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The Landscape of Climate Finance for Agriculture in sub-Saharan Africa

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1. Climate finance for agriculture in sub-Saharan Africa

Agriculture in sub-Saharan Africa (SSA) has been and will continue to be negatively affected by climate change. The sector is particularly vulnerable to climate-related weather events, such as extreme heat, drought, and flood and these negative impacts are disproportionately felt in the Global South. Already, the region has experienced declining agricultural yields because of climate change, a trend that will only worsen in warming years, causing economic losses, and threatening food security in a region where hundreds of millions already suffer from food insecurity and chronic malnutrition.

At the same time, agriculture is a major contributor to greenhouse gas (GHG) emissions in SSA, [accounting for over half of all GHG emissions in the region. In general, GHG emissions in agriculture mostly originate from cropland soil management, rice cultivation, ruminant livestock enteric fermentation, and livestock manure management.](#) In SSA, it is estimated that [over half of GHG emissions in agriculture are from enteric fermentation](#) (livestock digestion). In addition, in forested regions, agricultural expansion drives deforestation and threatens the carbon stocks that they contain; at a global level, [agriculture is responsible for 90 percent of this land use change.](#) As a sector that both contributes to and is threatened by GHG emissions and rising temperatures, agriculture in SSA represents a sector with both a great opportunity and need for climate mitigation and adaptation measures.

However, persistent risks and barriers prevent investment in climate-smart sustainable agriculture in the region, resulting in a gap between current investment activity and reported investment needs. It is crucial that we understand the current state of climate finance for agriculture in SSA and the risks and barriers to advance mitigation and adaptation financing for agriculture in the region and minimize the negative impacts of climate change.

1.1 What is climate finance?

Climate finance, as defined by the United Nations Framework Convention on Climate Change (UNFCCC) Standing Committee on Finance, consists of investments in:

Climate mitigation finance Finance aiming to reduce GHG emissions, and to enhance sinks of greenhouse gases	Climate adaptation finance Finance aiming to reduce vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts	Dual benefits finance Finance covering climate mitigation and adaptation
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2. A stark funding gap for agriculture climate finance in SSA

In 2019 and 2020, the agriculture sector in SSA received approximately \$3 billion per year in climate finance from both public and private sources. These flows fall drastically short of the reported \$11 billion per year needed for agricultural climate finance in the region. This funding is essential for aligning with and carrying out efforts under the countries' Nationally Determined Contributions (NDCs) over the next decade.

While both adaptation and mitigation are underfunded compared to reported needs, the climate finance funding gap observed is more pronounced for mitigation efforts, with only 7 percent of the needed funds being met in 2019/2020. Though typically it is believed that adaptation has a larger financing gap, almost 70 percent of the total climate finance for agriculture in the region was directed at adaptation measures. Mitigation finance needs may be greater than adaptation because, as the continent's highest emitting sector, agriculture presents the greatest potential for mitigation. While smaller, the adaptation finance gap is still significant, with approximately only half of reported finance needs met in 2019 and 2020.

Given that agriculture in SSA is dominated by the smallholder farmer model, and that many populations in the region are vulnerable, it is important to note that any efforts to implement mitigation or adaptation measures must be done keeping in mind the principles of a just transition (see below).

Why is a just transition important for small-scale agriculture?

A just transition refers to the process of shifting from an economy reliant on industries that may harm the environment or people to more sustainable and equitable alternatives. It involves ensuring fairness, support, and opportunities for affected workers, communities, and the environment throughout this transformation. While typically applied to the transition away from fossil fuels in the energy sector, a just transition is also relevant for agriculture.

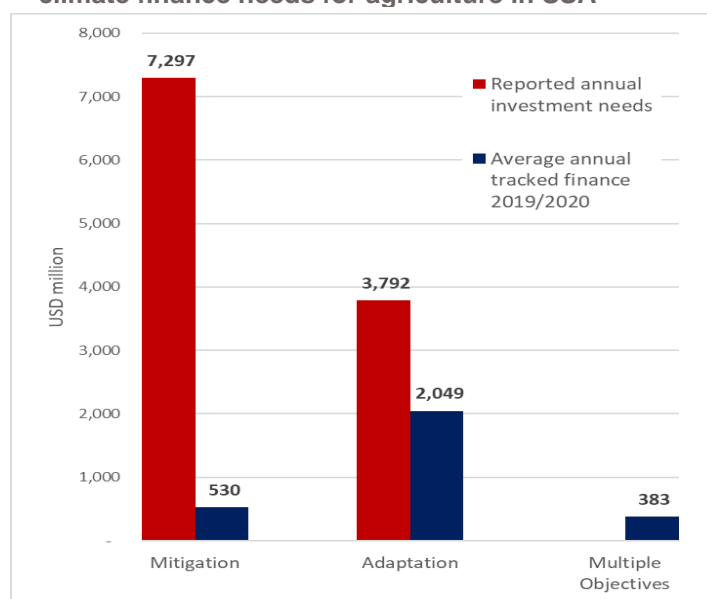
Small-scale farmers operate in highly informal markets, are geographically spread out, and often lack collateral or land tenure rights. These factors limit their ability to obtain capital from private financial providers and to ensure their social protection. Therefore, increasing smallholder farmers' access to finance to cover the costs of new low-carbon practices and technologies or access to crop insurance in case of weather events is challenging. Careful assessment of local contexts when designing funding mechanisms for low-carbon and resilient agrifood systems is to ensure distributional justice and a just transition for agriculture in SSA.

3. How is climate finance for agriculture distributed across SSA?

Climate investments for agriculture are not evenly distributed across SSA and instead are concentrated in Western and Eastern Africa. Climate finance needs also vary widely throughout the region, and the current distribution of climate finance does not match reported needs in the region.

Western Africa received the highest climate finance for agriculture in 2019/2020, with an annual \$1.2 billion, followed by Eastern Africa with \$1 billion in the same period. In both cases, climate finance primarily targeted

Figure 1: Annual climate finance commitments vs climate finance needs for agriculture in SSA



Source: CPI analysis

adaptation. Western and Southern Africa both received more than their reported mitigation needs. Central Africa, on the other hand, received only a fraction of its reported needs for both adaptation and mitigation in 2019/2020. Despite receiving the second-largest amount of finance, Eastern Africa had the largest mitigation finance gap of all sub-regions.

While it is unclear why the distribution of finance is uneven across subregions, the top receiving countries in Western and Eastern Africa were Nigeria and Ethiopia, respectively. These are not only the most populous countries in SSA, but also have central banks and/or governments that have adopted risk reduction mechanisms and policies for investment in agriculture, which may offer some explanation for why more finance flows were directed to these countries.

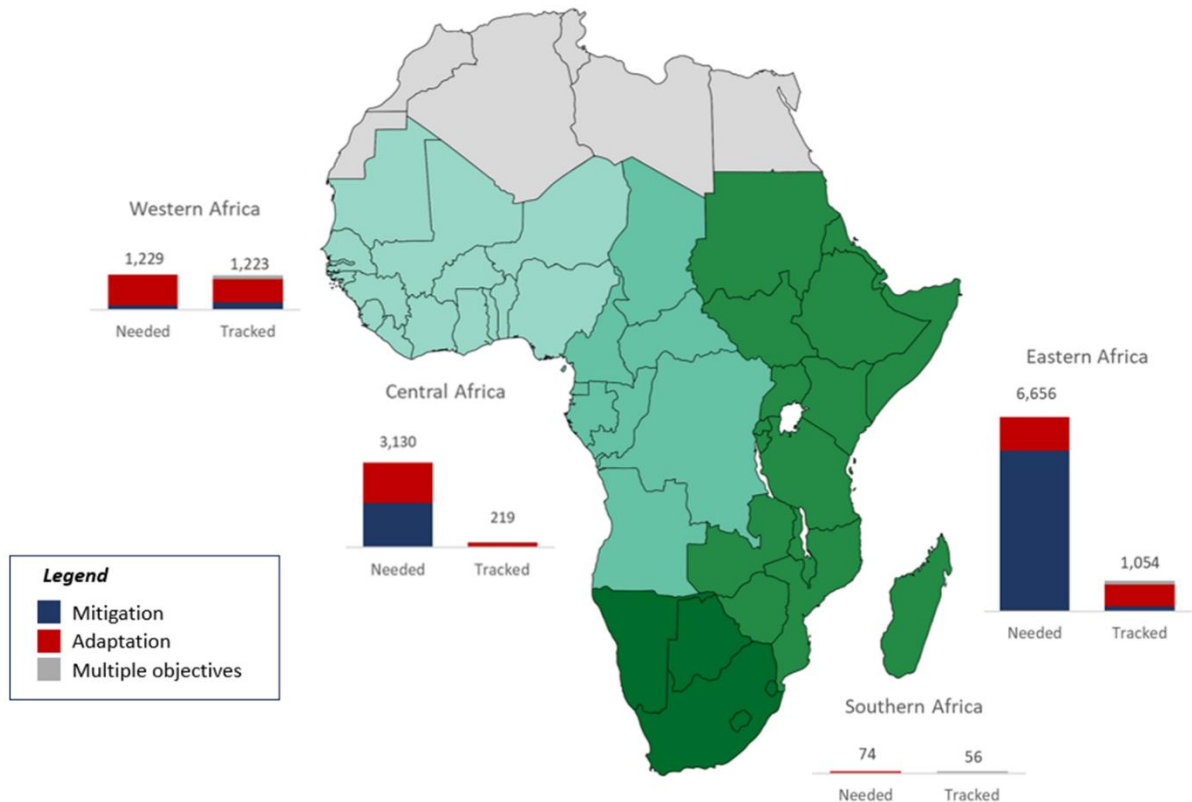


Figure 2: Climate finance gaps in sub-Saharan Africa by sub-region (USD million)¹

Source: CPI analysis

Risk reduction policies in Nigeria and Ethiopia

Nigeria: The [Nigerian Incentive-based Risk Sharing System for Agricultural Lending](#) (NIRSAL) was established in 2013 to increase public and private bank lending in agriculture with risk sharing facilities, insurance facilities, technical assistance facilities, bank ratings, and bank incentives. While not inherently climate-related, it reduces the overall risk of agriculture investment.

Ethiopia: Ethiopia's government adopted the [Agricultural Development Led Industrialization](#) (ALDI) framework to improve productivity. Increased agricultural public spending during 1995-2018 contributed to Ethiopia's 'green revolution'.

4. Who are largest providers of climate finance for agriculture in SSA?

Climate finance for agriculture in the region is overwhelmingly provided by the public sector, who provided 94 percent (\$2.77 billion per year) of finance during 2019 and 2020.

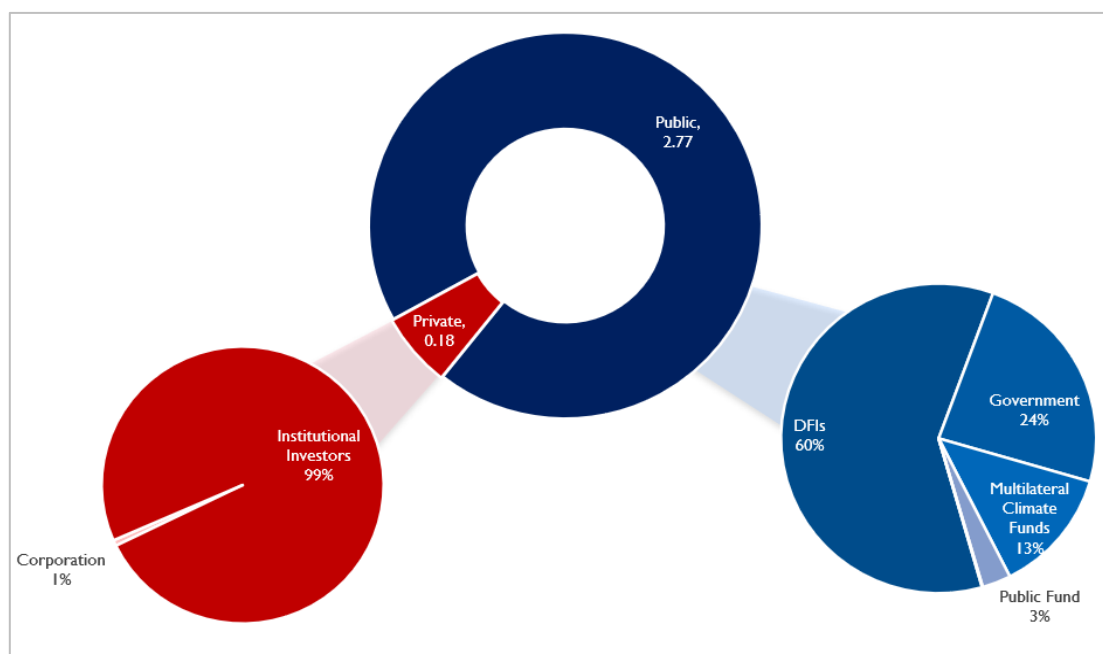
Just under 6 percent of all climate finance for agriculture coming from the public sector originates from within the region, all of which is provided by African governments.

Overall, public sector finance is led by Development Finance Institutions (DFIs), followed by governments and Multilateral Climate Funds (MCFs). DFI funding was provided mostly by the World Bank's International Development Association (WB/IDA), the African Development Bank (AfDB), and the International Fund for Agriculture Development. Western European governments are the primary governmental funders, contributing three-quarters of the total government share. MCF funding was mostly provided by the Green Climate Fund.

¹ It should be noted that South Africa had no reported needs for agriculture within its NDC, partially explaining the low finance needs for Southern Africa.

Private finance² (6%) is largely dominated by philanthropic organizations. The Bill and Melinda Gates Foundation alone provided 85 percent of private funds. The overall lack of private finance indicates barriers to mobilizing private capital within the SSA region and the agriculture sector. [Several barriers](#) limit the attractiveness of agriculture investments in SSA for private investors. The private sector finance partition has considerable potential to grow and close the investment gap. The public sector has a role to play in addressing barriers to agriculture climate finance in SSA and support and enabling environment to close the investment gap.

Figure 3: Climate finance for agriculture in SSA by type of investor (USD billion)



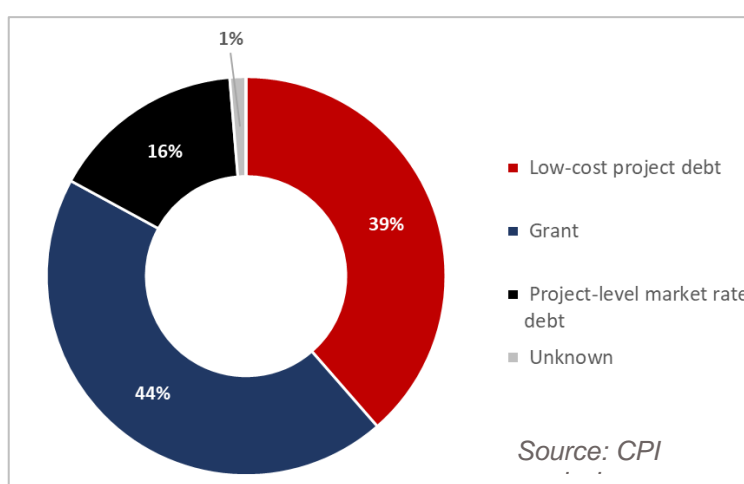
Source: CPI analysis

5. How is climate finance being challenged towards agriculture in SSA?

Grants and low-cost project debt are the most prominent sources of climate finance, collectively comprising 83 percent of all finance. Reliance on these instruments for agriculture climate finance in SSA reflects a low commercial attractiveness to private sector investors, limiting climate-smart agriculture projects' ability to scale.

Concessional debt is more prominent for mitigation measures, whereas adaptation finance is primarily provided through grants. It is often easier to quantify and measure impact for mitigation projects compared to adaptation measures, which may partially explain why lending is more common for mitigation measures compared to adaptation. There are increasing opportunities for agriculture mitigation projects to reduce or/and remove emissions by utilizing with carbon markets to sell carbon credits. These

Figure 4: Instruments deployed for climate finance to agriculture in SSA 2019/2020



Source: CPI

² Private finance includes flows from corporations, households, commercial financial institutions, institutional investors (including philanthropies or foundations) and private equity, venture capital and infrastructure funds.

projects offer a clearer and accountable return on investment (ROI) that may also contribute to a higher proportion of market-rate and concessional debt for mitigation.

5.1 Case studies

The following case studies illustrate successful climate finance projects in agriculture:

[Acumen Resilient Agriculture Fund \(ARAF\)](#) is the first-ever climate adaptation focused agribusiness equity fund. The fund enables early-growth stage agribusinesses to anticipate, weather, and bounce-back from climate events, resulting in increased yields and incomes.

With a commitment to [deploy \\$58 million by 2030](#), supported by Acumen and key partners like the Green Climate Fund (GCF) and FMO, ARAF targets bolstering the climate resilience of small-scale African producers. It possesses a [\\$23 million first-loss capital pool](#) and a \$5 million grant-funded technical assistance facility, increasing risk tolerance to back early-stage agri-SMEs and [facilitate their path to commercial viability and scalability](#).

Since its launch in 2020, ARAF has funded five innovative agribusinesses across Ghana, Kenya, Nigeria, and Uganda. Its support extends beyond capital infusion, encompassing the promotion of [sustainable agricultural practices, climate-smart technologies, and business expansion](#). ARAF-backed companies like [SunCulture](#) in Kenya, providing affordable pay-as-you-go solar irrigation systems, and [FarmWorks](#), connecting smallholders to essential agronomy training, inputs, and markets, exemplify the fund's aim to empower smallholder farmers within the agriculture sector. The fund's comprehensive support ranges from [climate-smart technology training for farmers to business development and impact measurement assistance](#).

[Aceli Africa](#) (Aceli) is a market incentive facility that provides capital through a network of partner lenders to small- and medium-sized (SMEs) agribusinesses in East Africa. Working with these partner lenders, Aceli mobilizes financing by providing financial incentives that reduce the real and perceived risks and enhance the returns for lending to agri-SMEs for qualifying loans ranging from \$15,000 to \$1.5 million.

By focusing on agribusinesses typically too large for microfinance yet too small for mainstream banks, Aceli's model provides concessional financing, offering financial incentives to lenders. Through its approach, Aceli provides first-loss coverage at a portfolio level for qualifying loans ranging from \$15,000 to \$1.5 million. Additionally, their ["Impact Bonus" initiative rewards lenders engaging in specific impact areas like gender inclusion, food security, nutrition, and climate-smart agriculture](#). Aceli does not just offer financial incentives; it complements these incentives with technical assistance both before and after investments and capacity building for lenders. For example, in 2021, partnering with [Precision Development](#) and regional forestry experts, Aceli supported the expansion of reforestation efforts for eight SMEs in Uganda and Rwanda.

Aceli operates on a [robustly data-driven model](#), leveraging ongoing data collection and analysis not only to inform its interventions but also to gather evidence and shape policies for impactful financial support to agribusiness SMEs in Africa.

6. Methodological Approach and Limitations

6.1 Approach

This analysis relies on a highly granular dataset, the Global Landscape of Climate Finance (GLCF) dataset, compiled by Climate Policy Initiative (CPI). The trends presented here define climate finance flows and needs as follows:

- **Climate finance flows:** total climate finance flows to agriculture in sub-Saharan Africa tracked in the GLCF dataset for the period 2019-2020.

- **Climate finance needs:** total climate finance for agriculture reported on countries' Nationally Determined Contributions (NDCs).

The GLCF dataset compiled by CPI is the most comprehensive overview to date of current actions in climate finance. CPI utilizes project-level data, which offers the highest level of detail regarding the sources, uses, and destinations of climate finance flows. For more information on the methodology behind the GLCF data, please refer to CPI's flagship report: [Global Landscape of Climate Finance](#).

6.2 Data limitations

- **Data coverage:** a lack of standardized practices for disclosing climate investment data, especially in the Global South and private investment, leads to data gaps.
- **Climate finance reporting:** due to varying practices and the absence of widely adopted standards for climate finance reporting, there may be issues with data availability and comparability, particularly for private sector finance.
- **Climate finance needs:** disparities in the extent and rigor with which different countries define their needs in their Nationally Determined Contributions (NDCs).

6.3 Keyword search and stated intentionality

The relevant data was identified through keyword searches and manual reviews, relying on reported objectives. This method might result in an underestimation of the actual finance because it may not capture all relevant actions or the full extent of project goals.