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Climate Finance Utilization in Africa and Asia:

Economic Outcomes and Policy Effectiveness

Sakshi Vyas[1], Jacob Machaka[2],

Lefu Elias Matsikitlane[3], Anuoluwapo Enitan Popoola[4]

[1]MSc Sustainable Resources, University College London, London, United Kingdom

[2]Master of Business Administration (MBA- Candidate), University of Malawi (UNIMA), Zomba, Malawi

[3]MSc Geography, University of Johannesburg, Johannesburg, South Africa

[4] BSc Marine Geology - Nigeria Maritme University, Delta state

Corresponding Author: Sakshi Vyas

Email: vyassakshi04@gmail.com, Contact: 9978420591

1. ABSTRACT

The use of climate finance has become one of the most significant means of combating climate change at the international level, but its conversion into tangible impacts has been extremely uneven in the Global South. The aim of this paper is to examine how the three largest emerging economies, South Africa, Nigeria, and India, implement climate finance and whether the national policy framework is effective in translating finance into tangible impacts. The five-lens approach used for the examination includes policy coherence, implementation, evidence of impact, economic impact, and structural obstacles. The question to be examined is whether the funds work.

Based on the results from the analysis, it becomes evident that while all three countries have indeed taken real efforts to align themselves with global conventions like the Paris Agreement and the UNFCCC, there are implementation gaps when it comes to ground realities. There have been positive developments on the part of South Africa and its REIPPPP and on the part of India and its NAPCC. However, both initiatives still face serious issues related to fragmented governance and lack of financing resources. Nigeria, even though its policy framework has become quite ambitious, suffers from poor institutional coordination, high administrative costs and persistent under-financing of adaptation activities. It is evident that the key determining factor here is not finance but quality of institutions and coherent implementation practices.

Keywords: Climate Finance, Policy Coherence, Implementation Effectiveness, Emerging Economies, Global South, Institutional Governance, Energy Transition

2. INTRODUCTION

Climate finance is increasingly being acknowledged as one of the foremost issues concerning the environment and development in the twenty-first century, with serious ramifications for economic growth, welfare and sustainability (Wei, 2025). The increasing levels of emission of greenhouse gases have led to global warming, with more occurrences of extreme weather conditions such as droughts, floods, heat waves and rise in the sea levels (Nawaz et al., 2021). Such effects have been felt most in countries of Africa and Asia, owing to existing structural inequalities, limited adaptive capacity and financial constraints (Muhammad et al., 2023). In this way, climate change has become both an environmental and development issue, necessitating policy and finance solutions.

The international agreements such as UNFCCC and Paris agreement have placed climate finance as one of key tools in facilitating mitigation and adaptation in the developing nations (UNFCCC, 2022). Climate finance may be defined as the flow of finance, in both private and public, that supports a low carbon and climate resilient development in developing nations (Denton et al., 2021). Although there has been an expansion in global pledges in terms of finance including NCQG made during COP21 for at least USD 300 billion every year by 2035 for developing nations, a gap remain on issues to do with the adequacy, accessibility and effectiveness of the finance (Khan et al., 2025; Kerr & Hu, 2025).

This analysis investigates the utilisation of climate finance and the efficacy of national policy framework in South Africa, India and Nigeria. These three countries are analysed due to their economic weight, vulnerability to climate hazards and their status as international climate finance recipient nation in the Global South (Muhammad et al., 2023; AfDB, 2021). South Africa as a transition economy is already significantly dependent on coal-based energy system which are facing challenges from existing inequality for the success of any decarbonisation agenda (Barnes, 2025). Likewise, India faces growing climate change risk, which can be directly attributed to fast rate of industrial development and increasing energy needs coupled with risk posed by increase in climatic extremities which impact agrarian systems (ADB, 2019). Whereas in case of Nigeria, Africa's leading oil exporting economy, capacity building

regarding the adaptation needs with due regard to increased coastal erosion, desertification and pressure of implementing reforms regarding transition to low energy from high energy-based economy and reforms for national energy security (AfDB, 2021).

Even with increase in international flows to the climate finance resources and other climate finance sources, there is limited comparative assessment about effective transformation of climate finance into measurable economic and environmental outcomes at cross country (Barnes & Perkins, 2026; Abraham & Fonta, 2018). The previous analyses have covered mainly climate finance regimes or the specific national cases. This paper is analysing policy alignment and coherence policy design and actual outcomes by exploring different mechanisms through which international climate finance can be converted into tangible benefits.

3. METHODOLOGY

This study adopts a qualitative comparative research architecture to examine the utilization of climate finance in India, South Africa and Nigeria. The three strategically selected cases represent Asia and Africa wholly. The approach relies on policy document analysis, enhanced by interpretive analytical frameworks to assess the extent to which climate finance turns into economic outcomes and effective implementation.

Based on the narrow-down approach used in filtering information relevant to this topic out, we adopt a five-lens focus framework on analysis of several multi-dimension for tracking finance outcome in the continents. Conventional approaches to climate finance evaluation tend to focus on a single dimension which is usually finance flow or policy compliance. These single dimension approaches are inefficient because a country can have excellent policy coherence and a substantial finance flow while producing negligible outcomes because its implementation design is weak. A country can also exhibit strong project level outcomes while failing systematically because its policies are internally contradictory. By examining all five dimensions concurrently and uniformly across three countries, this article will produce a more complete, comparable, and actionable diagnostic than single-lens analyses.

3.1 Lens One: Policy Coherence

Policy coherence analysis investigates whether a country's climate finance policies are internally harmonious with each other, and externally in agreement with international frameworks such as the Paris Agreement and the United Development Goals. Internal coherence is examined by mapping relationships between domestic legislation, fiscal policy, energy policy, industrial policy, and climate. External coherence is assessed by reviewing how each country's NDC, national climate strategy and finance mobilization approach aligns with the UNFCCC.

The methodological approach used for coherence is document triangulation which entails comparing stated objectives of policy instruments against each other and against financial data to pinpoint where the stated and the operational deviates. Whenever a country's fiscal policy encourages fossil fuel consumption while its NDC commits to emission ablation, the resultant outcome of indicating such commitment constitutes an internal coherence failure.

3.2 Lens Two: Implementation Design

Implementation design analysis evaluates the operational standard of climate finance governance which is the extent at which policy intent is translated into an actionable and accountable mechanism. A well-designed implementation system has specific time-bound and measurable targets, clearly designated institutional responsibilities with sufficient authority and financing to act, accountability mechanisms including monitoring, reporting, and verification systems, and sub-national delivery structures capable of reaching communities. The methodological approach uses an organized checklist assessment applied to each country's flagship implementation instruments.

3.3 Lens Three: Effectiveness Evidence

Effectiveness evidence analysis cross-checked available data and evaluated it on whether climate finance policies and projects had achieved their intended outcomes and reached the pre-determined beneficiaries. This analysis lens is the most data driven of the five and the most

uneven since climate finance monitoring and evaluation systems are variant across and within the countries.

This analysis methodologically draws on three layers of evidence which are:
1. Portfolio-level assessments from standalone bodies such as the Climate Policy Initiative, the Climate Action Tracker, and the OECD, which provide consolidated data on finance flows and outcome gaps.
2. Project-level evaluations from multilateral financiers (World Bank, GCF, Adaptation Fund) that include log frame assessments against targets
3. Secondary literature including peer-reviewed studies that evaluate specific sectors. Where a data thread is absent or insufficient in a system, that absence is itself treated as an effective finding, indicating that systems that cannot report on their outcomes are systems that cannot demonstrate their value.

3.4 Lens Four: Economic Outcomes

Economic outcomes analysis checklist the measurable economic effects of climate finance utilization which includes GDP contributions, employment generation, sectoral productivity changes, fiscal impacts, and cost-of-inaction estimates. This lens dives beyond the environmental framing of climate finance to ask: what economic returns is this investment generating, for whom, and at what cost?
Methodologically, the analysis uses available macroeconomic modelling results particularly from CPI and APRI which are indicative of IMF and World Bank country assessments, sectoral economic data from national statistics authorities and development banks, and peer-reviewed econometric studies that quantifies the relationship between climate finance instruments and economic variables such as industrial output, employment, and house-hold income. Where macroeconomic models are adopted, their assumptions and limitations are explicitly noted to avoid overstating certainty.

3.5 Lens Five: Major Challenges

Major challenges analysis identifies the structural, institutional, political economy, and capacity barriers that prevent climate finance from reaching its potential. This lens is deliberately diagnostic rather than investigative. Methodologically, this analysis adopts a combination of barrier taxonomy (classifying identified barriers by archetypes - institutional, fiscal, technical, political economy, market failure) and chain analysis (tracing how a particular barrier produces a particular outcome gap). Where the same barrier appears across multiple countries, it is flagged as a systemic feature of the global climate finance architecture rather than a country-specific failure.

4. RATIONALE FOR THE CONCEPTUAL FRAMEWORK

4. 1 Policy Coherence

Sustainable Development Goal (SDG) 17 is aimed at 'Revitalize the global partnership for sustainable development' (United Nations, n.d.). The 2025 SDG Report estimated that low- and middle-income countries (LMICs) face an annual investment gap of $4 trillion to achieve the SDGs (United Nations, 2025, p. 42). SDG indicator 17.14.1 measures policy coherence between different levels of government and between national and international policies (United Nations Environment Programme, n.d.). While policy coherence does not automatically reduce inequality, it makes a substantial contribution to policy effectiveness (Browne et al., 2023). This study therefore employs a policy coherence lens to evaluate the policy framework under examination.

4.2 Implementation

An extensive body of literature discusses why policy implementation must be assessed. Three important reasons are: first, it promotes accountability by holding policymakers and implementers accountable for achieving stated goals; second, it enhances effectiveness, since understanding barriers can improve programme delivery; and third, it draws attention to quality by establishing standards, promoting access, and encouraging consistency between providers

and regions (Mthethwa, 2012). Adapted from the USAID Health Policy Implementation Assessment Tool, the dimensions through which policy implementation must be studied are policy formulation and dissemination; social, political, and economic context; leadership; stakeholder involvement; plan for implementation and mobilisation; operations and services; and feedback on progress and results (Mthethwa, 2012).

4. 3 Effectiveness

Estimating the effectiveness of a policy is a difficult but crucial step. Peters et al. (2018) argue that the central goal of policy design is effectiveness. McConnell (2010) explains the success of effectiveness across four dimensions: programme (the degree to which set goals are achieved); process (how socially appropriate and just the policy is perceived to be); political support; and temporal (the sustainability of the policy under changing circumstances). The notion of a 'dynamic' policy is becoming increasingly relevant, policy designers must anticipate turbulence and uncertainty and continue developing the system through feedback loops (Bali et al., 2019). The key to this ever-changing process of effectiveness is transparency.

5. CASE STUDY: SOUTH AFRICA

5.1 Policy Coherence

In South Africa, climate finance has been integrated into the country's development strategy through comprehensive policies that link the approved and accepted climate policies to economic and social goals, in support of the overall development agenda. Major support frameworks include the Nationally Determined Contributions (NDCs), Climate Change Act, Just Transition Framework and Just Energy Transition Investment Plan (JET-IP). These three support frameworks provide South Africa with a common purpose in terms of its intended climate actions and energy transition opportunities while also providing opportunities for supporting economic growth in the country at the same time. As South Africa seeks to attain its NDC greenhouse gas (GHG) emission reduction targets of between 350 - 420 $MtCO_2e$

(2021) by 2030, achieve net-zero emissions by 2050 (DFFE, 2021), and transition to a low-carbon economy in a just and equitable manner, all of the components inherent within the transitional just transition will support the social and employment objectives that have been identified and will be undertaken under the climate change policies of the country (PCC, 2022).

5.2 Implementation Design

In South Africa, climate finance can be raised from a variety of sources including public sector funding, foreign partnerships and private sector investment. The Just Energy Transition Partnership (JETP) is a significant mechanism for funding renewable energy and other energy transition activities in South Africa (South African Presidency, 2023). South Africa has also expanded the use of green finance instruments; for example, the country has introduced green bonds, and sustainable investment initiatives. One of the more notable initiatives in terms of overall financing to support development of renewable energy is the Renewable Energy Independent Power Producer Procurement Program (REIPPPP) whereby capital investment has been attracted through bidding processes and progressive renewable energy generation (Niu et al, 2023).

5.3 Evidence of Effectiveness

Development in renewable energy infrastructure can be cited as an indication of the influence of climate finance on the South African economy. Funds raised via the REIPPPP have been utilized to develop wind and solar farms, thus diversifying the country's energy portfolio and making its economy less dependent on traditional energy (Niu et al., 2023). Climate finance has also facilitated investments in new sectors of the economy, such as production of green hydrogen and manufacturing of electric vehicles that will likely contribute to the creation of a low-carbon economy in South Africa (South African Presidency, 2023).

5.4 Economic Impact

Climate finance has produced tangible economic gains through investments, job creation, and industrialization. The country has managed to generate more than R280 billion (about USD 15

billion) in private sector funding from its Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) towards financing renewable energy infrastructure (IPP

Office, 2024; Niu et al., 2023). Moreover, REIPPPP has generated more than 80,000 job years' worth of employment based on cumulative employment created during the project life-cycle of renewable energy projects (IPP Office, 2024). Furthermore, according to the Just Energy Transition Investment Plan (JET-IP), about R1.5 trillion (USD 98 billion) will be needed to finance priority investments in electricity, green hydrogen, electric vehicles, and infrastructure (South African Presidency, 2023). In keeping with these results, climate finance positively impacts the economic performance of South Africa through sustainable investments and green economic growth (Akinbowale et al., 2024).

5.5 Major Challenges

There are still problems that make it hard to use climate finance effectively. Coal is a part of South Africa's energy system, and this makes it difficult to change things without upsetting people (Climate Analytics, 2025). There are still gaps in funding for projects that help people adapt to climate change and for local communities (DFFE, 2018). It is also hard to keep track of how the money's being used and what is being achieved (Petrie et al, 2018). This is because there is no system in place to monitor the money and the results of the projects (National Treasury, 2023). This makes it hard for the people, in charge to make sure everything is working properly.

5.6 Policy Recommendations for RSA

- Improve monitoring and reporting of climate finance through the creation of a climate finance tracking system at a national level (National Treasury, 2023; Petrie et al., 2018).

- Enhance climate adaptation financing by increasing financial support for municipalities and other vulnerable communities as part of both mitigation and adaptation activities (DFFE, 2018).

- Increase coordination between the Department of Forestry, Fisheries and the Environment, National Treasury, Presidential Climate Commission, and local government authorities to increase efficiency of the process (PCC, 2022; National Treasury, 2023).

- Encourage private sector involvement in climate action through use of such tools as green bonds and blended finance (South African Presidency, 2023).

- Develop skills and ensure a just transition to make sure people dependent on coal can benefit from green industries (PCC, 2022; South African Presidency, 2023).

5.6 Overall Assessment

South Africa has done some things to make sure that climate finance is being used in a way that helps the country develop. The REIPPPP programme is an example of how climate finance can help the environment and the economy at the same time. However, to really make the most of climate finance South Africa needs to improve the way it keeps track of the money and the results and make sure that everyone is involved in the decision-making process. Climate finance is important. South Africa needs to get it right to achieve its goals. Climate finance will be necessary to support both economic objectives and South Africa needs to use climate finance effectively to make a real difference.

6. CASE STUDY: NIGERIA

6.1 Policy Coherence

Nigeria's climate policy commitments are primarily guided by the Paris Agreement and its 2015 and 2021 Nationally Determined Contributions (NDCs), which set out emission-reduction goals and adaptation strategies (Giwah et al., 2020). The Nigeria policy according to several research conducted showed orientation with global policy frameworks. Nigeria's foreign policy has adopted a more realistic approach in recent decades, namely the integration of sustainable development and climate diplomacy as key tools for regional leadership (Gbabo, Okenwa, & Chima, 2022). The rise of sustainability-focused budgeting and green

finance initiatives points to the growing awareness of the interconnection between foreign policy, national interest and climate commitments (Isi, Taiwo, Okereke, & Sofoluwe, 2022). According to Liadi (2022), the Nigeria's foreign policy remains insufficiently aligned with its global climate diplomacy obligations due to fragmented institutional structures, data and technology deficit, weak monitoring and evaluation mechanism, limited inter-ministerial coordination, and an absence of a unified national climate agenda.

6.2 Implementation Design

The Nigerian government has made incredible progress in designing climate change policies and plans over the last decades, including several UNFCCC submissions and the 2021 Climate Change Act, which create the regulatory and legal framework for attaining net zero by 2060, as well as initiating the process for establishing a National Climate Change Fund (CPI, 2024b). The National Climate Change Fund, engineered under the Climate Change Act in 2021 remain dormant until operation plans were announced in 2025 and this long delay propagate a major gap between policy architecture and practical implementation (Aluko & Oyebode, 2025) During the research carried out, Animashaun (2025) concluded that PCAC and OSPEC are one of the most recent institutional frameworks responsible for coordinating a whole government approach to climate change in the country. National Council on Climate Change (NCCC) is the institution responsible for climate governance coordination in Nigeria formally, created to provide strategic guidance, inter-ministerial coordination, and monitoring of climate action across federal, state and local government level (Binuyo & Ahmad, 2026). The NCCC is supported by ministries, departments, and agencies (MDAs), including the Federal Ministry of Environment, the Ministry of Finance, the Ministry of Budget and National Planning, and sectoral agencies responsible for implementation (Olujobi & Abangu, 2026). Institutions such as the Energy Transition Working Group (ETWG) and National Council on Climate Change (NCCC Energy Transition Office (ETO) charged with or claim responsibility for spearheading the ETP and the CCA. (Olaniyan & Adelekan, 2023).

6.3 Effectiveness Evidence

Nigerian climate finance witnessed gradual growth in 2021/22, the third highest by total in Africa, however, flows fell short of estimated needs. In 2021/22, USD 2.5 billion of public and private capital from both domestic and international source went into climate action in Nigeria (CPI, 2024b). Moreover, climate finance flows were short-circuited by USD 9.3 billion spent on government fossil fuel subsidies in 2022 (ODI, 2022). Mitigation investments remained dominant in Nigeria's climate finance landscape, totaling USD 1.2 billion, largely due to solar PV investment (CPI, 2024).
Nigeria's climate finance has most of its funds allocated to mitigation; only about one-third of the total is allocated to adaptation, covering only 6% of the country's estimated adaptation finance needs, despite spiraling climate risk (CPI, 2024). According to CISLAC & Nature News Africa (2025), in 2024, more than half of federal climate spending went to adaptation and 11 percent to mitigation, but 32 percent was consumed by administrative costs. This means a significant share of climate-tagged funds did not directly reach projects or communities.

6.4 Economic Outcomes

FSD Africa initiated the Nigerian Green Bond Programme to facilitate the development and growth of a domestic green bond market. This initiative pools licensed verifiers, building the pipeline of green investments, and engaging with potential investors while developing an issuance framework and guidelines for the use of proceeds (FSD Africa, 2023). Several research connotes that climate loans and grants had a positive effect on industrial growth, while equity-based climate finance had weaker results (Ezie et al., 2025). This suggests that the type of financing matters, not just the amount. IMF modeling also shows the cost of inaction. Climate-related extreme weather already affects Nigeria's growth, fiscal stability, and external balances (IMF, 2025). The modelling further suggests that green subsidies can support both economic and environmental goals, while green taxes may require more careful design, especially as Nigeria considers a carbon tax (IMF, 2025; NALTF, 2025). Climate finance can deliver real economic returns (Ezie et al., 2025), but current spending patterns limit its wider impact. Too much funding is still absorbed by mitigation and administration, while adaptation

and frontline community resilience remains underfunded (CISLAC & Nature News Africa, 2025; CPI, 2025).

6.6 Major Challenges

During the cross-examination of several articles, five challenges stood out. Fore-instance, Nigeria still rely heavily on oil revenue, even as its climate goals require a gradual shift away from fossil fuels. The continued VAT exemption on fossil fuels reflects this policy tension stated by (IMF, 2025). In addition, climate finance responsibilities are widened across several institutions, including the NCCC, Ministry of Finance, Central Bank, NIRSAL, and development finance institutions, with no single system for tracking flows and results indicating the poor implementation of MRV system at every stratum (CPI, 2025)

Moreover, funding still encourages bankable mitigation projects such as renewable energy and industrial efficiency, while adaptation needs like flood protection, drought resilience, and community infrastructure remain underfunded (CPI, 2025). Research clarifies that weak state-level planning limits implementation. Many states lack climate budgets or strategies aligned with national frameworks, reducing the impact of federal policy at community level (Okafor et al., 2025). Furthermore, private financial institutions still have limited capacity to price climate risk, develop bankable green projects, or structure blended finance (The Authority Newspaper, 2025; CPI, 2025). Without targeted capacity building, private climate finance is unlikely to grow at the needed scale (CPI, 2025).

6.7 Conclusion

Overall, the evidence points to a balanced conclusion. Nigeria has built a broad climate finance policy and institutional framework, stronger than many peers and has recorded gradual growth in finance mobilization (CPI, 2025). Where funding is well designed and properly deployed, it has shown real economic value (Ezie et al., 2025).Even so, the system is not yet delivering at the scale, speed, or fairness required (CPI, 2025). Nigeria's financing needs remain far above current mobilization levels (CPI, 2025), but the deeper problem is not policy ambition. It is

weak coherence (Okafor et al., 2025), slow implementation (Aluko & Oyebode, 2025), high administrative costs (CISLAC & Nature News Africa, 2025), limited state-level budgeting (Okafor et al., 2025), and low institutional capacity to absorb and use climate finance effectively (The Authority Newspaper, 2025; CPI, 2025).

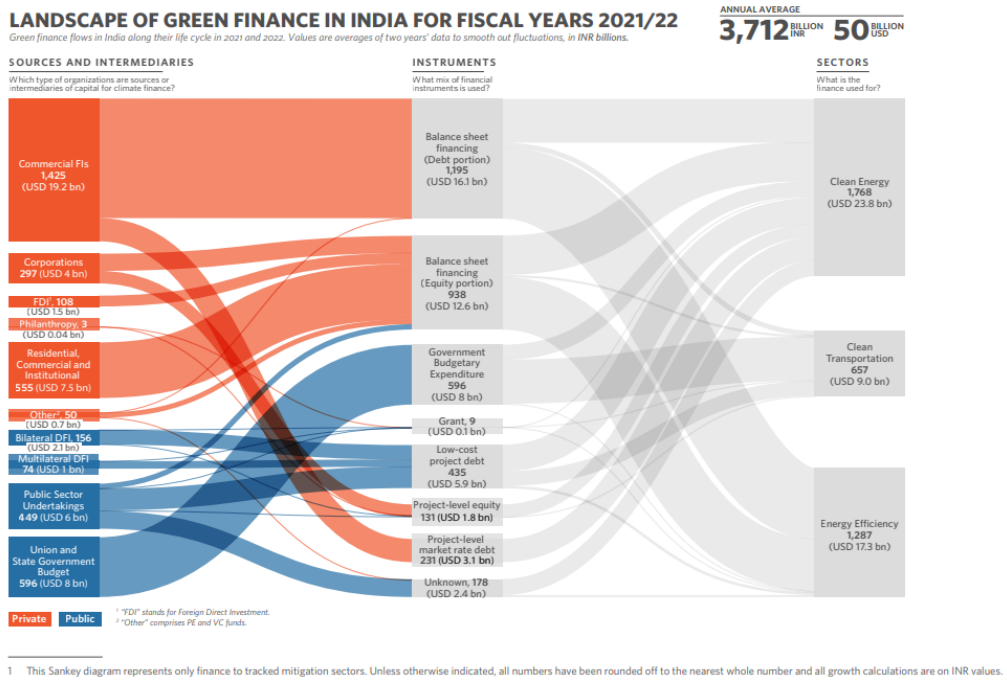
7. CASE STUDY: INDIA

7. 1 Policy Coherence

India has recently announced an ambitious plan called 'VIKSIT BHARAT @2047', which aims to transform India into a USD 30-40 Trillion Economy by the year 2047 (Viksit India, n.d.), while being committed to net-zero carbon emissions. In its most recent Nationally Determined Contribution (NDC) for the period 2031–2035 to the United Nations Framework Convention on Climate Change (UNFCCC), in line with the Viksit Bharat vision, India announced the goal to 'reduce Emissions Intensity of its GDP by 47% by 2035' (UNFCCC, 2026). These ambitious plans for a sustainable transition require significant finance; as per the Climate Policy Initiative, a substantial amount of INR 162.5 Trillion (USD 2.5 trillion) was required to meet the targets of 2030 (CPI, 2022). The green financial flows are only covering one-third of the requirement for 2030, and for the longer vision of net-zero by 2070, a USD 10 trillion funding gap exists (CPI, 2024a; ET, 2024). The main initiative to mobilise these funds is through the National Action Plan on Climate Change (NAPCC).

7.2 Implementation Design

There are several streams of finance running through private and public channels for mitigation and adaptation, as shown in Figure 1. In 2021, 83% of the mitigation finance and 98% of total finance for adaptation was domestically sourced (CPI, 2024a). This high degree of domestic dependency, while demonstrating national ownership, also underscores the limited role of international capital flows in supporting India's adaptation agenda.



1 This Sankey diagram represents only finance to tracked mitigation sectors. Unless otherwise indicated, all numbers have been rounded off to the nearest whole number and all growth calculations are on INR values.

Fig 1: Landscape of Green Finance in India 2021-22 (CPI, 2024a, page 5)

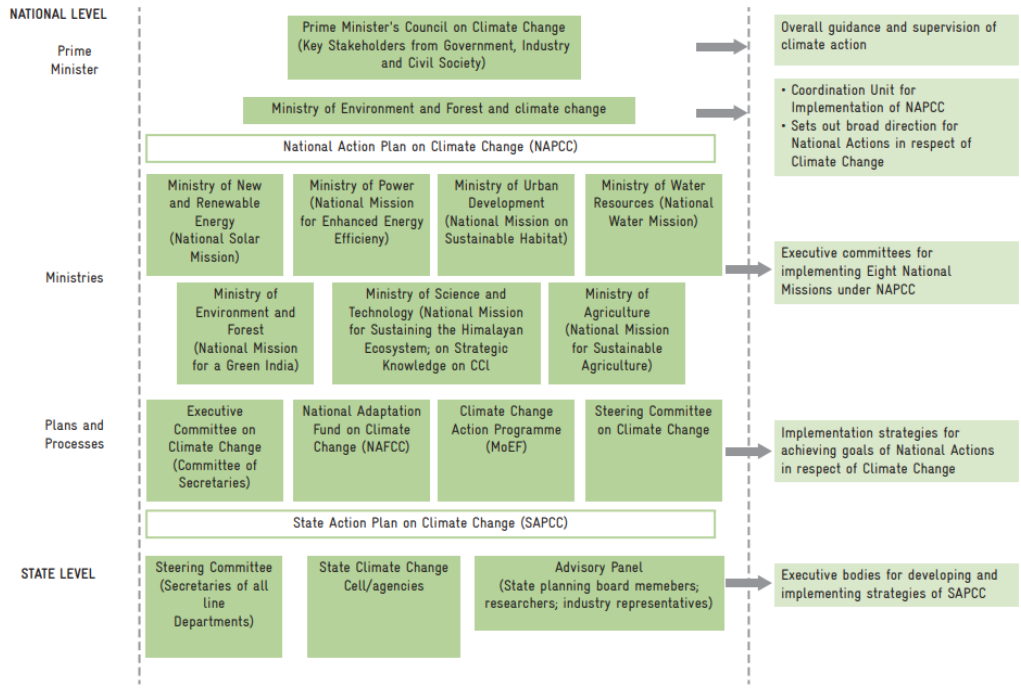


Fig 2: NAPCC Structure (GIZ. (2019))

The NAPCC was formally introduced in 2008; the framework includes 8 National Missions, State Missions, and a National Adaptation Fund on Climate Change (NAFCC). The missions were to be funded by the Government and venture capital funds to bring in support from the private sector (Ministry of Environment, Forest and Climate Change, 2008). Although these missions were institutionalised by the relevant ministries, they planned to bring in academia and industry experts and reach out to civil society to build the capacity of projects and develop a knowledge network (National Adaptation Fund for Climate Change, 2016). The funds flow from the Ministry of Environment to the implementing entity through the National Bank for Agriculture and Rural Development (NABARD) to the state government, which implements the adaptation projects (James, 2025).

7. 4 Effectiveness Evidence

The Ministry of Environment, Forest and Climate Change in a parliamentary hearing in 2024 disclosed that 30 projects had been sanctioned, of which 18 have been completed and 12 are ongoing. The total project cost summed to INR 847.48 crores (approx. INR 8.47 billion) (GoI, Lok Sabha Secretariat, 2024). The Development Monitoring and Evaluation Division conducted a third-party evaluation through Deloitte, although the report has not been released to the public.

In 2023, the Ministry of Environment also reported that, because of the actions under the NAPCC, 'India has achieved a reduction of 24% in emission intensity of its GDP between 2005 and 2016' (GoI, Press Information Bureau, 2023). The initiative initially disbursed strong funding but has drastically cut it down since 2018–2019 (James, 2025)

Prasad and Sud (2019) note in their study that the limited funding had brought out competitive federalism among the states, as there is no fixed allocation for each state. As per the NAPCC guidelines, only one project per state was initially approved for the fund to be inclusive and equitable. However, 9 states submitted additional projects, and this second round of proposals were significantly more rigorous and better designed, because the approval of the second project depended on the performance of the first. This led to states demonstrating measurable

progress in project outcomes to secure further funding; it also encouraged states to look for international funding such as the Green Climate Fund (GCF) (Prasad & Sud, 2019).

7.5 Challenges

The current state of the policy reveals significant structural deficiencies that must be addressed for the fund to operate more effectively. The limited and decreasing funding, although it has encouraged better plan submission, renders the overall programme insufficient. Prasad and Sud (2019) note that the system also faces challenges with fragmentation in the governance structure, making it difficult to mobilise different departments over which the nodal department has no administrative control. The states and their plans themselves need more support; climate change science is technical and always changing, and this has led to plans being incremental rather than transformative. As Kates, Travis, and Wilbanks (2012) define, transformational actions are intense and large in scale, seeking to transform an entire region or resource system. They encourage bringing in new technologies, new activities, new financial systems, and new governance for adaptation, what is required to meet India's long-term climate commitments (IPCC, 2014).

7. 6 Conclusion

India's climate finance policy framework demonstrates both institutional ambition and structural constraint. The NAPCC has produced measurable outcomes, including a 24% reduction in emissions intensity and an unintended dynamic of competitive federalism among states. However, these gains remain incremental given the scale of what is required. Declining domestic allocations, a USD 10 trillion funding gap, and fragmentation in the governance structure continue to limit the programme's effectiveness. For India to meet the dual ambitions of Viksit Bharat and net-zero by 2070, the NAPCC must attract greater international capital, strengthen accountability mechanisms, and support states in developing transformative rather than incremental adaptation plans.

8. COMPARATIVE ANALYSIS

8.1 Convergences

All three case studies show how climate finance has been integrated into the process of development planning in each country, rather than being viewed as an isolated environmental policy measure. For instance, climate finance has been incorporated into South Africa's Just Energy Transition Investment Plan and other decarbonization measures (South African Presidency, 2023). At the same time, Nigeria seeks to incorporate its climate change efforts into broader economic development plans through the Climate Change Act and its implementation mechanism (NDC Partnership, 2024), and India has created a framework which integrates its climate actions into broader development plans (Government of India, 2008; UNFCCC, 2026) within the context of its VIKSIT BHARAT vision. Finally, all three countries suffer from the presence of considerable financing gaps. In particular, South Africa still has various resources and institutional limitations (DFFE, 2018), Nigeria cannot generate sufficient climate finance for meeting its implementation needs (CPI, 2025), and India experiences an estimated climate finance gap of around USD 10 trillion to achieve net-zero emissions in 2070 (CPI, 2024a; ET, 2024).

8.2 Divergences

However, while these similarities exist, the efficiency of climate finance is significantly different across the three nations. South Africa has shown relatively greater success in terms of implementation in its Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) that has seen substantial private investments towards expanding the generation of renewable energy sources (Niu et al., 2023). India has also registered some success in terms of reducing emissions intensity through a 24% drop from 2005 to 2016 because of climate finance initiatives and policies (GoI, 2023). In the case of Nigeria, the situation is different owing to institutional problems, weak governance structure, and insufficient financing (Noah, 2025; CPI, 2025).

8.3 Structural Differences

These differences can be attributed more to structural factors than just policy ambition alone. The size and diversity of India's economy allow for better domestic mobilization of resources, where domestic sources make up most of the mitigation and adaptation finance (CPI, 2024a). South Africa gains advantage by having relatively well-developed financial markets as well as good international relationships, especially thanks to the Just Energy Transition Partnership that improves access to climate finance (South African Presidency, 2023). Nigeria is really struggling because it relies much on oil money. This makes it harder for the country to deal with climate finance because of problems with institutions and money management. (Climate Analytics, 2025; Noah, 2025). When we look at a few situations, we can see that the people and systems in charge of climate finance are very important (Petrie et al, 2018). If they are good at their jobs then climate finance can make a difference and therefore measure how well it is working (Prasad & Sud, 2019).

8.4 Comparative Insight

Taken together, the cases suggest that climate finance effectiveness depends not only on the volume of funding available but also on the quality of institutions responsible for managing it. Countries with stronger implementation systems and clearer governance arrangements appear better positioned to convert climate finance into tangible economic and environmental benefits (Akinbowale et al., 2024; Prasad & Sud, 2019).

9. POLICY RECOMMENDATIONS

9.1 Improve climate finance monitoring and transparency

One of the main findings of this study is that all three countries experience challenges in monitoring how climate finance is spent and what outcomes it achieves. Without reliable tracking systems it becomes difficult to assess whether financial resources are reaching their intended beneficiaries and producing measurable environmental and economic benefits. Hence the suggestion that governments should strengthen climate finance monitoring by introducing

transparent reporting systems. Better tracking would improve accountability, support evidence-based policymaking, and increase confidence among both public and private investors (Climate Policy Initiative [CPI], 2025; National Treasury, 2023; Petrie et al., 2018).

9.2 Strengthen institutional coordination and policy coherence

The findings also show that effective climate finance depends on strong coordination between government institutions. In all three countries, responsibilities are shared across several ministries and agencies, this system often resulting in fragmented implementation and slower decision-making. Governments should improve coordination between finance ministries, environmental agencies, planning departments, and local authorities to ensure climate objectives are integrated into wider development policies. Stronger institutional coordination would also lead to improvement in the use of available resources, and reduce duplication, if any. (Browne et al., 2023; PCC, 2022; Okafor et al., 2025).

9.3 Increase investment in climate adaptation

A considerable investment has been directed towards mitigation activities such as renewable energy, but adaptation continues to receive comparatively less funding, particularly in Nigeria and South Africa. Greater investment is needed to strengthen resilience of vulnerable communities as climate-related disasters become more frequent. Future climate finance should place greater emphasis on resilient infrastructure, sustainable agriculture, water resource management, and disaster preparedness. A better balance between mitigation and adaptation would strengthen long-term resilience while reducing the economic costs associated with climate change (Climate Policy Initiative, 2024; Department of Forestry, Fisheries and the Environment [DFFE], 2018; UNFCCC, 2023).

9.4 Encourage greater private sector participation

The climate finance requirements identified are far greater than what governments can finance alone. Greater private sector participation is essential to bridge existing funding gaps. Governments and international financial institutions should expand the use of blended finance,

concessional loans, guarantees, and green bonds. This will reduce investment risks and encourage private investment in climate projects. These financing mechanisms can improve project bankability and mobilise additional long-term capital for low-carbon development (African Development Bank [AfDB], 2019; Climate Policy Initiative, 2024; OECD, 2024).

9.5 Build institutional capacity at national and local levels

Finally, the effectiveness of climate finance depends on the capacity of institutions responsible for planning and implementing projects. This study found that weak technical expertise. Limited project preparation and uneven implementation continue to reduce the effectiveness of climate finance, particularly at the subnational level. Governments should invest in training, technical assistance, and knowledge-sharing initiatives to strengthen institutional capacity. Building stronger national and local institutions would improve access to climate finance, increase the quality of project implementation, and ensure that investments deliver lasting economic and environmental benefits (Mthethwa, 2012; Prasad & Sud, 2019; UNFCCC, 2023).

10. CONCLUSION

This study looked at how South Africa, Nigeria, and India use climate finance to get actual economic and environmental results by comparing their policies and how they are put into practice. The findings show that while climate finance is now a big part of national development plans in these countries, it has not led to consistent structural changes. All three countries align their policies with global goals like the Paris Agreement, but this connection weakens during the implementation phase. Issues like weak institutions, inconsistent financial incentives, and poor coordination between national and local governments make these policies less effective. This gap between global goals and local action is a major reason why climate finance does not always lead to strong results.

South Africa and India have seen better outcomes because they have more structured systems, such as specific programs for renewable energy and national mission-based plans. These have helped reduce emissions and increase green investments. Nigeria, on the other hand, faces more

challenges because its institutions are fragmented and there are delays in setting up climate finance systems, even though its policies look good on paper. Overall, the results show that climate finance can help expand renewable energy and boost economic activity, but these improvements are still not enough to keep up with growing climate risks and the massive funding gaps that exist.

There are some limitations to this research. It relied mostly on existing data and broad national indicators, which makes it hard to measure the exact results of specific projects or prove direct cause and effect. Future research should use long term data and look at more countries to better understand how institutions affect these outcomes over time. The main takeaway is that simply increasing the amount of money available is not enough. Success depends more on having strong institutions, clear policies, and reliable systems to carry them out. Improving governance is just as important as increasing funding if countries want to make real progress.

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