



Landscape of Climate Finance in Africa

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AUTHORS

Chavi Meattle, Rajashree Padmanabhi, Pedro Fernandes, Anna Balm, Elvis Wakaba, Daniela Chiriac, and Bella Tonkonogy.

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, the United Kingdom, and the United States.



FOREWORD

A low carbon, climate resilient pathway offers the African continent the opportunity to address climate change while ensuring sustainable development, improvement in livelihoods, energy security, and job creation. Bringing it to fruition will take significant financial resources from public and private actors, at scale and with speed. To tap these resources effectively and efficiently, countries need to ensure that enabling institutional and financial mechanisms are in place. The fiscal and economic environment, despite their constraints, should provide a platform for enabling the deployment of capital towards the achievement of climate mitigation and adaptation objectives.

Each country on the continent needs to foster sectoral policies, taxonomies, and governance mechanisms that support the attraction of domestic and global capital. Clear and consistent transition policies and information on investment will help highlight existing gaps, spotlight opportunities, and provide a fertile environment for effective mobilisation and scaling of climate and just transition finance. This is the context in which the Landscape of Climate Finance in Africa report is being launched.

This report provides a first-of-its kind assessment of climate finance flowing into and within African countries. This report is a crucial one and comes at a time when it is urgently needed, and to inform the discussions and negotiations at COP27 in Egypt. It provides a baseline to understand climate finance flows in Africa which need to be tracked, in order to measure progress of each country and, in combination, the continent, towards meeting their Nationally Determined Contributions (NDCs) under the Paris Agreement. Importantly, a report such as this allows us to measure whether the commitments of developed countries to provide finance to developing countries, is indeed being delivered.

According to this CPI report, African countries collectively received only 12-15% of their required climate response investments in 2019 and 2020. Climate finance must be mobilised at greater speed and scaled significantly if the continent as a whole is to achieve its mitigation outcomes and adapt to climate change. Incremental progress, the existing status quo and business-as-usual are no longer appropriate as developing countries pursue their socio-economic development paths to lower carbon economies and climate resilient societies.

As climate change agents on the continent, we welcome this report on the climate finance landscape and we are hopeful that it will make a contribution to our endeavours to meaningfully participate in the global efforts towards a net zero future.



Valli Moosa
Deputy Chairperson, South African Presidential Climate Commission

DESCRIPTORS

SECTOR

Climate finance, adaptation, energy, agriculture, forestry and other land use

REGION

Africa

KEYWORDS

Climate finance; adaptation; mitigation; private finance; public finance; Africa

RELATED CPI WORKS

[Climate Finance Needs of African Countries](#)

[Climate Finance Innovation for Africa](#)

[Financial Innovation for Climate Adaptation in Africa](#)

[Global Landscape of Climate Finance 2021](#)

[The Landscape of Climate Finance in Kenya](#)

[South African Climate Finance Landscape 2020](#)

CONTACT

Chavi Meattle

chavi.meattle@cpiglobal.org

MEDIA CONTACTS

Caroline Dreyer (CPI)

caroline.dreyer@cpiglobal.org

Nelson Karanja (FSD Africa)

nelson@fsdafrica.org

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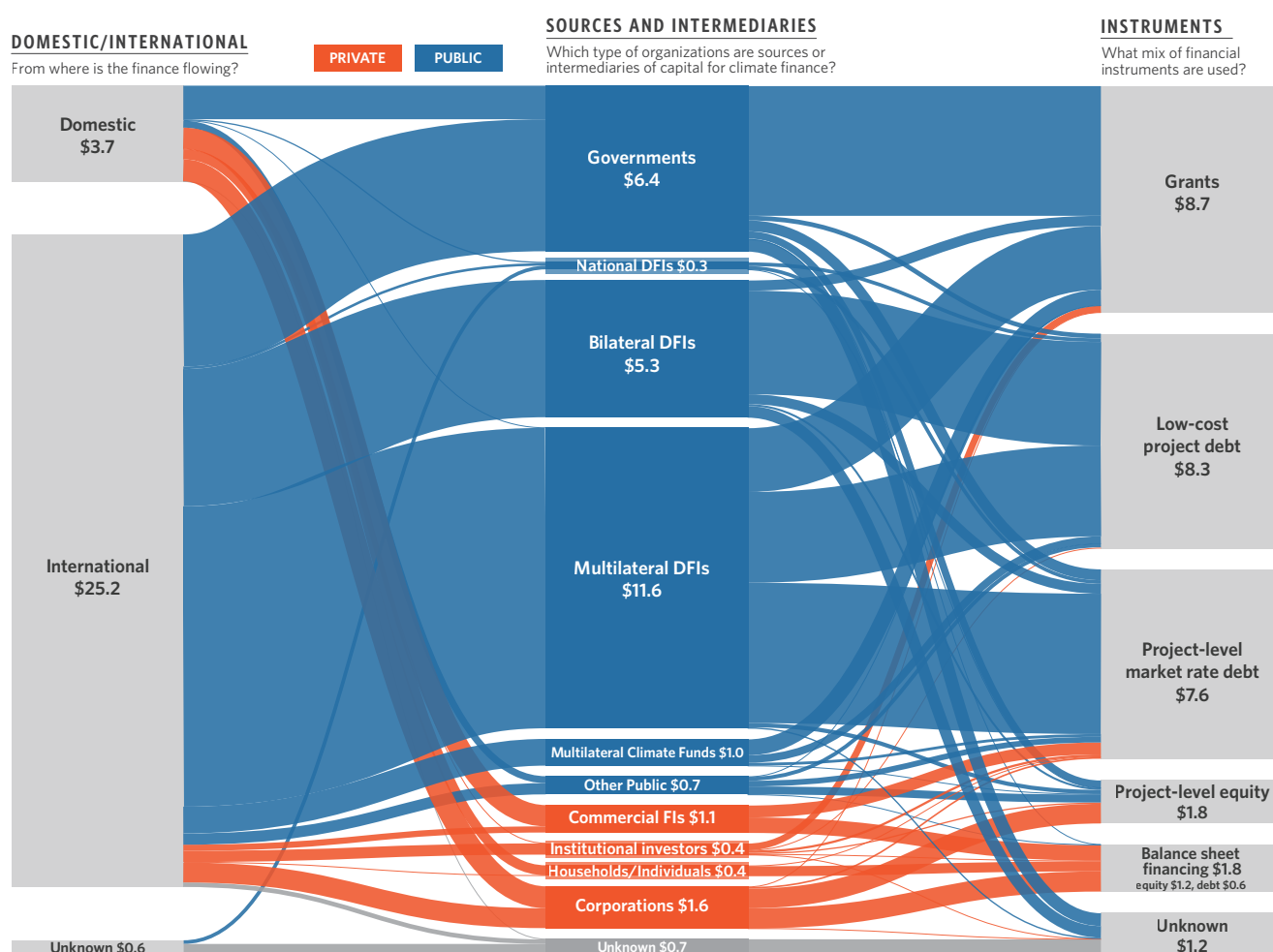
EXECUTIVE SUMMARY

Africa offers a wealth of climate-related investment opportunities. New value chains—from sustainable agribusiness to renewable energy—are taking root as the continent’s industrial mix extends beyond extractives and other traditional sectors (EY, 2020). A young and growing population is increasingly keen to tackle big challenges. At the same time, the continent faces issues ranging from lack of energy access to water scarcity, to acute food insecurity, and more. The COVID-19 pandemic, Russia’s invasion of Ukraine, rising debt, and climate change-induced severe weather magnify these risks.

Africa will need USD 2.8 trillion between 2020-2030 to implement its Nationally Determined Contributions (NDCs) under the Paris Agreement (CPI, 2022).¹ This is the cost of the continent’s contribution to limiting warming to 1.5°C and addressing the biggest impacts of climate change. To help direct investment to where it can have the most impact, the *Landscape of Climate Finance in Africa* provides a comprehensive overview of climate investment flows on the continent. It has the following objectives:

1. Establish a first-of-its-kind baseline of public and private climate finance flows in Africa
2. Improve understanding of volume, sources, thematic uses, and sectoral allocation of these flows
3. Identify entry points, financing gaps, and opportunities for new investments
4. Identify and propose solutions to methodological challenges and data gaps
5. Help financial actors and climate negotiators scale up climate finance

¹ Based on data from 51 African countries (out of 54 total)

ES Figure 1: Climate finance flows in Africa, 2019/2020 (USD billion)

KEY FINDINGS

- Both public and private actors must do more to fill Africa's climate finance needs.** CPI estimates that the continent needs USD 277 billion annually to implement its NDCs and meet 2030 climate goals.² But annual climate finance flows in Africa stand at only USD 29.5 billion. This gap is likely even wider as countries often underestimate their financial needs, especially in relation to adaptation, due to data and methodological problems in costing their NDCs (UNFCCC, 2021). Time is of the essence; delaying action will cost the continent more in the future.
- Investment gaps vary between countries.** All sub-regions receive significantly less finance than they need. However, the Southern African region bears the largest financing gap in absolute terms. This is mainly attributed to the high climate finance needs identified by South Africa alone—USD 107 billion annually³, combined with one of the lowest regional levels of climate investment.

² This is the total cost of implementing NDCs in Africa, as reported in their NDC submissions.

³ South Africa's needs assessment is one of the most comprehensive on the continent and is based on a detailed goal-based methodology, which provides different estimates based on probabilities of low, moderate, and high climate scenarios. For more details, refer to The State of Climate Finance in Africa: Climate Finance Needs of African Countries (CPI, 2022)

Countries in Central and East Africa face the largest climate investment gaps as a percentage of GDP: 26% and 23% on average, respectively. North African countries face the lowest climate investment gaps (3% of GDP), but absolute climate finance needs in those countries still exceed flows by three to six times.

3. **Climate finance is concentrated in too few countries.** Ten countries (out of 54 African countries) absorb more than half of all investment⁴. Risks—both real and perceived—reduce investor appetite to expand investment (Africa NDC Hub, 2021). These risks include:
 - Currency instability
 - Regulatory and governance problems
 - Lack of bankable project pipelines
 - Counterparty risks
 - Lack of technical capacity, transparency, and accountability mechanisms
 - Information asymmetries
4. **However, some large actors under-report their financing flows.** These include China, a major backer of infrastructure projects across the continent, and African Governments themselves. A lack of standardized, accessible, and climate-tagged expenditure data at national and sub-national levels hampers efforts to estimate the full share of government financing. Evidence from countries that do track domestic finance, however, suggests low levels of climate-related expenditures.
5. **International public finance climbed marginally from 2019 to 2020.** The COVID-19 pandemic did not disrupt growth in this tranche of funding, which grew from USD 22.3 billion in 2019 to USD 24.3 billion in 2020. Multilateral Development Financial Institutions (DFIs) and climate funds were the largest source of public climate finance (49%), followed by bilateral development partners including bilateral DFIs (22%), international governments (16%) and climate funds (4%).
6. **The private sector needs to step up.** It contributed only 14% (USD 4.2 billion) of total climate finance in Africa, much lower than in other regions like South Asia (37%), East Asia and Pacific (39%), and Latin America & Caribbean (49%) (CPI, 2021a). Sources of private sector investment were split between domestic (49%), international (39%), and unidentified sources (12%).

The private sector—largely corporates and commercial financial institutions—invested mostly in mitigation projects (81%). Supportive public interventions, growing maturity of renewable energy technologies, and better funding models for renewable energy projects versus adaptation-based projects largely drove this trend.
7. **Africa strikes a better balance between adaptation and mitigation than other regions.** Mitigation accounted for 49% (USD 14.6 billion) of climate finance flows in Africa, followed by 39% (USD 11.4 billion) towards adaptation, and 12% (USD 3.5 billion) to dual benefits. This is in contrast to other regions globally where adaptation represents only 7%–16% of total climate finance. This is a positive trend, given Africa’s disproportionately high vulnerability to climate change. Yet funding for both adaptation and mitigation must still increase **by at least six and 13 times, respectively.**

4 Egypt, Morocco, Nigeria, Kenya, Ethiopia, South Africa, Mozambique, Cote d’Ivoire, Tunisia and Ghana (ranked from highest to lowest)

8. **Loans dominate grants by nearly two to one as a share of total financing.** Although this varied by country, sector, and type of project, the predominant funding vehicle for each category is mentioned below:
- Mitigation: **loans**⁵ (57%)
 - Adaptation: **grants** (46%), and low-cost loans (30%)
 - Adaptation in low-income countries: **grants** (69%)
 - Adaptation in lower-middle-income countries: **loans** (73%)
 - Commercially attractive sectors (e.g., energy): **loans** (56%)
 - Agriculture, forestry, and other land use (AFOLU): **grants** (54%)
9. **There is huge potential to translate Africa’s sustainable energy needs into investment opportunities and reduce investments in fossil fuels.** Africa will need around USD 133 billion annually in clean energy investment to meet its energy and climate goals between 2026–2030 (IEA, 2022). However, annual investment in renewable energy—arguably the most attractive sector for commercial investors—stands at a mere USD 9.4 billion. This is a fraction of the continent’s investment in fossil fuels (USD 29 billion/year between 2016–2021), and government subsidies for fossil fuels (USD 37 billion/year in 2019/2020) (Banktrack 2022).
10. **Stakeholders need to boost funding for AFOLU⁶ in particular.** Despite the sector’s economic and social importance, and implications for food security, gender, biodiversity, and water security, it drew only 16% of the total climate finance in Africa.

5 Project-level market rate debt (30%) and low-cost project debt (27%)

6 Agriculture, Forestry and Other Land Use

OPPORTUNITIES AND RECOMMENDATIONS

To address the current climate financing gap and accelerate investment into Africa's diverse opportunities, we propose the following immediate priorities:

Adapt strategies to address current and future country realities. Currently, debt accounts for more than half of climate finance. This exacerbates already high debt vulnerabilities amid other ongoing crises such as the Covid-19 pandemic, food insecurity, and exchange rate vulnerabilities. Guarantees, insurance, and currency hedging could better address current fiscal realities and catalyze more private investment (OECD, 2020a). Stakeholders should tailor their solutions to local factors like depth of capital markets and implementation capacity. For instance, the Liquidity Sustainability Facility (LSF), established by UNECA in 2021, aims to compress liquidity premiums and improve sovereign access to international bond markets for African countries, drawing on additional Special Drawing Rights (SDRs).

Boldness to fund hard-to-abate sectors and less mature markets. While lending via traditional instruments (debt, equity, and grants) is critical, concessional finance players should take on greater risk, and, once they are de-risked and the project is operational, exit. Public actors should continue to lend to energy projects when needed and focus grants on adaptation and AFOLU projects. Stakeholders should commit concessional finance to hard-to-abate sectors like industry and urban infrastructure; sectors where the transition has hardly begun—like natural capital in carbon sinks, biodiversity, and ecosystem preservation; and nascent areas like the blue economy and green-fintech.

Catalyze private finance, including domestic capital. Private climate finance comprises half of total climate finance globally. In Africa it is only 14%. Actual risk, perceived risk, and ticket sizes dissuade private capital players, but several steps could be taken to expand investment. Development partners could target higher leverage ratios through blended financing structures, with a particular focus on an enhanced role for private insurance and partial guarantees. They could also support capacity building, both within domestic finance institutions and in developing a pipeline of investable opportunities. Information exchange platforms could make existing transactions more visible to investors. International networks like GFANZ could support pipeline development and back transaction accelerators. They could also engage actively with domestic institutions to source and bundle viable, well-diligenced transactions.

Data tracking and disclosure to inform financing strategies. Data is crucial for converting NDCs into climate finance strategies, building effective solutions, and informing investors. Yet pervasive data gaps exist across actors and sectors. Governments should 'climate tag' to track their revenue and expenditure. This can support the deployment of existing budgets towards climate-friendly activities and redirect them away from carbon-intensive ones. Since climate information is critical to investors, private companies also need to produce this information. Overall, stakeholders need to boost climate risk analysis, and better track the progress in translating net zero pledges into tangible targets and flows.

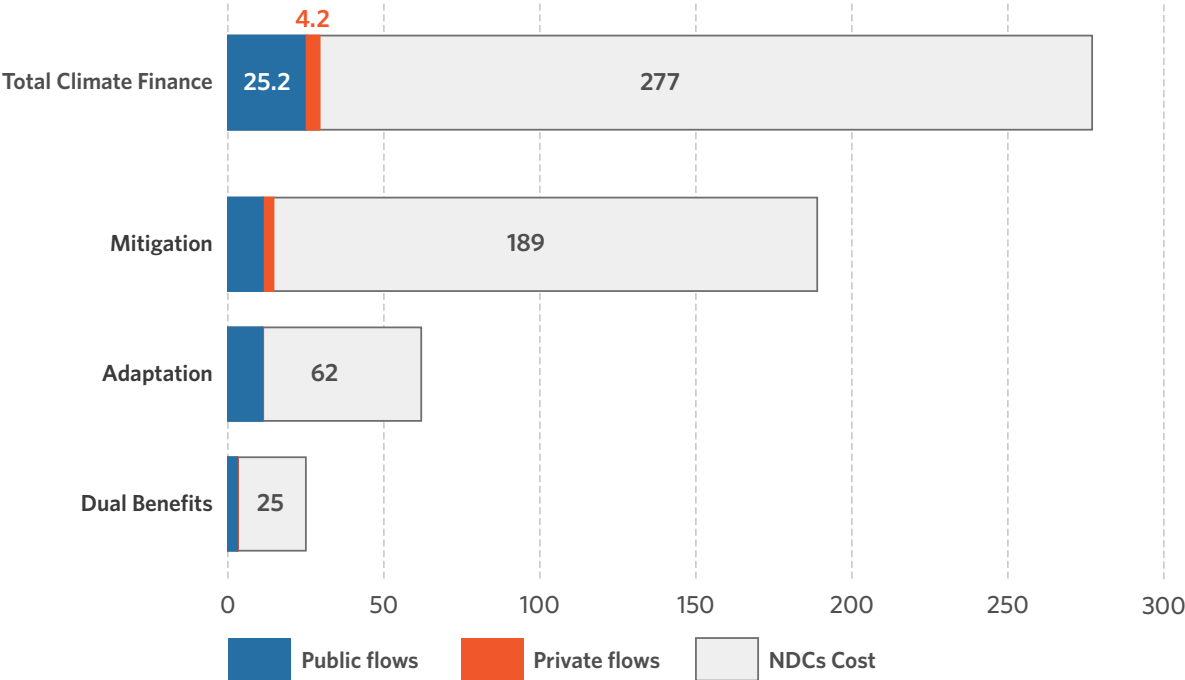
Enhance the enabling environment through capacity building. Stakeholders should support governments to make smarter climate decisions and develop climate-relevant policies. Some African countries have relatively robust regulatory frameworks in place (e.g., climate finance acts, green bond investment guidelines, green fiscal incentives), but many do not. Governments can learn from their peers, jointly develop best practices, and inform regulations. This will help build enabling environments and unlock private investment.

Facilitate climate investment at a sub-national level. Africa is urbanizing quickly, yet some regulations limit provinces, counties, and cities from expanding their financial or operational capabilities. Empowering local governments would improve vertical integration by avoiding policy gaps between national action plans and local initiatives. It could also ensure horizontal coordination across local governments. Kenya's Financing Locally-Led Climate Action Program (FLLoCA) is an example of one approach that aims to build climate finance capacity at a county level.

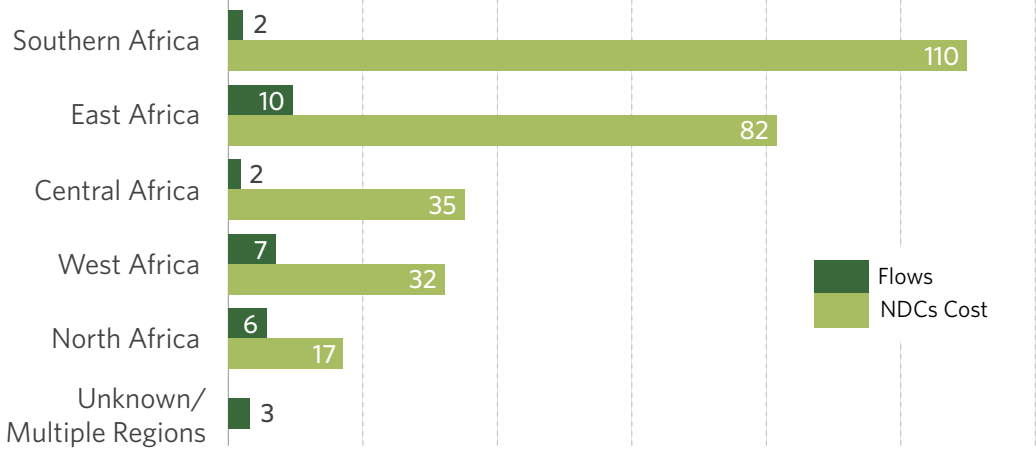
The socio-economic, ecological, and developmental benefits of climate finance investments far outweigh the costs of implementing them. This report, through robust evidence, aims to identify opportunities to scale up climate finance to ensure a just, fair, and inclusive transition for the region.

CLIMATE FINANCE IN AFRICA IN FIGURES

ES Figure 2: Private and public climate finance flows vs. total cost by climate use (USD billion)



ES Figure 3: Climate finance flows and needs in Africa (USD billion, annual average)



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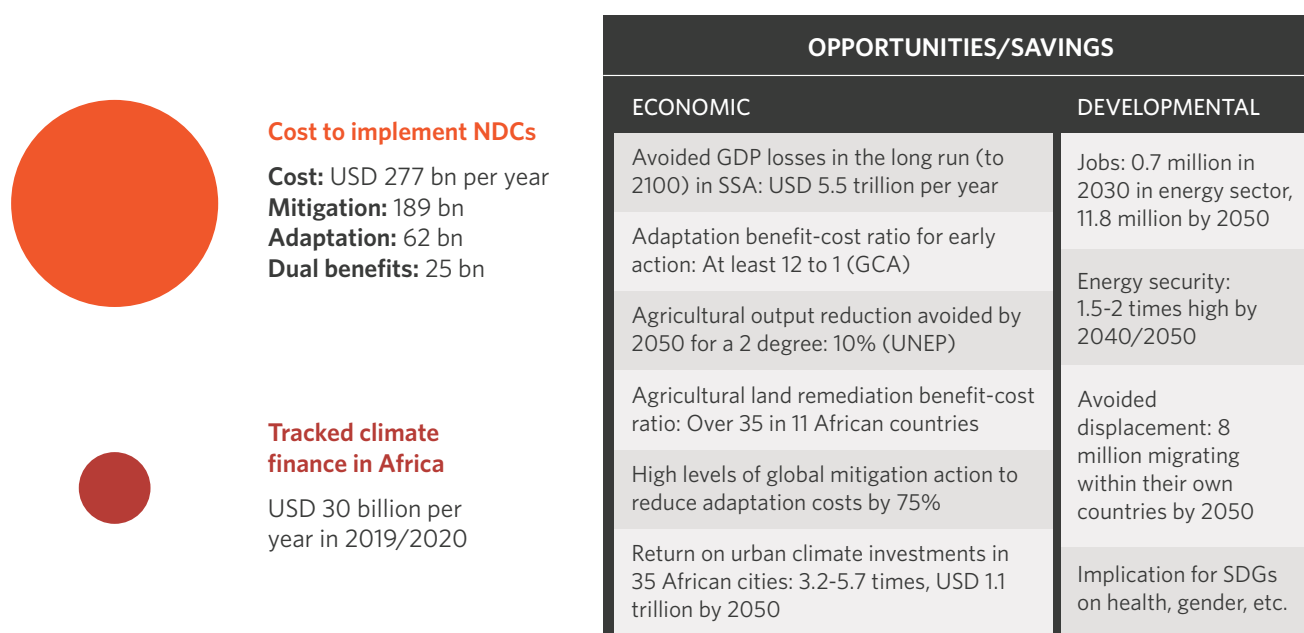
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1. INTRODUCTION

Africa's rapid urbanization, expanding infrastructure, and energy-access needs offer significant investment opportunities. The continent, while still poor by global standards, is undergoing profound change. Hundreds of millions of people suffering from food insecurity, water stress, and weak access to electricity make infrastructure and energy upgrades all the more urgent. These sectors could unlock tens of billions of dollars in returns for first movers as new value chains, from sustainable agribusiness to fintech, score over extractives and other traditional sectors in their investment potential (EY, 2020). Meanwhile, the continent's rich mineral reserves—critical for clean power technologies—make it a key player in the global energy transition. On the back of improved governance and investment conditions, and a growing middle class consumer base, private and public investors could quickly capitalize these opportunities.

However, worsening impacts of climate change could halt African countries in their tracks. The continent is one of the most vulnerable to climate change and nature loss, despite its low contribution to global CO₂ emissions (2%–3%). Hundreds of millions of people face increasingly extreme weather, which worsens already high inequalities in health, income, employment, and gender. Achieving the Sustainable Development Goals (SDGs) and implementing NDCs become more difficult as climate change intensifies.

While Africa's climate investment needs are substantial, the cost of inaction is even higher. To realize the true opportunity of climate-related investments, stakeholders must factor in all socio-economic and ecological trade-offs. Figure 1 shows that while climate investment needs are large, opportunities and savings associated with such investments are even larger. For example, mitigation and adaptation investments can turn increasing costs into new revenue streams; an upfront investment in resilience yields a benefit-to-cost ratio of 12 (GCA, 2021b) and reduces rebuilding costs by 25%.

Figure 1: Estimated climate finance flows, costs, and opportunities in Africa

Note: We compiled these estimates from different reports; they may not be directly comparable to each other in terms of scope and sector coverage.

We aim to clarify the current state of climate finance in Africa and build a credible baseline of finance flows. This report focuses on volume, sources, thematic uses, and sectoral allocation of these flows. It is a crucial piece in the effort to identify financing gaps, barriers, and opportunities to increase the scale and effectiveness of climate finance.

The structure of the report is as follows:

- **Section 2** introduces the methodology and analytical approach based on CPI's flagship report, the *Global Landscape of Climate Finance*. It also explains key data limitations.
- **Section 3** provides estimates of climate finance needed in Africa, based on NDCs of its countries.
- **Section 4** presents overall tracked climate finance flows for 2019/2020. It includes an assessment by source (public and private); use (adaptation, mitigation and dual benefit); end-use sector; instrument (debt and equity); and geographic breakdown by sub-region.
- **Section 5** discusses the efficacy of climate finance from two perspectives—disbursements and gender responsiveness.
- **Section 6** builds upon the evidence and challenges identified throughout the report, and provides recommendations for public and private actors.

2. METHODOLOGY

The *Landscape of Climate Finance in Africa* (the Landscape) presents a snapshot of climate finance flows in Africa in 2019 and 2020.⁷ It leverages Climate Policy Initiative's robust climate finance accounting taxonomy and methodology (CPI, 2021b) to provide a comprehensive overview of primary investment flows in Africa that have direct or indirect greenhouse gas (GHG) mitigation or adaptation benefits. The methodology and its composition is constantly evolving; the following broad definitions have been used for operational purposes:

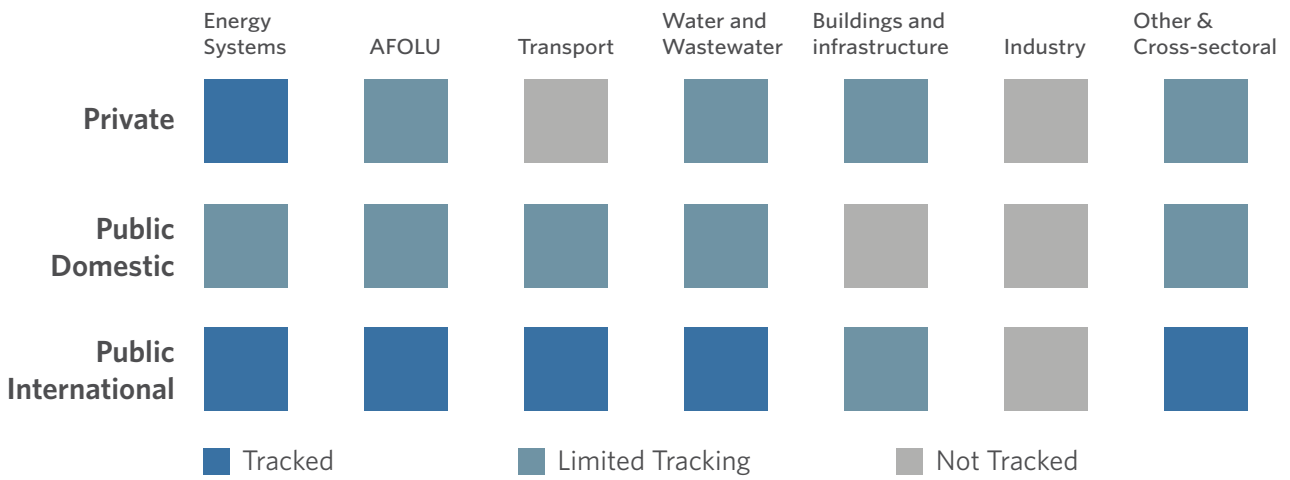
1. **Mitigation finance:** Resources directed to activities contributing to reducing, or avoiding GHG emissions, including gases regulated by the Montreal Protocol, or maintaining or enhancing GHG sinks and reservoirs.
2. **Adaptation finance:** Resources directed to activities aimed at reducing the vulnerability of human or natural systems to the impacts of climate change and climate-related risks, by maintaining or increasing adaptive capacity and resilience.
3. **Dual benefits finance:** Resources directed to activities contributing to both 'climate change mitigation' and 'climate change adaptation,' and meeting the respective criteria for each category.

2.1 DATA LIMITATIONS

While this report presents the most comprehensive information available for climate finance flows in Africa, methodological issues and data limitations persist (refer to the methodology document for data sources, data treatment, and limitations). Figure 2 outlines the key data gaps encountered in tracking climate finance. These mainly concern domestic government expenditure, investments from the private sector, and South-South flows.

Within sectors, climate finance at the project-level is particularly difficult to track as its processes are prone to confidentiality restrictions. Additionally, there are methodological challenges in what counts as climate finance in different energy-intensive, hard to abate industries (CPI, 2021b). Furthermore, this report tracks actual climate commitments from financial actors, since disbursements remain largely undocumented at the project level. We have attempted to fill these data gaps to the best extent possible.

⁷ CPI reports two-year averages (2019 and 2020) to smooth out annual fluctuations in data

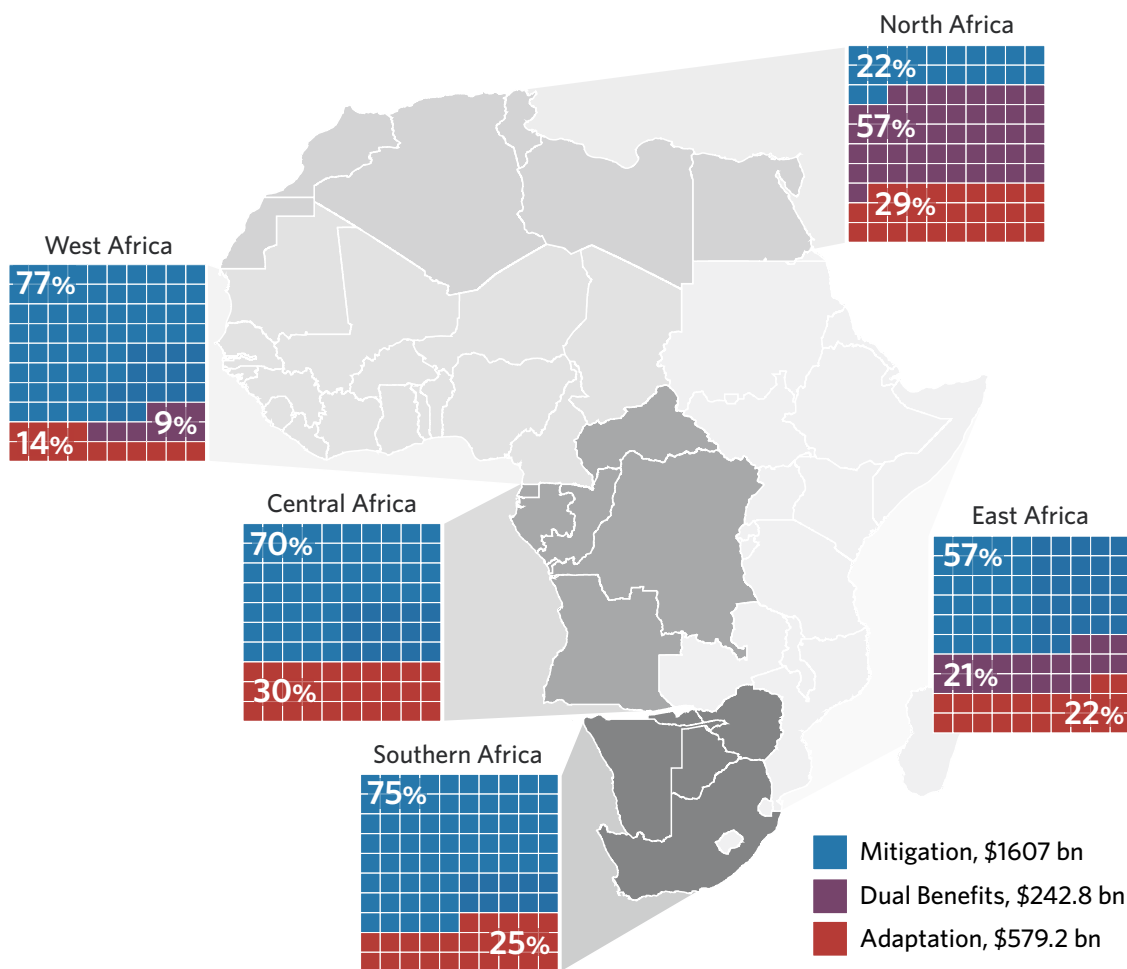
Figure 2: Tracked and untracked climate finance by actors and sectors

Note: Other & Cross-sectoral flows include financing for capacity building, policy support at national level, disaster risk management, financial inclusion, Covid-19 and other benefits such as healthcare and social security.

3. CLIMATE FINANCE NEEDS IN AFRICA

Implementing Africa's climate response⁸ will cost around USD 277 billion annually between 2020-2030 (CPI, 2022) based on each country's NDCs. African Governments have committed USD 26.4 billion of domestic public resources annually, about 10% of the total cost (Figure 3). However, given debt levels and other development priorities from concurrent crises, African countries may not be able to provide as much domestic public climate finance as was initially estimated. In fact, 23 African countries are either in debt distress or at high risk of debt distress (IMF, 2022). The remaining USD 250.6 billion, defined as 'climate finance needs', must largely come from international public sources and domestic and international private actors (CPI, 2022). It is important to note that these 'needs' may also be expressed as 'opportunities.'

Figure 3: Climate finance needs by subregions, thematic area, and sectors (2020-2030, USD billion)

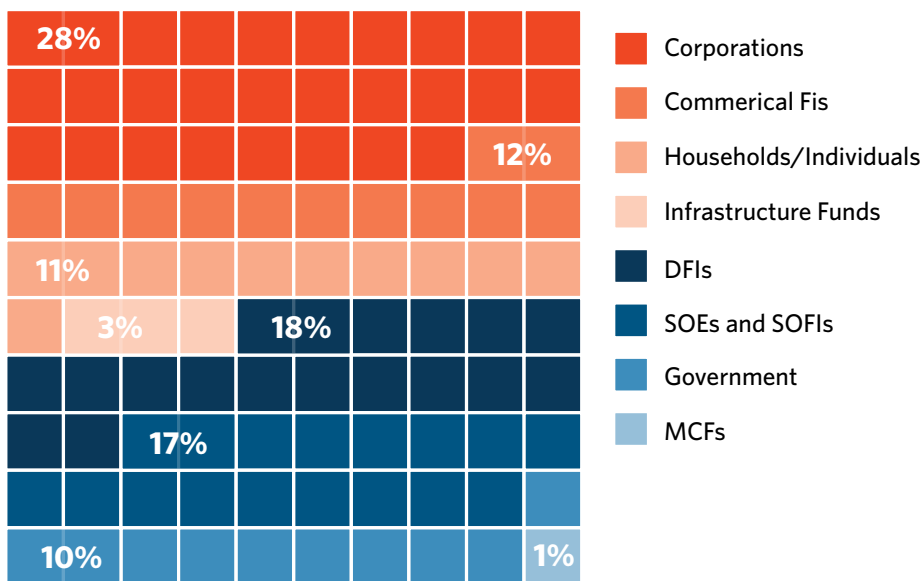


⁸ Based on latest NDCs submission by 53 African countries. It is important to acknowledge that adaptation needs are likely to be underestimated due to a lack of data and technical expertise to estimate the true cost of adaptation measures. Please refer to CPI, 2022 for more details

Mitigation actions represent the largest financing opportunities, accounting for 66% of the total need (or USD 1.6 trillion), followed by adaptation measures (24%, USD 579 billion) and actions impacting multiple sectors (10%, USD 243 billion). Within mitigation, four key sectors account for the lion’s share of the needs: transport (58%), energy (24%), industry (7%), and AFOLU (7%). However, excluding South Africa which reports the largest needs in the transport sector, the sectoral breakdown changes to energy (39%), AFOLU (27%), industry (21%), and transport (10%). Adaptation finance is needed mainly in agriculture (25%), water (17%), infrastructure and buildings (12%), disaster prevention and preparedness (10%), and health (8%).⁹

Every actor in the financial system can tap into these opportunities by re-examining their mandates and incentives. Across Africa, both public and private actors need to scale up their own finance while leveraging other sources, and at the same time collaborative approaches that will accelerate mobilization of the required capital. Public finance alone will not be sufficient; hence successfully mobilizing the private sector will be crucial if estimated investment needs are to be met. In fact, more than 50% of the finance needs in mitigation sectors in Africa are forecast to be financed by the private sector (GFANZ, 2021), as shown in Figure 4. Targeted support from public actors—through policies, regulations, and public finance—is crucial for driving private finance in the region.

Figure 4: Climate finance needs by actor for electricity, transport, buildings, industry, low emission fuels, and the AFOLU sector (2020-2030)



Source: GFANZ and Vivid Economics

⁹ It is important to acknowledge that these estimates could be underestimated due to lack of capacity, guidance, and information to conduct accurate assessments, especially for adaptation measures. Also, the quantitative information by sector and subsector is incomplete, with only 30 countries estimating needs by sector

4. THE CLIMATE FINANCE LANDSCAPE IN AFRICA

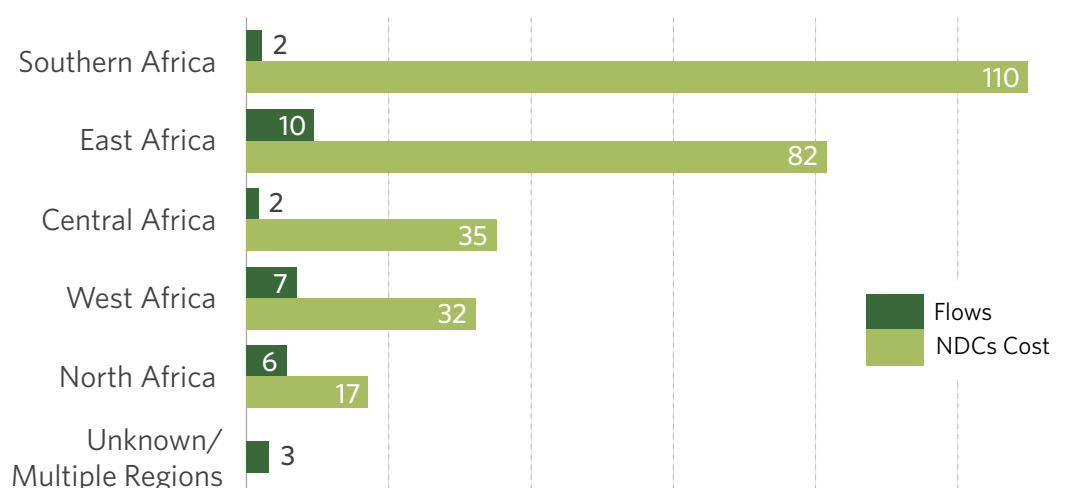
This section presents estimates of climate finance flows in Africa in 2019/2020. We use an annual average of the two years to smooth out any yearly fluctuations.

4.1 OVERALL CLIMATE FINANCE

At USD 29.5 billion, total climate finance flows in Africa represent only 11% of the estimated USD 277¹⁰ billion needed annually to implement its NDCs and meet its 2030 climate goals (CPI, 2022). The vast majority of this climate investment is from public international actors (80%) and private sector finance (14%). Contributions from African Governments (4%) remain largely unreported due to insufficient tracking of domestic climate budget expenditures.

All African regions received significantly less finance than their needs, with investment gaps varying among countries. Comparing climate finance flows and needs at the regional and country level can be challenging due to differences in geography, economic contexts, and methodologies for estimating needs, as well as their varying vulnerability to climate change. However, the largest financing gap exists in the Southern African region, largely attributed to the high climate finance needs identified by South Africa combined with one of the lowest levels of regional climate investment (Figure 5).

Figure 5: Climate finance flows and needs in Africa (USD billion, annual average)



Note: Needs are annual averages for 2020-2030; Flows are annual averages for 2019 and 2020.

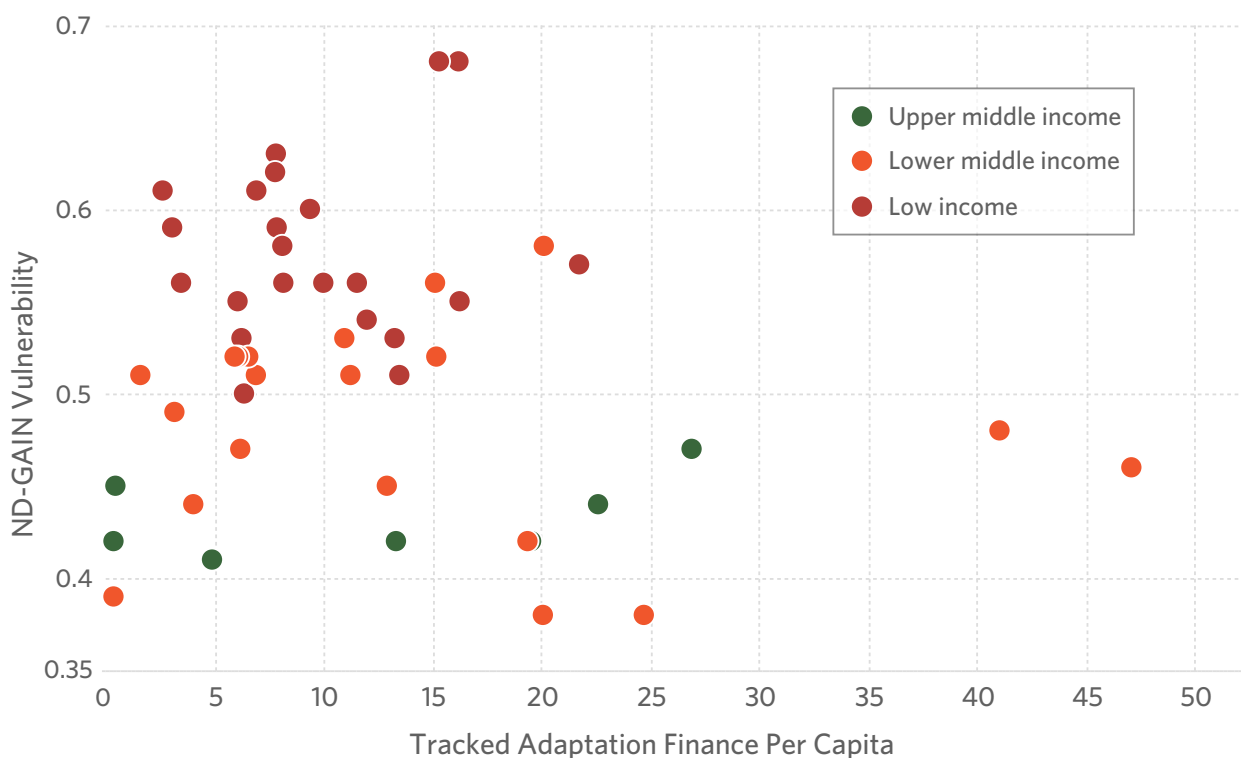
¹⁰ This is the total cost of implementing NDCs in Africa, based on countries' NDC submission

When compared to their GDP, the Democratic Republic of Congo, South Sudan, Somalia, Seychelles, and Mauritania have the highest investments gaps, ranging from 57% to 128% of their GDP. Countries including Mauritius, Tunisia, Morocco, Egypt, and Namibia face investment gaps in the range of 1-5% of their GDP. Positive factors such as possessing a diverse economy, innovation, skilled labor, quality of social and physical infrastructure, and institutional capacity, have influence on a country's adaptive capacity to respond to climate shocks and access climate finance. Yet while they have a relatively low financing gap (as a % of their GDP), the absolute climate finance needs in these countries are still three to six times higher than their actual flows.

Despite a more balanced split than in other parts of the world, expenditure on both mitigation and adaptation needs to increase substantially in Africa—by at least 13 and six times, respectively—if NDC commitments are to be met. Mitigation accounted for 49% of climate finance flows in Africa, followed by adaptation at 39%, and dual benefits finance at 12%. This is an encouraging trend, given Africa's acute need for adaptation financing, which is being increasingly prioritized by DFIs. However, this pales in comparison to the annual mitigation and adaptation cost of USD 189 billion and USD 62 billion, respectively. Moreover, countries often underestimate their financial needs, especially for adaptation, due to data and methodological issues in costing their NDCs (UNFCCC, 2021), so this gap is likely to be even greater.

Figure 6 plots climate vulnerability (as per the ND-GAIN Climate Vulnerability Index 2019) and tracked adaptation finance per capita for African countries. The correlation, albeit a weak one, suggests that relatively more vulnerable African countries are receiving less adaptation finance per capita than others.

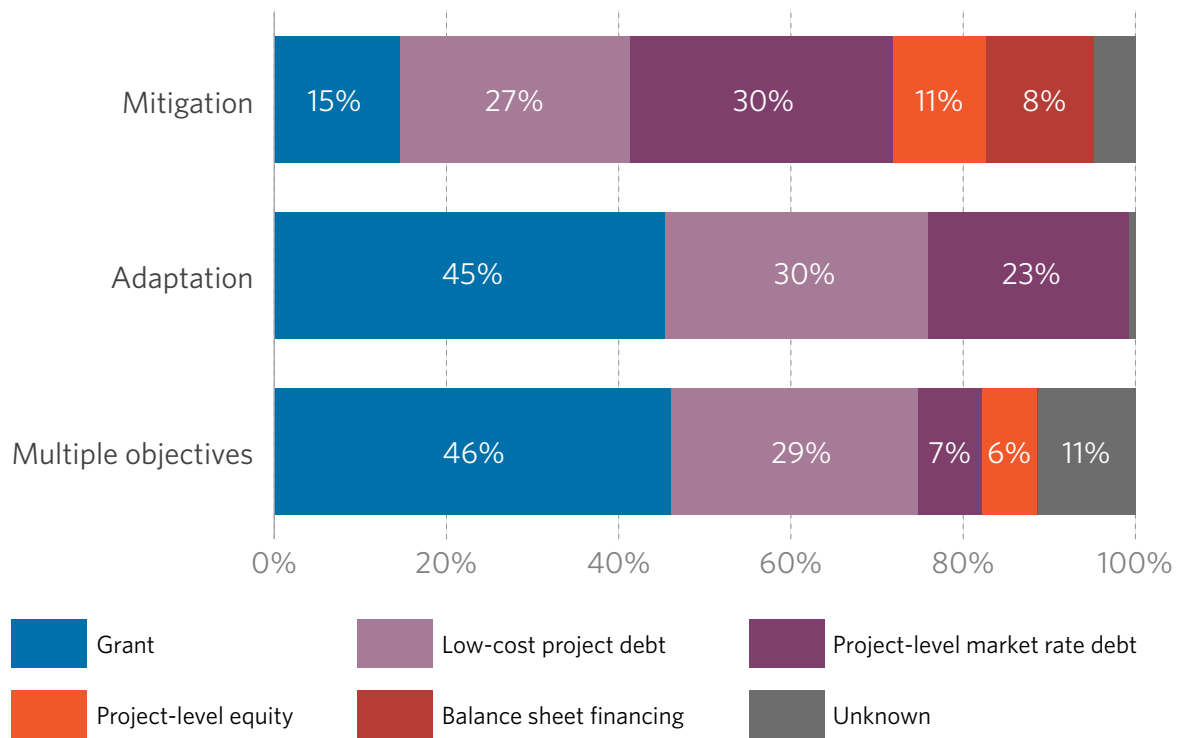
Figure 6: Per capita adaptation finance (USD, 2019/2020 averages) and ND-GAIN Vulnerability Index 2019



Loans (56%) were the preferred instruments for climate finance in Africa, followed by grants (30%). Although this varied by country, sector, and type of project, the predominant funding vehicle for some key categories was (see Figure 7):

- Mitigation: **loans** (57%)
- Adaptation: **grants** (46%) and low-cost loans (30%)
- Adaptation in low-income countries: **grants** (69%)
- Adaptation in lower middle-income countries: **loans** (73%)
- Commercially attractive sectors (e.g., energy): **loans** (56%)
- Agriculture, forestry, and other land use (AFOLU): **grants** (54%)

Figure 7: Climate finance by thematic use and instruments (2019/2020 average, USD billion)

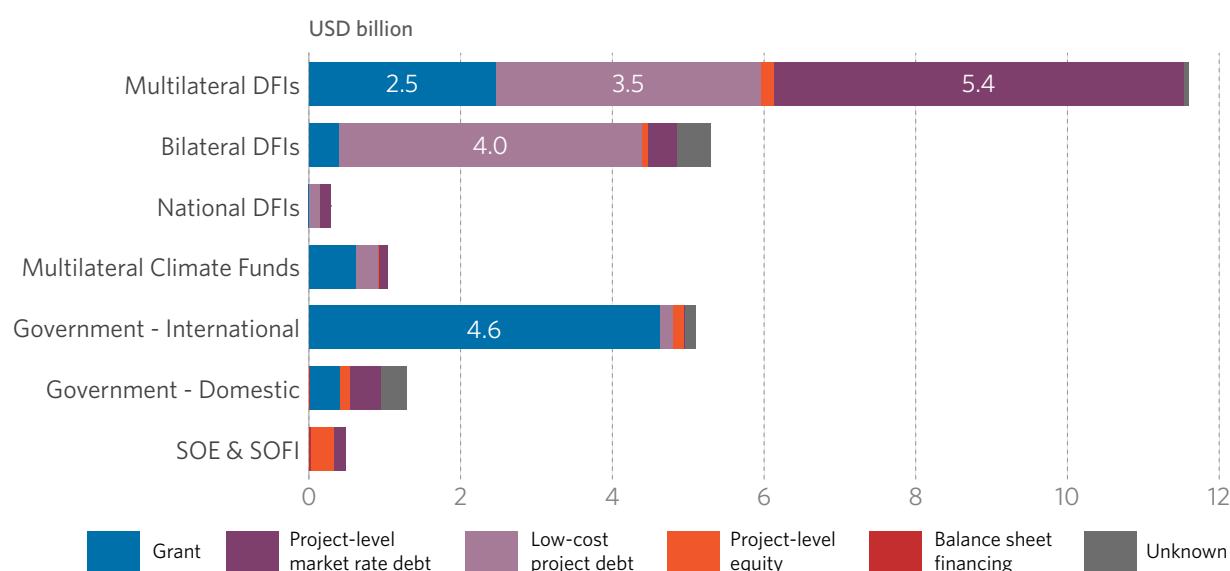


4.2 SOURCES OF FINANCE

4.2.1 PUBLIC FINANCE

Multilateral DFIs were the largest source of international public climate finance (40%, or USD 11.5 billion) with a relatively balanced split between mitigation and adaptation financing. Fifty-two percent of the financing from multilateral DFIs went towards adaptation activities; 46% towards mitigation; and the remaining 2% towards projects with dual benefits. In the case of multilateral DFIs, 2020 was the first year when more adaptation finance was reported than mitigation, and adaptation finance showed a 23% year-on-year increase as opposed to only 5% increase in mitigation financing between 2019 and 2020 (Figure 8).

Figure 8: International public climate finance by public actors and instruments (2019/2020 average, USD billion)



Energy (24%), AFOLU (16%), transport (10%) and water (9%) were the key sectors financed by multilateral DFIs. However, a higher share (31%) went towards cross-sectoral projects. These include policy, budget, and capacity building (30%); R&D (10%); Covid-19 response and social protection (21%); and disaster-risk management (19%).

Multilateral DFIs used a limited set of financial instruments to channel their investments. Seventy-seven percent of the funding was channelled through loans (47% at market rate and 30% at concessional rate), followed by 20% grants, and 3% equity financing (Figure 10). The energy sector was the largest recipient of loans whereas grants were used primarily for cross-sectoral adaptation projects and those in the AFOLU sector.

Multilateral Climate Funds (MCF) invested roughly USD 1 billion, or 3.5% of total climate finance, and only 7% of the total climate grants provided to Africa. The Green Climate Fund (GCF) provided the largest share (43%) of the total finance from Multilateral Climate Funds, followed by the Global Environment Facility (GEF) with 27%, Clean Technology Fund (13%), Least Developed Countries Fund (9%), and Adaptation Fund (4%). More than half

(51%) of the funding from MCFs was used for mitigation projects while 28% was dedicated to adaptation, and the remaining 21% of climate finance had dual benefits. Mitigation financing was mainly channelled through concessional (53%) and non-concessional loans (15%), while more than 90% of the adaptation and dual benefits financing was in the form of grants. MCF flows were directed towards AFOLU (36%), energy (36%) and cross-sectoral projects (26%).

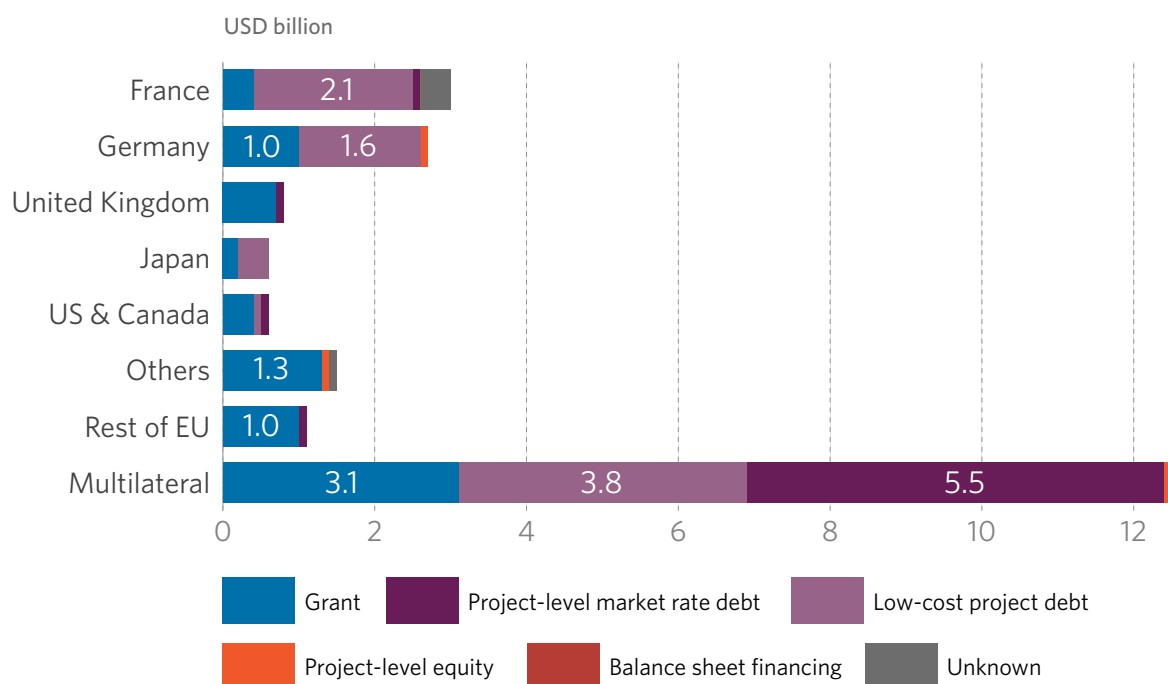
Multilateral institutions concentrated their finance flows to a few countries, reflecting differences in the ability of African countries to attract international climate finance.

Multilateral DFIs invested 40% of their funding in five countries: Egypt, Morocco, Nigeria, Ethiopia, and Kenya. Similarly, MCFs invested 43% of their Africa finance in five countries: Ethiopia, Senegal, South Africa, Nigeria, and Ghana. These climate investment trends are partially influenced by broader investment ecosystems, such as the differences among African countries in socio-political and economic instabilities; regulatory and governance issues; micro-economic conditions such as lack of a pipeline of bankable projects; counterparty risks; lack of technical capacity, transparency and accountability mechanisms; and perceived risks due to information asymmetries. Overall, these investment barriers contribute towards a lack of access to finance, including climate finance (Africa NDC Hub, 2021). Particularly in the case of MCFs, these challenges often lead to countries drawing support from international and regional organizations accredited to access the funds (Garschagen and Doshi, 2022). Eighty-six percent of GCF's committed portfolio in Africa in 2020 was funded through international organizations, which leads to lack of ownership and capacity building at a national level (SACFP, 2021).

Germany and France were the largest contributors of bilateral funding in Africa

(Figure 9). Other European countries, Japan, and the United Kingdom were other key providers of finance. Most of the bilateral climate finance to Africa is provided in the form of debt. Climate flows from China remain largely under-reported because there is limited or no official reporting of its climate-related development assistance (refer to the methodology for details).

Figure 9: International public climate finance in Africa in 2019/2020 by bilateral development partners (2019/2020 average, USD billion)



Note: Bilateral development partners include financing from governments and bilateral DFIs. Multilateral institutions are included for comparison purposes only.

The lack of comprehensive climate tracking of domestic budget expenditures leads to significant data gaps in tracking domestic public climate finance. Contributions from domestic public actors such as African Governments and State-Owned Entities (SOEs), accounted for only 5.5% (USD 1.6 billion) of the total tracked climate finance. This study has accessed publicly available national communication documents such as the NDCs, Biennial Update Reports (BURs), and Climate Public Expenditures and Institutional Review (CPEIRs) to collate the climate financing from African country governments.

Box 1: Efforts to mainstream climate change in domestic budgets

Most countries in Africa have ongoing efforts to improve budget planning in order to mainstream climate finance in their existing development plans and policies.

Since 2012, 14 African countries have undertaken CPEIRs or similar exercises that provide discrete analysis, one-time analysis on country commitments, international support, and estimates for climate-relevant domestic expenditure (CABRI, 2021). Building on these CPEIRs, only Ghana and Kenya have mainstreamed climate Budget-tagging (CBT) systems, and similar climate coding is either under development or in the pilot stage in Ethiopia, Eswatini, Mauritius, Namibia, Nigeria, South Africa and Uganda. Such reforms within the Public financial management (PFM) systems are often resource intensive, lengthy, and do not provide a breakdown of climate finance at sub-national level due to definitional and methodological challenges.

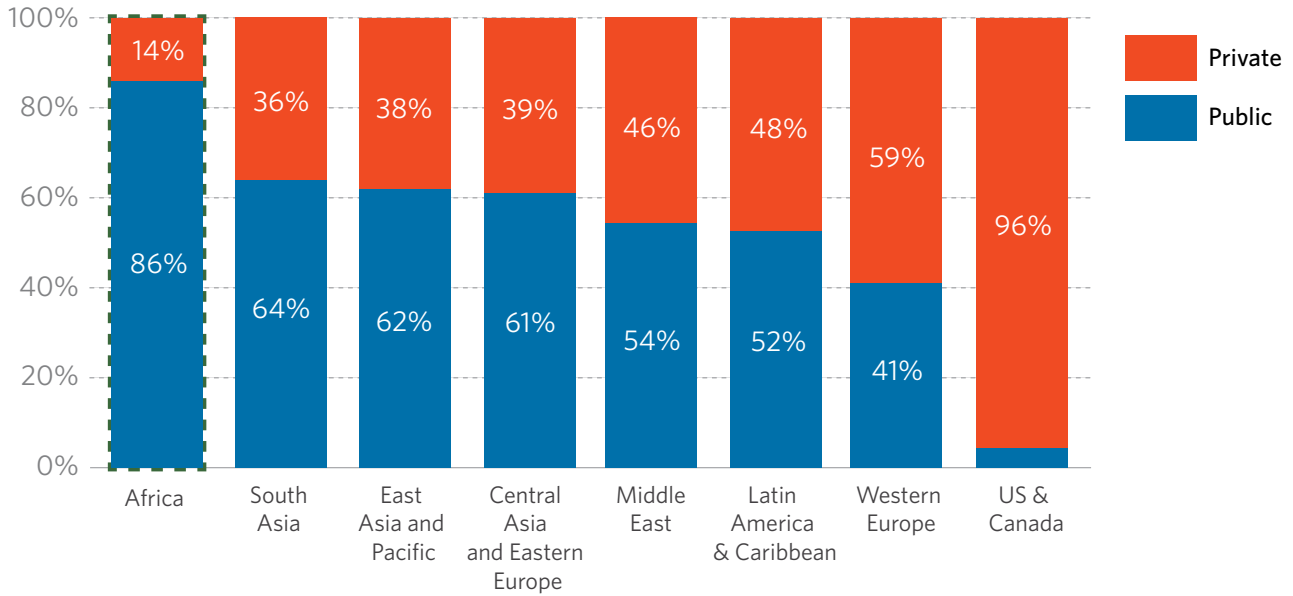
Most national communication reports, such as the NDCs and BURs, also include a summary of international climate finance received from bilateral and multilateral development partners. However, BURs of only four countries (Rwanda, Mauritius, Ghana, Eswatini) provided granular information on domestic expenditures through budgetary outlay towards climate change related policies and programs, with varying degrees of sectoral coverage and timelines.

Of the data collated from publicly available reporting tools and documents, domestic climate finance as a percentage of GDP has remained less than 0.3% (see Annex I). According to Collaborative Africa Budget Reform Initiative (CABRI), climate-change expenditure as a share of total government expenditure varied between less than 1% (Uganda) and 15% (Ethiopia) (CABRI, 2021). African countries are estimated to have contributed more than 20% of their climate adaptation finance needs in 2017 with the level of investment varying between 2-9% of the GDP across 34 countries (SOAR, 2018). However, such pan-African studies are limited and not updated enough to allow us to analyze the latest trends.

4.2.2 PRIVATE FINANCE

In Africa, private finance remains concentrated in a handful of countries that have more developed financial markets. USD 4.2 billion was tracked as private investments in climate-related projects, which is only 14% of the total tracked climate finance flows (Figure 10). In contrast, private climate finance as a proportion of total climate finance is much higher in other regions like Latin America & Caribbean (49%), East Asia & Pacific (39%), and South Asia (37%). Fifty percent of private finance in Africa came from domestic sources, followed by international (39%), and unknown sources (11%). Bigger African economies can offer larger investable opportunities with their political stability, more conducive regulatory environment, and the higher capacity of their local project developers to attract investors. For instance, non-LDC countries—South Africa, Nigeria, Kenya, Morocco, and Egypt—accounted for 50% of total tracked private finance. LDCs received 24% of total private financing with Mozambique, Ethiopia, and Burkina Faso being the largest recipients. But a majority of the key elements required by private sector participation—liquid bond markets, currency stability, investment grade rating—do not yet fully exist in African economies (refer to Annex II for more details).

Figure 10: Share of private climate finance to total climate finance by region (2019/2020 average)



Energy projects, with a generally more stable risk-return profile, attracted the largest share of private investments (74%). Most of this investment came from corporates and commercial financial institutions in the form of equity and non-concessional loans (Figure 11). Institutional investors including philanthropic foundations were the largest investors in the AFOLU sector, funding projects like sustainable crops and agro-forestry. Globally, a large share of private financing gets mobilized for renewable energy projects, public-private partnerships in the transport sector, and electric vehicles. However, a small share of climate finance in other sectors can be attributed to missing investment data and limited reporting. Moreover, private investments in adaptation are currently limited, owing to issues like inadequate understanding of financial models for adaptation projects, lack of investible pipelines, and misalignment of risk-return time horizon for private actors (UNEP, 2017). Tracking of adaptation investments is also difficult because of challenges associated with context dependency; the uncertain causality of investments made; lack of impact metrics; and confidentiality and reporting requirements (CPI, 2019).

Figure 11: Private climate finance by sector (2019/2020)

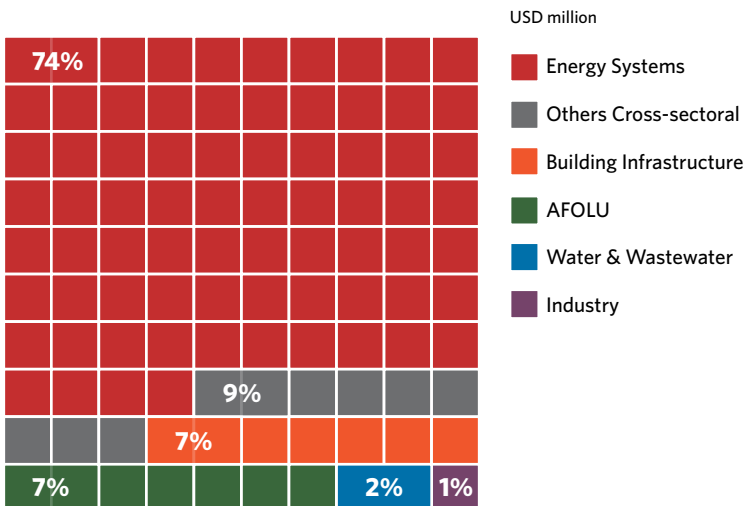
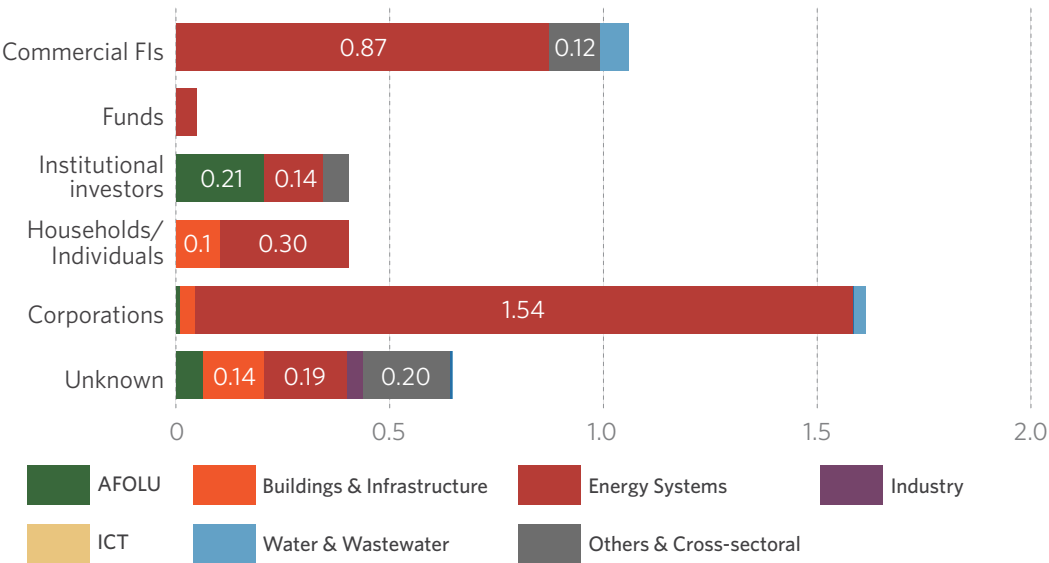
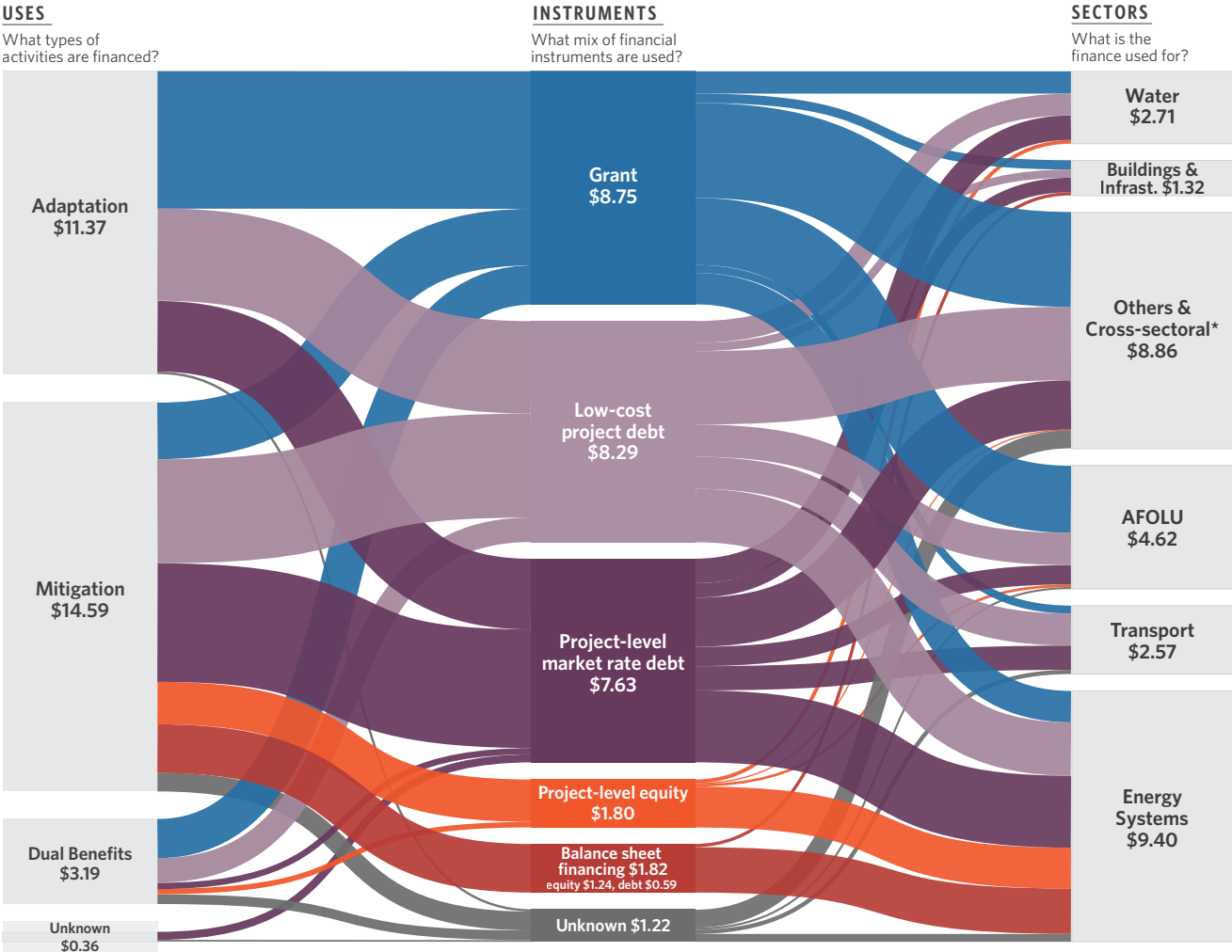


Figure 12: Private climate finance by providers (2019/2020 average, USD billion)



4.3 USES AND SECTORS

Figure 13: Uses, instruments and sectors



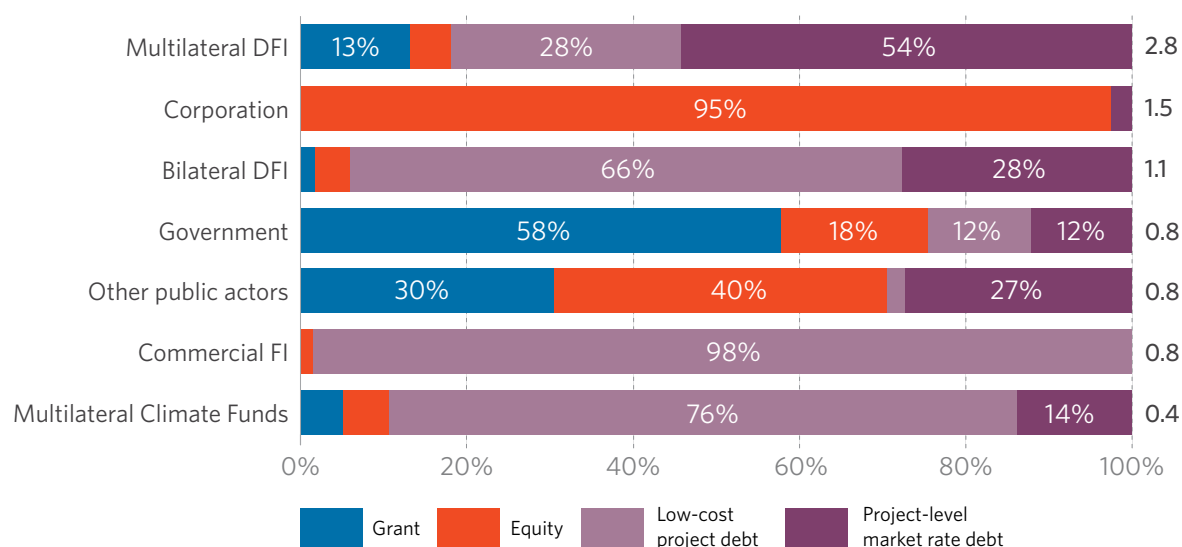
ENERGY SYSTEMS

In addition to reducing carbon emissions from its energy systems, Africa must mobilize sustainable and affordable access to energy finance for the approximately 600 million people who lack access to electricity, and the more than 900 million people in sub-Saharan Africa alone who lack access to clean cooking solutions. Africa's rich reserves of minerals (lithium, cobalt, copper, etc.) that are critical for clean energy technologies position Africa as a key player in the global energy transition (Mukarakate, 2021). Investments in clean energy technologies also have a strong multiplier effect on GDP growth. Globally, installed renewable capacity has more than doubled in the last decade due to falling costs and policy support (WRI, 2021a), but less than 2% of this new capacity was installed in Sub-Saharan Africa where it is critically needed.

Despite investment in energy systems accounting for 59% of mitigation finance and 29% of total climate finance, this investment (USD 9.4 billion) still falls short of the needs, estimated at USD 133 billion. Of this total, power and heat generation projects accounted for the majority of investments mobilized (66% or USD 5.6 billion). On-grid solar solutions received the largest share (USD 3.3 billion) while the rest went towards wind (USD 876 million), energy efficiency improvements (USD 885 million), hydro (USD 227 million), and waste-to-energy (USD 94 million), among other renewable energy solutions¹¹. Off-grid and mini-grid solutions and Transmission and Distribution (T&D) accounted for USD 591 million and 1.2 billion, respectively. The rest of the funding supported activities centred around energy policies and reforms, and capacity building, while some remained unallocated. Fifty-one percent of the energy investment was accounted for by only seven countries—South Africa (12%), Nigeria (8%), Morocco (8%), Egypt (8%), Mozambique (5%), Kenya (5%), and Tunisia (4%).

Despite offering a more stable risk-return profile, energy sector investments from private actors are limited in Africa. Sixty-seven percent of the investments were from public actors, including multilateral DFIs (30%), bilateral development partners (22%), and African governments' expenditure (7%). On the private side, more energy financing was provided by domestic corporations and commercial banks (15%, USD 1.4 billion) than international private actors (12%, USD 1.2 billion). The financing instruments varied across different finance providers (Figure 14). While financing from multilateral DFIs was extended primarily through non-concessional (53%) and concessional loans (27%), bilateral financing was mostly through concessional loans (67%), and government financing through grants.

¹¹ Other amounts could not be allocated to a specific technology.

Figure 14: Energy sector finance by main providers and instruments (2019/2020 average, USD billion)

Note: Government financing was split between international donors (65%) and domestic government (35%)

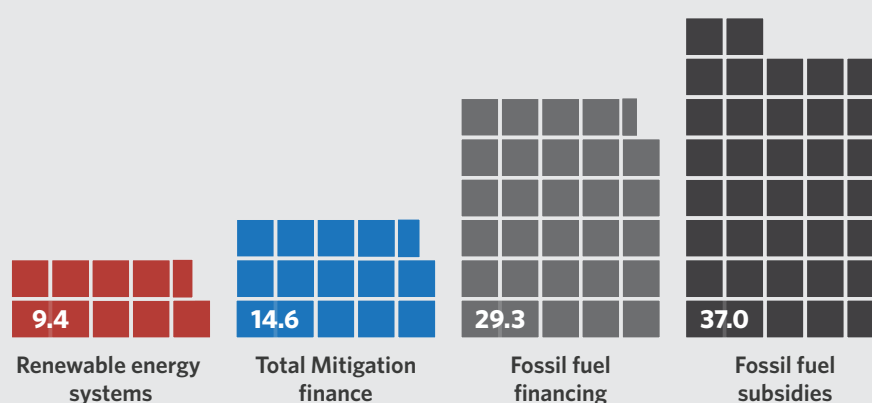
Box 2: Capital needs to shift towards just and climate-aligned purposes.

Current climate finance flows in the region are dwarfed in comparison to fossil fuel financing. High carbon investments and expenditures continue to dominate the region, stifling its energy transition. Public and private institutions invested at least USD 29 billion¹² per annum between 2016 and 2021 into fossil fuel companies and projects in Africa (Banktrack, 2022). Almost 90% of this financing was from financial institutions from the Global North (North America, Europe, and Australia – 56%) and Asia (China, and Japan – 32%). Further, fossil fuel subsidies for the region averaged USD 37 billion in 2019 and 2020 (OECD, 2022b). Traditionally, these subsidies were used as means of closing the energy access gap, but fossil fuel-based energy is no longer a cost-effective means of providing electricity (Tucker et al, 2021) when compared with distributed renewable energy. In fact, these subsidies, along with other policies and incentives, support investment in new fossil fuel infrastructure, and increase the potential for stranded assets by artificially lowering the risks in fossil fuel investment. USD 230 billion and USD 1.4 trillion of new oil and gas projects in Africa are at risk of becoming stranded assets by 2030 and 2050, respectively (Banktrack, 2022).

¹² This is obtained by converting the total financing of USD 132 billion between 2016 and June 2021 to annual averages.

A transition from fossil fuel-based economies to renewable-powered growth must adhere to the tenets of just transition, but it also presents an opportunity to make investments climate aligned. An effective energy transition will require a multidisciplinary approach involving policy support, new financing mechanisms, and alternative business strategies for stakeholders in the value chain. A case in point is the Just Energy Transition Partnership (JETP) model – a USD 8.5 billion support from donor governments to South Africa – to support its power sector decarbonization and just transition interventions. This includes decarbonization of the power sector including rehabilitation and repurposing of mines and providing support to develop new economic opportunities such as green hydrogen and electric vehicles among other things. If successful, this donor-funded but national government-led just transition model can practically demonstrate how just transition can be achieved and financed, for other countries to replicate.

Figure 15: Tracked climate finance vs. fossil fuel financing (2019/2020 average, USD billion)



Fossil fuel subsidies include direct budgetary transfers and tax expenditures providing a benefit or preference for fossil fuel production or consumption (coal, petroleum, natural gas, and end-use electricity), along with induced transfers.

AGRICULTURE, FORESTRY AND OTHER LAND USE (AFOLU)

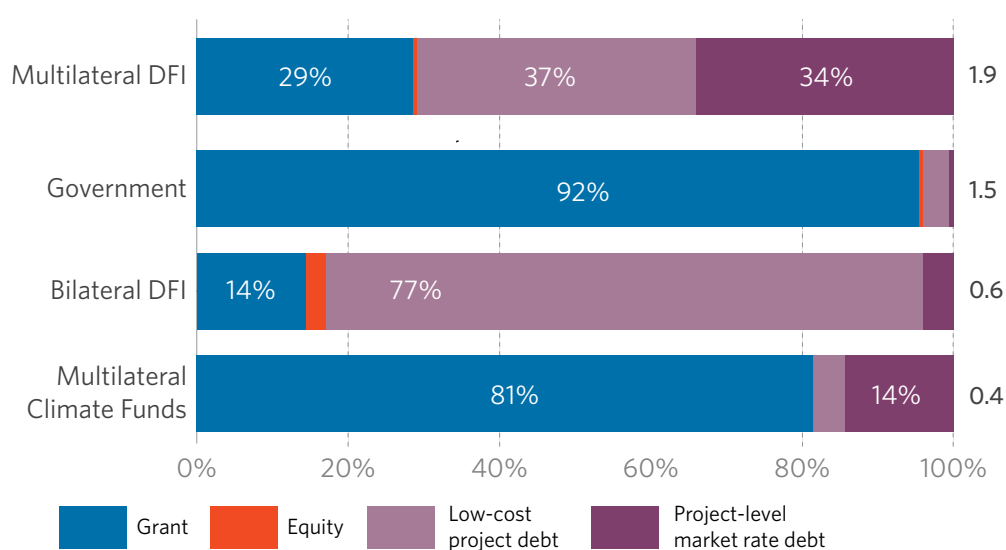
AFOLU is the second highest contributor of GHG emissions in Africa and is also one of the sectors most vulnerable to the impacts of climate change. Agriculture contributes to over a third of Africa's GDP, employing more than 55–62% of the Sub-Saharan workforce and accounting for 57% of the region's emissions (AfDB, 2022). The cost of action on climate adaptation of agriculture and food systems in sub-Saharan Africa is less than a tenth of the cost of inaction: USD 15 billion compared with USD 201 billion per annum (GCA, 2021b).

The magnitude of current AFOLU investments is relatively low compared to the sector's needs. Despite the economic and social importance of the AFOLU sector, it received only 16% of the total climate finance in Africa (USD 4.6 billion). Responding to the high climate vulnerability faced by the AFOLU sector, the majority of climate investments for the sector went into adaptation projects (62%, USD 2.8 billion) with the remaining amount split between mitigation (20%) and dual benefit projects (18%). Within AFOLU, the agriculture sub-sector received the largest share (58% or USD 2.7 billion), followed by forestry (12%

or USD 0.5 billion) and policy, national budget support, and capacity building activities (7.5%, USD 350 million). More than 20% of the finance for AFOLU, USD 970 million, could not be allocated to a specific sub-sector due to limited granular information. Given this sector's implications for food security, gender, biodiversity, and water security, it is possible that some additional portion of the finance flowing to the AFOLU sector is captured in the cross-sectoral sub-category. For instance, USD 280 million of finance was directed to food assistance and security programs in the area classified as cross-sectoral.

Climate financing from international public financial actors dominates AFOLU investments in Africa (93%). A majority of the finance was provided by multilateral DFIs and governments, accounting for 40% and 32%, respectively, followed by bilateral DFIs (12%), and climate funds (8%). Multilateral DFIs used grants as well as concessional and non-concessional loans in almost equal proportion, while governments and MCFs relied heavily on grants—92% and 81% each (Figure 18). Insurance is not captured in the Landscape though it plays an important role in the agriculture sector in transferring the risks associated with weather and climate fluctuations and provides credit enhancement to boost borrowers' access to bank credit (Refer to Annex III for more details).

Figure 16: AFOLU by main providers and instruments (2019/2020 average, USD billion)



It is difficult to provide an accurate picture of private funders contributing directly to AFOLU investments due to a lack of standardized, easily accessible information on private investments at both the domestic and international level. Based on publicly available data for 2020-2021, an estimated USD 223 million of asset managers' portfolios were focused on AFOLU sectors in African markets, using a climate and/or sustainability lens (refer to the methodology document for more details).

Box 3: Mainstreaming climate change in agriculture investment

More than 40% of the 78 banks interviewed in the 2021 EIB Banking in Africa survey reported having at least 10% of their portfolio in agriculture (EIB, 2021). CPI interviewed two large African banks, the Absa Group and the Standard Bank Group (SBG), to get more insights into the way African banks are incorporating climate into their agriculture portfolios. Key findings include:

Limited climate financing products offered for agriculture: Both banks provide funding to agriculture projects with both climate mitigation and adaptation benefits (solar energy, drip irrigation, greenhouses), but do not offer specific, structured climate financial products.

Most AFOLU climate-related investments are at the intersection of renewable energy and agriculture: Most funding to farmers and other value chain actors are targeted to ensure a consistent supply of power and water, in addition to the replacement of fossil fuel energy with renewables (ICA, 2018a, 2018b). Prevalent technologies primarily target improved water management through irrigation systems or hydroponic irrigation, and small-scale embedded generation projects that are integrating energy production into existing agricultural businesses—mostly solar.

There have been efforts towards climate-aligning investments but reporting on AFOLU climate investment remain largely untracked. 54% of African banks include green finance principles at various levels (EIB, 2021). In 2020, Absa Bank produced their first report on climate risk aligned with the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) (Absa, 2020), which identified their agriculture portfolio to represent 5% of their total loans and advances. Standard Bank has also made steps towards defining an institutional strategy and framework for climate finance as part of their wider sustainability finance policies. Notwithstanding these efforts, quantitative information on the actual investments in AFOLU with a climate lens is not included in the annual reports of either bank.

Banks' wider ESG targets offer opportunities to expand climate finance to agriculture. SBG recently set an overall commitment for net zero emissions by 2050 (SBG, 2022a) and sustainable financial target of USD 16.4 - 20 billion by the end of 2026. The use of renewable energy is identified as the main opportunity to achieve net zero in agriculture, together with climate-smart agriculture, and the use of digital platforms for smallholders. Absa has set a sustainable finance target of USD 6.2 billion in ESG-related financing.

SBG has also designed its Sustainable Bond Framework which, through the sustainable management of natural resources and land use, includes contribution to climate-smart agriculture, efficient water management, and reduction of GHG emissions from agricultural practices. However, the two green bonds it has issued to date are largely focused on energy: a 2020 London Stock Exchange-listed bond aiming to raise capital for green assets in renewable energy, energy efficiency, water efficiency and green buildings (SBG, 2020), and a South Africa listed bond targeting finance for renewable energy projects in South Africa (SBG, 2022b).

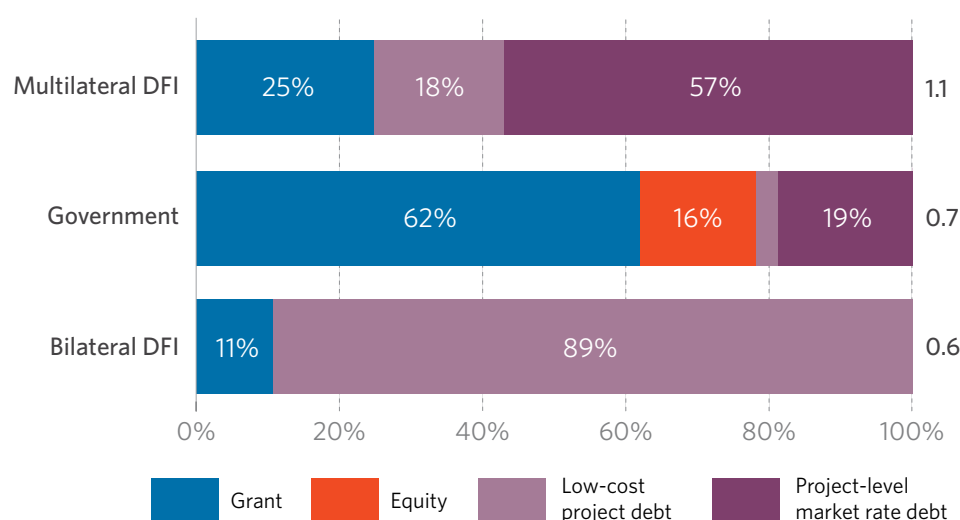
WATER AND WASTEWATER

There is massive opportunity for mainstreaming climate resilience both in the existing and new water infrastructure being built. Over 300 million Africans do not have access to clean drinking water and over 700 million live without access to adequate sanitation. The Africa Water Investment program states that USD 10-20 billion are committed every year towards water infrastructure, and an additional USD 50 billion is required annually by 2025 to meet the 2025 Water Vision and SDG 6 target of water security for all in Africa (AIP, 2021).

Water, despite being the second highest priority sector for NDC implementation, accounted for 23% of tracked adaptation financing, and 9% of total climate investments (USD 2.6 billion). As shown in Figure 17, multilateral DFIs (42%, USD 1.1 billion), governments (29%, USD 0.7 billion) and bilateral DFIs (23%, USD 0.6 billion) were the main providers of finance. The majority of water financing by multilateral DFIs was funded through concessional (18%) and non-concessional (57%) loans. Bilateral DFIs primarily used concessional loans (90%) while governments used a mix of grants (65%), non-concessional loans (17%), project-level equity (15%), and concessional loans (3%).

Roughly a third of the climate financing in the water and wastewater sector targeted adaptation projects (66%, USD 1.7 billion) while the rest was equally divided between mitigation and dual benefits financing (16%, USD 425 million). Some of the solutions receiving water adaptation financing in Africa include water and waste-water collection, water treatment, hygiene and sanitation provisions, and rainwater harvesting.

Figure 17: Water sector investments by main providers and instruments (2019/2020 average, USD billion)



New, innovative financing solutions are emerging in Africa to respond to risks in the water sector and to build climate resilience. Many private sector actors have largely avoided financing water projects in the region due to cost recovery challenges and lengthy project development and repayment timelines (ICA, 2018b). Some financing structures, like contingent payment structures or results-based financing, have shown success in overcoming these challenges. For example, since 2018, UBS Optimus Foundation and Impact Water have been implementing Social Success Notes in Uganda which provide interest free loans to more than 600 schools to access clean drinking water. These are repaid by schools through the savings from fuel used for water purification (ANDE Global, 2021).

SUSTAINABLE TRANSPORT

Transport sector investments comprised only 9% (USD 2.6 billion) of total finance, with the majority of this investment in North Africa. With rising urbanization and growing infrastructure, pressure on cities and their transport networks is only expected to increase. Despite this, only 30% of the national climate change action plans by African countries include reference to public transport measures (World Bank, 2022c). In fact, South Africa alone accounted for 94% of the total transport funding needs—USD 657.8 billion between 2020-2030—reported by countries in their NDCs.

The top five recipient countries received 74% of all transport finance - Egypt (36%), Kenya (22%), Morocco (6%), Nigeria (5%), and Ethiopia (4%). Multilateral DFIs (46%), bilateral DFIs (33%) and donor governments (15%) were the key providers of this finance. These projects were funded mainly through concessional loans (47%) and non-concessional loans (35%), followed by grants (11%).

Governance barriers for low-carbon transport infrastructure investments are particularly high as they are dependent on long-term public and urban planning along with political support. For these projects, high up-front costs and lengthy preparation and construction processes can make early-stage investment especially risky. Additionally, the long-term nature of transport infrastructure investments exposes hard currency investors to high currency risk. Furthermore, investments in electric vehicles are extremely vulnerable to regulatory risks related to standards and incentives, as well as the lack of available charging infrastructure and reliable electricity supply.

Structural and technological transformation of transport systems will be needed to ensure lower emissions while ensuring equity, access, and inclusivity. A modal shift to lower-carbon transport (public transport, cycling); avoiding journeys where possible (localized sourcing, etc.); developing local manufacturing capabilities; lowering energy intensity of vehicles (EV vehicles, increasing passenger occupancy rates and freight load factors, etc.); adopting low-carbon fuels; investments in associated and new infrastructure; and integrated urban planning, will all be needed.

BUILDING AND INFRASTRUCTURE

Building and Infrastructure investment comprised 4.5% (or USD 1.3 billion) of the total climate finance investment. Of the tracked finance, multilateral DFIs accounted for 50% of the total finance, followed by private actors (21%) and bilateral DFIs (16%). A majority of it was financed through non-concessional debt (41%), grants (26%), and concessional debt (23%).

With rapid urbanization, the large infrastructure deficit (housing, transportation, electricity, water sanitation) in terms of quality, quantity, and access will only increase. This sector accounts for 61% of energy use and 32% of energy-related carbon emissions (IEA, 2019). The lack of strategic and spatial urban planning could lock in inefficient, poorly designed, vulnerable and energy inefficient urban infrastructure for decades to come (CCFLA, 2020). Also, without adaptation and resilience, climate-related infrastructure damages and repair will cost African cities substantially. On the other hand, USD 280 billion of incremental investment, to deliver clean, and connected development in 35 African cities, can lead to a return of more than four times by 2050 (Coalition for Urban Transition, 2021).

Box 4: Estimating investments into Climate Resilient Infrastructure (CRI)

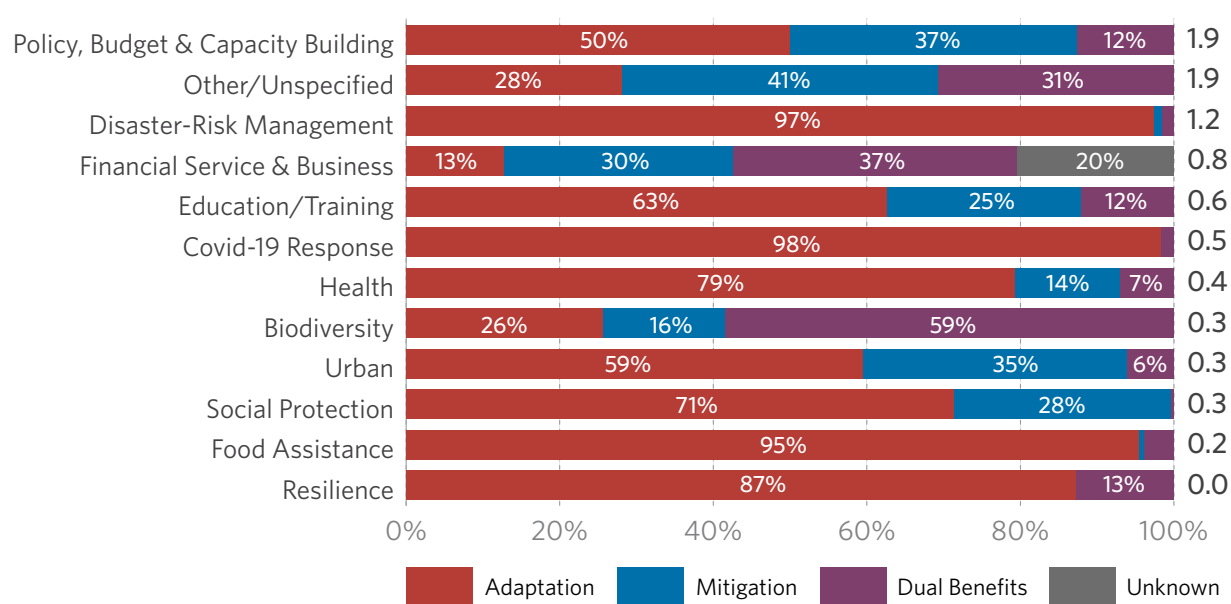
There is significant investment opportunity for Climate Resilient Infrastructure (CRI) in Africa. With infrastructure financing needs as high as USD 170 billion per year by 2025, it is imperative to mainstream resilience across infrastructure investments by catalyzing a true shift in understanding, planning, financing, and sustaining CRI. Even though building resilience increases the upfront costs of infrastructure investments by 3%, the benefit-to-cost ratio is estimated at about 4:1 (GCA, 2019, Hallegatte et al., 2019). For instance, hydropower systems in Africa can experience potential revenue increases of 20 -140% in Eastern Nile, Niger, and Volta basins, if climate change scenarios are integrated in design and building. However, a more robust methodology to track investments made towards CRI in Africa (and other regions) is needed to identify gaps and entry points for new investments, and to measure progress towards a resilient future. Such a methodology needs to consider the following key points:

1. **Build a taxonomy of CRI interventions:** CRI can be built in two ways. One, by mainstreaming resilience of infrastructure that is built and operated, to adapt to the impacts of climate change. Second, by building resilience through infrastructure where the asset increases the resilience of the beneficiaries or communities by reducing vulnerability and exposure (GCA, 2021a). There are more than 200 tools, guidance, and standards available worldwide to practitioners and stakeholders across the infrastructure lifecycle to build and maintain CRI (ICSI, 2021). Recent studies are also exploring best practices in engineering design and innovative approaches that are more context-specific for strengthening infrastructure assets in Africa (Alemaw, & Sebusang, 2019). A starting point is a regional or national taxonomy for CRI in order to develop and make available consistent indicators and contextual information on resilience to climate risks.
2. **Estimate the share of CRI investments:** The share of the climate resilience component in project investment costs will depend on the type of CRI being built. Large uncertainties are involved in estimating the share of total investments going into strengthening the components of infrastructure assets. Investment costs are greatly dependent on many internal and external factors, such as the quality and quantity of infrastructure being built, type of engineering intervention, and the frequency and intensity of climatic hazards. For example, increasing the flood resilience of a railway line by elevating it costs 50% of its value, whereas protecting a hydropower plant against flooding by creating bigger spillway capacity, costs only 3% of its value (Miyamoto International, 2019). Such estimates would help in establishing the business case for mainstreaming climate resilience while planning and allocating financial resources.
3. **Develop reporting standards for infrastructure investments:** Disclosure requirements for infrastructure must align with broader global reporting standards. Stakeholders across the infrastructure lifecycle should collaborate to provide contextual information while ensuring that the data is reliable and comparable.

OTHER & CROSS-SECTORAL ACTIVITIES

Cross-sectoral or 'nexus' solutions, critical for economy-wide development, accounted for 29% (USD 8.5 billion) of climate finance. Apart from linking climate goals with the SDGs, these cross-sectoral solutions can provide other co-benefits, including breaking siloes at the institutional, sectoral, and national levels; facilitating better sectoral information structures; and capacity building. Approximately 56% of the 'cross-sectoral and other' flows targeted adaptation projects, 25% went towards mitigation, and the rest were used for projects with dual objectives. Cross-sectoral projects were mostly funded by grants (47%) from multilateral DFIs and governments.

Figure 18: Cross-sector finance by sub-sector (2019/2020 average, USD billion)



COASTAL ECOSYSTEMS, BIODIVERSITY, AND NATURE-BASED SOLUTIONS

Currently, only USD 200 million of tracked adaptation financing went towards projects that build resilience in coastal ecosystems and biodiversity conservation, mostly tagged as AFOLU or cross-sectoral flows in East and West Africa (medium confidence¹³). The Landscape does not tag and track financing towards Nature-based Solutions (NbS) separately as of now, primarily because of double-counting issues in the absence of a clear definition. Relevant NbS activities may include plantation, conservation, and restoration of mangroves and natural coastal vegetation to adapt to increased coastal erosion and rising sea levels; rehabilitating coral reefs and seagrass areas; protection of coastal wetlands and salt marshes; building coastal risk information and governance systems; empowering coastal communities through sustainable livelihoods, etc. (IUCN, 2020, USAID, 2009). Additionally, with river basins covering approximately 64% of the continent's landmass, the blue or ocean economy—economic activities based on marine and aquatic resources—is estimated to be 'a major contributor to continental transformation and growth' (Agenda 2063 of the African Union).

¹³ These are based on manual tagging of projects, based on their project description, when available

If implemented well, NbS can address the triple problem of poverty, climate change, and biodiversity loss. However, currently African NDCs do not provide estimates of investing needs for adaptation in the coastal ecosystems sector and NbS. Also, there is limited systematic guidance on integrating NbS into development strategies and sectoral policies. A recent UNEP report suggests that there is an almost USD 5 billion annual investment gap in broader NBS-related financing in Africa.

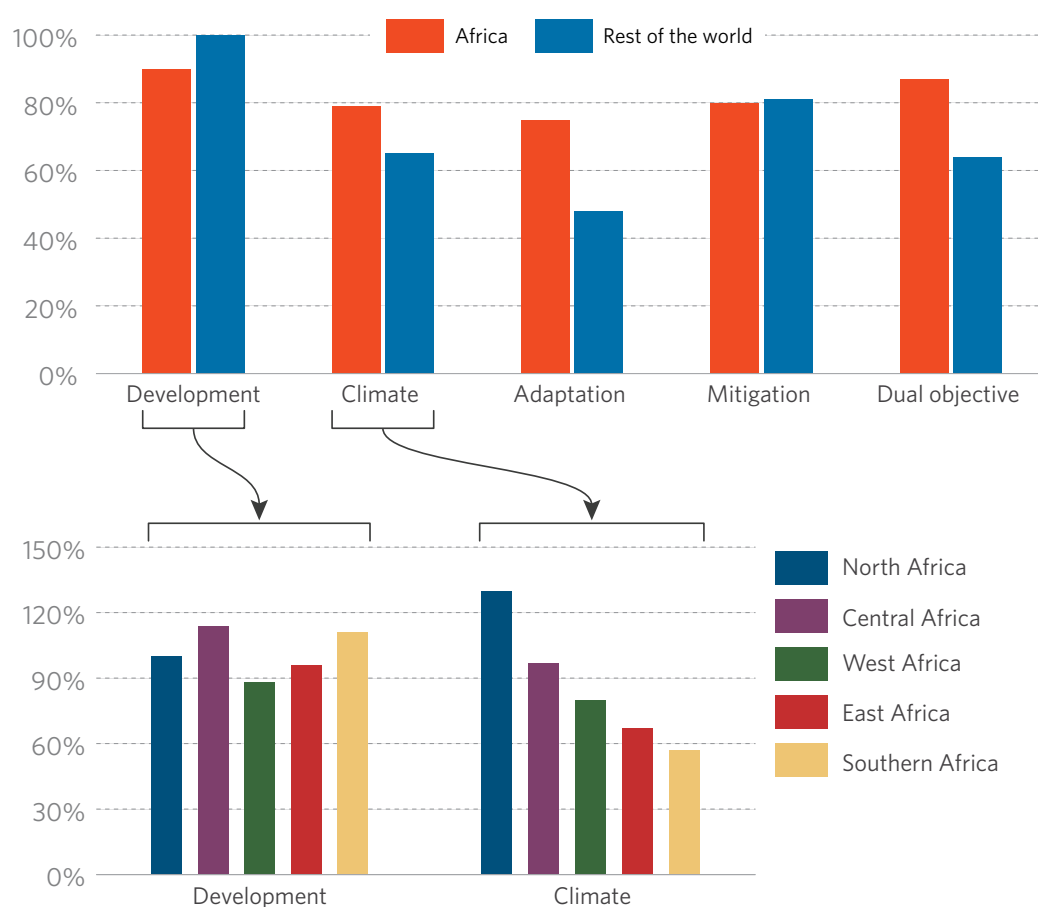
5. EFFECTIVENESS AND QUALITY OF CLIMATE FINANCE

Climate finance flows are important, but how effectively that finance achieves its goals is even more critical. The effectiveness of climate finance can be measured through various lenses—fair and equitable access, stakeholder ownership, linkages to national priorities, impact on climate and socio-economic parameters, mobilization of additional finance, gender responsiveness, etc. (UNFCCC, 2021). However, data, definitions, frameworks, standards, and metrics are lacking, which makes the assessment of effectiveness difficult. Two of these dimensions are discussed in further detail in this section – disbursements and gender responsiveness, mainly because of the availability of relatively better data.

5.1 DISBURSEMENT AND COMMITMENTS

Climate finance can only make an impact once it is disbursed. The ratio of aggregated disbursements to commitments in any one year/period is a way of assessing whether approved projects are being implemented as planned, or whether they are encountering difficulties on the ground (SEforALL, 2020). This analysis is based on data from the OECD's Creditor Reporting System (CRS) database (OECD, 2022a) which, to the best of our knowledge, provides the most comprehensive and comparable data on disbursed international development finance. The analysis is based on finance provided bilaterally by international governments to Africa, climate funds, and to other international institutions. However, MDBs are not included in the analysis because actual disbursements of climate-related finance are not reported in the OECD data.

Figure 19 compares disbursement ratios for development finance against climate finance, as it compares ratios across sub-regions in Africa and the rest of the world. Total committed climate finance captured in this analysis covers around 37% of total climate finance (USD 11 billion per year), while Official Development Assistance (ODA) equalled USD 38.5 billion in 2019/2020.

Figure 19: Disbursement Ratios (2019/2020 average, USD billion)

Note: Disbursements are more than 100% because they are aggregated across providers instead of averages of project-level disbursement rates.

KEY TRENDS:

- The climate finance disbursement ratio in Africa (79%) was higher than the rest of the world (65%), while it was similar for mitigation projects, and much higher for adaptation and projects with dual objectives.
- When compared with all ODA, the climate finance disbursement ratio was generally lower across African sub-regions (except North Africa).
- At a sectoral level, disbursement ratios for climate finance projects in agriculture in Africa (81%) was higher than development assistance projects in the same sector (60%), while for the energy sector, the ratios were similar (90%). However, for the transport sector, the disbursement ratio for climate-tagged projects (44%) was lower than development assistance projects in the same sector (130%).

Although Africa seems to be faring better in terms of disbursement than the rest of the world on average, the varying ratios across African countries provide more nuanced insights into how climate finance is working for individual sub-regions. A sector, sub-regional, and/or country level analysis on the differences in disbursement ratio at project level is out

of the scope for this study, but several barriers are identified that hinder disbursement in Africa, including:

- **Flaws in project design and technical barriers:** The initial project/program design failed to incorporate operational realities of domestic markets and financial institutions accurately or adequately (SeforAll, 2020¹⁴). For instance, undertaking an off-grid project in regions with already low tariffs for grid-connected electricity or high subsidies will not attract consumers, as they will wait for a grid extension.
- **Poor institutional and regulatory frameworks and capacity at the national level:** There is often limited awareness and technical capacity regarding climate change policies and issues among government officials. Also, perceptions like ‘climate change is a mandate only for the Environment Ministry’ may constrain the engagement of other Ministries. This may have implications on effectively managing bureaucratic procedures including, but not limited to, due diligence, procurement, and reporting (Coalition of Finance Ministers for Climate Action, 2022).
- **Limited access and maturity of local financial institutions:** Several results-based financing programs may require intended beneficiaries to purchase a certain equipment/product/service. But the lack of access and availability to match local finance may hinder uptake of such projects, and subsequent disbursements.

For conclusive evidence on barriers hindering disbursement in Africa, there is a need for better tracking and reporting of disbursed climate finance by all actors, especially the DFIs.

5.2 GENDER RESPONSIVENESS¹⁵ OF CLIMATE FINANCE

Achieving strong gender equality through synergies between climate and gender-based sustainable development offers a window of opportunity (UNDP & GGCA, 2016). Climate change reinforces and exacerbates existing gender inequalities, and those most impacted by the climate crisis are usually those who are most vulnerable. African countries are no exception, with gender inequalities embedded in their social, economic, and political structures. Several countries now have policies that advocate gender mainstreaming within their national climate efforts, albeit in different ways and with varying degrees of success. Countries leading in gender-related reforms include Nigeria, Eswatini, and Rwanda (CABRI, 2022). Tracking climate finance with a gender lens is an emerging activity among public institutions; however, data is still scarce. Based on the OECD-CRS markers (OECD, 2022a)¹⁶, and a few DFIs reporting on gender-sensitive climate finance in surveyed CPI data, Figure 20 compares gender responsiveness and tagging across different sub-regions and climate purposes. The following trends are observed:

- **32% of total climate finance was tagged for gender equality**, of which only 19% was gender responsive.

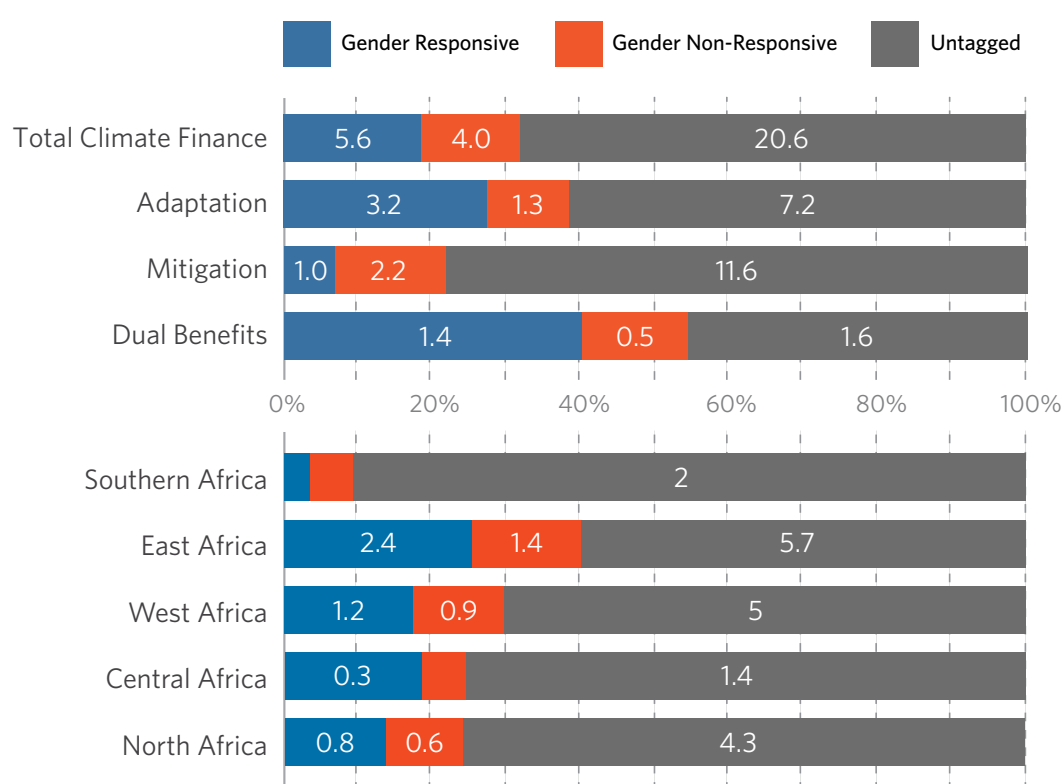
¹⁴ SEforAll (2021) focus on energy projects, but the listed barriers can be extrapolated to other areas of climate finance.

¹⁵ Refers to finance in projects that target gender equality as a policy objective.

¹⁶ The DAC Gender Equality Policy Marker of the OECD Creditor Reporting System (CRS), is used by members of the OECD Development Assistance Committee (DAC), which consist mostly of governments and national development financial institutions. Some development actors such as private philanthropy and multilateral organisations are now also using the DAC gender marker to report their activities, but the bulk of multilateral development financial institutions still do not report with a gender marker.

- **Adaptation and projects with dual benefits appear to offer the most potential for incorporating gender-responsiveness**, currently reporting 27% and 43% of finances as gender responsive, respectively. On the other hand, only 7% of tracked mitigation finance was gender responsive.
- **Gender finance ratios vary among regions.** Gender-tagged ratios range from 9% in Southern Africa to 40% in Eastern Africa, while gender responsiveness ratios vary from 3% (Southern Africa) to 25% (Eastern Africa).
- **At the sectoral level, AFOLU and Industry had the highest gender responsiveness rates:** 35% and 28% respectively.

Figure 20: Gender responsiveness of climate finance flows by use and sub-regions (2019/2020 averages, USD billion)



The lack of gender-tagged finance is correlated with the lack of definition and clear guidance regarding ways in which the concept of 'gender equality' should be applied to different sectors, as pointed out in SEforALL (2020) analysis for the energy sector. Our study shows that the energy sector contains only 19% of gender-tagged finance. More granular and gender-tagged, project-level reporting by all actors can help better assess the progress of gender-sensitive climate finance, an area for future research.

6. ROLE OF KEY ACTORS IN UNLOCKING CLIMATE FINANCE IN AFRICA

Both public and private actors committed USD 29.5 billion of climate finance annually to Africa in 2019/2020, falling far short of the estimated USD 277 billion needed. Climate finance needs to be both scaled-up and distributed more effectively. To make this happen, all actors have a role to play to ensure funding is deployed to where it can have the most significant impact.

This section discusses two main sets of opportunities:

1. Climate finance mobilization
2. Climate finance tracking and reporting

This section draws on the Landscape data as well as the existing literature to discuss the role of key actors in the climate finance ecosystem. We should note that this is not a comprehensive strategy to scale climate finance for Africa; that is outside the scope of this report.

6.1 CLIMATE FINANCE MOBILIZATION

Table 1: Key steps to mobilize climate finance in Africa

Actors	Key steps
Domestic governments	<ul style="list-style-type: none"> ▪ Align fiscal policies and spending to national decarbonization priorities ▪ Build a “whole-of-government” approach for effective implementation of policies and programs ▪ Develop policies and regulations to better align the domestic financial sector to climate-positive outcomes
Development partners	<ul style="list-style-type: none"> ▪ Target higher leverage ratios through blended financing structures ▪ Support under-funded sectors, technologies, and innovations through increased grants and concessional loans ▪ Adapt strategies and financing to current and future vulnerabilities of African economies ▪ Employ bolder adaptation and resilience financing strategies
Sub-regional and national DFIs	<ul style="list-style-type: none"> ▪ Support local institutions in developing capacity to mainstream climate considerations in their operations and portfolios ▪ Collaborate with multilateral institutions or accreditation agencies to provide a conduit for international climate finance ▪ Develop and deploy additional product offerings
Private sector	<ul style="list-style-type: none"> ▪ Leverage innovative financing vehicles to better match investment opportunities to risk-return profiles ▪ Redirect financing from carbon-intensive projects, technologies, and businesses to climate-friendly projects ▪ Assist and coordinate with clients, borrowers, and other stakeholders to build a carbon-resilient portfolio

1. Domestic governments

While data limitations (see Section 2.1) prevent a comprehensive analysis of climate expenditure by national and local governments, national governments play a vital role in climate action. Some major steps they could take include:

- **Align fiscal policies and spending with national decarbonization priorities.** Not all spending can be ‘green’, but governments can structure taxes and incentives that favor low-carbon alternatives (OECD, 2020b) and ensure long-term benefits such as job creation and energy independence. Carbon pricing, reforming fossil fuel subsidies, procurement policies, abatement payments, and green budgeting are important tools that national governments can deploy.¹⁷

Example: Kenya’s draft Green Fiscal Incentives Framework Policy 2021 provides fiscal incentives, such as tax exemptions, to private actors investing in green projects and programs.

- **Build a ‘whole-of-government’ approach for effective implementation of policies and programs.** Africa is rapidly urbanizing, yet sub-national development is often held back by laws or regulations that limit sub-national governments (province, county, city) from expanding their financial or operational capabilities. Facilitating climate investment at a sub-national level ensures that initiatives address local priorities and are implemented. If national governments address trade-offs to empower local governments, it will improve vertical integration by avoiding policy gaps between national action plans and local initiatives and ensure horizontal coordination across local governments. Also, ensuring cross-sectoral synergies by coordinating across ministries is critical given the multi sector impacts of climate investments. Kenya’s Financing Locally-Led Climate Action Program (FLLoCA) is an example of one approach that aims to build climate finance capacity at a county level.
- **Develop climate finance policies and regulations that spur the domestic financial sector to take action.** Institutional investors, microfinance institutions, private managers, insurers, and asset managers all play important roles in allocating, holding, and channelling liquidity (FSD Africa, 2021). Government frameworks, incentives, and regulations will help Africa’s financial sector to align with global standards and mobilize private capital. Exchanging experiences and mutually supporting regulatory reforms could further strengthen the policy and regulatory environment for climate-related investment.

2. Development partners—DFIs, international governments, and agencies

Multilateral DFIs and bilateral development partners together originated the largest share of climate finance in Africa (71%), prioritising adaptation. However, such finance remained concentrated in a few countries and sectors, while private players largely sat on the sidelines. As such, development partners need to update their capital deployment strategies to:

- **Target higher leverage ratios through blended financing structures.** For every dollar that MDBs invested in climate finance, only USD 0.29 in co-financing came from private sources (WRI, 2021b). Risk-mitigation instruments such as guarantees, insurance, and local currency hedging—which have the highest mobilization ratios (OECD, 2020a)—can mobilize private capital. Development partners could use these instruments in mature

¹⁷ These are price-based instruments that rewards businesses and citizens for reducing emissions

markets, like renewable energy, and for adaptation finance, where DFIs have succeeded in expanding finance but not in mobilizing private investment.

- **Increase grants and concessional support for underfunded sectors and technologies.** DFIs direct most of their funding to energy and AFOLU. They need to shift focus from mature technologies like renewables to hard-to-abate sectors like industry and infrastructure; sectors where the transition has hardly begun, like natural capital in carbon sinks, biodiversity, and ecosystem preservation, and in nascent areas like the blue economy.
- **Adapt strategies to address current and future vulnerabilities of African economies.** African countries are currently facing multiple crises—the fall-out of the Covid-19 pandemic, rising debt, food insecurity, exchange rate vulnerabilities, and climate change. Yet, more than half of the tracked climate finance (55%, USD 16.1 billion) was channelled through debt, exacerbating already heavy debt loads. Guarantees, insurance, and currency hedging could better address current fiscal realities (OECD, 2020a). Stakeholders need to tailor their solutions to local factors like depth of capital markets and implementation capacity. For instance, the Liquidity Sustainability Facility (LSF) established by UNECA in 2021, aims to compress liquidity premiums and improve sovereign access to international bond markets for African countries, drawing on additional Special Drawing Rights (SDRs).

3. Multilateral Climate Funds

Multilateral Climate Funds (MCFs) have huge opportunity to support significantly greater investment in climate-related innovation and resilience. MCFs need to extend capacity-building support, especially for the longer term, in pre- and post-accreditation support (Omari-Motsumi et al., 2019). Out of the 113 GCF-accredited institutions, only 21 are African (see Annex IV), and only four of those are from the private sector. In addition, adopting a more targeted private sector engagement policy through intermediary models that combine lines of credit with technical assistance for project preparation can help mobilize private finance and build resilience (GCF, 2021).

4. Sub-regional and national DFIs

Sub-regional and national DFIs, including sovereign wealth funds, are well-positioned to play a catalytic role in regional integration. They are well embedded in local financial systems, working as a conduit between multiple actors, financing infrastructure projects, and promoting cross-border trade. However, they are often too small to have significant impact. Climate-unfriendly political priorities can also influence them negatively. In order to increase their impact, the following steps could be taken:

- **Act as a conduit for mobilizing international climate finance.** They should amplify their impact by expanding from a traditional financier role to a mobilizer of international climate finance (OECD et al, 2018). To do this, they could seek GCF accreditation or raise green bonds with support from multilateral funds and DFIs. National DFIs can collaborate with multilateral institutions to create blended facilities that channel private actors (including institutional investors) into climate investments that are substantially de-risked and offer guaranteed returns.
- **Help build capacity in local financial institutions.** They could embed climate-friendly expertise (IDB, 2021), processes, and frameworks not only in their own operations and

portfolios, but also transfer this knowledge to local financial institutions. This will help local institutions develop their financial capacity (CCFLA, 2020).

- **Expand product offerings with climate-specific goals.** They could develop and deploy additional product offerings rooted in local contexts to address country and sub-region-specific barriers. Setting time-bound climate finance targets, like doubling climate finance by 2025, or ensuring a certain percentage of their overall portfolio goes into climate projects, will be critical for raising ambition and effectiveness.

5. Private actors

The private sector has the potential to mobilize significant climate finance by following a three-pronged strategy: innovating, aligning, and collaborating.

- **Use innovative financing vehicles,** like green bond issuances and infrastructure investment funds, to meet liquidity and credit requirements of investors with varying risk appetites. Green fintech innovation, like M-KOPA, OWATTS, and InfiBranches, can help integrate climate action with development needs. M-KOPA, for instance, addresses energy access by providing solar home systems that consumers can pay for in a staggered manner via their mobile phones.
- **Align more finance with climate opportunities** and away from carbon-intensive investments. For instance, insurers could reduce underwriting and investing in fossil fuel projects and companies. Commercial banks—the key financiers of fossil fuel companies and projects in Africa—along with other private actors, need to redirect support towards decarbonization efforts like the Just Energy Transition Partnership (JETP) model in South Africa.
- **Expand coordination and collaboration.** Domestic and international banks could advise their clients on how to build climate-resilient portfolios. Insurers, asset owners, and managers could empower and engage their clients to pursue greener alternatives (BCG, 2020). They could promote carbon pricing; offer additional analytical tools, frameworks, and products; and integrate Just transition, resilience, and equity dimensions into investment and procurement strategies. International networks like GFANZ could support pipeline development and back transaction accelerators, and engage actively with domestic institutions to source and bundle viable, well-diligenced transactions.

6.2 TRACKING AND REPORTING

Data is crucial for converting NDCs into climate finance strategies, building effective solutions, and informing investors. Yet pervasive data gaps exist across actors and sectors. This section provides a non-exhaustive list of key improvement areas to ensure climate finance data is comprehensive, periodic, and timely.

Table 2: Key steps to better track climate finance in Africa

Actors	Key steps
Domestic governments	<ul style="list-style-type: none"> ▪ Institute a centralized approach to standardize and track climate-tagged data ▪ Implement equity-responsive budget tagging in parallel to climate relevant tagging ▪ Strengthen adaptation risk analysis
DFIs	<ul style="list-style-type: none"> ▪ Provide greater transparency and more detailed reporting on impact outcomes
Private sector	<ul style="list-style-type: none"> ▪ Leverage existing frameworks and standards (SASB, TCFD, GRI, etc.) to efficiently implement climate data tagging ▪ Assess and report climate risk, and impact of own as well as client portfolios ▪ Set and report publicly against climate investment goals

1. Domestic government data

Domestic governments should institute a centralized agency to standardize and track climate-tagged data. Governance of climate finance is currently highly fragmented and dispersed, which makes good quality data on climate finance flows at the regional, national, and sub-national levels rare. Climate reporting tools such as CPEIR, CBT, or PEFA Climate—which have the potential to standardize more government data—are not widely used.¹⁸ Governments should consider housing a central climate data agency within an institution with a strong climate mandate and budgeting power (e.g., Ministry of Finance or Environment). For example, in Ethiopia, the Climate Resilient Green Economy (CRGE) facility within the Ministry of Finance drives climate finance mobilization and leads climate budget tagging integration.

To do this, governments need to build institutional and technical capacity at all levels in order to refine and promote definitions, methodologies, and processes. Even though a single sectoral ministry may allocate and report budget expenditures, climate-related projects are often cross-sectoral in nature and require coordination across ministries. Coordination and training can help ensure climate reporting tools are flexible to allow for thematic and cross-sectoral reporting.

Governments should ensure climate budget tagging reflects equity concerns. Investors and governments are showing greater interest in equity co-benefits. Yet needs and flows relating to gender and indigenous and vulnerable groups remain opaque. For instance, less than 10% of need activities reported in NDCs of African countries referred to gender or vulnerable communities. Combining equity-responsive budget tagging and climate budget tagging can improve reporting efficiency and ensure better synergies. Only Gambia and South Africa have launched pilots to this end.

¹⁸ PEFA climate assesses if a country's PFM system is ready to support and foster the implementation of government climate change policies. This includes the planning and design of budgetary policies considering climate, the budget allocations needed to implement them, the tracking of these allocations to ensure that policies are implemented as intended, and the monitoring and evaluation of the efficiency and effectiveness of these policies and investments.

Governments should strengthen adaptation risk analysis. National governments should boost their capacity to analyze adaptation risk in both upstream (debt sustainability analysis, macroeconomic modelling, etc.) and downstream activities (project design, implementation, etc.). They can do this by incorporating climate information and analytics that provide localized climate risk and vulnerability data.

2. DFI data

DFIs should improve transparency and reporting on impact outcomes. Recent efforts by the OECD have resulted in improved reporting on how much public interventions mobilize private finance. However, varying approaches and poor project-level reporting stymie efforts to integrate this data in overall estimates, and avoid double counting. DFIs should provide more granular project-level information on mitigation and adaptation outcomes. Standardizing approaches would not only streamline reporting and analysis efforts, it would also help identify opportunities where investment has the greatest impact.

3. Private sector data

Private sector data on climate investment in Africa remains limited, inhibiting efforts to improve market conditions and attract investment. The private sector should standardize reporting on disclosures and frameworks of its climate investments. Existing frameworks and standards like the Sustainability Accounting Standards Board (SASB), Task Force on Climate-related Financial Disclosures (TCFD), Global Reporting Initiative (GRI), and international taxonomies such as the EU Sustainable Finance Taxonomy, offer good starting points for private actors to report on climate finance data in a way that is aligned with international efforts.

7. WAY FORWARD

The African continent's rapid urbanization, underdeveloped infrastructure, and energy transition offers investment opportunities that are not currently being met. Every actor in the financial system—from governments to DFIs to the private sector—can tap these opportunities by re-evaluating their roles, mandates, and incentives. In fact, there is a clear imperative to act and invest—investment opportunities are substantial, and the social, economic, and environmental benefits which could be realized, are significantly greater.

However, climate finance in Africa remains anemic. Needs are not being met at each stage of the investment cycle. Climate finance has to increase by at least nine times in Africa to meet its climate targets. This study proposes the following six immediate priorities to address the financing gap:

- **A**dapt strategies to address current and future country realities
- **B**oldness to fund hard-to-abate sectors and less mature markets
- **C**atalyze private finance, including domestic capital
- **D**ata tracking and disclosures to inform financing strategies
- **E**nhance the enabling environment through capacity building
- **F**acilitate climate investment at a sub-national level

These six areas offer large potential for reaching the levels of climate finance Africa needs in order to maximize its investment opportunities and build a more resilient future.

8. ANNEXES

ANNEX I: VARIOUS NATIONAL TRACKING INITIATIVES DIFFERING IN THEIR SCOPE, TIMELINES, AND APPROACHES

Country	Climate Public Expenditures and Institutional Review (CPEIR)	Climate Budget Tagging (CBT)	Climate Finance Landscape	Climate Public Expenditure and Financial Accountability (PEFA)	Domestic climate finance in 2019/2020, USD million/% of GDP
Benin	2012				
Cote d'Ivoire			2017*		
Cabo Verde		Planning		Planning	
Eswatini	2021	In design			0.43 / 0.01%*
Ethiopia	2014a	In design		Planning	
Ghana	2015/2021	in action			454.5 / 0.31%
Kenya	2016	in action	2021		
Malawi	2019				
Mauritius	2016d/2018d	Pilot			7.24 / 0.03%
Morocco	2014				
Mozambique	2012d/2016b				
Namibia		In design			
Niger	In process				
Nigeria		Pilot			27.41 / 0.003%*
Rwanda	2013				9.59 / 0.05%
Seychelles	2018c				
South Africa		Pilot	2020		
Tanzania	2013				
Uganda	2013	2018			

Notes: a- partial; b- pending; c- unsuccessful due to consultant issues in 2018/2019; d- environment expenditure review; * The study was for the AFOLU sector

Source: Authors' compilation on a best effort basis; World Bank (2020). CABRI (2021), UNDP (2019), ** Onyimadu & Uche (2021), Government of Eswatini (2021)

ANNEX II: ROLE OF CLIMATE FINANCE IN DEEPENING DOMESTIC FINANCIAL MARKETS

Climate finance can be a catalyst in developing local financial markets in African economies.

Financial markets in African countries often remain small and undeveloped, characterized by small market capitalizations, few listed companies, and less liquidity with high transaction cost compared with other emerging countries (UNECA, 2021). Between 2014 and 2019, the Initial Public Offerings (IPO) in Africa was USD 27.1 billion—only 1.4% of global IPO.

Africa accounted for only 0.2% of the total green bond issuances between 2014-2021. Cumulative green bond issuance in Africa has risen 54.8% annually for the period 2014-2021. However, this was the slowest growth globally; Asia-Pacific witnessed a 97.5% annual growth. Only 7 countries¹⁹ in Africa seen green bonds being issued, with Northern Africa and Southern Africa accounting for 89% of total issuances. These markets have historically had relatively more sophisticated financial markets compared with other African countries. Also, the green bond proceeds have been concentrated in mitigation sectors, with 43% of proceeds directed into energy projects as they often have a clear risk-return profile relative to adaptation projects.

Africa's aggregate insurance penetration rate was only 2.78% in 2019 as compared with the global average of 7.23%. Five major countries—South Africa, Egypt, Morocco, Nigeria and Kenya—account for 84 % (USD 68 billion) of the continent's insurance value, while the rest of the continent has a rate which is below 2% (AIO, 2020). However, insurance companies are a key player in the space, with the most advanced technical know-how on climate risks among all other institutional investors, and they can innovate financial products for reinsuring risks (GCA,2021).

African pension funds and Sovereign-Wealth Funds (SWFs) are estimated to have USD 700 billion, and USD 16.4 billion of AUMs, respectively (Soumaré, 2020). However, they are still small compared to their global peers; for instance, 21 African SWFs represent only 2.1% of global SWF assets. African SWFs are known to have low risk appetite since they are traditionally used as a primary tool by countries with strong oil exports, such as Algeria and Libya, to manage their foreign reserves. However, recent evidence suggests that the landscape of African SWFs is evolving. SWFs are looking to invest in domestic markets; shifting to alternative asset classes for higher yields and to facilitate long-term, viable investments in the agriculture supply chain; food security; land degradation; and water sectors (IFSWF, 2021). They are also partnering with Gulf SWFs to promote green investments in Africa (Aljazeera, 2022).

Channeling these funds into African local capital markets would help improve the liquidity of African bond markets and exchanges. However, key elements required for such institutional investor' participation are liquid bond markets, currency stability, investment grade rating, etc. which do not yet fully exist in African economies. While developing a well-functioning capital market takes time, climate finance could be a catalyst for development of local financial markets (GIC, 2021) in the following ways:

¹⁹ Kenya, Egypt, South Africa, Morocco, Namibia, Mauritius, Nigeria

- **Support alignment to global issuances and reporting standards:** The quality and availability of information to identify, measure, and track green projects makes it challenging for investors to determine the performance of green bond issuers. This information asymmetry is exacerbated by a lack of generally accepted taxonomy. Adoption of global benchmarks for issuance of climate-linked capital instruments like green bonds will help enhance the transparency, effectiveness, and credibility of capital markets in African economies.
- **Diversification of investor base:** Increased issuance of green bonds and other securities will attract multiple financial sector participants—pension funds, sovereign wealth funds, investment banks, insurance companies, etc.—in varying capacities as investors, issuers, and facilitators. For instance, issuance of sovereign green bonds can help establish a ‘green risk-free curve’ for private issuers to be used as a benchmark for green pricing (OECD, 2021), thereby attracting more issuances.
- **Development of risk mitigating tools:** Given the needs, climate finance should be scaled across all asset classes. With emerging blended structures, pooling and securitization mechanisms, derivatives targeting low carbon transition projects can help improve market liquidity and better risk allocation for a range of market participants.

ANNEX III: AGRI-INSURANCE SOLUTIONS IN AFRICA

97% of farmers in Sub-Saharan Africa lack insurance coverage due to challenges in accessing funding and insurance. The *Landscape* does not currently capture the financing of insurance-related solutions due to data unavailability and methodological issues. However, insurance plays an important role in the agricultural sector in transferring the risks associated with weather and climate fluctuations, and increasing credit scores to qualify for bank credit (CFI, 2014; World Bank, 2017). It is also valuable because the insurers and re-insurers are often better equipped to manage climate risks because of their access to state-of-the-art technology, historical climate data, modelling methods, and portfolio diversification. However, evidence suggests that many factors—such as quality of insurance products, design, affordability, awareness, depth of financial markets and socio-cultural factors—affect the adoption of agricultural insurance in Africa.

Agriculture insurance solutions in Africa capture several risk transfer mechanisms such as parametric insurance, index insurance, and other risk pooling instruments at micro and macro level. For example, at a micro level, The Agriculture and Climate Risk Enterprise (ACRE) is the largest input-linked, mobile-enabled micro index insurance program in Africa for smallholders. By 2018, over 1,700,000 farmers in Kenya, Tanzania, and Rwanda were insured over USD 180 million against a variety of weather risks. Disruptive technical innovations in fintech such as mobile payment systems, are also continually increasing adoption. At a macro level, the African Risk Capacity (ARC), the sovereign risk pool and early response mechanism, is designed to provide insurance to countries in the event of catastrophic climate shocks and protect the food security of their vulnerable populations. 35 African States are members of the ARC (as of July 2022), and it has provided cumulative insurance coverage of USD 720 million for the protection of 72 million vulnerable populations in participating countries (World Bank, 2022a).

ANNEX IV: LIST OF AFRICAN INSTITUTIONS WHICH ARE 'DIRECT ACCESS' ENTITIES FOR GCF

Public:

- Agency for Agricultural Development of Morocco (ADA),
- Banque Ouest Africaine de Développement (West African Development Bank, BOAD),
- CDG Capital S.A. (CDG Capital, Morocco),
- Centre de Suivi Écologique (CSE, Senegal),
- Development Bank of Southern Africa,
- Development Bank of Zambia (DBZ),
- Environmental Investment Fund of Namibia (EIF),
- Infrastructure Development Bank of Zimbabwe (IDBZ),
- National Fund for Environment and Climate (FNEC) of Benin,
- La Banque Agricole (LBA, Senegal),
- Ministry of Environment of Rwanda (MOE_RWA),
- Ministry of Finance and Economic Cooperation of the Federal Democratic Republic of Ethiopia (MoFEC),
- Ministry of Water and Environment,
- Uganda (MWE_UGA),
- National Environment Management Authority of Kenya (NEMA),
- Sahara and Sahel Observatory (OSS), and
- South African National Biodiversity Institute (SANBI).

Private:

- Attijariwafa Bank (AWB, Morocco),
- CRDB Bank PLC (United Republic of Tanzania),
- Ecobank Ghana Limited (EGH),
- KCB Bank Kenya Limited (KCB), and
- Moroccan Agency for Sustainable Energy (MASEN).

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