Multilateral climate change financing in the developing world: challenges and opportunities for Africa

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ABSTRACT

The Paris Agreement has highlighted the worldwide significance of adaptation. Many investors are considering the effects of climate change and resource scarcity when making decisions. Even while the whole amount of the environmental harm caused by climate change is yet unknown, recent scientific evidence is more frightening, and many governments are taking substantial measures to avert a calamity. The financial innovations and mechanisms created to ease the transition to a low-carbon economy will have far-reaching effects on markets, firms, intermediaries, and investors. Although economists have been working on the subject for decades, financial-economics professionals have only recently become interested in climate change. There has been a growing body of empirical and theoretical contributions in recent years that analyze the influence of climate risks on investment decisions for firms, financial intermediaries, and national governments, as well as the pricing and hedging of climate change risks. This study seeks to establish the role of multilateral climate change financing in the developing world vis-à-vis challenges and opportunities for Africa. Five determinants of the multilateral climate fund were established and they are namely; Reduction of greenhouse gas emissions, Enabling Environments, Poverty and development linkages, Private investment and Public climate finance.

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Introduction

Climate change and resource scarcity are some of the major factors that are increasingly inhabiting investors’ minds as they weigh their options. Recent scientific evidence is more worrying, and many countries are taking significant efforts to avert disasters, although the full magnitude of the environmental damage from climate change is still unknown (IPCC, 2018). Markets, businesses, intermediaries, and investors will all be affected in significant ways by the financial innovations and instruments developed to facilitate the transition to a low-carbon economy. Financial-economics experts have recently been interested in climate change, despite the fact that economists have been working on the issue for decades. There is a rising awareness among financial actors that well-governed social, environmental, and economic systems are essential for the development of long-term, sustainable financial profits (Shiller, 2013). The scale and pervasiveness of exposure to climate hazards for global banks and financial institutions is illuminated by empirical findings. Up to around 17% of global financial assets are directly vulnerable to climate hazards (Dietz et al., 2016). When indirect exposures via financial counterparties are included (Battiston et al., 2017), however, the proportion of assets vulnerable to climate change increases significantly, from 40 to 54 percent. That is to say, the stakes associated with climate change are high, on par with or even exceeding those that contributed to the Great Financial Crisis. It will be vital for the global financial system to channel capital into new green assets. Investors can lessen their exposure to climate change's negative effects and aid in the fight against pollution by shifting their portfolios toward greener options. There is a wide range of strategies for factoring climate risk into financial decisions (Krueger et al., 2020).
While long-term institutional investors are working to increase the uniformity of green mandates and the availability of trustworthy climate reporting metrics, it is clear that financial engineering must be unleashed to move from mere disclosure to adequate management of climate risks. However, financial regulators are making greater efforts to improve the disclosure of financial actors with regard to climate change. Most significantly, central banks are mulling the idea of guiding or shifting the allocation of their assets toward less polluting issuers (Schoenmaker, 2021). In turn, this would mean cheaper financing for greener industries and speeding up the greening of the physical economy (Schoenmaker, 2021). Given this comprehensive picture, financial economists have many theoretical and empirical topics to investigate such as capital market-based emissions trading systems, the efficacy of market pricing of climatic risks, the role of venture capital, and alternative finance in the development of new low-emission technologies to mention a few.

Scholars interested in environmental reporting and transparency, as well as those curious about how climate hazards factor into financial management, may find this a fertile area for further investigation. Meanwhile, preliminary empirical findings and anecdotal evidence imply extensive greenwashing behaviour in the asset management business, despite the fact that institutional investors tend to be concerned with climate change (Krueger et al., 2020). More research is needed to determine the extent to which institutional money is genuinely considering climate change factors in investing decisions. Evaluating what factors and policies encourage families, businesses, and financial intermediaries to behave in a climate-resilient manner is possible with the aid of financial economics. Climate-related research topics may provide a fruitful field of application for behavioral finance and corporate governance theories and approaches. Effective financial incentives and accountability systems for the whole range of actors facing climate risks need to be better understood.

Climate change is attracting the attention of macro-finance, and experts have recognised a wealth of concerns that require thorough theoretical and empirical investigation. In particular, the scientific community should pay more attention to the efficient development of green monetary policies (Zadek, 2012). Furthermore, it appears that the ramifications of the financial flows across sectors and countries to finance climate mitigation and adaptation have been understudied. Research to inform policymaking should prioritise the mechanisms to efficiently channel public and private funds toward climate-resilient initiatives.

### The Effectiveness of Global Climate Finance

The importance of shifting to low-carbon and climate-resilient economic paths is becoming increasingly apparent in both industrialised and developing nations. Adaptation and mitigation efforts in underdeveloped nations are aided by climate funding (Neuhoff et al., 2010). Long-standing, fundamental development challenges are complicated and accelerated by climate change. Increasing the efficiency with which public funds are used to combat climate change is a pressing concern for those working in both the climate change and development sectors. The lessons learned in improving the efficiency of aid for developing countries should be applied to the deployment of climate money. As a result, securing climate money requires juggling a number of competing priorities and undertaking a highly complex process (Zadek, 2012). The reasoning behind disbursing funds for climate change has developed over time. A major goal of climate finance remains to handle the increased costs that are sometimes associated with low carbon and climate resilience choices.

Although much more needs to be done in all countries, developed and developing, most are now including climate change action as part of their development objectives. Supporting green investment through climate finance helps to create jobs and generate new economic growth and prosperity while also contributing to the secure and sustainable provision of energy and infrastructure services to satisfy the demands of developing countries (Buchner, Heller, and Wilkinson, 2012). Additionally, many climate finance contributors consider their contributions to be legitimate development assistance. This results in supply-side responsibilities for making sure climate funds are useful for development. A paradigm shift towards low-carbon, climate-resilient development may be aided by climate finance. Adapting to climate change will call for new ways of thinking about and solving development problems (Buchner et al., 2012). Global efforts to address climate change have placed a premium on the importance of financing the development, testing, and eventual rollout of appropriate technologies.

### Multilateral climate change financing

This section assesses the big picture of how major global climate funds are approaching issues like emissions reduction from deforestation, adaptation, and mitigation. This is essential in determining how well current funds are doing in achieving their stated goals. Currently, most funds employ their unique indicators, measures, and objectives to track and evaluate performance, however, there is interest in increasing standardisation around at least a core set of findings (Buchner et al., 2012). The majority of climate finance to date has been allocated to mitigation efforts. This is evident from the fact that the Global Environment Facility (GEF), the Clean Technology Fund (CTF), and the Scaling Renewable Energy Program (SREP) of the Climate Investment Funds (CIF) are all multilateral funds with a specific focus on mitigation. Greenhouse gas emission reduction through the use of low-carbon technologies has been a primary focus of current mitigation funding.
Reduction of Greenhouse gas emissions

Numerous pre-existing climate funds have prioritised minimising greenhouse gas emissions (Krueger et al., 2020). Financing for low-carbon development has been provided by some organisations, most notably the Global Environment Facility, based on compensating for the gap between the cost of providing energy needs and the greater cost of low-carbon technologies. Climate finance is anticipated to become increasingly important in the coming years as the world continues to warm. It is important to draw attention to the factors that could either promote or impede progress in this process. The first is that, as technology improves, more and better information about climatic phenomena is being available to the public. A greater empirical assessment of the consequences of climate hazards for asset pricing and corporate finance policy will be possible with more granular measures on climatic manifestations (Hong et al., 2020). As governments ramp up their efforts to combat climate change by instituting pricing mechanisms for greenhouse gas emissions, the dynamic pricing of carbon will allow for improved measurement of climate transition risks, opening up new avenues for research into the effectiveness with which financial markets are factoring in such dangers.

Enabling Environments

Enabling environments such as legislation and policy documents are essential in climate change financing. This is because not every mitigation scheme immediately lowers emissions. By proving the viability of lower carbon alternatives, for example, interventions may strengthen the underlying frameworks and conditions that can enable those reductions to occur over time. The influence of money on rules and incentives is consequently taken into account by several mitigation funds. Some financial institutions are looking towards performance-based methods of providing this type of aid (Ghosh et al., 2012), which would tie the disbursement of funds to verifiable progress toward predetermined goals. There has been a growing body of empirical and theoretical contributions in recent years that examine the pricing and hedging of climate change risks, investor awareness and strategies for dealing with such risks, and the impact of climate risks on investment decisions for corporations, financial intermediaries, and national governments. There are already helpful contributions that draw together the growing body of empirical and theoretical literature on the topic of climate finance (Giglio et al., 2021). More work has to be done by financial economists on this problem because of its significance and complexity (Stroebel and Wurgler, 2021). This is particularly true now that policymakers are beginning to see money as a potential tool in combating climate change.

Even though climate policies and plans are beginning to emerge in many developing nations, they are not necessarily firmly established in practice. The extent to which institutions entrusted with guiding national efforts to combat climate change are competent, have operational mandates and influence varies. How much real decisions and investments in key sectors are influenced by plans and strategies related to climate change also varies. Institutions tasked with managing climate financing on a national level and participating in the response to climate change may need to have their capability and accountability bolstered. Leadership will need to be supported and fostered where it can be found and may come from a diversity of institutions and stakeholders. Investment

### Table 1: Multilateral Climate change financing

<table>
<thead>
<tr>
<th>Determinants of Multilateral Climate Funds</th>
<th>Explanation</th>
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<tbody>
<tr>
<td>1. Reduction of Greenhouse gas emissions</td>
<td>A plethora of pre-existing climate funds have prioritised minimising GHG emissions in order to achieve the greatest impact</td>
</tr>
<tr>
<td>2. Enabling Environments</td>
<td>Enabling environments such as legislations and policy documents are essential in climate change financing.</td>
</tr>
<tr>
<td>3. Poverty and development linkages</td>
<td>There have been efforts made to quantify the number of people whose access to low-carbon energy services has improved as a direct result of funding programmes that have been made by some funds with a more specific focus on the links between poverty alleviation and climate change mitigation.</td>
</tr>
<tr>
<td>4. Private investment</td>
<td>In the renewable energy sector, private enterprises and investors are playing a crucial role in adopting and financing activities that offer mitigation benefits. Thus, there has been a lot of focus on studying how public money might inspire private investment and how to best implement such a strategy.</td>
</tr>
<tr>
<td>5. Public climate finance</td>
<td>Various national government aid organisations and international organisations provide public funding for climate change initiatives. The Climate Policy Initiative reports that the vast bulk of these funds originate in the private sector in industrialised nations.</td>
</tr>
</tbody>
</table>

Source: Author
in climate-compatible development requires sound policies, regulations, institutions, and governance, all of which can be bolstered with the support of climate finance (Stroebel and Wurgler, 2021). Grants, technical assistance, as well as budget support and policy loans, can be used to encourage countries to address policy, regulatory, and underlying governance frameworks that affect climate change adaptation and mitigation. Complexity abounds in the political economy of such a shift (Tanner and Allouche, 2011). If financing is allocated in ways that are supportive of well-designed national plans and associated institutions, it can assist strengthen their role and influence. Institutions on a global scale can back up the use of rigorous analytical tools and the participation of stakeholders in the planning process. However, in practice, this may be at odds with efforts to guarantee national ownership. Providers of international credit may be restrained in their ability to push matters further than sovereign governments are ready to go.

**Poverty and development linkages**

Attempts to quantify the number of individuals whose access to low-carbon energy services has improved as a result of funding programs that have been made by some funds with a more specific focus on mitigation and development of poverty links. Although it is generally possible to take steps to improve the developmental consequences of mitigation initiatives and ensure that they deliver social benefits, not all interventions that deliver large-scale GHG abatement also offer direct advantages for reducing poverty (Ellis, 2013). In the same vein, not all low-carbon development interventions that have direct impacts on poverty also have rapid mitigation benefits. As an illustration, providing low-carbon electricity to those who lack it may have a minor impact on short-term global GHG emission reductions but a significant impact on long-term climate-compatible development goals. Low-income countries contribute very little to global GHG emissions at the moment, but if they can find low-carbon ways to meet their energy and infrastructure (transport and water) needs as they develop, they can be a part of a global solution to climate change and enjoy its benefits as they develop as well (Ellis, 2013).

Since adaptation is such a vague term, figuring out the best way to fund it is difficult. It may be difficult to disentangle adaptation and resilience-building initiatives inside countries from those that lead to “good” development in practice (Jones et al., 2012). Strengthening resilience and adaptive ability is a common goal of conventional development interventions such as those that promote sustainable livelihoods, provide social protection, or run catastrophe risk reduction projects, although this is rarely acknowledged (Ellis, 2013). The reality is that adaptation funding will need to be spent well within recipient countries if it is to enhance resilience and adaptive capability, regardless of how complexly the term is defined. Although many development measures aim to do so, not all of them strengthen resilience to climate change. Low-income nations must increase their capacity for resilience and adaptation through investments in energy, transportation, and water services (Tanner and Allouche, 2011). It is possible that development efforts meant to make people more resilient to climate change could actually have the opposite effect if these services are offered in carbon-heavy ways. Independent adaptation projects have benefited from adaptation funding, but programmatic approaches that aim to include adaptation and climate risk in development efforts also have received assistance.

**Private investment**

Private enterprises and investors are playing an increasingly important role in implementing and financing actions that yield mitigation benefits, especially in the renewable energy industry. As a result, research into the mechanisms by which public funding can encourage private investment has received considerable attention. It is a goal of many mitigation funds to determine how much private financing was directly leveraged as a result of their efforts. Negative and positive screening, active ownership, targeted investments in green assets (like green bonds or clean energy public equity), specialised funds in renewable energy infrastructure (like project finance), cleantech venture capital, and alternative finance are all examples of green investment strategies (Busch et al., 2020). On the other hand, there is still an insufficient amount of clarity and precision in the green mandates throughout the investment chain and the investment definitions of certain asset classes. All too often, the “greenness” moniker is applied to financial instruments whose issuers are engaging in “greenwashing” by exaggerating their positive impact on the environment. In most situations, asset managers and issuers are left to their own devices when it comes to measuring and reporting environmental footprints, which often results in incomplete, unverified information. The true environmental footprint of corporate and sovereign issuers is difficult to quantify due to heterogeneous metrics and rating systems, as well as the inherent conflict of interests between issuers, investors, and score/rating providers (Berg et al., 2021).

The actual accountability of issuers, coupled with transparency and comparability of indicators for investors and rating providers, is crucial for directing private capital towards issuers and projects that can deliver on the transition towards a low-carbon economy. Capital is crucial to the success of technological advancements (Nakhhooda et al., 2012), especially in the formative stages of new technology development and deployment when financial risks are typically highest and private investors are generally hesitant to get involved (Nakhhooda et al., 2012). In turn, innovation can affect the budget allocation and the participation of various stakeholder groups. But innovation is about more than just new technologies (Nakhhooda et al., 2012). The ability of stakeholders and communities to innovate in response to climate change is something that climate finance can help to strengthen. Finally, there have been innovations in utilising finance to develop new kinds of financing structures and partnerships that remove barriers to climate-specific actions. All of these types of innovation contribute to improved efficiency. It is helpful, then, to think about how international climate funds have supported the full spectrum of innovation from new technologies to new methods of deployment to new finance models to new institutional capacities. Financing from several sectors, including the business sector, is necessary for the successful execution.
of adaptation efforts, such as those outlined in NDCs, NAPs, and NAPAs (IIISD and GIZ, 2017). To adapt to the changing climate and pursue a path of low-carbon and climate-resilient development, especially in developing countries, substantial financial resources are needed. To adapt in developing countries alone by 2030, between USD 140 billion and USD 300 billion per year may be needed, as stated in the Adaptation Finance Gap Report (UNEP, 2016). There may be a demand for between $280 billion and $500 billion in financing by the year 2050 (UNEP, 2016).

Public climate funding

Public funding for climate change comes from a variety of sources, including bilateral and multilateral financial institutions or national government aid organisations (CPI, 2012). According to the Climate Policy Initiative, a large portion of this money comes from the private sector, largely from industrialised countries. Both public and private intermediaries most notably national development and commercial banks played critical roles in mobilising climate finance. The majority of climate change budgets are used to support initiatives that reduce emissions. Out of a total of 385 billion USD (CPI, 2012), these are responsible for 350 billion USD, the vast majority of which goes toward energy efficiency and renewable energy generation projects. One-third of global mitigation financial flows flowed to emerging economies like Brazil, China, and India, with the majority of investments being raised domestically and supporting development aims. The estimated range for funding initiatives that aid adaptation to climate change is much lower, from $12.3 billion to $15.6 billion. There is a lack of consideration for the overlapping nature of these two fields. The World Bank (2010) conducted an estimate that found the annual cost of adapting to a global average temperature increase of 2°C would be somewhere between $70 and $100 billion. Currently available resources remain; however, grossly inadequate and emphasise the need for more proactive and inventive measures to secure funds to assist increased resilience of local communities to current and future shocks.

Multiple reports highlight the fact that while the private sector is responsible for a sizable portion of money for climate change mitigation, public sources are the primary providers of funds for adaptation measures. This means that National Red Cross and Red Crescent Societies will need to find alternative ways to secure funding for their various projects. Activities such as tree planting or better cook-stove programs can create synergies between adaptation and mitigation and enable more creative methods to mobilise financial resources. There is a rise in the number of initiatives, programs, and projects that indirectly or directly aid in both mitigation and adaptation. In addition to the primary goals of these projects, there are often secondary goals met as a result. Practitioners, development organisations, non-governmental organisations (NGOs), financial agencies, and policy-makers are increasingly highlighting the necessity of establishing synergies between adaptation and mitigation (Berg et al., 2021). Public sector support is often not delivered directly from governments to end-users but funneled through government agencies or development banks (CPI, 2012). In addition, many international subsidies are only accessible to national governments or UN development agencies such as UNDP or UNEP (UNEP, 2012). (UNEP 2012). Because of this, it is even more important for National Red Cross and Red Crescent Societies to work closely with their respective national governments or other organisations to effectively conduct climate change-related initiatives.

Climate change funding for Africa

The Clean Development Mechanism and other international carbon markets offer promising opportunities for African nations to participate voluntarily (CDM). Community-based afforestation and reforestation programs, agro-forestry, and reduced deforestation and degradation (REDD) are generating knowledge and solutions, but they need to be evaluated and applied to reduce carbon emissions. For the advantage of small farmers, these methods may generate synergies that boost productivity and allow agriculture to serve a variety of purposes. It is worrying to note that no climate fund is headquartered in Africa, despite there being twenty-two such funds worldwide. At the United Nations climate change conference (COP 15) in Copenhagen in 2009, delegates reached a political commitment, though not a binding one, to allocate US$30 billion in new and additional fast-track resources by 2012, with an additional US$100 billion to be raised yearly. The African Development Bank has been tasked by African leaders to manage these funds worldwide. At COP 15, delegates reached a political commitment, though not a binding one, to allocate US$30 billion in new and additional fast-track resources by 2012.

However, agriculture projects still face difficulties when trying to gain access to carbon markets due to the high costs associated with monitoring and procedures. It takes a long time, a lot of technical know-how, and a lot of money to get the initial set up for a carbon project designed and developed. Therefore, it is essential to find a project developer and donors early on in the process to streamline the procedure and set up early (up-front) payment or compensation arrangements for the engaged farmers (Seeberg-Elverfeldt, 2010). During the 7th African development Forum, the idea of an African Green Fund (AfDB, 2010) was considered. The proposed AGF was addressed on the consultation platform as a tool that would allow the African Development Bank to handle the fast-track financing and long-term obligations made under the Copenhagen Accord. The African Development Bank's role as host and manager of this Fund in Africa will increase the continent's access to critical global resources for combating climate change.
Conclusion

The study has established that financial players are increasingly cognizant of the need for well-governed social, environmental, and economic systems in fostering the growth of long-term, sustainable financial profits. The study delved into the magnitude and pervasiveness of vulnerability to climate hazards for global banks and financial institutions to the extent that indirect exposures through financial counterparties are taken into account. Essentially, the stakes related to climate change are tremendous, rivaling or even surpassing those that helped cause the Great Financial Crisis. Despite the efforts of long-term institutional investors to standardize green mandates and provide access to credible climate reporting measures, it is abundantly obvious that financial engineering must be released to progress from mere disclosure to proper management of climate risks. However, financial regulators are making more efforts to enhance financial actors’ disclosure of climate change-related information. Importantly, central banks are considering redistributing their holdings to favor companies with lower environmental impact. As a result, greener sectors would have easier access to lower-cost finance, which would hasten the process of greening the physical economy. Given this comprehensive picture, financial economists have a wide range of theoretical and empirical topics to explore, including capital market-based emissions trading systems, the effectiveness of market pricing of climatic risks, the role of venture capital and alternative finance in the creation of new low-emission technologies, and so on. The study, therefore, recommends that investment in renewable energy and other forms of climate change mitigation should be a top priority for the international financial system.

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