared by the PSC Chairperson and circulated to the members of the committee.

199. The PEE, via the PMU, forms the secretariat of and reports to the PSC on the progress of the project. The PEE is not a voting member of the PSC.

#### Transfer of assets:

200. Full or partial title and ownership of equipment purchased under the project may be transferred to national counterparts and/or project beneficiaries during the project implementation as deemed appropriate by the UNIDO Project Manager in consultation with project stakeholders.?

#### Legal Context:

201. Since it is a regional project, it is expected that each set of activities to be implemented in the target countries will be governed by the provisions of the Standard Basic Cooperation Agreement concluded between the Government of the recipient country concerned and UNIDO or, in the absence of such an agreement, by one of the following: (i) the Standard Basic Assistance Agreement concluded between the recipient country and UNDP, (ii) the Technical Assistance Agreements concluded between the recipient country and the United Nations and specialized agencies, or (iii) the Basic Terms and Conditions Governing UNIDO Projects.

Coordination with other relevant GEF-financed projects and other initiatives:

## 202. Kenya

- The *Strengthening Forest management for improved biodiversity conservation and climate resilience in the Southern rangelands of Kenya* project focuses on implementing sustainable rangeland rehabilitation and management techniques/actions. Some potential candidates for the pipeline of this project use fintech to increase the value of natural ecosystems services as forests.
- The *Eldoret-Iten Water Fund for Tropical Water Tower Conservation* project will focus on improving smallholder agricultural and forestry management practices, and food value chains that incentivize sustainable management principles, improve food security and conserve biodiversity and ecosystem health. As referred before in this document, there are clear potential synergies between inclusive fintechs and an improved access to water by the affected communities.

## 203. South Africa

- The *Mainstreaming Sustainable Land Management (SLM) for Large-Scale Impact in the Grazing Lands of Limpopo and Northern Cape provinces in South Africa* provides financial support to scale up validated sustainable land management practices and market links for the creation of priority value chains. Coordinating with market and embedded finance are among the main advantages that inclusive fintech can bring to the users, easing their participation in global value chains through their phones.
- The *Accelerating cleantech innovation and entrepreneurship in SMEs to support the transition towards circular economy and create green jobs* project will organize advanced acceleration and post acceleration support for local clean technology enterprises. Given that both projects share the same thematic, there is a clear area of synergies.
- The *Capacity strengthening for management of invasive alien species in South Africa to enhance sustainable biodiversity conservation and livelihoods improvement* will introduce smartphone application, linked to the national biosecurity information system and to national invasive alien species (IAS) databases, to enable the IAS fraternity and civil society to identify IAS for a wide range of conservation purposes and to report sightings of them being introduced via entry ports and in the wild. The project can take advantage of the pre-identified users to expand some services through the operation of the fintech supported by the project adding additional services to the mix.

**204.Rwanda:**

- *The ?Ecosystems/Landscape approach to climate proof the Rural Settlement Program of Rwanda?* will focus on Climate smart agricultural practices to increase and sustain food production under uncertain climate scenarios in the four pilot areas identified. Fintech solutions brought by the project could be vital for it, such as microinsurance for harvests.

**205.Uganda:**

- *The Reducing the Climate Change Vulnerability of Local Communities in Uganda through EbA in Forest and Wetland Ecosystems?* project aims to adopt appropriate harvesting, processing and production technologies to improve efficiency in consumption and reduce waste in forest products, and also to adopt and upscale technologies to mitigate forest fire risks.

- *The Strengthening the Adaptive Capacity and Resilience of Communities in Uganda's watersheds?* project could capitalise on innovations in early warning systems, for example, exploring the use of forecast based finance or partnerships with private sector and use of ICT Technology to provide communities with warnings. As it was mentioned in the case of Kenya, PAYGo systems promoted by the project may help to the long-term sustainability of the water and sanitation services.

**206.Nigeria:**

- 'Promoting clean energy technologies for sustainable start-ups and small medium enterprises development in Nigeria?' will place emphasis on SMEs with innovations that fall under one of these two focus areas: (i) enabling adoption of clean energy solutions in energy intensive SMEs; and (ii) improving energy access for households in underserved regions. Under the latter umbrella, low carbon technologies like clean cooking solutions and/or focussing on energy and resource efficiency, renewable energy utilisation, waste beneficiation tailored to reflect local conditions will be considered.

207.The project will also seek to collaborate with the relevant regional and international initiatives mentioned in the baseline section along with the UNFCCC Climate Technology Centres Network (CTCN) and the Private Financing and Advisory Network (PFAN), which are UNIDO hosted initiatives with expertise in supporting the technology innovation value chain. PFAN will play an integral role to bridge the gap faced by entrepreneurs and investors by helping entrepreneurs build their businesses and present them in a language which investors will understand and be interested in. It will also help investors find and recognize the potential of these businesses. By sharing the common vision of accelerating clean technology dissemination and effort for tackling climate change, this project will seek for cooperation with PFAN e.g. introducing PFAN and its systematic interventions at the series of events held under the project, exchange of advisors and experts.

208.Lightsmith Group founded the GEF-funded Climate Resilience and Adaptation Financing & Technology Transfer Facility (CRAFT), as well as the more recent Adaptation SME Accelerator Project (ASAP). The CRAFT project was the first private sector climate resilience and adaptation investment fund for developing countries and is now publishing conclusions that will be very useful as lessons learned to incorporate into this project. The ASAP project partners with existing accelerators to incorporate SMEs into their programs and has key overlap with this project for collaboration. Firstly, ASAP is developing a mapping and taxonomy of 100 SMEs within Africa, could be useful in

identifying SMEs specific to South Africa, Kenya, Nigeria, Uganda and Rwanda through general trends and sectors within the region. Secondly, ASAP is developing a toolkit for SMEs regarding environmental and social impact and impact management. This toolkit will be useful as it relates to the development of the impact measurement and management system for this project and efforts will be made to integrate the salient components into the work proposed here.

209. Lastly, the project will coordinate with the Green Climate Fund, Adaptation Fund, and other financiers to ensure that the capacity building strategy and that tools, curricula, knowledge products, and other resources that are used/developed for the project are consistent with the policies and priorities of these financiers. Related to this, the project will coordinate with GCF NDAs and relevant focal points for the UNFCCC, GEF, and other funds in the LDCs to ensure that the project's activities are consistent with country programs for accessing climate adaptation finance.

---

[1] Following the assessment and the approval of the PEE, collaboration between UNIDO and PEE will be based on the Project Execution Agreement (the "Agreement"). The Agreement defines the respective responsibilities of the PEE, including but not limited to activities, deliverables, financial, personnel, procurement and asset management components, as well as the reporting schedule and format. The Agreement also includes UNIDO's privileges and immunities, disbursement conditions, monitoring and evaluation requirements, as well as record keeping and audit standards.

#### **7. Consistency with National Priorities**

**Is the Project consistent with the National Strategies and plans or reports and assessments under relevant conventions?**

Yes

**If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc**

- National Adaptation Plan
- National Adaptation Programme of Action
- National Communications (NC) under UNFCCC
- Technology Needs Assessment (TNA) under UNFCCC
- National Capacity Self-Assessment (NCSA) under UNCBD, UNFCCC, UNCCD
- Nationally Determined Contributions (NDC)

210. The proposed project will be aligned to the government priorities (NDC and national adaptation plans) for each of the targeted countries as highlighted in the baseline section. By having the endorsement of the NDEs, national circumstances and priorities in each country will be reflected.

South Africa:

211. South Africa through its National Adaptation plan[1], focuses on climate change adaptation efforts in South Africa in the short term to medium-term, providing guidance across all levels of government, sectors and stakeholders affected by climate variability and change. It has plans to establish a programme to promote research into new climate change adaptation technologies as well as allocate adequate financial resources to improve understanding of climate change impacts and capacity to respond to these impacts, by promoting research application, technology development, transfer, and adoption.

Kenya:

212. Kenya through its National Adaptation Plan (2015-2030)[2] has prioritized supporting innovation and development of appropriate technologies and capacity that promote climate resilient development. This project will cater to their medium term objective to promote development of locally available technologies in support of adaptation to climate change as well as promote and facilitate transfer of appropriate technologies to the most vulnerable.

Nigeria:

213. Nigeria, through its National Adaptation Plan Framework[3] has underscored the need to leverage science, technology, and innovation (STI) and build a knowledge-based economy for development?both of which are key elements for climate change actions.

Uganda:

214. Uganda, through its National Adaptation Programmes of Action[4] also prioritized key areas of intervention to improve adaptation and resilience efforts using technology development. Uganda identified priority intervention areas such as 1) IK documentation and awareness creation; 2) Farm forestry; 3) Water resources; 4) Weather and climate information; 5) Policy, legislation and planning; 6) Land and soil management; 7) Disaster preparedness; 8) Alternative livelihoods; 9) Health; and 10) Infrastructure.

Rwanda:

215. Through Rwanda's National Adaptation Programmes of Action to combat climate change[5], Rwanda articulated six (6)-priority adaptation options to climate change which include: n Integrated Water Resource Management ? IWRM; Setting up an information systems to early warning of hydro-agro meteorological system and rapid intervention mechanisms; Promotion of non agricultural income generating activities; Promotion of intensive agro-pastoral activities; Introduction of species resistant to environmental conditions; Development of firewood alternative sources of energy.

---

[1] [South-Africa\\_NAP.pdf \(unfccc.int\)](#)

[2] [NAP\\_Final-Signed\\_22022017.pdf \(unfccc.int\)](#)

[3] [napgn-en-2020-Nigeria-National-Adaptation-Plan-NAP-Framework.pdf \(napglobalnetwork.org\)](#)

[4] [NAPA rpt sgl blt.pmd \(unfccc.int\)](#)

## 8. Knowledge Management

**Outline the knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.**

216. BFA Global has always operated a global learning agenda that promoted cross-learning among the countries. Startups across countries are invited to join regular peer exchanges, where BFA Global brings founders together to discuss challenges, as well as meeting investors from theirs and other countries. In addition, an annual portfolio gathering is also organised to bring current and alumni companies of the Catalyst Fund together. Building on this record, BFA Global will leverage the DF4CR task force and local stakeholders across target countries as an audience for the bottom up insights that will emerge from the work conducted by startups. The Local stakeholders may remain connected with Catalyst Fund's networks beyond the program to remain abreast of new insights and updates as well as attend stakeholder convenings.

217. This project will combine a learning agenda approach, communities of practice, and knowledge outputs to create and share knowledge with the broader ecosystem. The digital finance for climate resilience space is nascent, and a shared vocabulary is only just becoming established. The current state of the sector has been articulated and led by the Digital Finance for Climate Resilience (DF4CR) Task Force (BFA Global, UN Race to Resilience, WRI, CGAP, and Paypal), which will be a critical partner for managing knowledge in this project. The project will build upon the foundations laid by the Task Force, focusing on its relevance and applicability for startups and the startup ecosystem. Key learning topics will include: what fintech models work for building climate resilience, how startups can build products that improve climate resilience, what kinds of partnerships can help, how investors should evaluate climate resilience products, and more.

218. All knowledge products and related activities will be gender responsive.

### Knowledge Creation:

219. Knowledge will be created via a learning agenda that guides both startup acceleration as part of outcome 1 (of supporting startups) as well as communities of practice as part of outcome 2 (of building the ecosystem). The team will develop a set of learning questions that are both relevant to progressing the sector and pertinent to the startup acceleration methodology. In the past, Catalyst Fund learning agendas have focused on three core areas: startup growth (tools, method, and lessons for achieving product market fit), ecosystem acceleration (proof points, case studies, and shared understanding to build and motivate the ecosystem), and topical investment theses (state of the sector that has included financial health, platforms, digital commerce). A similar learning agenda will be developed with input from key stakeholders for the fintech for climate resilience space.

220. That learning agenda will guide monitoring and learning efforts across the venture acceleration engagements, as well as a series of community of practice convenings. The communities of practice

will be convened in consultation with key stakeholders to ensure that the team is both deriving insight from key informants as well as providing input to critical decision-makers across the ecosystem.

**Knowledge Dissemination:**

221. As part of Catalyst Fund's second outcome of building up the ecosystem, public knowledge outputs will be shared in the form of regular blog posts, infographics, and briefs on the BFA Global website as well as websites of content and implementation partners, such as the DF4CR Task Force, Next Billion, and others. The program will also craft private knowledge outputs in the form of decks, strategy documents and other critical inputs for startups. These will be shared with startups as part of venture building engagements and may be adapted for the website where appropriate. Finally, the team will prepare knowledge products for the communities of practice, to prepare for and guide convenings, and to reflect their conclusions. These products will be adapted for public consumption where appropriate.

**9. Environmental and Social Safeguard (ESS) Risks**

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

**Overall Project/Program Risk Classification \***

PIF	CEO Endorsement/Approval	MTR	TE
<b>Low</b>			

**Measures to address identified risks and impacts**

Provide preliminary information on the types and levels of risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the project (considering the GEF ESS Minimum Standards) and describe measures to address these risks during the project design.

According to the UNIDO Environmental and Social Safeguards Policy and Procedures (ESSPP), the proposed project is likely to have minimal or no adverse social and/or environmental impacts. No further specific environmental and/or social assessment is required during Project Formulation. While no further specific environmental and/or social assessment is required, the project will develop an Environmental and Social Management Framework (ESMF) - a project-level tool to apply when selecting individual startups (i.e. sub-projects). This will ensure that the project avoids, minimizes,

and/or mitigates potential adverse E&S impacts that may emerge from the selected startup sub-project activities and interventions across all stages of the selected sub-project cycle (planning, implementation, post- implementation). This will be supported by applying the requirements of the applicable UNIDO ESSPP Operational Safeguards of the UNIDO ESSPP, as well as the industry best-practices.

**Supporting Documents**

Upload available ESS supporting documents.

Title	Submitted
<b>E&amp;S_Screening_Template_SAP_ID_210238</b>	

### Part III: Approval/Endorsement By GEF Operational Focal Point(S) And GEF Agency(ies)

#### A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

<b>Name</b>	<b>Position</b>	<b>Ministry</b>	<b>Date</b>
Jonah Stanley	Director PRS	Ministry of Environment of Nigeria	12/6/2021
Juliet Kabera	Director General	Rwanda Environment Management Authority	1/21/2022
Zaheer Fakir	Chief Policy Advisor	Department of Forestry, Fisheries and the Environment, South Africa	1/28/2022
Dr. Chris Kiptoo	Principal Secretary	Ministry of Environment and Forestry, Kenya	1/17/2022
Patrick Ocailap	Acting Deputy Secretary to the Treasury	Ministry of Finance, Planning and Economic Development, Uganda	

## ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

The project is a regional project with focus on five countries.

**South Africa:** 30.5595° S, 22.9375° E

**Uganda:** 1.3733° N, 32.2903° E

**Rwanda:** 1.9403° S, 29.8739° E

**Nigeria:** 9.0820° N, 8.6753° E

**Kenya:** 0.0236° S, 37.9062° E

