

The Politics of Climate Finance in Ghana; Access, Equity, and the Socio-Economic Implication of the Green Transition

*Clement Adjei Arhin¹, David Amoateng²

¹University Of Ghana, Ghana

²HSE University, Ghana

DOI: <https://doi.org/10.51584/IJRIAS.2025.1010000043>

Received: 25 Sep 2025; Accepted: 02 Oct 2025; Published: 03 November 2025

ABSTRACT

Background: The discourse of climate finance has become a cornerstone in the pantheon of global climate governance, typified by contestations on issues of credibility, equity, and effectiveness.

Objective: This paper explores the politics of climate finance in Ghana through the interrelated issues of access, equity, and socioeconomic consequences.

Method: Within the framework of climate justice, the analysis draws on qualitative data gathered through semi-structured interviews with policymakers, representatives of civil society, international organizations, and youth advocacy groups and supported by secondary data.

Results: The findings show Ghana to be grappling with the mobilization of funds from several mechanisms such as the Green Climate Fund, Climate Investment Funds, and Article 6 carbon markets, yet there are many administrative bottlenecks, with weak institutional capacity undermining access in a meaningful way. The equity issues also exist with climate finance flows concentrating in the south and urban areas, leaving women, youth, and northern communities dominated and marginalized in governance and benefit-sharing. Socio-economic outcomes weave another set of narratives, for on one side projects like the Shea Landscape Emission Reductions Project have improved women's livelihoods and created green jobs, whereas on the other, trade-offs come along with restrictions to charcoal-dependent livelihoods and costly industrial compliance that actually present new risks.

Conclusion: The study argues that climate finance in Ghana reflects both the opportunities for and the tensions of doing an actual green transition delivering co-benefits in renewable energy and resilience yet reinforcing inequalities when badly timed. Policy recommendations are made for strengthening institutional capacity, targeting vulnerable regions and groups, and embedding gender and youth quotas in governance, while livelihood safeguards need to be integrated into project design. By situating Ghana's experience into the broader climate justice discourse, the paper adds to debates on how climate finance can promote not just environmental outcomes but also equity and sustainable development in the Global South.

Key words: Climate finance, Climate justice, Sustainable development framework

INTRODUCTION

Climate finance is the most important feature of climate action architecture internationally, with some considering post-2016 entrance into force of the Paris Agreement. According to Chen et al., (2024) and Siddiqui (2024) it is embedded into one of the three pillars of climate governance-the other two being technology transfer and capacity-building-under Article 9 of the Paris Agreement, which mandates developed countries to provide financial resources to developing countries for both mitigation and adaptation (Voigt & Ferreira, 2016). Thereafter, the COP decisions have further entrenched this principle by having developed countries pledge to raise USD 100 billion per year by 2020, with the deadline later extended to 2025 (Roberts

& Weikmans, 2020). Realization of these pledges has, however, become much contested, with aspects of credibility transparency, and equitable distribution being under contested (Pickering et al., 2015; OECD, 2021).

The global climate finance system hence rests on the principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC) (Bhardwaj 2008; Rajamani, 2018), which acknowledges that developed countries are historically responsible for the majority of global greenhouse gas emissions and their superior financial and technological capacities (Fajardo et al., 2024). But in practice, the literature of Persson & Remling (2021) argues that developed countries have tended to favor mitigation projects, especially those promising measurable emission reductions, over adaptation, which according to Nath and Behera (2011) is urgently needed by vulnerable countries in Africa and other parts of the Global South. The explanation for this imbalance lies in a broader discomfort in the area of international climate finance: whereas adaptation protects livelihoods and infrastructure in weak economies, donors often view adaptation as less bankable or less capable of delivering an immediate return on mitigation investments (Weikmans & Roberts, 2019).

The international institutional landscape for climate finance has considerably expanded in the last ten years. Schorlas like Visconti et al., (2024) Rahman and Ahmed (2015) and Benard et al (2014) Multilateral mechanisms such as the Green Climate Fund (GCF), the Global Environment Facility (GEF), and the Climate Investment Funds (CIFs) have been set up to channel resources from developed to developing countries. The GCF, in particular, is the flagship mechanism, with the mandate to ensure a balanced allocation between mitigation and adaptation and with a special focus on the needs of Least Developed Countries (LDCs) and Small Island Developing States (SIDS) (Fonta et al., 2018). Yet, inequities continue to exist in the spatial distribution of climate finance, where a greater share is diverted to middle-income countries with adequate institutional capacities, while poorer and more climate-vulnerable states continue to grapple with access and utilization of funds (Shah et al., 2025).

Outside the multilateral system, global climate finance architecture also includes bilateral aid programs, development banks, and market-based mechanisms such as carbon markets (Espelage et al., 2022; Leal-Arcas 2025). Expanding the scope of market instruments under Article 6 of the Paris Agreement, pathways under "Internationally Transferred Mitigation Outcomes (ITMOs)" and a new centralized mechanism have been instituted to facilitate emission reduction projects (Suárez-Eiroa 2020). While they offer opportunities for resource generation, concerns about transparency, double counting, and ensuring that revenues actually serve or at least trickle down to vulnerable communities remain (Schultheis, 2024).

There is rising scholarly view that climate finance is not so much a technical or economic arrangement but rather one of climate justice and global equity. Ciplet et al. (2015) maintain that climate finance should be perceived as a political process, shaped by negotiations regarding responsibility, fairness, in development priorities, rather than as a neutral flow of resources. In contrast, others emphasize that the credibility of the global climate regime will stand or fall on whether developed countries honor their promises and financial resources actually reach those most in need (Roberts & Weikmans, 2017; Pauw et al., 2020).

The global climate finance framework represents an arena for the clash of different capacities and intentions of actors and hence for the contestation of various interests (Skovgaard et al, 2023). On one hand, we have mechanisms set up for supporting the transfer of resources to developing countries, along with provisions to properly consider equity and justice (Pastor et al., 2024; Sefa-Nyarko, 2025). On the other, Social, (2025) and Tetteh (2025) continued shortfalls on delivery guarantees, constraints to accessing the funds, and the imbalances between mitigation and adaptation do not build trust in the global climate finance machinery. It is Tyce (2025) who traverse this contested global framework in pursuit of resources for supporting their country's just and sustainable green transition.

In Africa, the urgency of mobilizing and effectively utilizing climate finance cannot be overstated. There is a warning from the African Development Bank (AfDB, 2022) stating that climate change could reduce the continent's GDP by as much as 15% by 2030 if adaptation measures are not scaled up. This projection also reveals the immense vulnerability of African economies which largely rely on climate-sensitive sectors including agriculture, fisheries, hydroelectric power, and forestry (Steiner, 2019). Extreme weather effects, like droughts, floods, and coastal erosion, are already disrupting livelihoods, destroying infrastructure, and further

worsening poverty, putting a lot of pressure on governments to seek funding for adaptation and mitigation from the outside (Jha & Dev 2024; Banu & Fazal 2025).

International mechanisms like the GCF, CIFs, and Adaptation Fund were put in place to close the financial gap. And indeed, these mechanisms have created opportunities: From 2015 to 2020, Africa attracted over USD 20 billion of climate finance flows, mainly directed toward renewable energy and land-use projects (AfDB, 2022). Yet, major challenges still remain. Scholars are arguing that African states are confronted with structural impediments, including cumbersome accreditation processes, weak national fiduciary systems, and limited institutional capacity to design bankable projects that meet donor requirements (Fonta et al., 2018; Pauw et al., 2020). Besides that, inequitable distribution persists, with funds disproportionately privileging middle-income African countries like Morocco, Kenya, and South Africa, while low-income states are having difficulties attracting finance.

Another important issue is the imbalance between mitigation and adaptation funding. While legally African states have always emphasized the urgency for adaptation, research maintains that more than 70% of climate finance entering Africa between 2015 and 2020 was mitigation-related and largely involved renewable energy and clean transport activities (Persson & Remling, 2021; Weikmans & Roberts, 2019). This bias had been based on preference by donors for projects that are ready to hit the market and measurable, as opposed to community-based adaptation, thus leaving a large number of at-risk populations underserved. It thus invites what some scholars call a "climate finance justice gap" where the funding fails to reach where they are most needed on the continent (Ciplet et al., 2015; Nakouwo & Zhang 2024).

Ghana sets an example within the continental context. In the country, climate finance architecture is an active topic with Ghana having been able to tap into GCF, CIF funds, bilateral arrangements, and cooperatively implement Article 6 carbon market mechanisms of the Paris Agreement (Strand, 2023; Schultheis, 2024). These efforts have promoted renewable energy development, climate-smart agriculture, and ecosystem restoration. For instance, programs supported by GCF, such as the Ghana Shea Landscape Emission Reductions Project, have simultaneously sequestered carbon and enhanced women's economic empowerment in northern Ghana (GCF, 2020). Likewise, CIF-supported renewable energy programs have brought off-grid solar to rural areas, thus linking mitigation with developmental interventions (World Bank, 2021).

Yet the Ghana case presents persistent dilemmas about who benefits, whether resources are equitably shared, and what socio-economic trade-offs arise. Although northern Ghanaian women have gained from GCF projects involving agroforestry and shea value chains (Pienaaah et al., 2024), the controls related to charcoal production put in place as mitigation measures jeopardize the livelihoods of over 500,000 people in rural areas who rely on charcoal for income (Brobbe et al., 2019; Asare et al., 2022). Furthermore, urban-centric renewable energy interventions tend to bypass communities in rural areas without grid infrastructure, thus reinforcing inequality in accessing climate finance benefits (Owusu-Manu et al., 2021).

These contradictions point to the dual nature of climate finance in Ghana; for example, as a driver of opportunity for green jobs, renewable energy, and rural livelihoods, yet a source of trade-offs and inequities if poorly managed. Against this backdrop, questions arise in the study of climate finance in Ghana along three axes of analysis: access, equity, and socio-economic implications. How does Ghana access and mobilize climate finance, how equitably are funds distributed across groups and regions, and what impacts do the financed projects generate in socio-economic terms for livelihoods and the green transition?

This study looks at Ghana's climate finance from three interconnected perspectives: access, equity, and socio-economic impacts. It inquires into how Ghana accesses and mobilizes climate finance, how equitably the benefits are distributed to various stakeholders, and what the socio-economic impacts of projects that have been financed look like-one side of the coin-livelihoods, and the other-green transition. Based on qualitative data from 15 semi-structured interviews with policymakers, civil society, academia, and development partners, the paper draws lessons from Ghana's experience with climate finance. Applying the Climate Justice and Sustainable Development frameworks, it adds to the conversation on equity, inclusiveness, and developmental outcomes in climate finance, thereby informing other developing countries.

Research Objectives

To look into Ghana's access to international climate finance mechanisms (e.g., GCF, CIFs, bilateral partnerships, carbon markets).

Analyze equity dimensions of climate finance allocation and participation (urban vs rural, men vs women, youth vs elite).

Analyze the socio-economic implications of climate finance projects on livelihoods, employment, and local development.

Theoretical Framework

The concept of climate justice bridges previous environmental justice research, the latter being proposed by Okereke (2010), Schlosberg (2013), and Schlosberg & Collins (2014). Such scholars maintain that responding to climate change cannot be reduced to technocratic and economic decisions but must be seen as matters of justice, consequence, and social inclusion. The works of these theorists draw from political theory, environmental justice, and global climate governance.

At the core of climate justice is the assertion that carrying capacity and climate benefits and burdens must be fairly distributed among countries, communities, and generations (Kaklauskaitė & Streimikiene 2024; Kangero, 2024). This principle has arisen from the understanding that climate change is an environmental as well as a social problem, with the social impacts borne by those exhibiting the least contribution towards causing it (Islam, 2024). The entire framework becomes ensconced upon the principles of Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC), enshrined in the UNFCCC and reaffirmed in the Paris Agreement (Voigt & Ferreira, 2016).

Scholars like Salvi (2025) and Gromea (2025) have questioned the 'justness' of the CBDR-RC which asserts the principle that, while all nations are responsible for addressing climate change, developed countries bear more burden by virtue of their emissions in the past and by reason of having more financial and technological means. Climate justice thus reframes climate action into an ethical imperative requiring equitable transfer of resources and inclusive governance for correcting global imbalances.

The first dimension in climate justice is distributive justice, which addresses the fair share of resources, costs, and benefits resulting from climate action. This means ensuring that climate funds flow to those countries and communities which are the most vulnerable to climate impacts rather than those communities with the greatest institutional capacity to utilize those funds (Bulkeley et al., 2014). In the African context, and particularly in Ghana, distributive justice raises crucial questions about whether climate finance is fairly distributed to rural and urban areas, wealthier elites, and marginalized groups, and between sectors such as renewable energy and agriculture (Bondinuba et al., 2024; Anjanappa 2024). Climate finance without distributive justice will deepen inequalities instead of reducing them (Dafemos, 2025).

The second dimension is procedural justice, which stresses the importance of inclusive and transparent processes of decision-making. Newell and Mulvaney (2013) insist that one cannot claim justice when all we do is allocate resources, "there must also be meaningful participation of those groups who are affected by the policies and programs that affect their own lives." In climate finance, this means that local communities, women, youth, and civil society organizations must be heard in negotiating priorities, designing projects, and monitoring outcomes (Lindqvist 2025). Procedural justice is crucial in Ghana, given that donor projects can often dominate the agenda, sometimes dismissing grassroots actors or disciplining their knowledge from being a valid input into project design (Boamah 2025).

The third dimension is recognitional justice, which stresses honoring the unique vulnerabilities, identities, and capacities of marginalized groups (Schlosberg, 2013). Recognition is not just about participation: "communities must not just be included, they must also be valued for what they bring, their specific contributions, and their lived experience." In climate finance, recognitional justice requires that policies and

interventions take into account the differing impacts of climate change on women, rural farmers, youth, and informal sector workers. With energy investments possibly servicing urban industries, recognitional justice would see to it that rural women who depend on shea processing and charcoal production for a livelihood are not left out of the benefits or, even worse, are impacted negatively.

Together, distributive, procedural, and recognitional forms of justice define the main analytical pillars of the climate justice framework. Overall, they offer a multidimensional prism through which to view whether various climate finance policies and projects promote equity and fairness or increase existing inequalities. In the Ghanaian setting, these dimensions may provide the building blocks of a constructive analysis that looks at how climate finance is accessed, what the benefits are, and the socio-economic implications being borne by the projects so funded, thereby interfacing theory with ground realities.

The climate justice framework remains of particular relevance in analyzing Ghana's climate finance landscape. Firstly, it captures access challenges: From the perspective of international distributive justice, Ghana's difficulties in navigating global financial architecture (GCF, CIFs, Article 6 carbon markets) are considered issues of international distributive justice. Secondly, according to the focus on equity, it examines whether climate finance has reached marginalized groups such as women, youth, and rural communities or rendered services to the urban areas and elite. Third, directly impacting socio-economic analysis with projects such as the Shea Landscape Emission Reductions initiative, where fostered women but at the same time threatened charcoal-dependent livelihoods (Brobbe et al., 2019; Boateng et al., 2025); hence, with climate justice, this study pronounces on not merely economic transactions but also on whether climate finance could lead to a just transition in Ghana.

While climate justice poses a very strong ethical and analytic perspective, scholars emphasize some limitations that need to be accounted for when doing a climate finance analysis. First, it is a normatively broad framework, incorporating distributive, procedural, and recognitional dimensions of justice without specifying clear operational criteria for measurement or policy design (Schlosberg, 2013). This very expansiveness may render it appealing as an umbrella principle, but it seems almost impossible to boil down into concrete indicators that policymakers or practitioners can use in determining whether climate finance measures are perceived as "just" in practice. Some inequities can be pinpointed in resource allocation, but it would be another matter entirely to say what level of distribution would be "fair." How would such valuations be placed side by side with competing claims of justice made on behalf of other social groups?

Again, to some critics, appeals to justice in international climate negotiations go unenforced. While the Principle of Equity and the Principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC) are enshrined in the UNFCCC and the Paris Agreement, developed countries have consistently failed in full finance disbursement, diminishing trust in the regime (Roberts & Weikmans, 2017). Justice arguments may be rhetorically persuasive, but without binding mechanisms or sanctions, they continue to prevent wealthier nations from being held accountable for unmet financial commitments. This raises concerns about whether the justice framework, for all its moral allure, may have limited leverage on a practical level when it comes to redirecting global financial flows to the most needy nations.

Moreover, the justice perspective may undervalue the developmental trade-offs in which governments in developing states engage. For a country such as Ghana, climate action has to be balanced with more pressing domestic considerations, like energy access, industrialization, employment creation, and poverty reduction. Policies that dovetail with global justice principles, such as those that seek to phase out charcoal or fossil fuel subsidies, may actually end up hurting local livelihoods or economic competitiveness in the absence of alternative financing and transition measures. From this perspective, the justice framework tends to position debates about climate finance solely within ethical discourse and, in doing so, neglect the political economic realities that really shape decision-making (Newell & Mulvaney, 2013). Ghana's case situates climate justice as something that does not quite comprehensively consider domestic structural and institutional dynamics in relation to climate finance outcomes. From the fiscal constraints to a dependency on donor support, from bureaucratic fragmentation to elite capture: the phenomena are ample enough to dramatically influence when and how climate finance is being accessed, allocated, and used. In other words, the entangled domestic governance challenges intersecting with international finance flows greatly complicate straightforward

questions of under "just" or "unjust" disbursement. Thus, while climate justice helps in foregrounding issues of fairness and equity, it needs to be supplemented with insights garnered from political economy and development studies to more comprehensively account for the gyrations of Ghana's climate finance landscape.

Method and Materials

This study employs qualitative research design using the case study approach. Ghana was selected as the case because it is a climate-vulnerable developing country that actively participates in international climate finance through the Green Climate Fund (GCF), Climate Investment Funds (CIFs), and Article 6 cooperative approaches. The qualitative approach was suitable due to the intention of further exploring perceptions, experiences, and interpretations of climate finance access, equity, and socio-economic implications rather than just quantifying financial flows.

Primary data were collected through semi-structured interviews from February- April 2025. The themes in the interviews canvassed Ghana's climate finance landscape through three broad themes: (i) access to international and domestic climate finance; (ii) equity in distribution and participation; and (iii) socio-economic implications of climate finance projects. Open-ended questions created space for respondents to share insight and perspectives while allowing the interviewer to probe deeper into new issues that emerged from the responses. Each interview lasted anywhere from 45 minutes to an hour-and-a-half and was essentially face-to-face or virtually, depending on availability. Supplementary evidence used included policy documents, institutional reports, and academic literature. Key references considered were Ghana's NDCs; the Ministry of Finance Green Finance Taxonomy (MoF, 2022); Green Climate Fund, World Bank reports (World Bank, 2021; GCF, 2020); and global stock-taking produced by the UNFCCC Standing Committee on Finance (SCF, 2022). Peer-reviewed literature was used for further analytical enrichment concerning access to climate finance, equity, and trade-offs in development (Fonta, Ayuk & van Huysen, 2018; Persson & Remling, 2021). Employing secondary data contributed to stronger triangulation of findings and their placement within wider policy and academic debates.

To cover a broad spectrum of views regarding government, development partners, academia, civil society, and youth groups, using a purposive sampling technique became necessary for selection. In total, 20 respondents were interviewed. Representatives interviewed were from the Ministry of Environment, Science, Technology, and Innovation (MESTI); the Environmental Protection Agency (EPA); and the Ministry of Finance (Climate Finance Unit); The dataset reflected institutional, technical, and grassroots perspectives, including project managers from international organizations like UNDP and GIZ; academics from the University of Ghana; representatives of civil society organizations; and youth climate activists.

The analysis combined primary and secondary data through thematic analysis (Braun & Clarke, 2006). In this way, interview transcripts were coded and analyzed in an inductive manner, while secondary materials underwent deductive review, all through the lens of climate justice. Thematic patterns were based on three categories: distributive justice (access), procedural justice (equity), and recognition justice (especially the socio-economic implications). Triangulating interview findings with official reports and scholarly literature increased the validity of the conclusions (Creswell & Plano Clark, 2018). By mixing sources, the final outputs consider the perspectives of stakeholders as well as valid documentary evidence.

The study conforms to ethical standards set in qualitative research. Informed consent was obtained from respondents prior to interview sessions. To ensure confidentiality, all interviewees are kept anonymous. Data were securely stored and used strictly for academic purposes.

ANALYSIS AND DISCUSSION OF FINDINGS

This section presents a description, analysis, and interpretation of data from semi-structured interviews and secondary data that complement the former. The analysis is undertaken from a climate justice perspective, which brings on fairness, equity, and recognition issues to the foreground for interpretation in Ghana's climate finance landscape. Secondary documents, such as Ghana's NDCs, Ministry of Finance Green Finance Taxonomy, and Green Climate Fund (GCF) project reports, help set the much-needed policy backdrop, while

the interviews give substance to the actual lived experiences and institutional perspectives of actors involved directly in climate finance processes.

The analysis is structured around the three objectives of the study:

To look into Ghana's access to international climate finance mechanisms (e.g., GCF, CIFs, bilateral partnerships, carbon markets).

Analyze equity dimensions of climate finance allocation and participation (urban vs rural, men vs women, youth vs elite).

Analyze the socio-economic implications of climate finance projects on livelihoods, employment, and local development.

For each objective, the discussion follows mini themes that map out key issues that respondents raised. Direct quotations serve to provide concrete views, which are then followed by analytical interpretation that relies on empirical material and wider academic literature.

Objective One: Access to Climate Finance

The first objective associated itself with Ghana's access and mobilization of climate finance from international and domestic mechanisms. Two main themes arose from the data: bureaucratic and institutional barriers, and emerging opportunities through innovative finance mechanisms.

Bureaucratic and Institutional Barriers

Several respondents stated that Ghana has accessed GCF funds and other mechanisms at the international level, but bureaucratic and institutional hurdles limit effective access.

An EPA respondent stressed the difficulty of meeting international requirements despite Ghana's strong proposals:

"Most of the climate change policies that we developed are funded by [international mechanisms], but the application procedures are so complex. We spend months preparing documentation and even then, it can take years before approval comes." (EPA Interview, 2024)

An UNFCCC programme officer gave an account of this institutional strain by funding processes:

"Climate finance is helping Ghana access international funds, but it is also upping the cost because resilience measures now have to be built into development projects. A simple road construction that used to cost one million can now cost twice as much, because you need deeper drains and stronger materials. So really, the funds exist, but it is the bureaucracy and requirements that conspire to weigh down our institutions." (UNFCCC, Interview, 2024)

These reports underscore that procedural bottlenecks and institutional capacity limitations increasingly undermine Ghana's access to climate finance. According to the EPA officer, donor accreditation has postponements that commonly extend beyond immediate climate needs, in the process of putting already vulnerable communities on hold for intervention. This corroborates Fonta, Ayuk, and van Huysen (2018), who observed that funding disbursement to African countries from the Green Climate Fund (GCF) is at most times hindered by administrative bottlenecks.

The officer of the UNFCCC points towards a second dimension of the barrier: domestic institutions bear an additional cost and administrative strain as international financing requires substantive infrastructure upgrades, with compliance and monitoring having to be in place. Otherwise, while accountability remains paramount, a procedure that excludes countries with weaker administrative capacities is born-the so-called "efficiency-equity trade-off" in climate finance as defined by Persson and Remling (2021).

From the standpoint of climate justice, this bureaucratic rigidity could indeed aggravate inequities. After all, Schlosberg (2013) contends that postponements of adaptation finance worsen the vulnerability of frontline communities, which least prioritize emissions and are mostly exposed to the risk. In Ghana's case, maladaptation brings forth the common challenge of intervention, wherein one of the intervention needs is at risk of being impaired on account of the approval timelines being longer. Intervention intervention here stands for intention-based or determined actions to mitigate climate impacts such as floods and droughts.

Innovative Finance Mechanisms and Emerging Opportunities

Despite these barriers, respondents have also pointed to innovative mechanisms signaling new opportunities for Ghana to access climate finance especially in carbon markets. MOE stated that;

"I am a member of the National Carbon Market Office responsible for the administration and implementation of Article 6 of the Paris Agreement in Ghana" (MOE Interview, 2024).

EPA further explained Ghana's engagement in a more practical way with carbon markets:

"There is what we call Ghana Carbon Market. Since we started somewhere in 2022 . . . we have 28 cookstove projects, three electric vehicle initiatives, 15 nature-based solutions, two biogas projects, and three projects installing 338 MW of solar. These are tangible projects Ghana got out of our halting international climate change practices." (EP, Interview, 2024)

These quotations show Ghana moving away from traditional donor financing and carving its niche into innovative market mechanisms. The direct involvement of the Ministry of Environment through the National Carbon Market Office portrays institutional support for cooperative approaches under Article 6. This implies Ghana's ambition to benefit from global carbon trading frameworks for climate and economic benefits.

Strand (2023) argues for the early positioning of developing countries under Article 6 in order to shape emerging rules and attract private investment into emission-reduction projects.

According to the EPA officer, Ghana marks a rare example of a country moving from policy to practice-the country already has implementation projects in cookstoves, electric mobility, solar energy, and nature-based solutions. These initiatives further diversify climate finance beyond grants and concessional loans into a hybrid form within which international carbon markets co-exist with some form of domestic implementation capacity. This diversification should ideally reduce their dependence on slow-moving multilateral funds and strengthen Ghana's position as a country that actively engages in climate finance (MoF, 2022).

Still, the thorny issues of equity and distributive justice must be addressed. Roberts and Weikmans (2017) warn that market-based mechanism may privilege big bankable projects while leaving vulnerable communities behind. Carbon revenues and taxonomy-aligned investments could thus be at risk of coalescing narrowly in urban or industrial sectors, bypassing the very populations that are marginalized from addressing climate risk in Ghana. If the benefits are not to reach women, smallholder farmers, and rural communities because of weak safeguards, then innovative finance measures could only replicate the existing inequalities.

In governance terms, Ghana's Green Finance Taxonomy adoption is, however, a positive step toward mobilizing private capital with clear sustainability standards. According to a civil society participant, investor confidence is increased when there is clarity in defining what is green, and it brings the domestic finance system into line with related international benchmarks. This notion is perfectly in harmony with global best practice of climate finance readiness wherein a taxonomy is regarded as a cornerstone in channeling investment flows toward low-carbon mode of development (OECD, 2022).

Objective Two: Equity in Climate Finance

This second objective investigates the fair distribution of climate finance across different social groups, regions, and sectors in Ghana. Two major themes appeared: regional and socio-economic disparities in the allocation and gender and youth inclusion in climate finance governance.

Regional and Socio-Economic Disparities

The respondents that were interviewed always alleged that the climate finance allocation to the northern and southern parts of Ghana is not equal. A regional officer said:

UNDP explained the uneven distribution of projects, especially in the north:

“What I am now doing is mostly in Savannah areas, restoring degraded lands, bringing back the shea tree. But when you look at it, most of the resources are still concentrated in Accra and the forest zone. The north always has to struggle for attention, even though the climate impacts here are harsher.” (UNDP Interview, 2024)

EPA lamented that climate finance flows are concentrated in national-level institutions based in Accra:

“Most of the climate change policies that we developed are funded by them [international partners]... but the money comes through Accra institutions. At the community level, especially up north, you hardly feel it directly.” (EPA Interview, 2024)

YCA also pointed out the disadvantage of rural people and others that are vulnerable:

“We keep hearing about all these big climate projects but the people in the rural areas are hardly ever the beneficiaries. In a way, those who are affected the hardest by floods and droughts seem to be least likely to benefit. (YCA Interview, 2024)

Another interviewee stressed the inequity of financing in the distribution of adaptation funds:

“Total payments of more than USD 107 million have gone into the Green Climate Fund, but much of that goes into energy and infrastructure. The smallholder farmers in the north do not see enough of it, yet they are the ones fighting droughts and food insecurity.” (CSO Interview, 2024)

These testimonies show that there is a clear regional and socio economic disparity in the allocation of climate finance in Ghana. Respondents from government and civil society alike agreed that the flow of funding is concentrated in Accra and the southern regions; when it comes to northern Ghana, where the climate impacts are experienced at their worst, relatively little support is available. This finding confirms the conclusions of Nakouwo & Zhang (2024), whereby climate finance is seen as channeling through regions with stronger institutions and relatively easier-to-finance mitigation projects, thereby leaving out the vulnerable rural areas.

It is imperative to establish the perspectives of the some respondents that the structural centralization of climate finance becomes apparent: funds flow into ministries and agencies based in Accra with a so-called "trickle-down" effect that almost always gets stuck before reaching the most exposed communities. On the flip side, the youth activist and CSO researcher illustrate the lived realities: rural households, smallholder farmers, and northern communities rarely receive any benefits from big climate projects yet bear the full brunt of floods, drought barrenness, and land degradation. This is exactly what Roberts and Weikmans (2017) refer to as the "justice gap" in the distribution of climate finance.

From the point of view of distributive justice, these inequalities make pre-existing developmental imbalances between the north and south of Ghana much deeper. The World Bank (2021) show that the north faces a disproportionate exposure to desertification and erratic rainfall, Adaptation funding remains far below mitigation investments for the urban and industrial sectors in the south. If explicit mechanisms are not prioritized for vulnerable groups and regions, climate finance could well risk perpetuating inequality.

Gender and Youth Inclusion in Governance

From a climate justice viewpoint, Ghana's climate finance governance has visible distributive and procedural inequities. The testimonies of respondents bring out that, even though gender and youth are mentioned in project documents, their participation in decision-making processes remains insufficient.

UNDP explained how climate finance projects in the north enhanced women's livelihoods through shea production while stating:

"The project is also to promote [shea production] and improve the livelihoods of women in the north in the Savannah zone... shea is a huge livelihood commodity, especially for Northern Ghana. Women are the ones involved, and improving this directly supports them" (UNDP Interview, 2024).

Though these illustrate attention towards women as beneficiaries, they also emphasize a project-level focus as opposed to a governance-focused approach to include gender.

Likewise, EPA also hinted at gender mainstreaming often coming up as a donor imperative rather than a domestic governance priority:

"Most of these things are sponsored... we get grants from them so that there is gender inclusiveness and all that" (EPA Interview, 2024).

This is in line with what Schalatek and Bird (2020) term as tokenistic inclusion: gender references are included merely to cater to an external checklist where actual power-sharing in governance systems is not guaranteed.

The exclusion of youth was brought out even more station prominently.

YCA stated further added;

"I am a young climate activist and youth negotiator in Ghana... but honestly, youth voices are barely heard. Climate finance is mostly discussed between government and donors" (YCA, Interview, 2024).

These finding echoes procedural justice critiques in climate finance, which have argued that indeed, governance processes were sidestepping intergenerational equity, despite the disproportionate long-term risks borne by young people (Schalatek & Bird, 2020).

CSO also in the same context capture the ways in which the technical and institutional requirements of climate finance draw away resources from community-level, inclusive approaches:

"Building institutional frameworks and technical capacity for climate governance diverts resources. There's always less left for community-based, inclusive approaches. That is where women and youth tend to get excluded" (CSO Interview, 2024).

These examples show structural constraints within the governance framework in Ghana that, in practice, promote exclusion-meaning that equity could be cited in policy documents like the Energy Transition Framework and Green Finance Taxonomy (MoF, 2022).

The results, then, point to this paradoxical twofold situation in climate finance with respect to equity concerns: While one aspect points to distributive inequities concentrating resources in a few sectors and regions, the other refers to procedural ones where women and youth are present in name only, without the powers to enforce. If these gaps were to be closed, intentional reforms would have to be put in place: setting aside funding for women and youth-led initiatives; embedding gender and youth quotas in decision-making bodies; and moving actual inclusiveness beyond a check list for donor governance priority. Dazé and Terton (2016) provide clear evidence that the full and meaningful participation of marginalized peoples helps increase fairness and also, finally, the success and potential sustainability of climate interventions.

Objective Three: Socio-Economic Implications of Climate Finance

The third objective concerned analyzing how livelihood patterns, employment, and the wider socio-economic transformation of Ghana have been influenced by climate finance projects. Two main themes emerged: livelihood opportunities and green jobs, and trade-offs and unintended consequences.

Livelihood Opportunities and Green Jobs

There was wide consensus from respondents that climate finance has offered new livelihood opportunities, particularly in renewable energy and climate-smart agriculture.

UNDP explained how the climate finance programs are directly increasing the income of women in the north through the shea economy:

“There's so much promotion for bringing back the shea tree that has been exploited without control.... Shea is a massive livelihood commodity especially for Northern Ghana.” (UNDP Interview, 2024).

In continuation UNDP added that;

"A lot of the vulnerable people are women, and enhancing this development directly promotes them." The same respondent also highlighted the importance of climate finance for rural diversification through restoration projects: (UNDP Interview, 2024)

"Commercial trees are being brought back... and there's also promotion of farming systems that allow communities to benefit. The Ghana Shea Landscape Project is helping improve women's income in the north while restoring degraded lands." (UNDP Interview, 2024)

EPA spoke about the employment potential in renewable energy activities working under climate finance:

"We have three [electric vehicle] initiatives ... 120,000 e-bikes and cars are being introduced. We also have 28 cookstove projects and 338 MW of solar. These projects are tangible, and they are creating green jobs in new sectors." (EPA Interview, 2024)

YCA explained how climate finance can act as an instrument in empowering poor and marginalized communities if the funds reach the deserving communities:

“Climate funds are in billions of dollars for climate funds... if Ghana can attract the right projects, it will be able to reduce inequalities and strengthen the sectors most affected by climate change such as agriculture.” (YCA Interview, 2024)

With reference to the above testimonies, climate funds are a building block for environmental resilience provide livelihood transformation and green job creation in Ghana.

The United Nations Development Program Ghana provides an account of interventions that indicated that climate finances, like the Ghana Shea Landscape Project, have a distributive justice element by empowering women from northern Ghana, and a recognitional justice aspect. According to UNDP Ghana, direct livelihoods support and climate-resilience-enhancement services would bolster 100,200 people (78,850 women and 21,350 men). Restoration interventions, coupled with decreased deforestation and fire management, would in turn indirectly aid retention of soil moisture, reduce evapotranspiration, and maintain soil fertility over an area of nearly 500,000 hectares (UNDP, 2023). These details reveal that climate finance would, beyond direct income pathways, generate ecological co-benefits of its own: restoring soil fertility and reducing evapotranspiration, and thus securing long-term agricultural resilience for vulnerable communities. By focusing on vulnerable groups who bear the heaviest impacts from climate risks, these projects follow Schlosberg's (2013) justice model focused on environmental governance equity and participation.

The projects grouped under the working of electric mobility, solar energy, and clean cookstoves present a green economy emerging in Ghana. According to a 2021 report by the clean cooking alliance, the percentage of rural population that uses clean cooking fuel only stood at 5% while 73% and 20% use wood and charcoal respectively (Clean cooking alliance, 2021). However, these projects provide technical, operational, and entrepreneurial opportunities, especially thrumming with excitement among young people and local SMEs, being in line with the World Bank (2021) about climate finance investments toward renewable energy improving rural electrification and job creation.

The respondents' responses largely points to a wider socio-economic transformation potential: climate finance, if well leveraged, can lessen inequalities by strengthening climate-sensitive sectors such as agriculture. Yet, as urged by UNDP (2022), ensuring that these benefits are not concentrated in already-advantaged regions or institutions should be of utmost concern.

In essence, such livelihood-oriented climate finance projects in Ghana come with important co-benefits: economic empowerment of women, rural energy access, and new green industries. These projects embody what the Green Climate Fund (2020) calls "transformational climate finance," able to simultaneously address development deficits and climate risks.

Trade-offs and Unintended Consequences

Interview respondents shared side effects on livelihoods with species poorly chosen in an afforestation project. UNDP stated that;

"The only thing is the choice of species ... "The whole problem with the promotion of teak in the north is that teak is not a northern plant; it takes away surface water, and that is the issue. But because of the high economic value, they are planting it." (UNDP Interview, 2024)

In relation to some of the trade-offs in carbon markets, where reliance on external offsets may undermine global mitigation efforts, EPA argued

" On the first side, the trade-off is that you are also not forcing the developed nations to be serious with their commitments, because they can just come to Ghana, buy credits, and continue polluting." (EPA Interview, 2024)

Also, MOE added that

"Upfront investment in climate projects requires massive capital... sectors like cement and manufacturing face higher costs to decarbonize, and our exports could face tariffs if carbon intensity exceeds EU benchmarks." (MOE, Interview, 2024)

CSO also stated that

"Building institutional frameworks and technical capacity for climate governance diverts resources. It means less is left for community-based, inclusive approaches" (CSO, Interview, 2024).

These views highlight that climate finance in Ghana, while undergoing transformation, entails heavy socio-economic trade-offs and unintended consequences. The UNDP example of teak promotion illustrates how interventions may undermine local ecological balance and rural water security when economic incentives are prioritized at the expense of sustainability. This coincides with Brobbey et al., (2019), who opined that afforestation schemes also impose hidden costs on rural communities by ignoring local environmental realities.

The comment of EPA thus exposes the structural trade-offs with carbon market participation: while revenues can be realized, reliance on offsets continues global inequities by allowing wealthier nations to outsource mitigation responsibilities. As Ciple, Roberts, and Khan (2015) contend, donor- and market-driven climate finance can serve to reinforce hierarchies wherein vulnerable countries shoulder disproportionate burdens.

While the MOE have highlighted the economic competition dilemma, according to causes and effects analysis from Asare et al. (2022), and Stopponi et al., (2025) decarbonization in hard-to-abate industries, including cement and steel, raises production costs and may threaten Ghana's industrial competitiveness under mechanisms such as the EU Carbon Border Adjustment Mechanism. CSO's comment has highlighted institutional trade-offs, noting that climate finance typically strengthens national frameworks while diverting resources away from grassroots priorities, leaving women, smallholders, and rural communities underserved-a critique of climate-finance tokenism laid forth by Schalatek and Bird (2020) where equity is promised but never delivered.

This is the kind of scenario one would expect to emerge, reflecting the socio-economic consequences of climate finance in Ghana: On one hand, as shown earlier in this analysis, climate finance has created livelihoods, empowered women, and generated green jobs. On the other hand, the unfortunate costs of ill-designed transitions such as the promotion of exotic tree species, dependence on carbon offsetting, and expensive industrial compliance place vulnerable groups at new risks. This reflected the larger equity question in climate finance: ensuring interventions finance true transitions, rather than impose restrictions or hidden costs on already marginalized populations.

Resolving such trade-offs implies that Ghana build in robust social safeguards, guarantee alternative livelihood support to communities dependent on vulnerable sectors (e.g., charcoal production, cement), and fully emphasize inclusive project design. This is the only way climate finance can realize the formulary of resilience plus socio-economic transformation.

CONCLUSION AND POLICY RECOMMENDATIONS

Conclusion

The study sought to interrogate climate finance within a climate justice frame, focusing on three areas: access, equity, and socio-economic impacts. The findings show that progress has been made in Ghana with regard to building institutional frameworks for climate finance access, such as the establishment of the Climate Finance Division at the Ministry of Finance, the adoption of a Green Finance Taxonomy, and being an early mover in Article 6 cooperative approaches. On the other hand, bureaucratic bottlenecks, donor-conditioning, and limited capacity to prepare projects continue to prevent efficient mobilization of funds. Equity concerns remain paramount. There are uneven climate finance flows, with urban and southern regions receiving an unfair share of the resources while northern communities are arguably the most vulnerable but still underserved. Similarly, the exclusion of women and youth from the decision-making process constitutes procedural gaps that undermine fairness and effectiveness. Such inequities resonate with the critiques leveled against climate finance globally, where the rhetoric on inclusivity rarely translates into reality.

In a socio-economic context, there are a lot of trade-offs but quite a few benefits as well. In climate finance, renewable energy and women's empowerment through the Shea Landscape Emission Reductions project are some of the co-benefits. Drawing away incomes, however, are the trade-offs: charcoal production gets banned with no alternatives given, and short-term project cycles threaten community sustainability once the donor stops funding. In spirit and in practice, climate finance in Ghana is an interesting mix of ambition and frailty. If a just transition is to be realized, interventions must be designed not only to address environmental outcomes but also to protect livelihoods and reduce inequalities.

Policy Recommendations

Strengthening of Institutional Capacity for Access

First and foremost, the Government of Ghana should invest in technical expertise as well as modern data management systems for the preparation, appraisal, and monitoring of climate finance projects. Furthermore, a specialized climate finance task force should be set up within the Ministry of Finance, with assistance and collaboration from Ministry of Environment Science and Technology (MEST) and the Environmental Protection Agency (EPA), to navigate the application processes, prevent duplication, and expedite response to donor requirements. In addition, training programs should be institutionalized so that the officials across ministries and agencies attain the dual skills in the design of bankable projects and even in the management of monitoring and reporting frameworks while keeping responses to donor requirements in line with international standards.

Give Priority to Vulnerable Areas and Populations

Climate finance funding must deliberately channel greater resources into Northern Ghana and other climate-vulnerable communities in which droughts, floods, and land degradation exert devastating effects. This can be

effected through the establishment of targeted “adaptation funding windows” for rural livelihoods, agriculture, and water resilience. Local governments in such areas should be entrusted with budget authority for direct acquisition of climate money, supported by clear guidelines and transparent reporting systems. Such mechanisms would not only lessen regional imbalances but also affirm climate justice by earmarking the most vulnerable populations.

Advance Gender and Youth Participation

Climate finance governance must transcend tokenistic inclusion and adopt binding measures for the full participation of women and youth. These measures may include establishing quotas for women and youth on climate finance boards and decision-making committees or earmarking a percentage of climate funds for projects led by women or youth. It is imperative for Capacity-building programs be initiated so as to enhance the technical capabilities of women cooperatives, youth groups, and grassroots organizations in preparing proposals and managing funds. Such reforms will enhance the fairness and functioning of climate finance in Ghana, ensuring that disenfranchised groups are not locked out of the transition.

Embed Livelihood Safeguards in Project Design

All climate finance projects must prepare livelihood transition plans for local communities dependent on activities deemed vulnerable or high-emission, such as charcoal production. This largely entails restricting unsustainable practices while giving them alternatives such as skills training, microfinance for small enterprises, or incentives for the adoption of clean technologies. Livelihood safeguards must be built into the project right from the design stage, together with active involvement by affected local communities, so that the interventions have no unintended consequence of deepening poverty or fueling resistance. Funding for transition into new, sustainable livelihoods will guarantee that climate finance remains a tool for inclusive development rather than one causing social disruptive.

REFERENCES

1. Anjanappa, J., Samant, S., & Thakur, B. (2024). bridging the gap: addressing the unequal allocation of climate adaptation finance in global South. Available at SSRN 4985851.
2. Asare, F., Owusu, F. W., & Gazo, R. (2022). Sustainable charcoal production drive in rural communities in Ghana, West Africa. *Energy for Sustainable Development*, 68, 364–372.
3. Banu, N., & Fazal, S. (2025). Climate change, livelihood crisis and resilience: an introduction. In *Livelihoods and Well-Being in the era of climate change: risk to resilience across India* (pp. 3-18). Cham: Springer Nature Switzerland.
4. Barnard, S., Watson, C., Greenhill, R., Caravani, A., Trujillo, N. C., Hedger, M., & Whitley, S. (2014). Climate finance: is it making a difference. Overseas Development Institute.
5. Blanchard, L., Haya, B., Lezak, S., & Anderegg, W. (2024). The History of. *Approaches For Climate Mitigation: A Narrative Review*.
6. Bhardwaj, M. (2008). The role and relationship of climate justice and common but differentiated responsibilities & respective capabilities (CBDR-RC) principle in the international climate change legal framework: historical evaluation, developments, challenges & future outlooks of CBDR-RC principle & climate justice (Doctoral dissertation, Thesis for MSc in Public Policy & Human Development (Foreign Policy), United Nations University & Maastricht University).
7. Boamah, F. (2025). Dancing on the head of a needle? ‘Disciplining’ energy justice scholarship. *Dialogues in Human Geography*, 20438206251347245.
8. Boateng, D., Bloomer, J., & Morrissey, J. (2025). Fueling homes and lighting lives: understanding household energy decisions in off-grid rural Ghana. *Energy Research & Social Science*, 125(10410), 5.
9. Bondinuba, F., Jones, C. A., & Akinbogun, S. Building Equitable and Resilient Communities in the Global South Through Housing Justice and Climate Justice. Available at SSRN 5260550.
10. Brobbey, L. K., Pouliot, M., Hansen, C. P., & Kyereh, B. (2019). Factors influencing participation and income from charcoal production and trade in Ghana. *Energy for Sustainable Development*, 50, 69–81.
11. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.

12. Bulkeley, H., Edwards, G. A. S., & Fuller, S. (2014). Contesting climate justice in the city: Examining politics and practice in urban climate change experiments. *Global Environmental Change*, 25, 31–40.
13. Chen, Y., Wu, F., & Zhang, D. (2024). Global Climate Finance Architecture: Institutional Development. In *Climate Finance: Supporting a Sustainable Energy Transition* (pp. 51-100). Singapore: Springer Nature Singapore.
14. Cipler, D., Roberts, J. T., & Khan, M. R. (2015). *Power in a warming world: The new global politics of climate change and the remaking of environmental inequality*. MIT Press.
15. Clean Cooking Alliance. (2021). Market assessment of improved cookstoves in Ghana [Report]. Environmental Protection Agency of Ghana. Retrieved from https://cmo.epa.gov.gh/wp-content/uploads/2024/04/150224_Ghana_ICS_MADD_redacted.pdf
16. Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Sage.
17. Dafermos, Y. (2025). Climate finance and global justice. *Climate Policy*, 1-17.
18. Espelage, A., Ahonen, H. M., & Michaelowa, A. (2022). The role of carbon market mechanisms in climate finance. In *Handbook of International Climate Finance* (pp. 352-378). Edward Elgar Publishing.
19. Green Climate Fund. (2020). Enhancing climate resilience in Ghana's agricultural sector through Shea Landscape Emission Reductions. Green Climate Fund Project Document. Retrieved from https://www.greenclimate.fund/sites/default/files/document/fp137-undp-ghana_0.pdf
20. Fonta, W. M., Ayuk, E. T., & van Huysen, T. (2018). Africa and the Green Climate Fund: Current challenges and future opportunities. *Climate Policy*, 18(9), 1210–1225.
21. GROMEA, J. V. (2025). *The Cost of Climate Justice: Applying the Principle of Common but Differentiated Responsibilities and Respective Capabilities* (Doctoral dissertation, UNIVERSITY OF ST. LA SALLE).
22. Islam, M. S. (2024). Rethinking climate justice: insights from environmental sociology. *Climate*, 12 (12), 203.
23. Jha, M. K., & Dev, M. (2024). Impacts of climate change. In *Smart internet of things for environment and healthcare* (pp. 139-159). Cham: Springer Nature Switzerland.
24. Kaklauskaitė, U., & Streimikiene, D. (2024). Climate justice from the lens of sustainable development. *Sustainable Development*, 32(6), 6788-6800.
25. Kangero, D. S. (2024). Environmental Equity, a Means for Securing Our Environment. In *(In) Security: Identifying the Invisible Disruptors of Security* (pp. 351-380). Cham: Springer Nature Switzerland.
26. Leal-Arcas, R. (2025). Carbon Markets, International Trade, and Climate Finance. Forthcoming in *Trade, Law and Development*, 16(2).
27. Lindqvist, E. (2025). The GCF in a fragmented climate finance system:: A discourse analysis of accountability, legitimacy, effectiveness and equity.
28. Ministry of Finance (MoF). (2022). *Ghana Green Finance Taxonomy*. Accra: Government of Ghana. Retrieved from <https://share.google/Zp0EBSITImuKz7UI3>
29. Nath, P. K., & Behera, B. (2011). A critical review of impact of and adaptation to climate change in developed and developing economies. *Environment, development and sustainability*, 13(1), 141-162.
30. Newell, P., & Mulvaney, D. (2013). The political economy of the 'just transition'. *The geographical journal*, 179(2), 132-140.
31. Nakouwo, S. N., & Zhang, D. (2024). Climate finance and investment in Africa: A case study of Ghana. In *Climate finance: Supporting a sustainable energy transition* (pp. 315-374). Singapore: Springer Nature Singapore.
32. Okereke, C. (2010). Climate justice and the international regime. *Wiley interdisciplinary reviews: climate change*, 1(3), 462-474.
33. Owusu-Manu, D. G., Mankata, L. M., Debrah, C., Edwards, D. J., & Martek, I. (2021). Mechanisms and challenges in financing renewable energy projects in sub-Saharan Africa: a Ghanaian perspective. *Journal of Financial Management of Property and Construction*, 26(3), 319-336.
34. Pastor, M., Cha, J. M., Méndez, M., & Morello-Frosch, R. (2024). California dreaming: Why environmental justice is integral to the success of climate change policy. *Proceedings of the National Academy of Sciences*, 121(32), e2310073121.

35. Pauw, W. P., Castro, P., Pickering, J., & Bhasin, S. (2020). Conditional nationally determined contributions in the Paris Agreement: foothold for equity or Achilles heel?. *Climate policy*, 20(4), 468-484.
36. Persson, A., & Remling, E. (2014). Equity and efficiency in adaptation finance: initial experiences of the Adaptation Fund. *Climate Policy*, 14(4), 488-506.
37. Pienaaah, C. K., Baruah, B., & Luginaah, I. (2024). Women's perspectives on addressing the decline of Shea trees in Northern Ghana. *GeoJournal*, 89(1), 9.
38. Rajamani, L. (2018). The principle of common but differentiated responsibilities and respective capabilities in the international climate change regime. In *Research Handbook on Climate Disaster Law* (pp. 46-60). Edward Elgar Publishing.
39. Rahman, S. M., & Ahmad, M. M. (2015). Climate finance towards vulnerable countries: evidence from the Global Environment Facility (GEF). *International Journal of Green Economics*, 9(2), 199-214.
40. Roberts, J. T., & Weikmans, R. (2017). Postface: fragmentation, failing trust and enduring tensions over what counts as climate finance. *International Environmental Agreements: Politics, Law and Economics*, 17(1), 129-137.
41. Salvi, S. L. (2025). A Just Adjustment Mechanism? Investigating the Alignment of the EU's CBAM with the CBDR-RC Principle.
42. Schultheis, S. (2024). Investigating buyer preferences in climate finance under Article 6.2 of the Paris Agreement. *IIIEE Masters Thesis*.
43. Shah, G. M., Sapkota, K., & Spakota, M. (2025). A Comprehensive Review of Theories, Models and Approaches Governing Climate Change Discourse and Global Climate Finance. *Models and Approaches Governing Climate Change Discourse and Global Climate Finance* (June 05, 2025).
44. Schalatek, L., & Bird, N. (2016). The principles and criteria of public climate finance—A normative framework. Washington: Heinrich Böll Stiftung North America. <https://www.odi.org/sites/odi.org.uk/files/resource-documents/11018.pdf>.
45. Schlosberg, D. (2013). Theorising environmental justice: The expanding sphere of a discourse. *Environmental Politics*, 22(1), 37–55.
46. Sefa-Nyarko, C. (2024). Ghana's National Energy Transition Framework: Domestic aspirations and mistrust in international relations complicate 'justice and equity'. *Energy Research & Social Science*, 110, 103465.
47. Siddiqui, A. (2024). Climate Change and Global Governance: Challenges in Policy Coordination. *Journal of Future Building*, 1(1), 15-30.
48. Singu-Hansen, H. (2024). Civil society, youth, and social change: A case study of Femina Hip (Doctoral dissertation, Loughborough University).
49. Social, G. (2025). Climate Financing, Institutional Structure, and Budget Tracing in Ethiopia.
50. Steiner, A. (2019). Climate change, environment, and sustainable development in Africa. In *African Economic Development* (pp. 93-110). Emerald Publishing Limited.
51. Stopponi, G., Jepsen, T., Jørgensen, N. O., & Pouliot, M. (2025). Opportunities and Challenges of Shea Trees Agroforestry Systems and Management Practices in Northern Ghana: A Socio-Ecological Perspective. *Journal of Sustainable Forestry*, 1-26.
52. Skovgaard, J., Adams, K. M., Dupuy, K., Dzebo, A., Funder, M., Fejerskov, A. M., & Shawoo, Z. (2023). Multilateral climate finance coordination: Politics and depoliticization in practice. *Global Environmental Politics*, 23(2), 125-147.
53. Suárez-Eiroa, B., Ferreira, A., Sánchez, V. J., & Alonso-Rodríguez, A. Social Change in Sustainability Transitions: An Assessment Through the Case of the Circular Economy. Available at SSRN 4798233.
54. Tetteh, C. K. (2025). Innovative Climate Adaptation Financing Options for Ghana: Focus on the AFOLU Sector. *Climate Action in Ghana*, 178.
55. Tyce, M., Abdulai, A. G., & Asante, K. P. (2025). Confronting shifting energy landscapes and contested domestic politics: Ghana's national oil company and the global energy transition. *Energy Research & Social Science*, 119, 103901.
56. UNFCCC, S. (2022). Fifth Biennial Assessment and Overview of Climate Finance Flows. Biennial Assessment Fifth. Bonn: Standing Committee on Finance (https://unfccc.int/sites/default/files/resource/J0156_UNFCCC%20BA5_2022_Report_v4%5B52%5D.pdf (Accessed: 2 December 2022)).

57. UNDP. (2022). Human development report 2022: Uncertain times, unsettled lives. New York: United Nations Development Programme. Retrieved from <https://share.google/BQHPujMWQ19YyO6AW>
58. Visconti, G., Ramírez, G., & Braly-Cartillier, I. (2024). Enhancing Access to Concessional Climate Finance: Perspectives from the IDBs Experience with Major Climate Funds: CIF, GCF, and GEF.
59. Voigt, C., & Ferreira, F. (2016). The Paris Agreement: What is the standard of conduct for parties? *Questions of International Law*, 26, 17–39.
60. Weikmans, R., & Roberts, J. T. (2019). The international climate finance accounting muddle: is there hope on the horizon?. *Climate and Development*, 11(2), 97-111.
61. World Bank. (2021). Ghana: Scaling Up Renewable Energy Program (SREP). Washington, DC: World Bank. Retrieved from <https://share.google/y6TxhBFcOdZ1v5ERa>