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Financial Innovation for Climate Adaptation in Africa

2022

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ABOUT THE GLOBAL CENTER ON ADAPTATION

The Global Center on Adaptation (GCA) is an international organization, hosted by the Netherlands, which works as a solutions broker to accelerate action and support for adaptation solutions from the international to the local, in partnership with the public and private sector, to ensure we learn from each other and work together for a climate resilient future.



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ABOUT CLIMATE POLICY INITIATIVE

CPI is an analysis and advisory organization with deep expertise in finance and policy. Our mission is to help governments, businesses, and financial institutions drive economic growth while addressing climate change. CPI has six offices around the world in Brazil, India, Indonesia, Kenya, the United Kingdom, and the United States.

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FOREWORD



Adaptation finance urgently needs to flow for Africa in the coming decade.

African countries are on the frontline of climate change, facing increasingly frequent and severe climate shocks. With Covid-19 recovery still underway and the Ukraine conflict exacerbating climate, food security and energy challenges, accelerating adaptation finance for Africa is an imperative.

Yet, this report shows that current adaptation finance flows are insufficient to meet the continent's growing needs. If current trends continue, cumulative adaptation finance through 2030 will come to less than one-quarter of the estimated needs stated by African countries in their Nationally Determined Contributions. This adaptation investment shortfall in Africa must be met by action.

To support urgently needed action, this report identifies opportunities and proposes solutions for increasing both the volume and variety of capital available for adaptation in Africa.

Let us not forget: Investing in climate adaptation is not just the right thing to do, it is also the economically smart thing to do. Every dollar invested in climate adaptation brings a much higher return on investment.

We see evidence of this in the Africa Adaptation Acceleration Program (AAAP), a joint initiative between the Global Center on Adaptation and the African Development Bank. Delivering adaptation action on the ground rapidly and at scale, the AAAP has already mainstreamed adaptation solutions into \$3 billion worth of investments with Multilateral Banks in 19 countries in Africa through its Upstream Financing Facility. The AAAP, backed by the African Union and actualizing the vision of the Africa Adaptation Initiative, will mobilize \$25 billion for adaptation in Africa over the next five years. Finance mobilization supports the four interconnected pillars of this program: climate-smart digital technologies for agriculture, resilient infrastructure investments, youth enterprise support, and innovative financial initiatives.

Taking action now will be critical to determining the course of Africa's capacity to respond to present and oncoming climate impacts.

Let us seize the opportunity to build a more climate-resilient and livable future.

A handwritten signature in blue ink, appearing to be 'Patrick Verkooijen'. The signature is fluid and stylized, with a prominent loop at the end.

Prof. Dr. Patrick Verkooijen
Chief Executive Officer
Global Center on Adaptation

SECTION 1

KEY MESSAGES

In the years 2019 and 2020, an annual average of \$29.5 billion in climate finance was committed to Africa,¹ and approximately 39% of those commitments, \$11.4 billion,² targeted adaptation activities. Of the \$11.4 billion in adaptation commitments tracked from 2019 to 2020, more than 97% came from public actors, while less than 3% was tracked from the private sector. More than half of adaptation finance commitments tracked in Africa were loans in 2019 to 2020, with 30% in the form of concessional debt and 23% in the form of commercial debt. An additional 45% of adaptation finance commitments tracked in that period were grants, with the remaining 2% a mix of commercial equity and unspecified finance types.³

There is a pressing need to accelerate finance from all sources for climate adaptation in Africa over the coming decade. The Nationally Determined Contributions (NDCs) of 51 African countries cumulatively show a need for an estimated \$579 billion in investment for adaptation through 2030.^{4,5} This compares to the \$11.4 billion in tracked adaptation finance to Africa on average annually from 2019 to 2020.⁶ If this trend were to continue through 2030, cumulative adaptation finance through 2030 would be \$125.4 billion—less than one-quarter of the estimated needs stated in NDCs. The adaptation investment shortfall in Africa must be met by action across stakeholder groups. To increase the volume and efficacy of adaptation finance flows, the following shifts are critical:

Financial institutions must mainstream resilience into investments they are making. Many investors are already engaged in investment in Africa that has significant relevance to adaptation goals—but a significant portion of investments in Africa are not yet climate resilient despite significant potential. To support financial institutions in mainstreaming resilience into their investments in Africa, it is critical that there be an increase in access to robust climate data to inform mainstreaming decisions and an increase in requirement of disclosure and consideration of climate risks by financial institutions (via national legislation and/or via Development Finance Institution (DFI) on-lending).

Policymakers and other stakeholders must build the enabling environment for adaptation investment.

The enabling environment in a country helps determine the viability of certain types of instruments. To build a supportive enabling environment for adaptation investment, policymakers and financial institutions should support articulation of investment-ready National Adaptation Plans (NAPs) and mainstream climate resilience in government procurement, capacity building to develop science-based policy and projects, and improvement of macro-economic environments and adopt a multi-faceted approach to address debt burdens faced by African countries.

Financial innovation for adaptation must match country-level policy and market conditions.

There is a wide array of available investment instruments, risk finance mechanisms, and broader finance-relevant solutions that financial actors are already mobilizing in support of climate resilience across Africa. It is critical to carefully select a financial instrument or structure that meets the conditions and activities targeted. Selection of appropriate financial instruments must be informed by the sectoral focus of the adaptation activity, underlying country-level policy and market conditions, and the stakeholders and actors engaged.



SECTION 2

INTRODUCTION



Current adaptation finance flows in Africa are insufficient to meet growing adaptation needs on the continent.⁷ This chapter provides an overview of existing adaptation finance flows in Africa and identifies opportunities to increase the volume and efficacy of that finance. The core objectives of this chapter are to:

- Assess the state of adaptation finance and risk-finance mechanisms already available and in use in Africa.
- Analyze African financial market readiness for climate adaptation finance and risk-finance mechanisms.
- Present three country case studies to illustrate facets of the adaptation finance landscape in Africa – covering country-level adaptation finance needs, domestic public finance to adaptation, and issuance of sovereign bonds.
- Identify gaps where climate risk exists yet there is insufficient finance to address it, as well as the barriers to implementation.
- Propose solutions to increase the volume and variety of capital available for adaptation finance and risk-transfer mechanisms in Africa and to enable pipelines for adaptation and dual-benefits projects in the region.

SECTION 3

FINANCIAL FLOWS ANALYSIS

The impacts of climate change in Africa are exacerbated by rapid urbanization, geopolitical tensions, and the impact of global shocks such as the Covid-19 pandemic and the ongoing war in Ukraine. Rising prices of energy, food, and other commodities have worsened the climate-related food security and energy access risks to the population of Africa. Despite these challenges, there is opportunity for climate investments in Africa to mainstream resilience and low-carbon development in the long term.

In September 2022, CPI will release the Landscape of Climate Finance in Africa, a comprehensive exercise to map climate mitigation and adaptation investments in Africa. The analysis indicates that \$29.5 billion annual average in climate finance was committed to Africa in the years 2019 and 2020.⁸ Approximately 39% of those commitments, \$11.4 billion, targeted adaptation activities.

Importantly, the newly assessed commitments for 2019 to 2020 in CPI report represent a 44% increase from \$7.9 billion reported by CPI's 2021 Global Landscape of Climate Finance as adaptation finance in Africa in the same two years. CPI continually strives to enhance the tracking of climate finance by both updating data inputs as new information becomes available and by adding new data sources to address data gaps, which are especially pervasive in adaptation finance. The 2022 Landscape of Climate Finance in Africa study—the first of its kind—represented an especially concentrated effort to improve data availability and quality for Africa, leading to a relatively large difference between the commitments for 2019 to 2020 reported in 2021 as compared to those reported in 2022 for the same years.

The increase in the 2022 analysis is primarily attributable to 1) updated investment data for 2020 made available in April 2022 by the OECD Creditor Reporting System (CRS)⁹, 2) new inclusion of adaptation activities from publicly available resources on African national government budget expenditures like the Climate Budget Tagging (CBT) and Climate Public Expenditure and Institutional Review (CPEIR), 3) updated OECD statistics on the amounts mobilized from the private sector by official development finance interventions, and 4) screening of post issuance reporting on climate bonds in African countries.

Figure 1. Adaptation Finance Commitments (\$ bn) vs. Needs

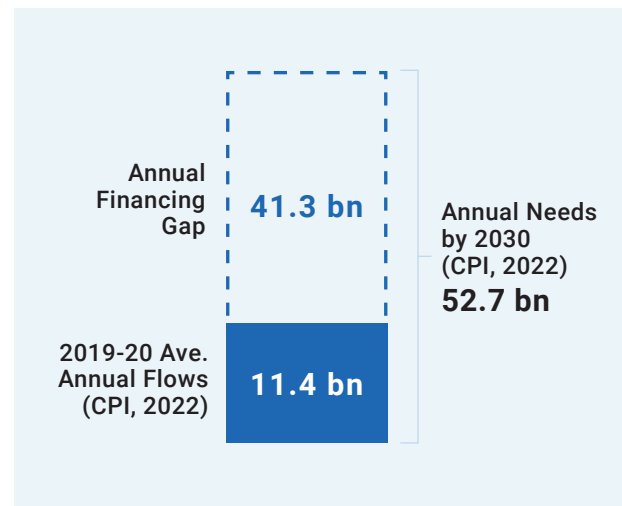


Figure 1 shows the trends in adaptation financing flows and needs in Africa. It is informed by an analysis of 51 NDCs submitted by African countries that provide information on countries' climate finance needs. Of the 53 African countries that submitted NDCs, 51 countries (collectively representing more than 93% of Africa's GDP) have also provided data on the costs of implementing their NDCs.

The analysis of that data indicates an estimated \$579.2 billion in adaptation finance needs for Africa over the period 2020 to 2030.^{10,11} By contrast, an annual average of \$11.4 billion was tracked in adaptation finance to Africa in 2019 to 2020. If this trend were to continue through 2030, adaptation finance would total \$125.4 billion through 2030, far short of the \$579.2 billion (or approximately \$52.7 billion annually) in estimated needs per costs of implementation stated in NDCs. Adaptation finance is thus scaling too slowly to close the investment gap, even as the costs of inaction rise.^{12,13}

Adaptation finance was approximately 39% of total tracked climate finance to Africa in 2019 to 2020. Further, the share of adaptation finance as a percentage of total climate finance was higher in Africa than any other region for 2019 to 2020.¹⁴ Due to the cross-sectoral nature of adaptation projects, a large share of tracked adaptation finance

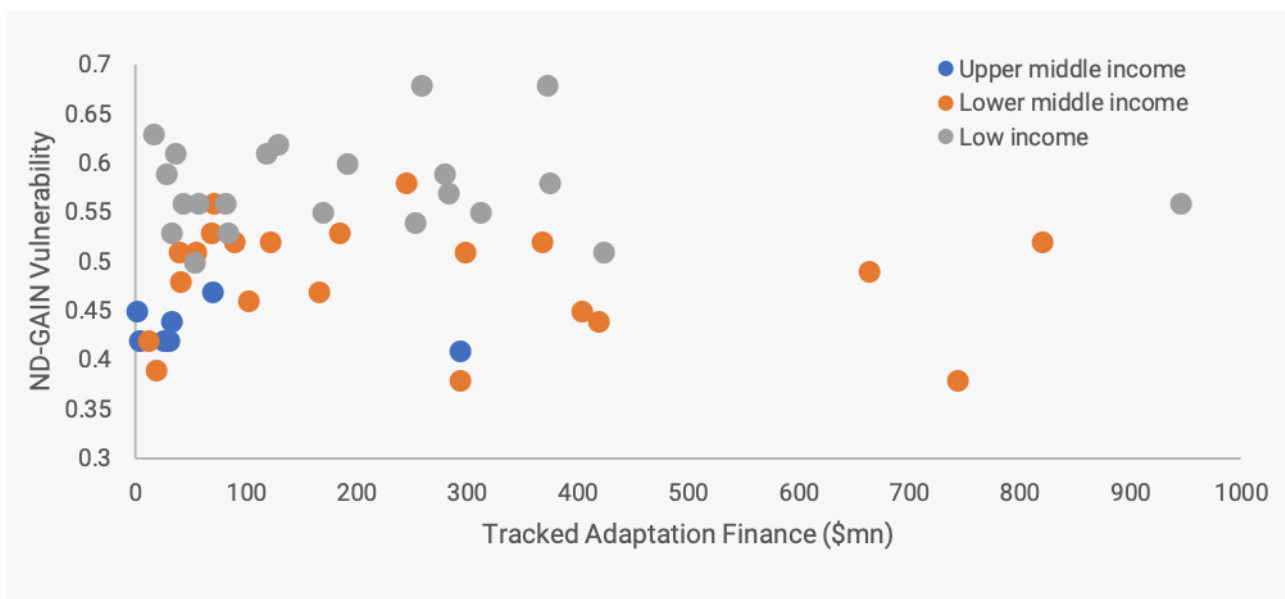
commitments to Africa in 2019 to 2020 went towards other & cross-sectoral activities (41%, \$4.7 billion), which include support for national-level policy and capacity building, disaster management activities, Covid-19 response, urban issues, and social security.¹⁵ The agriculture, forestry, and other land use (AFOLU) sector saw the second highest commitments, accounting for \$2.8 billion, followed by the water and wastewater sector with \$1.7 billion in annual commitments.

Across Africa, multilateral development finance institutions (DFIs) were the most significant source of adaptation finance flows (53%, \$6 billion), followed by governments (23%, 2.6 billion) and bilateral DFIs (16%, \$1.8 billion). In line with the global trend of increasing prioritization of adaptation in DFIs' climate portfolios, the 2019 to 2020 period was the first period where more finance commitments tracked from multilateral DFIs were directed to adaptation than to mitigation in Africa.¹⁶

More than half (53%) of the adaptation finance commitments to Africa in 2019 to 2020 were loans. A high share of financing from multilateral DFIs was committed in the form of commercial-rate loans (41%) and concessional loans (32%) whereas bilateral DFIs primarily committed concessional loans (82%). By contrast, more than 90% of adaptation finance committed from governments was in the form of grants with less than 6% total in the form of loans. The share of grants and loans varies across regions and income group of countries. Low-income countries primarily attracted grant commitments for adaptation financing whereas lower-middle income countries largely saw commitments of loans at market rate (58%).

As shown in Figure 2, there is limited to no-correlation at the country level between tracked adaptation finance and climate vulnerability.

Figure 2. Tracked Adaptation Finance (\$ million) vs. ND-GAIN Vulnerability by Country



Adaptation finance commitments to Africa remain substantially below the estimated needs in NDCs.¹⁷ Despite the global health and fiscal crisis caused by the pandemic, positive factors influencing adaptation finance flows to Africa appear to have outweighed negative factors, resulting in an overall increase in adaptation finance. Numbers for 2021 are not yet

available and it is still premature to assess how 2022 events – notably the war in Ukraine and global supply chain and inflationary pressures – will impact investment for 2022 and beyond. A detailed summary of positive and negative factors can be found in Table 1 below:

Table 1. Factors Affecting Adaptation Finance Flows in Africa

Positive Factors	
DFI commitments to adaptation finance continue to grow	Pre-pandemic, nine Multilateral Development Banks (MDBs) announced a collective commitment to double their total levels of adaptation finance by 2025, to \$18 billion annually. ¹⁸ Towards that end, the World Bank announced a 35% target for climate finance as a proportion of total finance from 2021 to 2025, of which at least 50% will support adaptation. The African Development Bank (AfDB) has committed to a target of at least 40% for climate finance by 2025, to a doubling of climate finance to \$25 billion between 2020 and 2025, and to prioritize adaptation finance. While simultaneously mobilizing massive resources towards the global Covid-19 response, ¹⁹ DFIs have increased adaptation investments in Africa by an estimated \$2.7 billion between 2019 and 2020.
Launch of innovative financing models	New innovative models for raising adaptation finance, such as the African Adaptation Acceleration Program (AAAP), jointly developed by GCA and the AfDB, are beginning to be deployed. These instruments are designed to fill the financing gap facing adaptation projects, both by providing up-front capital and adjusting projects' risk-return profile to meet the requirements of private investors. Between 2019 and 2020, tracked adaptation finance flows from grants and concessional debt in Africa increased by \$2.9 billion, with the potential to "crowd-in" commercial capital going forward.
International commitments at COP26	Additionally, COP26 outcomes included a call to action for developed countries to double their collective provision of adaptation finance from 2019 levels by 2025, strengthened adaptation finance pledges from multilateral organizations, governments, and private actors, and increased allocation of proceeds from market-based mechanisms towards adaptation. ²⁰ The African Group of Negotiators on Climate Change are asking for mobilizing \$1.3 trillion in climate finance by 2030 with adaptation remaining a top priority. ²¹

Negative Factors	
Capacity constraints	A number of capacity constraints within African countries limit access to adaptation finance. Many institutions, including National Designated Authorities (NDA), Direct Access Entities (DAEs), and other Accredited Entities (AEs), have constrained access to finance from climate funds given the significant technical and institutional capacity required to build project pipelines and proposals to climate funds including the Green Climate Fund (GCF). ²² Furthermore, there is a lack of reliable and accessible information about climate risks and impacts in many contexts. This lack of information combines with limited capacity to process available climate data and to translate findings into the necessary resilience measures.
Limited inclusion of resilience in stimulus packages	In the 2021 UNEP Adaptation Gap Report, ²³ analysis of the fiscal stimulus packages of 66 countries—including all G20 and V20 countries—showed that less than one-third (18) of the responses were found to integrate physical climate-risk awareness and resilience components, including just three African countries: Niger, Ethiopia, and Kenya. As national budgets were strained during the pandemic, annual adaptation finance provided by domestic governments only rose by an estimated 156 million between 2019 and 2020.
Minimal private sector investment	Although capital outflows stabilized relatively soon after hitting record lows in March 2020, total foreign direct investment (FDI) declined 16% in 2020 in Africa to \$40 billion, a decline to 2005 levels of investment. ²⁴ While annual tracked private investment for adaptation in Africa rose between 2019 and 2020 by around \$114 million, private investment only comprised 2% of total adaptation finance during the period.
Africa debt crisis	The macroeconomic strain caused by Covid-19 will continue to affect 2021 finance flows, with governments and private investors particularly impacted. 56% of African countries with a credit rating suffered downgrades in 2020, further weakening the financing ability of domestic governments. ²⁵ Despite this setback, FDI in Africa has rebounded in 2021, with positive growth in nearly all sub-regions. ²⁶
Aftermath of Covid-19 and war in Ukraine	Since early-2022, the ongoing war in Ukraine has caused sudden hikes in energy and food prices with massive disruptions to the international trade and supply chain systems. The uncertainties around food security and energy access may significantly affect the adaptation outcomes of planned and future projects. Even though adaptation financing flows from bilateral governments and to a lesser extent, from DFIs, can be expected to face constraints as resources are directed towards humanitarian aid, there are significant opportunities for building long-term adaptive capacity and resilience through a holistic and coordinated approach.

SECTION 4

SOURCES OF ADAPTATION FINANCE

To mobilize further adaptation investment and to increase the impact of investments in terms of building resilience, a wide variety of sources of finance need to be tapped. Public spending alone cannot meet the adaptation finance gap, so private sector investment must scale up alongside public investment to supplement limited public resources.²⁷ One initiative seeking to bring together key financial institutions within Africa to mobilize private flows towards climate objectives is the African Financial Alliance on Climate Change (AFAC).²⁸ AFAC brings together multilateral, national, and regional development banks, central banks, commercial banks, institutional investors, stock exchanges, insurance companies, and ministries of finance to increase alignment on initiatives to mobilize private capital to climate action. AFAC and other

initiatives to galvanize partnerships to mobilize adaptation finance (including the Africa Adaptation Acceleration Program and the Africa Adaptation Initiative) are critical to leveraging the wide variety of finance sources that must play a role in increasing adaptation finance volumes and efficacy.

Figure 3 summarizes the financial actors that have a role to play in mobilizing finance for adaptation at scale in Africa. These actors offer financing along a spectrum of terms, ranging from highly concessional terms (lower return expectations and/or longer tenors) to commercial terms (market returns and tenors expected). Concessional capital is intended to fill a gap where the private sector (commercial capital) would not otherwise invest.



Figure 3. Current and Potential Sources of Adaptation Finance in Africa



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commercial
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to support adaptation investments in the private sector which can create positive externalities for social and economic development. DFIs can bridge knowledge gaps through tools such as feasibility studies, business risk assessments, technical assistance, and market studies.

Sub-Regional Development Banks (SRDBs): SRDBs have a mandate to contribute to regional integration and regional infrastructure development projects. Four African SRDBs (Eastern and Southern African Trade Development Bank, East African Development Bank, West African Development Bank, and ECOWAS Bank for Investment and Development) are operational in Africa in three separate Regional Economic Communities. ECOWAS, for example, is in the process of developing a regional climate strategy and published an ECOWAS Guide to implementation of the Paris Agreement in September 2020 for its members states. SRDBs are relatively financially stable and shareholding countries generally report satisfaction with their performance which makes them potentially suitable to mobilize more capital to finance adaptation in Africa.

National Development Banks (NDBs): NDBs are state-owned or government-sponsored financial institutions with a primary mandate of providing long-term and concessional capital to high-risk sectors and industry which are underserved by private commercial banks and contribute to the country's development agenda. NDBs are important intermediaries for international climate finance and more than ten currently have direct access to GCF funding. NDBs' expertise in domestic market opportunities, relationships with public and private sector entities, partnerships with large international MDBs, access to international capital markets to raise capital from a wide range of sources, co-lending ability for risk mitigation instruments in a local currency like guarantees and countercyclical nature of lending make them potentially important for financing resilient development in Africa.

Multilateral Climate Funds: Multilateral Climate Funds established through international agreements or for a specific mandate provide financing for adaptation in Africa either through grants or market-linked instruments. They are catalytic in facilitating and accelerating financing in perceived high-risk adaptation projects by providing instruments like first-loss or junior equity, repayment guarantees, and grants to mobilize private investments.

National Climate Funds: National, country-driven, dedicated, catalytic financial institutions designed to address domestic market gaps, take ownership of climate finance and crowd-in private investments in low carbon and resilient projects. National Climate Funds have the potential to provide integrated access to grants and finance to meet NDCs and have strong potential to mobilize private sector investments. As detailed further in a case study on Rwanda in Section 5a, the Rwanda Green Fund (FONERWA) serves as the main vehicle for climate finance in the country.

State-owned Enterprises & Financial Institutions (SOEs): SOEs are public entities that are partly or wholly owned by government to deliver services in a particular sector or sectors. SOEs have not financed many climate adaptation activities to date but have substantial opportunity to lead in climate resilience given the size of their market share and public governance model.

African Governments: Budgetary allocations are among the largest and most well-suited mechanisms for financing adaptation activities in Africa and African governments are already spending a considerable share of their budget on adaptation.³³ African governments are instrumental in deploying capital to non-commercial adaptation activities and current levels of expenditure meet around 10% of the total adaptation need.³⁴ Illustrative of the key importance of African governments in deploying climate finance – as detailed further in a case study on Kenya in Section 5b, of the \$2.4 billion in climate finance committed in Kenya in 2018, 28% (\$670 million) came from public domestic sources which include national ministries, subnational departments, and semi-autonomous government agencies.

Foreign Government Agencies (ODA): ODA is a critical component of adaptation finance in Africa to de-risk adaptation activities and support more commercial finance. Bilateral agencies have a relatively high-risk appetite and strong climate mandates. Increasing global ambition should yield an increase in ODA for adaptation in Africa as countries seek to increasingly achieve a balance between adaptation and mitigation commitments in alignment with Article 9.4 of the Paris Agreement.

Philanthropies, Foundations, and Non-profits: Like ODA, funding from these organizations can de-risk adaptation activities, draw in private finance, and support technical capacity building. Philanthropic funding is nimbler and more flexible than ODA and can serve as catalytic capital for private sector investment.

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SECTION 5A

CASE STUDY: ADDRESSING THE DOMESTIC INVESTMENT IN ADAPTATION GAP IN GHANA AND RWANDA

SECTION 5A1: CONTEXT AND INTRODUCTION

As part of their Nationally Determined Contributions, Ghana and Rwanda have estimated their adaptation finance needs at \$12.8 billion^{35,36} and \$5.3 billion³⁷ respectively from 2020 to 2030. Both countries have identified agriculture, human settlements, water, transport, and health as key sectoral priorities for adaptation investment. Ghana aims to cover almost one-third of adaptation finance needs through domestic sources, and Rwanda announced its intent to cover almost 40% of its total mitigation and adaptation needs by leveraging domestic sources of finance.^{38,39,40} Both countries have developed a range of policy frameworks and strategies to support the mobilization of domestic finance towards climate adaptation, including developing specific climate finance instruments, working to mainstream climate adaptation throughout the public sector, and engaging the private sector.

SECTION 5A2: DEVELOPING TAILORED CLIMATE FINANCE INSTRUMENTS

In Ghana, the Ghana Infrastructure Investment Fund (GIIF) sovereign wealth fund is currently seeking Green Climate Fund (GCF) accreditation.⁴¹ If able to tap into GCF funds the GIIF could emerge as a key resilience infrastructure investment vehicle. To this end, Ghana launched in 2021 the Green Climate Fund Readiness Program which aims to support the Ghanaian government in strengthening national capacities to plan for, deliver, and monitor climate finance, as well as build private sector capacity.⁴² The country also has issued sovereign bonds with adaptation components.⁴³

The Rwanda Green Fund (FONERWA) serves as the main vehicle for climate finance in the country. While originally capitalized by the UK, Rwandan, and German governments, FONERWA's budget is now sourced from both public and private domestic and international sources. On the domestic side, funding sources include state allocated budget, grants and subsidies, and various fines and fees

from environmental penalties.⁴⁴ FONERWA is incorporated into the Rwandan Ministry of Natural Resources but has its own administration including a Managing and a Technical Committee. The Managing Committee cooperates with public and private sector stakeholders while the Technical Committee aims to ensure all projects are in line with national adaptation priorities and avoid duplication with other government or private sector led projects.

Further, the government of Rwanda in partnership with the African Development Bank is developing the Rwanda Catalytic Green Investment Facility (RCGIF) which will utilize blended financing structures for not-yet-bankable projects through direct loans and credits issued by the Development Bank of Rwanda, and a project preparation facility at FONERWA to increase the bankability of projects.⁴⁵

SECTION 5A3: MAINSTREAMING CLIMATE ADAPTATION THROUGHOUT THE PUBLIC SECTOR

Setting up a coherent and proactive policy environment is key to enhancing the effectiveness of climate finance and can in the long run, strengthen countries' ability to tap into wider and more varied sources of finance.⁴⁶ In 2011, Rwanda launched its Green Growth and Climate Resilience National Strategy⁴⁷ which aimed to mainstream climate change and low carbon development into all areas of the economy and policymaking, with special emphasis on climate resilience.⁴⁸ Further, Joint Sector Reviews were set up to foster cross-sectoral dialogues across relevant ministries, non-governmental actors, and the public.

Ghana has identified limited in-country capacity and a siloed approach towards climate finance proposals across government ministries as key challenges to meeting their climate adaptation finance needs as outlined in their NDC.⁴⁹ The government has announced plans to work on creating an enabling environment to attract private sector funds and enhance domestic revenue mobilization through improvements in compliance, widening the tax net, digitization, and tax policies.⁵⁰



Indeed, adequate tax incentives and expanding the countries' tax base are key to mobilizing public funds. A joint study conducted by Action Aid, the Government of Ghana, and the Integrated Social Development Centre estimates that Ghana may be missing out on close to \$1.2 billion annually in general tax revenues that could be directed among others towards climate finance because of misaligned tax incentives.⁵¹ The Ghanaian Ministry of Finance has identified improvements in compliance, widening the tax base, and reassessing tax policies as key next steps to fulfill the country's NDC.⁵² Supporting initiatives to establish new specialized funds to finance resilient infrastructure, deepening of bond markets, establishing Strategic Development Sovereign Wealth Funds, and using existing sovereign-backed pension funds for development projects are further recommended steps to step the mobilization of domestic financial resources.⁵³

SECTION 5A4: LESSONS LEARNED

Private sector adaptation finance mobilization remains a challenge in both countries. To date most entities engaging in climate finance have focused their efforts on mitigation.⁵⁴ Lack of government incentives for private sector involvement and limited awareness of public initiatives in this space are often cited as a key barrier to private sector finance for adaptation. Moreover, small-and-medium enterprises in these countries often lack access to credit and funding which limit their ability to invest in resilience measures.⁵⁵

In Rwanda, supported by several grants, FONERWA has developed capacity building trainings specific to private sector actors and routinely holds private sector stakeholder engagement workshops.⁵⁶ The Fund which also received grant funding to build capacity to identify climate interventions within the private sector, actively seeks out private sector project co-finance and reserves 20% of funds for private sector projects. More generally, in both cases of Public-Private Partnerships, the use of the compliance and voluntary carbon market mechanisms have been put forward as potential options to attract private sector funds.^{57,58}

SECTION 5B

CASE STUDY: TRACKING DOMESTIC PUBLIC FINANCE FOR ADAPTATION IN KENYA

SECTION 5B1: CONTEXT AND INTRODUCTION

Kenya is among the most water scarce countries in the world and nearly half the population lacks access to basic water services.⁵⁹ Recurring droughts, flooding, and sea level rise will compound the issue resulting in severe crop, livestock, infrastructure, and freshwater losses leading to widespread famine and displacement. Kenya's economy is heavily reliant on climate sensitive sectors like fishing, agriculture, and forestry which make up more than a third of its GDP and are already fragile from the 2020 locust invasion⁶⁰ and Covid-19 pandemic.⁶¹

To respond to the significant climate risk facing the country, Kenya passed the Climate Change Act of 2016 and the National Climate Change Action Plan (NCCAP) to provide a framework for coordinating adaptation and mitigation efforts.⁶² A landmark analysis from 2018 found that Kenya invested roughly \$2.4 billion in public and private capital from both domestic and international sources towards climate projects.⁶³

Kenya estimates that it will need \$65 billion through 2030 to achieve its Nationally Determined Contribution (NDC) goals where the national government plans to provide 13% of the funding and the rest would be provided by international development partners.⁶⁴ An analysis of the sources, instruments, destinations, and accuracy of Kenya's domestic public climate finance flows captures the breadth of the national and international efforts needed going forward to meet Kenya's NDC.

SECTION 5B2: PUBLIC DOMESTIC CLIMATE FINANCE IN KENYA

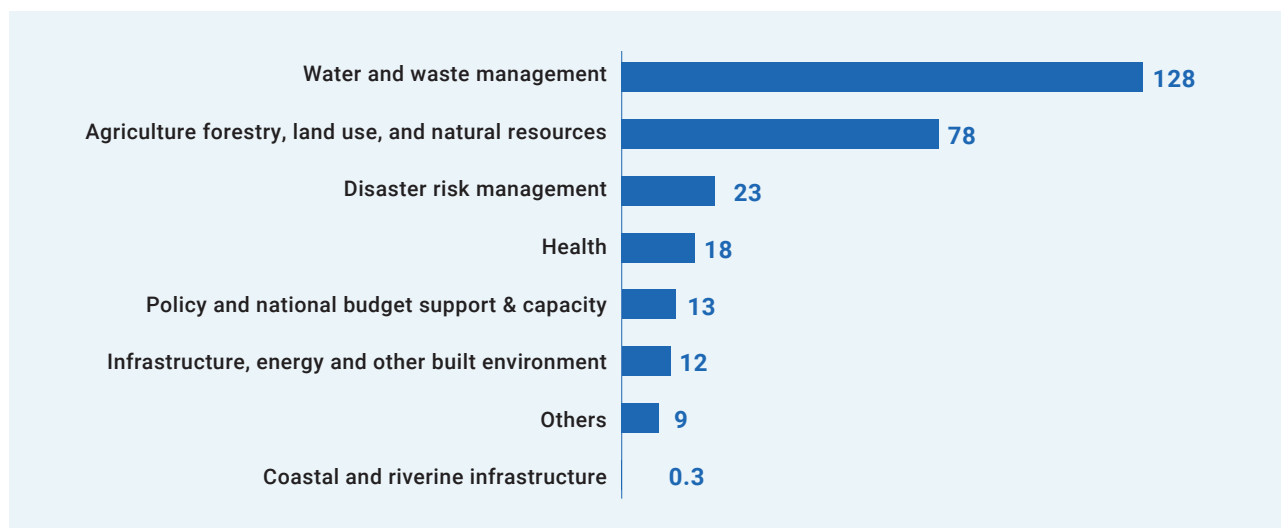
Of the \$2.4 billion in climate finance committed in Kenya in 2018, 28% (\$670 million) came from public domestic sources which include national ministries, subnational departments, and semi-autonomous government agencies.⁶⁵ Roughly 50% of the \$670 million was committed through the government's central budget and the other 50% through the semi-autonomous government agencies through the form of equity.⁶⁶

Only 12% of all climate finance funds committed in 2018 across domestic, international, public, and private sources were directed towards adaptation - the majority of which was spent in water and wastewater management.⁶⁷ Figure 4 below breaks down the sub-sectoral investments across these adaptation efforts. However, 30% climate finance channeled through the Kenyan government's central budget was allocated to adaptation projects indicating a higher sensitivity to adaptation needs compared to most investors.⁶⁸

The sectoral breakdown of domestic equity financed projects were more difficult to ascertain due to a lack of visibility into expenditure data from semi-autonomous government agencies.⁶⁹ This lack of visibility makes it challenging to get an accurate overall picture of climate finance in Kenya because semi-autonomous government agencies are the primary recipients of domestic and international finance flows. They are responsible for budget implementation making them the de facto implementers of climate projects in Kenya.⁷⁰



Figure 4. Climate finance in Kenya by Adaptation Sub-Sector (\$ millions)



SECTION 5B3: RECOMMENDATIONS AND LESSONS LEARNED

Improving climate finance visibility is vital in enabling governments and international investors to operationalize their capacity to act on the data and close investment gaps. For example, after the release of the 2021 Landscape of Climate Finance in Kenya, the central government issued a new training handbook and government-wide circular for tracking and reporting climate finance spending. Broadly speaking, this transparency and accuracy in climate finance flows is vital in Kenya and across Africa to help the national ministries, DFIs, and international investors know which sectors to prioritize future investments in order to close the gaps and build resilience where needed.

African nations should modernize their public financial management systems to enable more granular levels of climate finance expenditure tracking. Kenya needs expenditures from all ministries, departments, and semi-autonomous governments to be reported through the central government’s public financial management system known as the Integrated Financial Management Information System (IFMIS). A new analytical segment of the IFMIS system called Segment 8 has been introduced but not yet rolled out which would allow for

distinct levels of tagging climate-related expenditures for adaptation, mitigation, and cross-cutting activities.⁷¹ African nations should begin developing similar functionality in their finance ministries, without which climate expenditures will continue to be manually tagged in ad-hoc ways with conflicting information and double counting impairing the accuracy of the data.

Adaptation frameworks need to be institutionalized into ministries and departments who oversee tagging and tracking of climate finance expenditures. Due to definitional issues, much of Kenya’s adaptation finance was unable to be properly tracked. However, Kenya had already developed a Tracking Adaptation and Measuring Development (TAMD) framework in its National Adaptation Plan which contained a series of top-down county level institutional adaptive capacity indicators and bottom-up vulnerability indicators that spanned the national and sectoral levels.⁷² There is a need for these existing taxonomies and frameworks, both in Kenya and other African countries, to be substantively used and filter down to the line ministries who are tasked with tagging climate finance. This will help align climate projects implemented by entities at different levels of government as that data is fed into a public financial management system, thus streamlining data reconciliation, and improving the quality of the qualitative information that is reviewed and tagged for adaptation.

SECTION 5C

CASE STUDY: EGYPT'S SOVEREIGN BOND

SECTION 5C1: CONTEXT AND INTRODUCTION

Egypt's Nile Delta faces significant climate risks.⁷³ Sea level rise and flash floods will likely lead to inundation and erosion of a sizeable portion of the northern delta, and extreme heat waves and dust storms will severely strain water resources and the agriculture sector which employs a third of the country's labor force.⁷⁴ In response to these threats, Egypt launched Vision 2030 – a holistic sustainable development strategy that includes specific aims to prepare the country for climate change. As part of this effort, Egypt's Ministry of Finance debuted the first sovereign green bond for the Middle East and North Africa region in September 2020.⁷⁵

Green bonds are a debt instrument that allows the issuer to raise finance through a typical bond but where the proceeds are earmarked for projects with environmental benefits. Green bonds have been used in other contexts such as the world's first sovereign blue bond issued by the Seychelles in 2018 to support sustainable marine and fisheries projects.⁷⁶ Ghana has also recently implemented a green bond program called the Green Exchange which aims to raise \$5 billion.⁷⁷

Egypt's green bond was met with significant investor interest. The initial \$million sale was oversubscribed by more than seven times with \$3.7 billion of purchase orders. This prompted the Egyptian Ministry of Finance to increase the sale to \$750 billion and lower the investor return to 5.25% - the lowest yield for a five-year bond in the country's history.

SECTION 5C2: RELEVANCE OF GREEN BONDS TO ADAPTATION IN AFRICA

54% of the green bond proceeds, roughly \$400 million, have been spent on 14 water and wastewater projects including desalination and sludge treatment facilities. The remaining 46%, about \$350 million, has been spent on clean transportation to build a monorail system from Cairo to the new capital known as the

New Administrative Capital. Egypt has passed an independent review certifying that the program meets the International Capital Markets Association's Green Bond Principles.

Though the aims of Egypt's green bond issuance are not solely adaptation-focused, the bond aligns relatively closely with the Climate Bonds Initiative's (CBI) climate resilience principles advanced in 2018. The principles broadly seek to determine whether the proceeds from a green bond sale are invested in a way that either enhances the climate resilience of an asset over its lifespan and/or increases the climate resilience of a broader sector/system.

CBI has outlined six illustrative examples of investments that would enhance the resilience of an asset, including re-locating at-risk infrastructure and implementing drought resistant seeds. CBI also noted six sectors that would enhance the resilience of a broader system including—with most relevance for Egypt's green bond—water, which encompasses investments in wastewater treatment, desalination, and strengthened water distribution.⁷⁸ Table 2 notes the elements of close alignment between Egypt's green bond issuance and CBI's climate resilience principles. This evaluation is intended to help explain Egypt's bond through the lens of climate resilience but is not intended to be definitive given the limited public information available to make a comprehensive expert assessment.



Table 2. Alignment between Egypt's Sovereign Green Bond and CBI's Climate Resilience Principles

Resilience Bond Principle	Egypt Green Bond Alignment
Assets and activities receiving investment must have clearly defined boundaries and identify interdependencies for assessing climate risks and resilience impacts	<p>Egypt has defined seven categories of assets and activities eligible to be financed: energy efficiency, renewable energy, sustainable transport, green buildings, waste and water efficiency, energy management systems, and non-GHG reduction energy management systems. During the screening process, a team utilizes the International Finance Corporation's (IFC) Climate Assessment for Financial Institutions tool⁷⁹ which notes that an adaptation project should reduce risk, exposure of and sensitivity to climate change and also increase climate resilience.^{80, 81} As part of the green bond issuance processed and executed by the Commercial International Bank, the green bond issuer, the findings are also vetted by a Green Bond Task Force.⁸²</p>
Expected climate resilience benefits assessment must be undertaken for system focused assets and activities receiving investment	<p>Egypt has determined resilience benefits for its water treatment projects across cubic meters/day of treated water, megawatt hours of electricity generated, and number of people benefiting from the projects.⁸³ It has outlined a formal set of impact indicators that inform six green bond project types: energy efficiency, renewable energy, green buildings, sustainable transportation, water and wastewater, and waste projects. Indicators for its primary resilience project, water and wastewater, include annual absolute (gross) water use before and after the project in m³ per year, reduction in water use (in percentages), annual absolute (gross) amount of wastewater treated, reused or avoided before and after the project in m³ per year or as percentages.⁸⁴</p>
Mitigation trade-offs must be assessed	<p>Egypt has calculated the GHG emission reduction benefits for its projects⁸⁵ and reports on any emissions generated⁸⁶, thus allowing for mitigation trade-off analyses.</p>
There must be ongoing monitoring and evaluation	<p>Egypt will conduct an annual report evaluating the use of its green bond proceeds⁸⁷ as well as establishing a National Committee for Monitoring progress on the UN Sustainable Development goals.⁸⁸</p>

SECTION 5C3: RECOMMENDATIONS AND LESSONS LEARNED

Though Egypt's green bond is not solely climate adaptation focused, it has significant potential to deliver climate resilience benefits. Other countries can benefit from the lessons learned from Egypt's implementation to move forward with similar initiatives. African DFIs and ministries of finance can, for example, look to leverage and potentially replicate Egypt's Regional Center for Sustainable Finance (RCSF) to build institutional capacity. Following the launch of the green bond program, Egypt established the RCSF with the aim of removing market barriers in the Middle East and North Africa region to integrate sustainable finance practices, instruments, and management models. African nations should take advantage of RCSF's training and educational institutes for capacity building on sustainable finance literacy, debt management operations, cross-ministry coordination, and technical support for setting up their own green finance programs.

Egypt's green bond issuance also benefited from the establishment of a robust legal and green financing framework in collaboration with international finance institutions including the World Bank and the IFC. Egypt brought together three crucial ingredients that enabled the right economic and political conditions for

its green bond program, setting a template for other African nations to model. First, early involvement from key ministries who established a guiding green bond framework, thus imparting confidence in the sustained political support for the program.⁸⁹ Second, utilizing the Commercial International Bank (CIB), the nation's largest private bank, to issue the green bond sale. This ensured that the deposits were held in a separate account in a safe and liquid part of the domestic financial system which made it easy to provide proof of documentation and tracing of project and category level allocations during audits. Lastly, partnering with the World Bank and IFC to act as technical advisors on the project created global credibility on the execution of the sale and use of proceeds and served to guide assessments of impact indicators.^{90,91} Awareness of these ingredients for success will be valuable for replication and scale.

Finally, concessional funding from DFIs, foreign governments, and foundations could help increase climate information collection to bolster the adaptation relevance of green bond-financed projects moving forward.⁹² This information could unlock further investor interest and set up a future pipeline of resilience-focused projects. In Egypt and beyond, this work could allow countries to expand the resilience pipeline and promote further liquidity in the green bond market and prove investor demand.⁹³

SECTION 6

BARRIERS

There are cross-sectoral barriers as well as sector-specific barriers hindering investment in adaptation activities. Table 3 summarizes key barriers to

investment across seven key sectors assessed in this analysis alongside cross-cutting barriers which affect investment potential across sectors.

Table 3. Barriers to mobilizing adaptation finance by sector and cross-cutting

Sector	Barriers
Cross-cutting	<p>Constrained macroeconomic environment: The macroeconomic strain caused by geopolitical and health conditions including the Covid-19 crisis and ongoing war in Ukraine will continue to affect adaptation finance flows. Credit rating downgrades may weaken the financing ability of domestic governments and international governments and DFIs may face constraints as resources are directed towards humanitarian aid.</p> <p>Inadequate risk-adjusted returns: Returns do not compensate investors in developing countries for the additional risk associated with unfavorable regulations and policies, such as foreign investment restrictions.</p> <p>Complexity of project due diligence: Many private sector actors, including institutional investors, have largely avoided financing infrastructure projects across sectors in the region due to cost recovery challenges and the complexity of the technical due diligence.</p> <p>Limited capacity to collect and analyze relevant climate data: The lack of reliable and accessible information about climate risks and impacts, combined with limited capacity to process available climate data in infrastructure modeling and translate findings into the necessary resilience measures, makes it difficult to adapt proactively.</p>
Water	<p>Lack of municipal/subnational implementation capacity: Water projects often involve municipal or other subnational implementers with limited implementation capacity (to pursue finance, structure an adaptation project, or access climate analytics).</p>
Agriculture	<p>Policy and regulatory barriers: Lack of regulatory incentives for climate-smart agriculture in terms of priority lending and mal-incentives in regulatory environments with subsidies for non-adaptive crops.</p> <p>Limitations in aggregation: Difficulty in aggregating or securitizing many small-scale projects due to local contexts and disparate level of development.</p>

Transport	<p>Variability of climatic conditions within a single project: Transport projects are often cross-jurisdictional in nature and therefore face a complex range of climate risks.</p> <p>Public sector nature of the sector: Even more than for other infrastructure projects, some elements of the transport sector including roads, railways, and ports are often publicly owned and operated and private sector investment involvement may not be feasible.</p>
Energy	<p>Need for regional coordination: As countries are tackling domestic energy security challenges separately, this is creating build-up of overcapacity in some countries and deficiencies in others.</p> <p>Risk attitudes of decision-makers: Given the long lifespan of energy infrastructure, ranging from 50 to 100 years for hydropower assets, it is critical to base expansions and new infrastructure investments on future climate projections. However, uncertainties around climate projections and the magnitude of associated revenue losses contribute to the lower risk perception of decision-makers.</p>
Urban infrastructure	<p>Lack of subnational fiscal autonomy: Subnational borrowing capacities for infrastructure and other capital needs are severely constrained, making long-term planning for climate resilience challenging and creating delays in responding and recovering promptly from disasters.</p>
Coastal ecosystems	<p>Challenging economics: Adaptation in coastal ecosystems zones is often overlapping with flood-risk management and land-use planning which have significant public good characteristics, making it difficult to build an economic case.⁹⁴</p>
Land use and forestry	<p>Multi-stakeholder solutions can create complexity for channeling funding: Developing and implementing solutions in land use and forestry involves numerous actors and flows across sectors and jurisdictions. Coordination across these sectors and jurisdictions can make the design and implementation of funding solutions complex.</p>

SECTION 7

RECOMMENDATIONS

1. MAINSTREAM ADAPTATION AND RESILIENCE INTO INVESTMENT DECISION-MAKING

Many investors in Africa are already engaged in investment that has significant relevance to adaptation goals, but their investments are not yet climate resilient. For example, a multinational corporation investing in Africa along an agricultural supply chain or an infrastructure investor building a water treatment facility will be operating in a sector with substantial climate risk but may not be screening for climate risk nor mitigating that risk. To enable financial institutions to mainstream resilience into the investments they are making, the following steps are critical:

INCREASE ACCESS TO ROBUST CLIMATE INFORMATION:

There is a critical lack of climate data in many parts of Africa, which limits adaptation projects and leads to uncertainty about the optimal approach to building resilience. The poorest countries have the most significant lack of climate data: either they are post-conflict or fragile states, or simply do not have the funding and technical resources to develop climate data such as groundwater baseline data, 24

to 48-hour precipitation data, and forward-looking climate projections. More targeted concessional finance and grants, from DFIs, donor governments, and foundations are needed to support policy makers and other implementers in collecting and providing access to sufficient data, as well as to support collaboration and training on open-source models that can utilize the data. Across the board, there should be an emphasis on increasing access to high-resolution climate data at low cost so that implementers may undertake climate risk assessments as a basis for future adaptation planning.

BUILD CAPACITY OF AFRICAN FINANCIAL INSTITUTIONS AND GOVERNMENT ENTITIES TO EVALUATE AND ACT ON CLIMATE RISKS:

A concerted effort should be made to increase membership of Pan-African Banks, locally based pension funds, and national development banks in international financial initiatives such as the UN Principles for Responsible Investment and Banking, and the International Development Finance Club—and to provide these institutions with the resources to participate actively. Capacity building is also crucial to strengthen African financial institutions' capacity to access finance from Climate Funds through pre- and post-accreditation support.

REQUIRE DISCLOSURE OF CLIMATE RISKS, VIA NATIONAL LEGISLATION AND/OR VIA DFI ON-LENDING:

Domestic financial regulators in Africa should consider requiring financial institutions to disclose climate-related risks in line with the Task Force for Climate-related Financial Disclosures recommendations. Moody's has found that the 49 banks it rates across Africa have more than \$200 billion in lending across sectors with high potential climate risks, therefore, disclosure of climate risks is critical.⁹⁵



2. BUILD THE ENABLING ENVIRONMENT FOR ADAPTATION INVESTMENT

The enabling environment in a country is critical to the viability of adaptation investment. Key factors that influence the strength of the enabling environment for

investment in adaptation and resilience are reflected in Table 4 where a country with a strong enabling environment has the majority of these factors in place:

Table 4. Key factors in the enabling environment

Policy environment	Market environment	Institutional/stakeholder environment
National adaptation plans/strategy in place	Access to international markets	Availability of accredited entities for accessing climate finance
Regulations enforcing adaptation measures (i.e., building codes)	Developed insurance market	Engagement of NDBs, regional development banks, and other regional institutions
Availability and capacity to analyze climate data	PE/VC availability Subnational borrowing capacity	

To build the enabling environment of countries that do not meet the key factors in the enabling environment captured in Table 4 – key actions needed include:

ARTICULATE INVESTMENT-READY NATIONAL ADAPTATION PLANS (NAPS) AND MAINSTREAM CLIMATE RESILIENCE IN GOVERNMENT PROCUREMENT:

Having a nationally articulated strategy for adaptation is critical for establishing long-term expectations, identifying priority actions across sectors, and indicating areas for private sector participation. Only six countries in Africa have submitted NAPs to date, while 34 other countries have received funding or have submitted proposals to access funding from the Green Climate Fund (GCF) and the Least Developed Countries Fund (LDCF) for NAP development. Policymakers should ensure that adaptation planning is incorporated and mainstreamed into all relevant policy and procurements plans. An increased focus on climate adaptation mainstreaming within procurement plans in particular is critical to ensure that international infrastructure investment must screen for and build in resilience.

BUILD CAPACITY TO DEVELOP SCIENCE-BASED POLICY AND PROJECTS:

For much international public climate finance, there is a need to establish attribution between a climate impact and the corresponding action/measure that aims to mitigate that impact. This attribution is challenging, requires substantial quantitative and science capacity, and is often a critical factor for mobilizing adaptation finance. There is a substantial need to increase capacity to translate science into policy, and to translate policy into investment needs, for instance by utilizing climate resilience indicators to prioritize budget allocations. Resilience outcomes are also difficult to track against a moving baseline—for example, other development projects may have also contributed to improved social outcomes in a given region.

IMPROVE MACRO-ECONOMIC ENVIRONMENTS AND ADOPT A MULTI-FACETED APPROACH TO ADDRESS DEBT BURDENS FACED BY AFRICAN COUNTRIES:

- African finance ministers have called for external assistance of \$100 billion annually over the next three years to close a financing gap of \$345 billion

to achieve a sustainable recovery.⁹⁶ The participation of private creditors will be critical to relieve existing debt burdens, requiring innovative financing models that set clear incentives. Additional actions that should be considered to address debt challenges in African countries include: 1) advancing efforts to link credit ratings with reductions in climate risk to incentivize resilience and lower the cost of debt, 2) continuing implementation of the Debt Service Suspension Initiative (DSSI)

program and seeking as many avenues as possible for alleviating debt strain on African countries as a key strategy to increase domestic adaptation finance, 3) exploring development of sovereign bonds with an adaptation component (e.g., Ghana's 2030 bond with an IDA guarantee of 40%) and scaling up sovereign debt-for-adaptation swaps to countries where conditions are viable.⁹⁷

3. DEPLOY INNOVATIVE FINANCE INSTRUMENTS

There is a wide array of available investment instruments, risk finance mechanisms, and broader finance-relevant solutions that financial actors are already mobilizing in support of climate resilience across Africa. The universe of financial instruments captured in this analysis is represented in Figure 5. The level of "concessionality" required for certain instruments will vary by market or policy environment. Financial instruments can be used to finance activities that build physical resilience to climate change impacts (reducing physical risk) and are also useful in responding to risks where physical climate impacts cannot or have not been eliminated (through risk transfer and risk reduction instruments).

It is critical to carefully select a financial instrument or structure that meets the conditions and activities targeted. Selection of appropriate financial instruments must be informed by the sectoral focus of the adaptation activity, underlying country-level policy and market conditions, and the stakeholders and actors' engagement. Instruments will only function successfully when they target an appropriate context. Key factors that must be considered when designing an instrument include currency stability, strength of project pipeline, strength of debt capital markets, presence of strong policy environment, existence of a sovereign credit rating, existence of corporate bond market, robustness of climate information, and engagement/existence of a domestic private sector.

Three examples of financial instruments implemented to finance adaptation in Africa that match well with the conditions of the implementing context are:

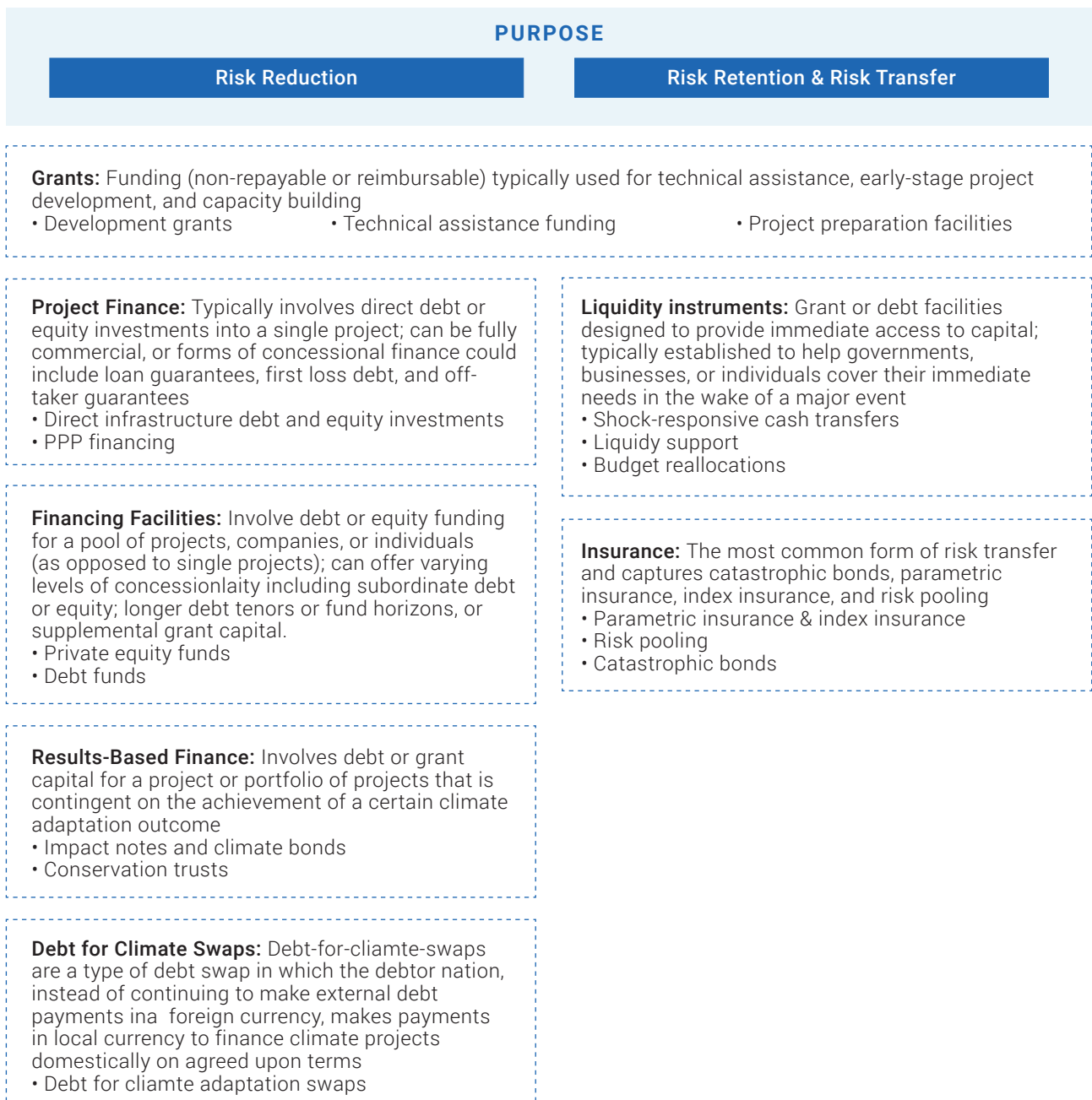
- **The Food Securities Fund.** The Food Securities Fund seeks to provide working capital loans to agricultural aggregators (cooperatives, processors, traders) operating in developing and emerging markets. The fund has been developed by Clarmondial with input from leading institutional investors, agribusinesses, and conservation organizations and aims to provide an additional source of timely and affordable credit to support the transition to sustainable agriculture notably on climate mitigation, sustainable land management, rural livelihoods and gender. The fund targets local SMEs operating in established value chain relationships and will be most successful in markets where there are relevant agri-SMEs and where access to working capital is scarce. The fund will also appeal to investors primarily in areas where institutional investors have an interest in SDG-aligned fixed income and private credit investments and is primarily targeting European and US institutional investors (banks, pension funds, insurance companies).
- **Debt for Climate (DFC) Swap – Seychelles.** In 2017, the Seychelles became the first country to successfully undertake a DFC swap aimed specifically at protecting the world's oceans. The Nature Conservancy (TNC) acquired Seychelles' foreign external debt at a discounted price and raised additional donor funding worth \$5 million from private actors. The government of Seychelles will repay the loans to a specially created Seychelles Conservation and Climate Adaptation Trust by TNC. Key conditions met within the market and policy enabling environment that led to the success

of the swap include: the country has a high level of public external debt held bilaterally by other sovereigns, is in a position to service their debt but has a limited fiscal capacity to mobilize domestic public climate finance, and had high-level political and whole-of-government support.

- **Komaza Smallholder Forestry Vehicle (SFV).** A forestry business based in Kenya whose mission is to move small-scale farmers out of poverty. SFV

is an instrument that packages tree production partnership contracts with thousands of smallholder farmers and sells them to investors, providing farmers and forestry companies with access to low-cost, long-term finance while enabling institutional investors to access sustainable forestry investments. The instrument has broad applicability in terms of market and policy enabling environment because it is based on funding to and contracts with individual farmers.

Figure 5. Financial Instrument Types





CONCLUSION

African countries are among the most at risk of increasing frequency and severity of climate-related shocks and stressors. There is a pressing need to invest in climate change adaptation to support individuals, SMEs, municipalities, corporations, financial actors, and governments in building resilience to climate impacts. To date, climate adaptation finance is scaling far too slowly to build climate resilience, even as the costs of climate impacts rise.

To mobilize the levels of investment needed and to increase the resilience impact of these investments, a wider variety of sources of finance must be tapped. A three-pronged strategy is needed to tap the wide range of potential actors: 1) mainstream adaptation and resilience in investment decision-making, 2) build the enabling environment for adaptation investment, and 3) aggressively deploy innovative finance instruments at scale towards adaptation activities. Action taken now across the full range of potential adaptation finance sources will be critical in determining the course of Africa's capacity to respond to present and oncoming climate impacts and in building a more climate-resilient and livable future.

ENDNOTES

- 1 CPI reports two-year averages (2019 and 2020) to smooth out annual fluctuations in data.
- 2 These numbers represent a 44% increase from previously reported data for the same period due to updated and improved data analysis. Please see Section 3 for more information.
- 3 Adaptation finance flows numbers presented in this report are from CPI's forthcoming report *The Landscape of Climate Finance in Africa*, to be published in September 2022 in partnership with FSD Africa and the Children's Investment Fund Foundation.
- 4 CPI (2022). "Climate Finance Needs of African Countries". <https://www.climatepolicyinitiative.org/publication/climate-finance-needs-of-african-countries/>.
- 5 The climate finance needs for the purposes of the study are defined as the cost of NDC implementation minus committed financing from national governments.
- 6 CPI reports two-year averages (2019 and 2020) to smooth out annual fluctuations in data.
- 7 The focus of this analysis is on adaptation finance to address physical climate risks in Africa. It does not capture other important climate risks, such as transition risks associated with the shift towards lower-carbon economies.
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- 9 OECD-CRS is used by members of the OECD Development Assistance Committee (DAC) to report on the development finance provisions.
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- 14 The high share of adaptation finance as a percentage of total climate finance in Africa as compared to other regions may be attributable to a variety of factors including in particular increasing prioritization by DFIs of adaptation finance in line with commitments to reach parity in adaptation and mitigation commitments.
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- 67 Ibid. Pg. 23-24.
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