Unlocking Climate Finance for Africa: Rethinking Access Mechanisms for Sub-Saharan Economies Under the Paris Agreement

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Abstract

Despite contributing less than four percent of global greenhouse gas emissions, Africa is disproportionately affected by climate change, experiencing recurring floods, desertification, and food insecurity. Climate finance is central to addressing these vulnerabilities, yet Africa consistently receives a fraction of global flows. Estimates suggest that the continent requires approximately $250 billion annually by 2030 to meet both adaptation and mitigation needs, but current allocations are heavily skewed toward mitigation, while adaptation, critical for livelihoods and resilience, remains chronically underfunded. Compounding this challenge, financing is predominantly loan-based, increasing debt burdens, and the complexity of application processes, weak institutional capacity, and fragmented regulatory frameworks further limit access. This article critically examines why climate finance under the Paris Agreement has largely failed to deliver meaningful support to African economies. It explores structural, regulatory, and institutional barriers that undermine the continent's ability to mobilise and effectively utilise international climate resources. The study draws comparative lessons from South Africa's Just Energy Transition Partnership, Latin America's green bonds and debt-for-nature swaps, and the advocacy of Small Island Developing States for loss and damage, highlighting pathways that could inform African approaches. The article advances practical opportunities for reform, including streamlining global fund governance, scaling regional climate finance mechanisms, establishing credible monitoring, reporting, and verification standards, responsibly leveraging private finance, and exploring innovative instruments such as debt-for-climate swaps and regional carbon markets. It argues that without deliberate reform, Africa will remain marginalized in climate finance flows, risking further vulnerability. Only through structural, legal, and financial innovation can the continent secure the resources necessary to implement both adaptation and mitigation measures and participate equitably in the global low-carbon transition.

1. Introduction

In the clearest terms, climate finance is the lifeblood of the Paris Agreement.[1] Without it, the promises of mitigation and adaptation for the Global South cannot materialise, and the most

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[1] Neil Gunningham, 'A quiet revolution: Central banks, financial regulators, and climate finance' (2020) 12(22) Sustainability 9596

vulnerable regions will bear the greatest cost of climate change. For Sub-Saharan Africa, where fiscal limitations, structural inequalities, and fragile economies constrain domestic capacity, external climate finance is not simply desirable but essential for survival.[2] The effectiveness and credibility of the Paris Agreement will ultimately be judged not by its declarations, but by whether the flow of resources enables countries in Africa to withstand intensifying climate shocks while pursuing low-carbon development.

In 2009, developed countries pledged to mobilise 100 billion US dollars annually by 2020 at the Copenhagen climate talks, a commitment reaffirmed in Paris in 2015.[3] This target has never been fully achieved. Reports by the OECD and independent analysts confirm that the sums claimed often rely on questionable accounting and are delivered in the form of loans rather than grants, increasing debt burdens rather than relieving them.[4] For African countries already struggling with debt sustainability, this failure reveals not only a funding gap but also a deeper imbalance in the design of global climate finance. Instead of meeting the pressing needs of recipients, the system largely reflects the interests and priorities of donors. Africa exemplifies one of the most conflicting paradoxes in the climate crisis.[5] The continent contributes less than four per cent of global greenhouse gas emissions, yet it suffers some of the most severe consequences.[6] Rising temperatures, desertification, droughts, floods, and coastal erosion are already displacing communities, disrupting food and energy systems, and threatening public health. According to the Intergovernmental Panel on Climate Change (IPCC), tens of millions of Africans could be pushed into extreme poverty by 2030 unless large-scale adaptation measures are implemented.[7] In this context, access to climate finance is not a supplementary matter of development policy; it is an existential necessity.

Despite the urgency, existing access mechanisms have not delivered meaningfully for Sub-Saharan Africa.[8] Accreditation procedures under the Green Climate Fund (GCF) and other institutions have also been found to be overly complex, favouring countries with stronger bureaucracies and technical capacity.[9] High co-financing requirements exclude many low-income states, while funding is disproportionately skewed toward mitigation projects such as renewable energy generation. Adaptation, which should be the continent's most urgent priority, unfortunately receives only a fraction of available finance.[10] The effect is a system that rewards

[2] Anna Belianska, Nadja Bohme, Kailhao Cai, Yoro Diallo, Saanya Jain, Giovanni Melina, Pritha Mitra, Marcos Poplawski Ribeiro and Solo Zerbo, 'Climate change and select financial instruments: an overview of opportunities and challenges for Sub-Saharan Africa' (2022)
[3] Noah M Sachs, 'The Paris Agreement in the 2020s: Breakdown or breakup' (2019) 46 Ecology LQ 865
[4] Bjarne Steffen, 'A comparative analysis of green financial policy output in OECD countries' (2021) 16(7) Environmental Research Letters 074031
[5] O MC Osazuwa, Maryjane Y Oghogho, Alfred A Mboto, Godwin P Onogwu and Okwudia Gogogwute, 'Climate change and civil conflict in Africa: understanding the interconnections' (2025) 7(05) The American Journal of Political Science Law and Criminology 158
[6] Mphethe Isaac Tongwane and Mokhele Edmond Moeletsi, 'A review of greenhouse gas emissions from the agriculture sector in Africa' (2018) 166 Agricultural Systems 124
[7] Ibidun O Adelekan, Edmond Totin and Christopher Trisos (eds), *IPCC WGII Sixth Assessment Report, Chapter 9: Africa* (Draft, 4 December 2020)
[8] Iain Barton, Anton LV Avanceña, Nevashini Gounden and Ravi Anupindi, 'Unintended consequences and hidden obstacles in medicine access in Sub-Saharan Africa' (2019) 7 Frontiers in Public Health 342
[9] Rishi Basak and Sylvia Karlsson-Vinkhuyzen, 'The Green Climate Fund: history, status and legitimacy' in (eds), *Handbook of International Climate Finance* (Edward Elgar Publishing 2022) 135
[10] Ibid.

carbon accounting metrics while leaving the human consequences of climate change in Africa largely unaddressed.

The critical question therefore arises: why is climate finance not working for Africa, and what reforms are required to make it effective? Addressing this challenge requires more than larger pledges. It calls for systemic changes to the way climate finance is structured and delivered under the Paris Agreement. For Sub-Saharan Africa, the task is not only to secure greater resources but also to reshape the institutional and legal frameworks that govern access. Unlocking climate finance must involve reducing the barriers created by donor-driven procedures, rebalancing mitigation and adaptation priorities, and creating instruments that attract private capital without undermining equity. Above all, Africa must shift from being treated as a passive recipient of international benevolence to becoming a decisive actor in the governance of global climate finance.

2. Climate Finance Under the Paris Agreement

Climate finance under the Paris Agreement combines a broad spectrum of financial support aimed at assisting developing countries in both mitigating greenhouse gas emissions and adapting to the adverse effects of climate change.[11] Article 2 of the Agreement articulates the overarching goal to "make finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development." This commitment underscores the necessity for financial resources to facilitate the transition to sustainable development pathways.

The scope of climate finance is expressed through various mechanisms, including mitigation, adaptation, technology transfer, and capacity-building.[12] Mitigation finance targets emission reduction initiatives, such as the deployment of renewable energy technologies and the enhancement of energy efficiency.[13] Adaptation finance focuses on strengthening resilience to climate impacts, encompassing projects that safeguard water resources, protect biodiversity, and fortify infrastructure against climate-induced stresses.[14] Technology transfer involves the dissemination and deployment of climate-friendly technologies, while capacity-building aims to enhance the institutional and human resource capacities of developing countries to implement climate actions effectively.[15] Currently, there are several financial instruments employed to mobilise and channel climate finance. For one, grants serve as non-repayable funds primarily allocated for adaptation projects and capacity-building initiatives. Concessional loans offer favourable lending terms to reduce the financial burden on recipient countries. Also, guarantees are utilised to mitigate investment risks, thereby attracting private sector participation. Carbon markets, particularly those established under Article 6 of the Paris

[11] Sarah Bracking, 'The anti-politics of climate finance: the creation and performativity of the green climate fund' (2015) 47(2) Antipode 281

[12] Snigdha Nautiyal and Sonja Klinsky, 'The knowledge politics of capacity building for climate change at the UNFCCC' (2022) 22(5) Climate Policy 576

[13] Ling Zhang, Hayot Berk Saydaliev and Xiaoyu Ma, 'Does green finance investment and technological innovation improve renewable energy efficiency and sustainable development goals' (2022) 193 Renewable Energy 991

[14] Francesco Granata and Fabio Di Nunno, 'Financing the Future of Water: Unlocking Investment, Innovation, and Governance for Resilient Infrastructure in a Changing Climate' (2025) Earth Systems and Environment 1

[15] Charikleia Karakosta, Haris Doukas and John Psarras, 'Technology transfer through climate change: Setting a sustainable energy pattern' (2010) 14(6) Renewable and Sustainable Energy Reviews 1546

Agreement, facilitate the trading of emission reductions, providing economic incentives for mitigation activities. Blended finance combines concessional funding with private investment to de-risk projects and mobilise additional resources. In the same vein, the global architecture for climate finance is structured around several key institutions, some of which would still be considered in detail in this article. For instance, the Green Climate Fund serves as a central mechanism to support the efforts of developing countries in mitigating and adapting to climate change.[16] The Adaptation Fund focuses specifically on financing adaptation projects, particularly in the most vulnerable countries.[17] The Global Environment Facility (GEF) operates as a financial mechanism for the UNFCCC by providing grants for projects that address global environmental issues, including climate change.[18] These institutions are governed by decisions made at the Conference of the Parties (COP), which outline their operational modalities and funding priorities.

Despite the establishment of these mechanisms, challenges are encountered in the effective mobilization and equitable distribution of climate finance. There are issues ranging from complex accreditation processes, stringent co-financing requirements, to the prioritization of mitigation over adaptation have hindered the accessibility of funds for many developing countries. Furthermore, the actual financial flows often fall short of the commitments made, raising concerns about the credibility and efficacy of the global climate finance system. Addressing these challenges necessitates a comprehensive evaluation of the existing frameworks and the implementation of reforms that align financial support with the genuine needs and priorities of developing countries

3. Africa's Climate Finance Situation

Estimates indicate that Africa requires approximately $250 billion annually between 2020 and 2030 to adequately address climate-related risks and build resilience.[19] In practice, however, the financial flows that reach Africa fall far short of these requirements. In 2021/2022, Africa received approximately $44 billion in climate finance, representing a 48% increase from $30 billion in 2019/2020, yet this remains only a fraction of the funding needed to meet the continent's climate ambition.[20] This persistent gap underscores the systemic inadequacies of the global climate finance architecture in providing predictable, sufficient, and accessible resources to the region.

[16] Britta Horstmann and Jonas Hein, *Aligning climate change mitigation and sustainable development under the UNFCCC: A critical assessment of the Clean Development Mechanism, the Green Climate Fund and REDD+* (Studies No 96, 2017)

[17] Matthias Garschagen and Deepal Doshi, 'Does funds-based adaptation finance reach the most vulnerable countries?' (2022) 73 Global Environmental Change 102450

[18] GEF, DRAFT, 'Global Environment Facility' in *Second meeting for the fifth replenishment of the GEF Trust Fund: Issues for the strategic positioning of the GEF* (Washington DC, 25–26 June 2009)

[19] Sandra Guzmán, Greta Dobrovich, Anna Balm and Chavi Meattle, *The State of Climate Finance in Africa: Climate Finance Needs of African Countries* (Climate Policy Initiative, June 2022)

[20] Climate Policy Initiative (CPI), 'Climate financing to Africa grows by 48% to USD 44 bn in 2021/22 but still only a quarter of what is required to realize its 2030 goals' (23 October 2024) https://www.climatepolicyinitiative.org/press-release/climate-finance-in-africa-2024-press-release/ accessed 16 September 2025

The distribution of climate finance across sectors further highlights structural distortions in global funding priorities. The majority of funds are directed toward mitigation, particularly in renewable energy projects, while adaptation finance, critical for Africa's highly vulnerable populations are severely underfunded.[21] Adaptation projects accounted for only $13.9 billion in 2021/2022, less than half of what is needed to address urgent climate risks such as floods, droughts, desertification, and food insecurity.[22] This imbalance is particularly concerning because, as already established, Africa contributes less than 4% of global greenhouse gas emissions yet experiences some of the most severe climate impacts globally.[23] Without a realignment of priorities toward adaptation and resilience, climate finance risks reinforcing global inequities rather than mitigating them. The nature of climate finance instruments also compounds the problem. A significant portion of funding received on the continent is provided as loans rather than grants, increasing the debt burden on countries that are already fiscally constrained.[24] Concessional loans dominate adaptation finance, with a few countries receiving the bulk of such support, leaving many vulnerable nations without sufficient resources.[25] Beyond the type of funding, structural barriers, as examined in the previous section, make it difficult for many African governments to access the funds that are theoretically available. These hurdles particularly disadvantage low-income and least-developed countries, preventing them from effectively translating finance into tangible climate action.

What all of these mean is that the scale, allocation, and accessibility of climate funds in Africa is severely inadequate. Without systemic reforms in the international climate finance system that prioritize both adaptation and mitigation, and without mechanisms to ensure transparent, equitable, and direct access, Africa will continue to struggle to respond to climate change effectively.

4. Barriers to Accessing and Effective Utilisation of Climate Finance

As already established in the previous sections, despite the growth of climate finance initiatives globally, African countries are faced with barriers that restrict their ability to access and effectively utilise these resources. These barriers are deeply entrenched in institutional, regulatory, legal, and procedural frameworks and collectively limit the continent's capacity to implement both mitigation and adaptation projects. Understanding these obstacles is critical to designing reforms that can unlock meaningful finance for Africa's climate challenges.

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[21] Axel Michaelowa, Stephan Hoch, Anne-Kathrin Weber, Ruth Kassaye and Tesfaye Hailu, 'Mobilising private climate finance for sustainable energy access and climate change mitigation in Sub-Saharan Africa' (2021) 21(1) Climate Policy 47

[22] Ede Ijjasz-Vasquez and Jamal Saghir, 'Prospects for climate adaptation finance for Africa: A glass less than half full' (Brookings, 13 February 2025) https://www.brookings.edu/articles/prospects-for-climate-adaptation-finance-for-africa-a-glass-less-than-half-full/?utm_source= accessed 17 September 2025

[23] Mounia Mostefaoui, Philippe Ciais, Matthew J McGrath, Philippe Peylin, Prabir K Patra and Yolandi Ernst, 'Greenhouse gas emissions and their trends over the last 3 decades across Africa' (2024) 16(1) Earth System Science Data 245

[24] Anna Belianska, Nadja Bohme, Kailhao Cai, Yoro Diallo, Saanya Jain, Giovanni Melina, Pritha Mitra, Marcos Poplawski Ribeiro and Solo Zerbo, 'Climate change and select financial instruments: an overview of opportunities and challenges for Sub-Saharan Africa' (2022)

[25] Martha Getachew Bekele and Alex Miller, 'Concessional loans for Africa's climate crisis: Whose fiscal effort?' (devinit.org, 27 August 2024) https://devinit.org/resources/concessional-loans-africas-climate-crisis-whose-fiscal-effort/?utm_source= accessed 15 September 2025

4.1 Institutional Barriers

Institutional constraints constitute one of the most significant impediments to accessing climate finance in Africa. Responsibility for climate action is often spread across multiple government ministries and agencies, including environment, energy, finance, agriculture, and planning.[26] This fragmentation leads to poor coordination, duplication of efforts, and conflicting priorities. The argument has consistently been made that ministries and departments of governments in African countries often operate in silos, each with its own reporting requirements, which complicates the preparation and submission of comprehensive project proposals.[27]

Another major institutional barrier is the limited number of nationally accredited entities eligible to directly access multilateral climate funds such as the Green Climate Fund.[28] Most African countries rely on international intermediaries to channel funds, which introduces delays, reduces flexibility, and increases transaction costs. Reliance on third parties also limits domestic ownership of projects, undermining contextual adaptation to local needs.[29] Weak institutional capacity manifests in insufficient financial management systems, inadequate monitoring and evaluation frameworks, and a lack of technical expertise to meet donor requirements.[30] These challenges prevent African governments from translating available finance into projects with tangible impact. Capacity constraints are particularly acute in the design of climate projects. Many institutions lack skilled personnel to develop technically rigorous proposals that comply with stringent global standards.[31] Furthermore, the institutional culture in some countries is risk-averse, discouraging innovation and the adoption of new financing mechanisms such as blended finance or carbon market instruments.[32] What this produces is a slow uptake of available funding and a persistent gap between Africa's climate needs and the funds it successfully mobilises.

4.2 Regulatory and Legal Barriers

Regulatory and legal frameworks across Africa further reinforce institutional weaknesses. Domestic laws often fail to align with the requirements of international climate finance mechanisms.[33] Sectoral policies governing energy, forestry, water management, and agriculture may conflict, creating ambiguity about which projects are legally compliant and eligible for

[26] Athena Ballesteros, Smita Nakhooda, Jacob Werksman and Kaija Hurlburt, 'Power, responsibility, and accountability: Rethinking the legitimacy of institutions for climate finance' (2010) 1 Climate L 261

[27] Oseland, Stina Ellevseth. "Breaking silos: can cities break down institutional barriers in climate planning?." *Journal of Environmental Policy & Planning* 21, no. 4 (2019): 345-357.

[28] Megan Bowman and Stephen Minas, 'Resilience through interlinkage: The green climate fund and climate finance governance' (2019) 19(3) Climate Policy 342

[29] William M Fonta, Elias T Ayuk and Tiff van Huysen, 'Africa and the Green Climate Fund: Current challenges and future opportunities' (2018) 18(9) Climate Policy 1210

[30] Abrar Chaudhury, 'Role of intermediaries in shaping climate finance in developing countries—lessons from the Green Climate Fund' (2020) 12(14) Sustainability 5507

[31] Amy N Javernick-Will and W Richard Scott, 'Who needs to know what? Institutional knowledge and global projects' (2010) 136(5) Journal of Construction Engineering and Management 546

[32] Vladimir Litvinenko, Ian Bowbrick, Igor Naumov and Zoya Zaitseva, 'Global guidelines and requirements for professional competencies of natural resource extraction engineers: Implications for ESG principles and sustainable development goals' (2022) 338 Journal of Cleaner Production 130530

[33] Jonathan Pickering, Carola Betzold and Jakob Skovgaard, 'Managing fragmentation and complexity in the emerging system of international climate finance' (2017) 17(1) International Environmental Agreements: Politics, Law and Economics 1

funding.[34] In practice, these misalignments make it difficult for national agencies to prepare coherent project proposals that satisfy the fiduciary and operational standards of multilateral funds. The absence of enforceable fiduciary frameworks also undermines confidence in fund management. In many countries, there is no clear legal mandate outlining the management, disbursement, and reporting of climate finance, creating vulnerabilities to mismanagement, corruption, or inefficient allocation, which in turn discourages both public and private finance.[35] Furthermore, the lack of legal clarity on project ownership, revenue-sharing, and carbon credit rights can impede participation in international mechanisms such as Article 6 of the Paris Agreement. Without strong legal foundations, countries risk exclusion from financing opportunities or may receive funding that is poorly aligned with national climate priorities.

Weak regulatory environments also limit private sector engagement.[36] Investors and project developers often view African climate finance projects as high-risk due to unclear regulatory frameworks, inconsistent policy enforcement, and the absence of standardized approval processes.[37] This deters investment in innovative climate solutions such as renewable energy integration, carbon credit generation, or climate-smart agriculture, all of which require predictable and transparent regulatory conditions.

4.3 Economic and Structural Barriers

Beyond institutional and legal obstacles, African countries face significant economic and structural barriers that impede access to climate finance.[38] High perceived investment risks in African economies are particularly a critical challenge as investors often view projects as vulnerable due to political instability, weak governance, and macroeconomic volatility. Even when projects meet technical criteria, the perception of risk inflates the cost of capital and discourages private sector participation.[39]

Currency volatility is another pervasive challenge. Climate finance often comes in foreign currencies, while project expenditures are incurred in local currency.[40] Sudden depreciation can drastically increase local costs, reduce project returns, and create uncertainty in long-term planning. This risk is compounded in countries with limited foreign exchange reserves or restrictive monetary policies, where hedging options are either unavailable or prohibitively expensive.[41] Limited domestic financial markets further constrain climate action. Many African economies lack long-term financing instruments that can support the capital-intensive nature

[34] Ibid.
[35] Ballesteros A, Nakhooda S, Werksman J and Hurlburt K, 'Power, responsibility, and accountability: Rethinking the legitimacy of institutions for climate finance' (2010) 1 Climate L 261
[36] Colin Scott, 'Private regulation of the public sector: a neglected facet of contemporary governance' (2002) 29(1) Journal of Law and Society 56
[37] Robyn Clark, James Reed and Terry Sunderland, 'Bridging funding gaps for climate and sustainable development: Pitfalls, progress and potential of private finance' (2018) 71 Land Use Policy 335
[38] Edward M Mungai, S Wagura Ndiritu and Izael Da Silva, 'Unlocking climate finance potential and policy barriers—A case of renewable energy and energy efficiency in Sub-Saharan Africa' (2022) 7 Resources, Environment and Sustainability 100043
[39] Ademola A Adenle, Dale T Manning and Joseph Arbiol, 'Mitigating climate change in Africa: barriers to financing low-carbon development' (2017) 100 World Development 123
[40] Michael Jakob, Jan Christoph Steckel, Christian Flachsland and Lavinia Baumstark, 'Climate finance for developing country mitigation: blessing or curse?' (2015) 7(1) Climate and Development 1
[41] Ibid.

of climate projects, particularly in renewable energy, carbon credit initiatives, and large-scale adaptation programs.[42] Local banks are often reluctant to provide financing due to regulatory constraints, risk aversion, or insufficient experience with climate-specific projects.[43] Consequently, countries must rely heavily on external funding, which is often complex, conditional, and insufficient to meet projected needs.

5. Challenges with Existing Paris Agreement Mechanisms

In addition to the barriers to accessing climate finance in Africa, significant challenges arise from the structural limitations of the current Paris Agreement mechanisms. While the agreement provides broad guidance on mitigation, adaptation, and finance mobilisation, the operationalization of these commitments often falls short in addressing the continent's unique vulnerabilities and institutional constraints. Some of these mechanisms are considered in detail below:

5.1 Nationally Determined Contributions (NDCs)

Nationally Determined Contributions (NDCs) are central to the Paris Agreement, intended to communicate each country's climate ambitions and priorities for mitigation and adaptation.[44] In theory, they should serve as the bridge between policy objectives and actionable climate finance. In practice, however, the design and implementation of NDCs in Africa expose significant weaknesses that limit their utility as instruments for attracting finance.[45] Most African NDCs outline broad targets for emissions reduction or adaptation measures but fail to provide detailed costings, clear investment priorities, or concrete strategies for implementation.[46] Without these elements, the NDCs offer insufficient guidance for financiers seeking bankable projects, leaving countries reliant on external technical assistance and ad hoc funding arrangements. Institutional capacity constraints compound the problem. As already highlighted, ministries and agencies tasked with climate action, energy policy, and financial planning frequently operate in silos, with limited coordination to integrate NDCs into broader national development agendas. This fragmentation undermines project preparation, delays approval processes, and reduces the credibility of NDCs as instruments capable of securing large-scale climate finance.[47] Furthermore, many NDCs lack comprehensive monitoring, reporting, and verification frameworks, making it difficult for funders to assess project

[42] Vera Songwe, Nicholas Stern and Amar Bhattacharya, *Finance for climate action: Scaling up investment for climate and development* (Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science 2022)
[43] Diana Smallridge, Barbara Buchner, Chiara Trabacchi, Maria Netto, José Juan Gomes Lorenzo, and Lucila Serra. 'The role of national development banks in intermediating international climate finance to scale up private sector investments.' (2012).
[44] Frauke Röser, Oscar Widerberg, Niklas Höhne and Thomas Day, 'Ambition in the making: analysing the preparation and implementation process of the Nationally Determined Contributions under the Paris Agreement' (2020) 20(4) Climate Policy 415
[45] Anna Belianska, Nadja Bohme, Kailhao Cai, Yoro Diallo, Saanya Jain, Giovanni Melina, Pritha Mitra, Marcos Poplawski Ribeiro and Solo Zerbo, 'Climate change and select financial instruments: an overview of opportunities and challenges for Sub-Saharan Africa' (2022)
[46] Philip Antwi-Agyei, Andrew J Dougill, Thomas P Agyekum and Lindsay C Stringer, 'Alignment between nationally determined contributions and the sustainable development goals for West Africa' (2018) 18(10) Climate Policy 1296
[47] Ibid

feasibility, risks, and impact.[48] The resulting uncertainty diminishes investor confidence and restricts access to concessional and private finance.

Equity considerations also reveal structural shortcomings. Climate finance allocation often favours countries with technically detailed and administratively robust NDCs, typically middle-income African nations with stronger institutional capacity.[49] Low-income and highly vulnerable countries, which contribute less than four percent of global emissions yet face the highest climate risks, are frequently disadvantaged.[50] The current NDC framework therefore perpetuates systemic inequities by linking fund access to administrative capacity rather than climate vulnerability or financing need.

5.2 The Green Climate Fund and Multilateral Financing Mechanisms

The GCF was established under the United Nations Framework Convention on Climate Change (UNFCCC) as the principal channel for delivering climate finance to developing countries.[51] In Africa, it has emerged as one of the largest potential sources of funding for both mitigation and adaptation initiatives. Despite its significance, the operationalization of the GCF in African contexts reveals certain shortcomings that limit its effectiveness.[52] For one, approval processes are lengthy and highly technical, often requiring extensive project documentation, feasibility studies, and co-financing commitments that many African countries struggle to provide.[53] As a result, project disbursement timelines can span several years, delaying urgent interventions in areas prone to climate shocks such as coastal flooding, desertification, and extreme droughts.

Multilateral mechanisms including the Adaptation Fund, the Global Environment Facility, and regional climate facilities operate alongside the GCF to channel finance into Africa.[54] However, these mechanisms often adopt fragmented approaches, with overlapping mandates and inconsistent eligibility criteria. This fragmentation increases administrative burdens on national agencies, leading to duplication of efforts and inefficient allocation of resources.[55] Smaller and low-income countries, in particular, face systemic disadvantages as they lack the accredited entities or technical expertise necessary to meet stringent fund requirements. Consequently, Africa receives a disproportionately low share of global climate finance, estimated at less than

[48] Lauri Peterson and Harro van Asselt, 'Assessing risks to the implementation of NDCs under the Paris Agreement' (2025) Climate Policy 1

[49] Axel Michaelowa, Stephan Hoch, Anne-Kathrin Weber, Ruth Kassaye and Tesfaye Hailu, 'Mobilising private climate finance for sustainable energy access and climate change mitigation in Sub-Saharan Africa' (2021) 21(1) Climate Policy 47

[50] Max Alexander Matthey, Aidan Hollis, Clara Brandi, Georg Kobiela, Benjamin Roth and Magdalene Silberberger, 'Climate impact auctions: an underused tool for green subsidies in the Global South' (2025) 25(5) Climate Policy 806

[51] Abrar Chaudhury, 'Role of intermediaries in shaping climate finance in developing countries—lessons from the Green Climate Fund' (2020) 12(14) Sustainability 5507

[52] William M Fonta, Elias T Ayuk and Tiff van Huysen, 'Africa and the Green Climate Fund: Current challenges and future opportunities' (2018) 18(9) Climate Policy 1210

[53] Jessica Omukuti, Sam Barrett, Piran CL White, Robert Marchant and Alina Averchenkova, 'The green climate fund and its shortcomings in local delivery of adaptation finance' (2022) 22(9-10) Climate Policy 1225

[54] Megan Bowman and Stephen Minas, 'Resilience through interlinkage: The green climate fund and climate finance governance' (2019) 19(3) Climate Policy 342

[55] William M Fonta, Elias T Ayuk and Tiff van Huysen, 'Africa and the Green Climate Fund: Current challenges and future opportunities' (2018) 18(9) Climate Policy 1210

10 percent of total disbursements, despite the continent's high vulnerability to climate impacts.[56]

5.3 Bilateral and Private Climate Finance Flows in Africa

Bilateral climate finance also constitutes a significant portion of external resources directed toward Africa, with countries such as Germany, France, the United Kingdom, and the United States serving as primary contributors.[57] These funds often take the form of grants, concessional loans, and technical assistance programs intended to support renewable energy, climate-resilient infrastructure, and capacity building.[58] Despite the scale of bilateral engagement, funding is typically project-specific, short-term, and highly conditional, reflecting donor priorities rather than the continent's strategic climate needs.[59] This approach has produced uneven impacts, with wealthier or more geopolitically strategic countries receiving disproportionately higher levels of support, while lower-income and highly vulnerable states face exclusion. Private climate finance is gradually being accepted as an increasingly important channel, particularly through green bonds, climate-focused investment funds, and corporate social responsibility initiatives targeting renewable energy and sustainable agriculture.[60] However, the mobilisation of private capital in Africa is not without its challenges. Investors perceive high political, regulatory, and currency risks across many African markets, resulting in risk premiums that deter investment or make projects economically unviable.[61] Additionally, weak domestic financial infrastructure, limited availability of long-term credit, and inadequate legal frameworks for contract enforcement further discourage private sector participation.[62] In many cases, climate finance intended for adaptation projects are concentrated in urban, commercially viable contexts, leaving rural and marginalized communities underserved.[63]

The cumulative effect of these challenges is a skewed finance architecture that prioritizes mitigation over adaptation, favours countries with stronger institutional capacity, and channels resources toward donor-driven agendas. Addressing these issues requires the development of continent-wide strategies to de-risk investment, harmonise regulatory frameworks, and expand accredited entities capable of mobilizing both bilateral and private capital effectively.

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[56] Phemelo Tamasiga, Malesela Molala, Malebogo Bakwena, Hugue Nkoutchou and Helen Onyeaka, 'Is Africa left behind in the global climate finance architecture: redefining climate vulnerability and revamping the climate finance landscape—A comprehensive review' (2023) 15(17) Sustainability 13036

[57] Isaac Doku, Theophilus Edward Richardson and Nicholas Kwame Essah, 'Bilateral climate finance and food security in developing countries: A look at German donations to Sub-Saharan Africa' (2022) 11(3) Food and Energy Security e412

[58] Gracelin Baskaran, Amara Ekeruche, Chris Heitzig, Aloysius Uche Ordu and Lemma W Senbet, 'Financing climate-resilient infrastructure in Africa' (2023) T20 Policy Brief in *Purpose & Performance: Reassessing the Global Financial Order*

[59] Ibid

[60] Vera Songwe, Nicholas Stern and Amar Bhattacharya, *Finance for climate action: Scaling up investment for climate and development* (Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science 2022)

[61] James Mukasa, 'Market Risk Analysis in Investment Portfolios in Uganda' (2023) 1(2) *Journal of Modern Risk Management* 1.

[62] Isaac Kayode Oyegbade, Abbey Ngochindo Igwe, O C Ofodile and C Azubuike, 'Advancing SME financing through public-private partnerships and low-cost lending: A framework for inclusive growth' (2022) 6(2) *Iconic Research and Engineering Journals* 289.

[63] Ibid

Enhancing transparency, accountability, and equitable allocation mechanisms is critical to ensuring that bilateral and private climate finance flows align with Africa's climate vulnerabilities and long-term sustainable development objectives.

6. Comparative Lessons

Building on the discussion of structural and operational challenges that impede Africa's access to climate finance, it is useful to examine specific country experiences to draw comparative lessons. South Africa's Just Energy Transition Partnership, for example, offers insights into large-scale climate finance mobilisation, while Small Island Developing States and Latin American countries provide perspectives on innovative mechanisms such as loss-and-damage advocacy, green bonds, and debt-for-nature swaps. Analysing these examples allows for identification of best practices, potential pitfalls, and adaptable strategies that can inform reforms across African contexts.

6.1 South Africa's $8.5 Billion Just Energy Transition Partnership (JETP) with G7

South Africa's Just Energy Transition Partnership (JETP), agreed in 2021 with the G7 nations, represents a landmark effort to mobilize international finance for decarbonization in a developing economy.[64] The $8.5 billion package combines concessional loans, grants, and technical support to accelerate the country's shift away from coal, modernize energy infrastructure, and support affected communities.[65] From a climate finance perspective, the JETP is a critical example of how large-scale, externally backed initiatives can align economic development with climate mitigation goals.[66] It demonstrates that partnerships between developed and developing countries can create the conditions for ambitious decarbonization while addressing socio-economic considerations, such as employment transitions and energy security. However, there are structural and policy challenges in this partnership that are highly instructive for other African countries. The financing mix has been subject to scrutiny, particularly regarding the proportion of concessional loans relative to grants.[67] Loans, even at favourable rates, increase public debt burdens and may constrain fiscal space for other development priorities.[68] For South Africa, already contending with high sovereign debt and significant social expenditure needs, the loan component introduces complex trade-offs between financing immediate energy transition projects and maintaining broader macroeconomic stability. Furthermore, the disbursement mechanisms are contingent upon specific milestones and reforms, which places significant administrative and institutional burdens on local agencies.[69]

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[64] Sean Sweeney, 'The Fad Is Dead: Why "Just Energy Transition Partnerships" Are Failing' (2024) 33(2) *New Labor Forum* 95.
[65] A A Seiler, Hannah Brown and Samuel Matthews, *The JETPs of South Africa and Indonesia* (Center for Global Development 2023).
[66] Joshua Oluwaseun Lawoyin, 'Policy Frameworks for Energy Transition: A Comparative Study of Nigeria and South Africa.' (2023).
[67] Ibid
[68] Nicholas P Simpson, Michael Jacobs and Archie Gilmour, *Taking stock of Just Energy Transition Partnerships* (ODI Policy Brief 2023).
[69] Ibid

The JETP also highlights the governance challenges of large-scale international climate finance.[70] Coordinating between multiple donors, government ministries, and private sector stakeholders requires robust institutional capacity, clear accountability structures, and transparent decision-making. Weaknesses in these areas risk delays, misallocation, or failure to achieve intended outcomes.[71]For other African economies, South Africa's JETP provides valuable lessons. First, the loan-to-grant ratio must be critically evaluated to avoid replicating debt vulnerabilities. Second, project design must balance technical feasibility with socio-economic considerations, ensuring that energy transition does not exacerbate inequality. Third, institutional readiness is key to translating pledged finance into tangible outcomes. Although the JETP demonstrates the potential of targeted, internationally backed finance, it underscores that effective climate partnerships require more than funding; they demand legal, fiscal, and institutional reforms to achieve sustainable impact.

6.2 Small Island Developing States (SIDS) Lobbying for Loss and Damage

Small Island Developing States (SIDS)[72] have long been at the forefront of international climate negotiations, advocating for mechanisms to address loss and damage arising from climate impacts that are beyond adaptation.[73] These states, facing existential threats from rising sea levels, intensified cyclones, and coastal erosion, have consistently highlighted the inadequacy of conventional climate finance, which largely focuses on mitigation and adaptation.[74] Their lobbying efforts led to the establishment of the Santiago Network under the Warsaw International Mechanism for Loss and Damage, providing technical assistance and guidance on funding and risk management strategies.[75] While still evolving, the Network represents a critical recognition that certain climate impacts cannot be avoided and require dedicated financial support. Africa shares several vulnerabilities with SIDS, albeit on a continental scale. Flooding, desertification, and extreme droughts increasingly threaten livelihoods, food security, and infrastructure across both Sub-Saharan Africa and the SIDS.[76] In this context, the African negotiating position could draw lessons from SIDS by advocating for dedicated loss and damage financing mechanisms that go beyond project-based adaptation

[70] Patrick Bolton, Alissa M Kleinnijenhuis and Jeromin Zettelmeyer, *The economic case for climate finance at scale* (Bruegel Policy Brief No 09/2024, 2024)
[71] Niña Nicole Cerilla and others, *'Tracking Just Energy Transition (JET)-related projects in the Philippines: A policy and program review of the Green Climate Fund (GCF) and the Global Environmental Facility (GEF)'* (2024).
[72] Small Island Developing States (SIDS) are a distinct group of 39 States and 18 Associate Members of United Nations regional commissions that face unique social, economic and environmental vulnerabilities. The three geographical regions in which SIDS are located are: the Caribbean, the Pacific, and the Atlantic, Indian Ocean and South China Sea (AIS). SIDS were recognized as a special case both for their environment and development at the 1992 United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil.
[73] Adelle Thomas and others, 'Climate change and small island developing states' (2020) 45(1) *Annual Review of Environment and Resources* 1.
[74] Sam Adelman, 'Climate justice, loss and damage and compensation for small island developing states' (2016) 7(1) *Journal of Human Rights and the Environment* 32.
[75] Inés de Águeda Corneloup and Arthur PJ Mol, 'Small island developing states and international climate change negotiations: the power of moral "leadership"' (2014) 14(3) *International Environmental Agreements: Politics, Law and Economics* 281.
[76] Josefine Falk and Otto Fjelkner, *African Climate Hazard Assessment – A Composite Index Assessing National Vulnerability to Climate Change* (2023).

and mitigation funds. Such mechanisms would address both the immediate humanitarian needs and the long-term socio-economic recovery of affected populations.

Noteworthily, adopting a SIDS-style approach in Africa is not a seamless endeavour. Africa's size, diversity, and institutional fragmentation complicate unified lobbying and allocation of funds.[77] A continental framework under entities such as the African Union or the AfCFTA could help consolidate positions, streamline access to international loss and damage funds, and ensure equitable distribution among countries with varying exposure and vulnerability levels.[78] Critically, Africa must also guard against dependency and inequitable arrangements. Unlike SIDS, which can leverage international attention due to their geopolitical visibility, African countries must navigate complex donor landscapes and competing development priorities. Emulating the SIDS approach requires strategic diplomacy, robust governance, and institutional capacity to ensure that loss and damage financing translates into tangible protection for communities rather than symbolic allocations.

6.3 Latin America's Experiments with Green Bonds and Debt-for-Nature Swaps

Latin American countries as a case study is particularly apt considering that they are pioneers in mobilising climate finance through innovative instruments such as green bonds and debt-for-nature swaps.[79] Green bonds, which earmark capital exclusively for environmentally sustainable projects, have been issued by countries such as Mexico, Brazil, and Chile to fund renewable energy infrastructure, reforestation, and water management projects.[80] These instruments not only provide access to long-term financing but also attract private investors seeking ESG-compliant assets. The success of these bonds is often determined by clear regulatory frameworks, independent verification of project outcomes, and integration with national climate strategies.[81] However, there are challenges including the high cost of structuring bonds, limited local capital markets in smaller economies, and the risk of misalignment between bond proceeds and broader sustainability objectives. Debt-for-nature swaps offer another pathway, allowing countries to restructure sovereign debt in exchange for commitments to fund environmental conservation.[82] Costa Rica, for example, successfully converted portions of its external debt into financing for forest protection and biodiversity projects.[83] Such arrangements provide dual benefits: immediate fiscal relief and long-term environmental investment. Nevertheless, these instruments require strong governance,

[77] Machiko Nissanke and Ernest Aryeetey, 'Institutional Analysis of Financial Market Fragmentation in Sub-Saharan Africa: A Risk-Cost Configuration Approach' in Machiko Nissanke and Ernest Aryeetey (eds), *Domestic Resource Mobilization and Financial Development* (Palgrave Macmillan UK 2008) 112.
[78] Wumi Olayiwola, 'Governing the Interface between the African Continental Free Trade Area and Regional Economic Communities Free Trade Areas: Issues, Opportunities and Challenges' (2020).
[79] Mauricio Cárdenas, Juan Pablo Bonilla and Federico Brusa, *Climate Policies in Latin America and the Caribbean: Success Stories and Challenges in the Fight Against Climate Change* (2021).
[80] Juan David González-Ruiz, Juan Camilo Mejía-Escobar, Javier Rojo-Suárez and Ana-Belén Alonso-Conde, 'Green bonds for renewable energy in Latin America and the Caribbean' (2023) 44(5) *The Energy Journal* 45.
[81] Sayuri Shirai, 'An overview on climate change, environment, and innovative finance in emerging and developing economies.' (2022).
[82] Christoph Nedopil, Mengdi Yue and Alice C Hughes, 'Are debt-for-nature swaps scalable: Which nature, how much debt, and who pays?' (2024) 53 *Ambio* 63.
[83] Sarah Cordero, 'Local regulatory and economic instruments to encourage tropical forestry conservation: an analysis of the policy process in Costa Rica and Mexico.' (2018).

transparent monitoring, and credible reporting to avoid mismanagement and ensure that funds directly support climate-positive outcomes.[84]

For Africa, these Latin American experiments offer critical lessons. First, they highlight the importance of legal and institutional frameworks capable of enforcing accountability, especially in multi-stakeholder financing arrangements. Second, they demonstrate that innovative financial instruments can mobilize resources beyond traditional aid, particularly if integrated with domestic capital markets and international investors. Third, they reveal the necessity of transparency and verification mechanisms to build investor confidence and prevent the diversion of funds. Adapting such instruments in African economies would require careful calibration to local contexts, including managing currency risk, strengthening domestic capital markets, and ensuring equitable access for vulnerable communities. Done effectively, green bonds and debt-for-nature swaps could become essential tools in bridging Africa's climate finance gap while simultaneously promoting sustainable development.

7. Opportunities for Reform

Reforming global climate finance mechanisms is a particularly critical step toward making climate funding effective for Africa.[85] The Green Climate Fund, as already explored and other multilateral channels are cumbersome, with protracted application processes and limited African representation in decision-making bodies. Streamlining procedural requirements, increasing African participation on boards, and explicitly prioritising adaptation projects could significantly improve accessibility for the continent. Equally, the prevailing emphasis on loans rather than grants has worsened debt burdens in many African countries. A shift toward grant-based support or highly concessional funding would mitigate fiscal risks while ensuring that climate projects do not deepen economic vulnerability.

Domestic innovations are equally important. African countries must strengthen their capacity to mobilise and manage climate finance through regional instruments and national mechanisms. Initiatives such as the African Development Bank's Africa Climate Change Fund provide a model for pooled regional resources, while sovereign green bonds in Nigeria, Kenya, and South Africa demonstrate the potential to raise domestic capital for climate projects. Complementing these tools with comprehensive measurement, reporting, and verification standards tailored to African contexts would reduce conditionality bottlenecks and enhance the credibility of funding applications. Additionally, private finance can be leveraged responsibly to scale investment in climate action. Blended finance models can also reduce investment risks and attract commercial financiers without compromising African sovereignty. Crucially, mechanisms must ensure equitable risk-sharing between Northern investors and Southern recipients, preventing scenarios where African states assume disproportionate exposure while bearing limited financial benefits. New approaches offer further avenues for reform. As already discussed, debt-for-climate swaps, successfully implemented in Mozambique, Seychelles, and Belize, provide a pathway to convert debt obligations into actionable climate projects. Regional

[84] Yeonji Park, 'Debt-for-Nature Swap for Latin America in the era of Climate Change: Focusing on Costa Rica's case.' (2021).
[85] William M Fonta, Elias T Ayuk and Tiff van Huysen, 'Africa and the Green Climate Fund: Current challenges and future opportunities' (2018) 18 *Climate Policy* 1210.

carbon markets, if paired with strong governance safeguards, can generate new revenue streams while promoting sustainable emissions reductions. Finally, litigation and climate diplomacy can serve as instruments to hold developed countries accountable for finance pledges, compelling adherence to commitments under the Paris Agreement.

These measures, collectively, can transform Africa's climate finance ecosystem, making it more accessible, equitable, and strategically aligned with the continent's urgent adaptation and mitigation needs.

8. Conclusion

In conclusion, this article has established that despite commitments under the Paris Agreement, including the $100 billion annual pledge, climate finance flows to Africa are inadequate, fragmented, and often inaccessible. Existing mechanisms have failed to address structural barriers, including weak institutional capacity, fragmented regulatory frameworks, inequitable allocation of resources, and over-reliance on loans that increase debt burdens. As a result, Africa's capacity to implement both mitigation and adaptation measures is severely constrained.

Addressing these gaps requires comprehensive reforms at multiple levels. Global climate funds must streamline approval processes, increase African representation, and prioritise adaptation while shifting toward grant-based financing. At the national and regional levels, African states should establish domestic and regional climate funds, issue sovereign green bonds, and develop credible monitoring, reporting, and verification systems to reduce dependency on donor conditions. Private finance should be engaged responsibly through blended finance mechanisms that share risk equitably and protect African policy autonomy. Innovative solutions, including debt-for-climate swaps, regional carbon markets with governance safeguards, and the use of legal instruments to enforce finance commitments, are essential to translate promises into meaningful outcomes.

Summarily, unlocking climate finance for Africa is not merely a technical or financial challenge; it is a structural and legal requirement. Only through harmonised policies, comprehensive institutions, and accountable financing mechanisms can Africa secure the resources needed to build resilience, drive sustainable development, and claim its rightful voice in global climate governance.