

Mobilising private-sector investment to mitigate climate change in Africa



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Key messages

- African countries have set ambitious targets for their nationally determined contributions (NDCs); however, the resources needed to realise these goals exceed available domestic and international public finance. Thus, measures that direct private funding to climate investments are needed.
- Market mechanisms are powerful instruments to incentivise the private sector to invest in mitigation action, and a growing number of specialised finance instruments have been created with this in mind. These should be further refined, with special provisions tailored to African countries that are particularly climate vulnerable, and that have in many cases only begun to attract private-sector investment.
- The most widely used mitigation finance instrument for developing countries – the Kyoto Protocol's Clean Development Mechanism (CDM) – allows private-sector actors to develop mitigation activities on their own initiative. Though African countries initially struggled to benefit, CDM reforms have begun to enable wider African access. These reforms should inform the design of the next generation of multilateral mechanisms under the Paris Agreement.
- Climate finance institutions, such as the Green Climate Fund and the Climate Investment Funds, have established a range of climate finance delivery models in Africa. At the same time, they are at an earlier stage of their institutional evolution compared to the CDM, and they still need to tailor their rules more closely to African circumstances.
- Market mechanisms and public climate finance have complementary strengths (upfront versus results-based delivery of finance). These should mutually reinforce themselves in order to expand private-sector contributions to achieve NDC goals.

Introduction

What role can the private sector play in financing climate change-related mitigation in Africa, and how can the public sector incentivise private investments most efficiently? These are critical questions for achieving the Paris Agreement's long-term goal of keeping global temperature rise to well below 2°Celsius above pre-industrial levels.

Enhanced private-sector climate finance for developing countries' nationally determined contributions (NDCs) is considered to be a crucial part of the policy picture. Yet, vulnerable African countries, which require particular support in order to strengthen climate resilience and to enable sustainable development, have yet to attract the levels of private finance that are widely believed to be necessary.

Photo (above): A woman is shown cooking in Ethiopia, where private finance underpins programmes that seek to expand the use of more fuel-efficient stoves.

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This discussion brief summarises key insights on the role of the private sector in finance instruments for climate mitigation in Sub-Saharan Africa. The focus is on those instruments backed by the United Nations Framework Convention on Climate Change (UNFCCC) and one national-level South African programme, which provides an illustration of the increasingly important interaction between multilateral and national support mechanisms. While the analysis focuses exclusively on these specific instruments, rather than aiming to provide a complete overview, it raises issues that may inform broader discussions about how to devise policy levers that can be effective in spurring private-sector climate finance mobilisation.

The evolving landscape of climate finance mitigation

With strong African engagement, participants in the Copenhagen Climate Change Conference in 2009 agreed to mobilise “jointly USD 100 billion a year by 2020” (UNFCCC 2010). Seven years later in Marrakech, this goal was reaffirmed and extended to 2025. On a practical level, the number of climate finance institutions and resulting approaches to engage the private sector has increased since the World Bank set up the Global Environmental Facility in 1991. Public finance mobilises private capital and innovation through incremental cost financing and support mechanisms (non-concessional loans, guarantees, early-stage financing). As climate policy is increasingly being mainstreamed into economic development planning, the interaction between multilateral and national support mechanisms gains in importance.

Through the Kyoto Protocol, market mechanisms have been powerful drivers for private-sector engagement in mitigation. Beyond carbon markets, in 2014, USD 45 billion of public finance flowed from North to South (OECD 2015), of which only a minor share went to Sub-Saharan Africa (Mazza et al. 2016). Still, interest in other big, emerging economies continues to eclipse interest in Africa; a focus on reducing existing emissions rather than on preventing future ones predominates, resulting in insufficient investment flows to African countries because of perceived or actual risk. To foster understanding of the dynamics that underpin the state of private finance for African climate mitigation, this paper examines and provides case studies of three international, UNFCCC-backed climate finance vehicles and one national climate policy instrument used in South Africa.

Created by the Kyoto Protocol, the **Clean Development Mechanism (CDM)** established the first global carbon crediting scheme of its kind by providing a UNFCCC-approved approach to verifying emission reductions and translating them into carbon credits: certified emission reductions (CERs). The CDM mobilised over USD 400 billion, generating more than 1.7 billion certified emission reductions to date (UNEP DTU 2017 a,b). Yet, initially, this innovative source of climate finance hardly benefitted Africa. Since then, capacity building, improved rules, and investment significantly increased Africa’s ability to tap into the CDM as a source of funding for activities with significant sustainable development co-benefits (clean cooking, water, electrification).

The **Climate Investment Funds (CIF)** represent the first attempt to channel multilateral climate finance at scale to developing countries. They were capitalised after the Copenhagen conference in order to generate practical experience with climate finance delivery in different sectors and geographies. The **Green Climate Fund (GCF)**, also created in Copenhagen, was devised to set up a completely new financing institution governed by the principles of the UNFCCC, and with a view to channel a significant share of long-term climate finance. On the level of national financing instruments, the South African Renewable Energy Independent Power Producers Procurement Programme (REIPPP) is the most mature renewable energy support scheme in Sub-Saharan Africa, and has mobilised private investment at scale.

How to mobilise the private sector for mitigation finance in Africa

To identify mitigation activities that involve the private sector, we screened the project portfolios of major climate finance mechanisms and institutions. Rather than generating a complete dataset of mitigation projects in Sub-Saharan Africa, we aimed to analyse different typological models

Market mechanisms are powerful instruments to incentivise the private sector to invest in mitigation action.

of private-sector engagement in UNFCCC-backed climate finance mechanisms. The selection of institutions and mechanisms is influenced by their relevance in terms of scale and degree of private-sector engagement.

Table 1, below, shows the institutions and projects that meet the selection criteria. The majority of the 457 projects in our database are financed through the CDM – either directly as single projects or through its Programme of Activities (PoA), which allows aggregating multiple component project activities through streamlined registration procedures. These projects comprise a total funding volume of over USD 30 billion¹.

Table 1. Overview of private climate finance mitigation activities

Climate Finance Vehicle	Financing Instrument	Number of projects	Financial volume in USD millions
Clean Development Mechanism (CDM): single projects^a	Carbon finance mechanism	105	7913.7
CDM: Programme of Activities (PoA)	Carbon finance mechanism	265	NA
Green Climate Fund (GCF)	Multilateral climate finance fund	3	481.4
Climate Investment Funds (CIF)	Multilateral climate finance fund	19	1012.2
Nationally Appropriate Mitigation Action (NAMA) Facility^b	Multilateral climate finance fund	2	32
World Bank	Multilateral development finance institution	9	260.9
Global Environment Facility (GEF)	Multilateral development finance institution	43	1325.3
Kreditanstalt für Wiederaufbau (KfW)^c	Bilateral development finance institution	6	90.2
Proparco^d	Bilateral development finance institution	5	181
South Africa's REIPPPP^e	National policy instrument	52	20 500
Total		457	31 796

Source : authors' own research

Notes :

^a Only about 40% of all CDM projects report on the total investment volume in the Project Design Document. Thus, the total volume investment is expected to be significantly higher.

^b A joint initiative of the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety and the UK Department for Business, Energy and Industrial Strategy

^c The German government-owned development bank (Reconstruction Credit Institute)

^d A subsidiary of the French development agency, Groupe Agence Française de Développement. Includes only the commitments of AFD Proparco only and not the total financial volume of the projects.

^e The South African Renewable Energy Independent Power Producers Procurement Programme. Data from Eberhard and Naude (2017)

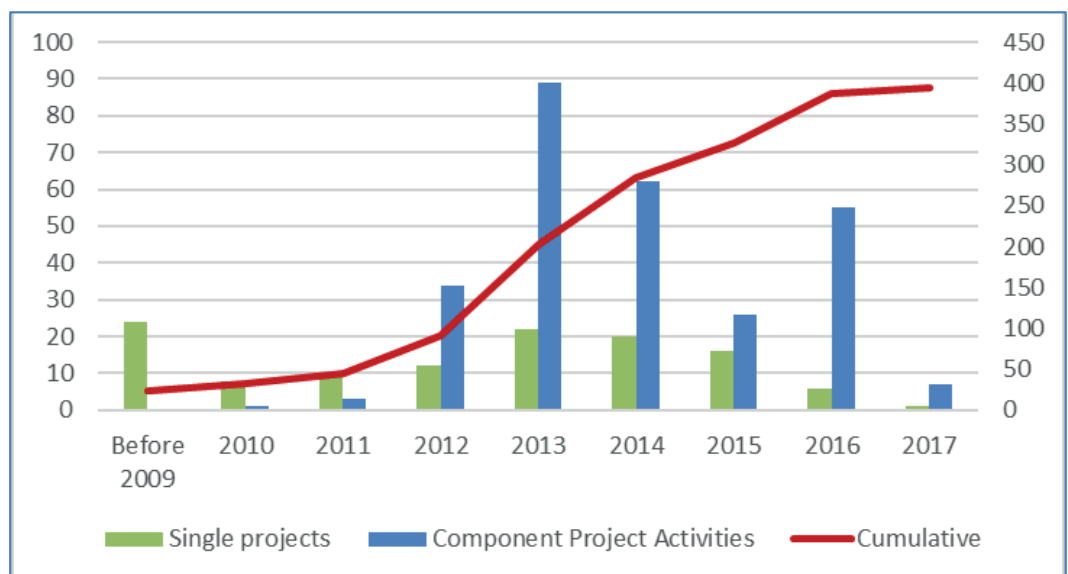
¹ Total funding volume in this context refers to the sum of all public and private resources, as far as such information has

The Clean Development Mechanism

The CDM empowers private-sector actors to develop mitigation activities on their own initiative. The most widely used mitigation policy instrument for developing countries, it has been instrumental in financing over 7,700 single projects as well as roughly 300 Programmes of Activities with over 2,000 component project activities. Two key success factors have been the multilateral oversight before certified emission reductions (CERs) are issued, and the hands-off approach to project initiation. Although Africa remains clearly underrepresented, rules fashioned through reform processes have improved the situation. For example, Programmes of Activities allow adding unlimited component project activities (CPAs) without undergoing the full UNFCCC review cycle for each single project. This provision significantly lowered transaction costs for small-scale activities. In Sub-Saharan Africa, a total of 105 single projects and 265 component project activities have been registered in energy supply, energy use and land use (see Figure 1), triggering cumulative investments of at least USD 8 billion thus far.

Both public- and private-sector organisations implement CDM activities. As carbon credit markets faltered from 2011 onwards due to low mitigation ambition in industrialised countries, public carbon procurement initiatives emerged to sustain high-quality CDM activities. The World Bank's Carbon Initiative for Development and Pilot Auction Facility procures and subsequently cancels CCERDM credits as a means of delivering results-based finance. Multilateral funds thus incentivise private-sector actors to engage in difficult market circumstances. A recent development is that public-sector organisations have initiated CDM programmes that mobilise private-sector organisations in implementation (as illustrated in Figure 1, below).

Figure 1: Sub-Saharan Africa's Use of the Clean Development Mechanism



Source: authors, data from UN Environment Programme Danish Technical University Partnership (2017a,b)

This figure shows the growth of the African CDM pipeline over the years. The numbers on the left represent the number of activities, while the numbers on the right indicate the number of activities over the life of the CDM. The red line shows the accumulated number of CDM activities over time.

been publicly available. In many cases, information on overall financial volumes of the project was unavailable. Therefore, the aggregated numbers represent significant uncertainties, and should be seen as an approximation.

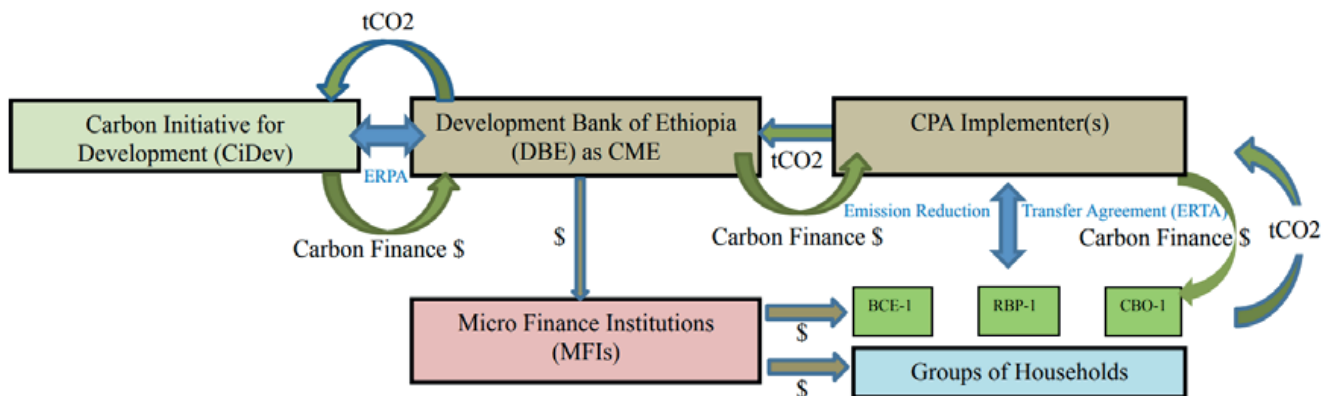
CASE STUDY 1: CLEAN DEVELOPMENT MECHANISM: PUBLICLY MANAGED PROGRAMMES ENGAGE PRIVATE-SECTOR ACTORS “DOWNSTREAM”

The Programmes of Activities managed by Development Bank of Ethiopia (DBE) support clean cooking and off-grid electrification technologies. The private sector implements programme components with the bank’s financing, thereby benefiting from lower capital costs in exchange against CDM credits. These programmatic approaches are particularly relevant for certain sectoral activities, in this case Ethiopia’s National Biogas and Improved Cook Stoves Program.

Climate Investment Funds

In 2008, the World Bank and regional multilateral development banks established the Climate Investment Funds (CIF). Capitalised with USD 8.3 billion, they are among the largest climate financing institutions. The Funds expect to attract co-financing of USD 58 billion through sectoral investment plans, which support regulatory investment frameworks and private-sector pilot projects. While private actors are consulted during the funds’ country-programming phase, they cannot initiate mitigation actions (unlike the provisions of the CDM). Still, close to 30% or USD 2.7 billion are earmarked for private-sector projects (CIF 2017). For example, private companies are bidding for power-purchase agreements in the context of public sector-designed strategies (see Figure 2, below). Projects of a volume of USD 1.01 billion have been approved to date in 10 Sub-Saharan African countries with a focus on South Africa, Ethiopia, Kenya and Mali.

Figure 2: General implementation framework of the Programme of Activities



Source: Development Bank of Ethiopia

As shown in this figure, the Development Bank of Ethiopia serves as the coordinating and managing entity (CME) over the flows of climate finance to a range of private stakeholders. The Emission Reductions Purchase Agreement (ERPA) regulates the payments, and the Emission Reductions Transfer Agreement (ERTA) regulates the transfer of the certificates of the Component Project Activities (CPA) implementers. In the green boxes, BCE-1 represents the programme’s first participating biogas construction enterprise; BRBP-1, the first regional biogas programme; and CBO-1, the first community-based organisation .

The interplay between multilateral and national climate context is increasingly important.

CASE STUDY 2: SUSTAINABLE ENERGY ACCELERATION PROGRAM (SEAP) FOR SOUTH AFRICA: LEVERAGING COMPETITION TO REDUCE RENEWABLE ENERGY COSTS

South Africa's Renewable Energy Independent Power Producers Procurement Programme (REIPPPP) encourages private-sector investment in renewable energy. This programme started as a feed-in-tariff scheme, and has transitioned towards competitive auctioning, which proactively aims at reducing renewable energy costs. Private companies bid for the electricity tariff of wind, solar, concentrated solar power, small hydro, biogas and landfill gas projects. As of March 2017, the programme included 102 projects, 52 of which were operational and eight of which were under construction. So far, 6,376 MW of renewable energy generation capacity has been procured, amounting to USD 20.5 billion in investment (Eberhard and Naude 2016). The CIF-supported South Africa Sustainable Energy Acceleration Program funded a pilot phase of REIPPPP that supported the first megawatt-scale projects in three low-carbon technologies. This supported 250 MW of installed capacity of concentrated solar power, thereby demonstrating that solar technologies that can be deployed at scale.

Green Climate Fund

The Green Climate Fund has received pledges of USD 10.3 billion. As of March 2017, its portfolio comprised 17 adaptation, 11 mitigation and seven cross-cutting projects with USD 1.5 billion from the fund itself and USD 4.7 billion provided through co-financing (GCF 2017). Private actors can be directly accredited to the fund and submit project proposals. To date, three mitigation projects in Sub-Saharan Africa have been approved, all led by international private-sector actors (Acumen Fund, Conservation International and Deutsche Bank).² These actors cooperate with national private entities through, for example, equity investments (Acumen) or financial products with local banks (Deutsche Bank, see Case Study 3). So far, African entities have not been able to access the fund on their own initiative. Moreover, after using complex accreditation procedures, the fund has approved only small projects. Thus, the fund has not yet led to large-scale sectoral transformation or highly innovative approaches. Achieving these goals would require both a simplification of the fund's accreditation rules, especially for those used for micro- and small-scale projects, and enhanced direct access for national and local organisations.

CASE STUDY 3: CATALYSING RENEWABLE ENERGY INVESTMENTS IN SUB-SAHARAN AFRICA

In 2016, the Universal Green Energy Access Program managed by Deutsche Bank established an investment fund to finance energy service companies for rural off-grid and mini-grid systems in Benin, Kenya, Namibia, Nigeria and Tanzania. Approximately 50 investments, representing a total volume of USD 500 million, will be made available for off-grid electrification (through, for example, solar-powered home electricity systems, and the establishment, operation and maintenance of solar mini-grids in rural areas), green industrial energy supply, and selected on-grid installations. Through the programme, international private-financing institutions in cooperation with local financial institutions use multilateral public climate finance to increase access to long-term credit lines for local businesses. The programme aims to lead to emission reductions of up to the equivalent of 50.6 million tons CO₂.

² Acumen Fund and Conservation International are non-profit organisations, which are considered private entities in context of the study.

Conclusions and next steps

To mobilise significant private investments into a low-carbon economy, public and private sectors need to complement each other effectively. Building on the insights presented in this discussion brief, we draw the following conclusions:

- Market mechanisms have successfully engaged the private sector in a variety of roles, ranging from investment to conceptual development and verification. However, this approach only works so long as emission credit revenues are sufficient. Although reforms successfully enabled access to the CDM in Africa, the transition to the Paris Agreement's market tools needs to be managed well to provide the private sector with the certainty needed to commit to fresh investments.
- The interplay between multilateral and national climate finance in the context of NDCs is increasingly important. Given the overall need to increase mitigation ambition, and the need to overcome the barrier of access to finance, stronger synergies between international and national sources of finance should be achieved. Interrelationships should be clarified to provide long-term investment certainty for private actors – for example, by integrating Paris Agreement mechanisms with domestic finance mechanisms. The situation in South Africa offers a case in point. As the result of low carbon credit revenues, 19 projects that were initially part of the CDM “moved” to the South African Renewables Programme, which was created to serve as the country's blueprint for mobilising private-sector investment in grid-connected electricity production. Yet, this programme does not “accept” CDM activities ostensibly to prevent projects from “double dipping”, i.e., receiving support from two types of subsidies. However, given the overall investment needs and limited domestic public resources in Sub-Saharan Africa, international and domestic financing mechanisms should identify complementarities to ease the constraints of public budgets in developing countries.
- Climate finance institutions and market mechanisms evolve. They have complementary strengths, and they should exploit synergies to mobilise significant, long-term mitigation action. However, rules of engagement should be sufficiently adjusted to African circumstances and balance simplicity with environmental integrity.
- There is a clear trend towards scaling up and using sectoral investment approaches – as evidenced by, for example, the Climate Investment Funds' focus on “enabling environments”, and the Green Climate Fund's focus on achieving “transformational change”. However, in the absence of a carbon price signal that drives private investment, the grant- and loan-based funding model of international climate financing institutions is clearly limited by the availability of public finance.
- The public sector necessarily takes a coordinating role in sectoral or scaled-up initiatives. However, public sector-led initiatives tend to be of lower financial volume than those that give the private sector more leeway for decision-making. In addition, innovative climate finance approaches such as auctions for power or emission reductions can raise capital and drive down mitigation costs by harnessing the capacity of the private sector to compete for delivering climate investments.



South Africa is participating in a public-private partnership designed to reduce costs of renewable energy from sources, including wind.

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Private finance instruments may help Sub-Saharan Africa to make greater use of renewable electricity sources, such as solar power. © JAAKKO HEIKKILÄ / GETTY IMAGES