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Role of Intermediaries in Shaping Climate Finance in Developing Countries—Lessons from the Green Climate Fund

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Received: 4 June 2020; Accepted: 6 July 2020; Published: 8 July 2020

Abstract: Social scientists are increasingly interested in the processes that give shape to global policy solutions. I investigate the issues of intermediation and the role of intermediaries in climate finance. I use the case of the Green Climate Fund (GCF), a new consortium for dedicated funding set up under the United Nations Framework Convention on Climate Change (UNFCCC) to assist developing countries in responding to climate threats, to ask a fundamental question: What role do intermediaries (GCF-accredited and related entities) play in catalysing climate action through climate finance in these countries? This paper offers three propositions focused on the role of intermediaries in the GCF, and tests these using data from the GCF and the wider literature. The results show a growing dominance of international intermediaries in GCF project development and implementation, the low capacity of national intermediaries to conceive and scale projects, and the mismatch between planned and actual funding allocations. Collectively, these outcomes derail the GCF from its core objectives of promoting country ownership of projects, building capacity of local intermediaries, and equitable allocation of funding between mitigation and adaptation. I offer three learning models to help the GCF and intermediaries capitalise on the early lessons from GCF activities and to scale climate finance effectively in developing countries.

Keywords: intermediaries; climate finance; Green Climate Fund; climate change; learning models; developing countries

1. Introduction

The role of intermediaries in catalysing climate finance is gaining recognition in global policy and practice space. Climate change, with its global policy and science agenda but local country-level activities, has been an ideal setting for climate finance intermediaries that sit between these two worlds to emerge and enable action. Formally, intermediaries are actors that bring together or link two or more actors in activities that would not otherwise have materialised [1]. Building on Parag and Janda [2], in this paper, I treat intermediaries as middle actors that sit between global climate finance institutions and nation-states, as well as between climate finance and implementation, and play a crucial function in bridging the implementation gap in developing countries. These intermediaries are a broad array of international, public, private, and civil-society actors.

Scholarship on intermediaries points to the critical roles they play in large-scale initiatives like market creation, innovation, policy efficacy, and implementation [3,4]. Intermediaries often help to manage and fill critical voids by providing information, standards, and solutions [5–7]. In particular, the literature on intermediaries highlights three recognised roles: Intermediaries work as brokers between distributed policy actors [8,9]; they bridge between key constituents and stakeholders [10,11]; and they diffuse knowledge and information for others and themselves [12,13], offering

structural connections among disparate actors [14]. This work often involves codifying information, creating standards, and building procedures and metrics in these emerging spaces. International development scholarship offers a comparable approach to governance, referred to as ‘orchestration’ to shape action of intermediaries on a voluntary basis [7,15]. In this paper, I consider a wider role for intermediaries as system builders [16], shaping climate change policy and implementation spaces and building the capacities of developing countries to achieve climate finance readiness, i.e., planning, accessing, innovating, delivering, and monitoring climate finance activities. I use the case of the Green Climate Fund (GCF), a new consortium for dedicated climate funding set up under the United Nations Framework Convention on Climate Change (UNFCCC), to ask a fundamental research question: What role do intermediaries in the GCF play in shaping global climate finance activities in developing countries? Answering this question is important for understanding how climate activities are funded and implemented and, in turn, how these shape the landscape of climate change, both nationally and globally.

The GCF represents a nascent funding scheme with a transitional policy and operational structure. It acknowledges that the aims of national governments and their agencies are realised with difficulty through earlier policy initiatives, such as versions of national climate policy plans. I focus on the ways that intermediaries ‘translate’ and support local implementation and, at the same time, remain attentive to the expectations of international and national agencies. In the GCF, intermediaries are a deliberate introduction to promote country ownership, reduce transaction costs of direct involvement by the GCF in local activities, promote equitable and balanced distribution of funding, set up a mechanism of accountability and transparency, and develop local implementation capabilities. I take an interdisciplinary approach, bringing together work from the fields of climate change, management theory, and policy, and supported by secondary data to study the role of climate finance intermediaries.

I develop three propositions to examine the intermediaries, backed by a broad understanding of the types of intermediaries that have appeared in the GCF domain, the roles these play in shaping emerging climate finance spaces, and the challenges they confront. I highlight the proposition that the current approach and design of the GCF will reinforce the historically dominant role of international intermediaries, limit the capabilities of national intermediaries to take local ownership, and widen the gap between adaptation and mitigation funding. This is contrary to the core objectives of the GCF in promoting country ownership, enhancing the capacity of local intermediaries to lead projects, and equitable allocation of funding. I offer a way forward to overcome these challenges and stay true to the founding principles of the GCF.

The paper begins with describing the methodology of the research. I next map the landscape of climate finance, followed by the key developments in the GCF. I identify the key roles of intermediaries in the GCF and introduce and analyse three propositions on the role of intermediaries in the GCF. This approach provides a framework for analysis of variation in key features of intermediaries, distribution of intermediary types, and their activities in developing countries. The paper concludes with a brief discussion and offers three learning models to help the GCF and intermediaries capitalise on early lessons from the GCF’s activities and to scale climate finance effectively in developing countries.

2. Materials and Methods

I employed a mixed-method case study approach to study intermediaries [17–19]. The GCF is new, so there is a dearth of published literature on the GCF and climate finance in general. I relied on the GCF’s website and its data portal (<https://www.greenclimate.fund>) as the primary data source on the intermediaries, covering accredited national, regional, and international entities and executing agencies, approved projects, concept notes, country profiles, minutes of board meetings, and GCF reports. The GCF’s website and data portal is considered a reliable data source for this research, as it is an official UN body and offers current data on the GCF’s governance and funding activities, including access to live transmissions of board meetings for public consumption. Independent observers participate in the board meetings, and meeting documents are shared with the public as

well as with board members. The GCF data source is supplemented with archival material, public records, published literature, grey literature, secondary data sources and limited interviews, and, informed by my expertise, experience and professional networks. To study the role of intermediaries in climate funding, I developed three propositions that originate from the challenges in the GCF, supported by literature. The propositions allow for examining critical questions on the intermediaries and form a strong basis for inquiry [20].

3. Landscape of Climate Finance

Climate change carries huge global costs, with estimates ranging well over hundreds of billions of dollars annually [21–24], rising to trillions by the mid-century as increased droughts, flooding, and crop failures hamper growth and infrastructure [25]. Despite having contributed little to climate change, developing countries are hardest hit by these changes owing to their geographic location, reliance on resources sensitive to climate change, such as agriculture and aquaculture, and their low adaptive capacity [26,27]. Already burdened with huge development deficits, developing countries are unable to meet these additional costs, making climate action efforts challenging without appropriate financial support [21,28].

Nations have not yet agreed upon a formal distinction between climate finance and general development assistance, but a consensus is emerging on climate finance as those resources needed specifically to meet the costs of supporting climate action [24]. Debates on global climate finance have historically been anchored on the principle of “common but differentiated responsibility and respective capabilities (CBDR)” introduced through Principle 7 of the Rio Declaration of 1992. The CBDR principle implies that while all countries share and bear common responsibility for the environment, developed countries have historically placed additional pressures on the environment to develop and command higher levels of economic, social, and technological capital. The developed countries should thus share greater liability and compensate developing countries for the disproportionate adverse impacts of climate change they face [29,30]. Using the CBDR principle, the UNFCCC and the Paris Agreement called upon developed countries to ramp up financial assistance to the developing countries, which are more vulnerable and financially weak.

A number of climate finance initiatives under the UNFCCC, preceding the GCF, have set the groundwork formalising the GCF mechanism. The Global Environment Facility was the first in the series of funds, established in the 1992 Rio Earth Summit to serve as the operating entity for the formal mechanism for managing climate finance. The Least Developed Countries Fund and the Special Climate Change Fund were established in the 2001 Conference of the Parties (COP) 7 in Marrakesh to provide dedicated and immediate funding to address the special needs of the most vulnerable countries. The Adaptation Fund was set up in 2010 under the Kyoto Protocol of the UNFCCC for climate adaptation and resilience measures. The fund is primarily financed through 2% of the proceeds of Certified Emission Reductions (CERs) issued under the Protocol’s Clean Development Mechanism projects and donor funding. Reliant on the CERs, the fund has suffered from low carbon prices and has to rely on external funding to stay afloat. The fund has pioneered the mechanism of working directly with national entities through a detailed accreditation process, laying the foundation and offering valuable insight for the direct accreditation mechanism adopted by the GCF [31]. This entailed a significant shift by the fund from working exclusively with international institutions to engaging national entities. The Climate Funds Update 2019 and Climate Policy Initiative 2019 [32,33] offer a comprehensive overview of the global climate finance landscape.

The formal financing mechanism of the UNFCCC has had mixed success. While these funds have paved a way for setting up a formal mechanism for developing countries to access climate finance under global commitments, the scale of financing has been underwhelming. With rising funding demands from vulnerable countries in the face of increasing climatic impacts and ever-increasing prospects of developed countries backing away from their commitments (e.g., the United States pulling out of the COP funding commitment) in the face of the current health crisis and global economic downturn, there is a greater need for transparency in funding allocation to the vulnerable

in an equitable way. With the introduction of the GCF as the central UNFCCC funding mechanism, the role of the other funds is diminishing.

Outside the UNFCCC structures, there is a growing volume of climate finance managed by the multilateral development banks, such as the Climate Investment Funds, Clean Technology Fund, and the Pilot Program for Climate Resilience led by the World Bank. Many multilaterals, bilateral, and country institutions also manage their independent climate funds, although the data on the funding commitments and disbursements are often lacking. Reinsberg et al. (2020) and the World Bank (2018) [34,35] offer detailed reviews of climate finance and trust funds at multilateral development banks. A new wave of finance is also emerging through innovative partnerships between private-sector fund managers and public entities. The Climate Finance Partnership (CFP) (<https://www.afd.fr/en/actualites/blackrock-climate-finance-partnership>) is an example of a blended finance partnership between the world's largest asset manager—BlackRock—and philanthropists and governments, including France and Germany. The CFP will be a 1 billion USD fund, with the first 100 million USD secured by the governments to catalyse and reduce the risks from institutional capital in climate change. Finally, we are seeing rapid growth in sustainable, responsible, and impactful investing through dedicated private-sector investment funds with climate change as a key focus issue.

4. The Green Climate Fund

The GCF was conceived in 2010 at the COP 16 in Cancun by the Parties as the designated operating entity for the financial mechanism under Article 11 of the UNFCCC. It took another five years for the fund to become fully operational in 2015 after several rounds of negotiations on the operational modalities and the funding commitments. While the GCF is accountable to the Parties under the Paris Agreement, it is an autonomous entity with its independent secretariat and board of directors housed in South Korea. The GCF is fundamentally a partnership body mandated to take a country-driven approach through its partner entities to deploy climate funding in developing countries. It does not directly implement projects, and operates through intermediaries for implementation on the ground. The World Bank acts as a trustee to the fund.

Among the many objectives of the GCF, three critical aspects distinguish the fund from other climate financing initiatives and global institutions. First, the GCF is governed through equal representation by developed and developing countries in its 24 board seats, with co-chairs from each of the two blocks, offering balanced ownership over the functionality and funding decisions of the GCF. This addressed the long-standing demand from developing countries for ownership and a move away from the historical control of international institutions, such as the World Bank and International Monetary Fund, in local affairs. Second, the GCF has committed to equal funding distribution between mitigation and adaptation activities, and at least 50% of the adaptation funding is committed to the Least Developed Countries, Small Island Developing States, and African countries. This commitment was made to address the lack of attention to adaptation funding, with a huge skew of global funding towards mitigation. Finally, the GCF mobilises project funds through a direct access mechanism, where countries can directly access GCF project funding through national and sub-national entities accredited by the fund. The accreditation mechanism builds on the accreditation and direct access approach developed by the Adaptation Fund with the aim of empowering developing countries to take ownership of local priorities and move away from international organisations' historical role as project administrators. The role of global international and regional development institutions is still prevalent in the GCF under the distinct category of regional and international accredited entities. The role of the accredited entities as intermediaries is the main focus in the remainder of this paper.

The GCF's initial funding came from 43 countries (including a few regions and cities) that pledged a total of 10.3 billion USD to the fund during its initial resource mobilisation (IRM) process in 2014. To date (<https://www.greenclimate.fund/about/resource-mobilisation/irm>) a total of 7.2 billion USD has been available for commitment during the IRM period through formal agreements with the pledged countries. The difference between the pledged and available amounts represents a

loss on exchange differences and, most significantly, non-payment by the United States of 2 billion USD of its pledged 3 billion USD commitment following its intentions to withdraw from the Paris Agreement in 2017. The squeezed funding has created operational, funding, and governance challenges in the GCF [36]. Of the total pledged amount, 5.6 billion USD has been allocated to projects approved by the GCF board, with projects worth 2.8 billion USD under active implementation. With significant amounts from the IRM committed to the projects, the first replenishment process has been triggered by the GCF to collect funds for the next 3–5 years from developed countries.

Despite the fund's initial enthusiasm and success as the largest formal mechanism for climate funding, it has faced a myriad of challenges [37]. These range from demand for project funding outstripping availability, lower commitment of funds from the developed countries, unequal allocation of funding between adaptation and mitigation activities, a stringent process for accreditation of national entities and their lower capacity to meet the extensive funding covenants, and skewed allocation of projects and funding to international entities. These growing challenges came to their head in the 20th Board meeting of the fund in 2018, where the developed and developing countries clashed on many issues. This resulted in a stalemate with no decision-making, halting progress on project and accreditation approvals [38]. The Executive Director stepped down, creating a void in the leadership and signalling to the world about the growing division within the fund between the developed and developing countries' approaches. Much of this divide was attributed to the growing mistrust between the developed and developing countries, with the latter complaining that their priorities were not properly addressed by the GCF, especially on fund eligibility and country ownership. Developed countries' board members, on the other hand, were focused on improving financial leverage, private-sector engagement, and cost effectiveness of financing [38]. With the arrival of the new Executive Director, renewed efforts are in place to bridge the divide and offer a clearer strategic plan for the GCF for 2020–2023 [39]. Several countries have also stepped forward to fill the funding void left by the United States in the first replenishment, with Germany and Norway doubling their initial contributions. According to the latest figures by the GCF (<https://www.greenclimate.fund/about/resource-mobilisation/gcf-1>), pledges of 3.41 billion USD have been confirmed, representing a third of the total replenishment amount announced by different countries. Despite strong support—notably by EU states, Japan, and the UK—the total funding pledges remain similar to those of the IRM and require stronger ambition from countries to tackle the rising threats of climate change in developing countries. Significantly, improving these growing governance issues within the fund is necessary to spur action and ensure the continuity of the funding mechanism [36].

GCF Accreditation Architecture

One distinct aspect of the GCF's architecture is its accreditation and direct access mechanism for funding. Under this architecture, the GCF offers project funding directly to developing countries through entities that have been accredited by the fund, known as accredited entities (AEs). These AEs are categorised as national, regional, and international, and cover a range from multilateral, bilateral, public, private, and civil-society entities. The entities are nominated for accreditation by their host country's National Designated Authority (NDA) or focal point, and, in the case of international entities, directly by the GCF. The project funding is given through financial instruments of grants, loans, guarantees, and equity. Grant and loan instruments make up the bulk of GCF funding so far.

To date, 116 entities have submitted applications seeking accreditation, of which 95 entities were approved, comprising 43 national entities (45%), 13 regional entities (14%), and 39 international entities (41%). Out of these, 18 are from the private sector, highlighting the GCF's push to improve private-sector engagement. With the GCF's limited capacity for accrediting entities, a growing number of national applicants, a complex registration system, and a lack of transparency, delays are inevitable in delivering climate funding to developing countries [37]. An inadvertent outcome of the GCF's focus on country ownership has been a surge of government entities as national AEs, as climate change is a public-led challenge in many developing countries. The engagement of government AEs

in disbursing funding is likely to perpetuate existing local social, economic, and political structural challenges to the GCF-funded climate projects [40].

The GCF has taken some concrete steps to overcome these challenges. It offers funding of 1.5 million USD under its Readiness Programme to prepare national entities for accreditation. The programme has supported 21 entities for GCF accreditation and 24 concept and project proposals. A fast-track accreditation process is also available, but with limited scope.

5. Intermediaries in the GCF

I examine how intermediaries in the GCF shape climate action. While the GCF offers detailed guidelines for accrediting intermediary entities and their categorisation (as national, regional, or international, or by size of funding and type of activities), “the literature as a whole lacks clarity in how intermediation is defined, where it begins and ends, and where interaction in general becomes intermediation” [1]. Building on the definitions in the introduction, I define intermediaries to be formal AEs and other entities that are directly or indirectly involved in the GCF’s projects, covering project funders, designers, planners, implementers, consultants, and advisers. There are also a range of actors that operate outside the GCF’s formal structures and influence the climate funding landscape, including advisory firms, investment outfits, research organisations, and academic institutions. Overall, these intermediaries act as a conduit for conceiving, developing, planning, implementing, and governing climate projects funded by the GCF in developing countries. For the remainder of the research, I use the term intermediaries to encompass AEs and other entities, unless otherwise specified.

While the functional categorisation of intermediaries is useful in identifying the spectrum of entities, it offers a limited view of their role in the GCF and climate finance in general. Building on Howells (2006), I propose four main roles of intermediaries in the GCF as (1) information providers, (2) brokers, (3) concept and project designers, and (4) project implementers. These roles are important to understand how intermediaries operate, influence and shape projects, and, in turn, set the tone of how climate action is understood and implemented in developing countries.

5.1. Intermediaries as Information Providers

Intermediaries in this role provide information to translate the complex GCF funding mechanism, but are not directly involved in the GCF’s activities per se. They offer information, data, and analysis on the GCF’s activities and projects to parties that may be interested in the GCF and for wider public consumption. Their aim is to become the key information source for interested parties on the GCF’s developments and updates, and to offer helpful feedback for improving the overall funding process. Development organisations, research institutions, consulting firms, think tanks, NGOs, and government entities dominate this role. The GCF also encourages the information provider role by requiring countries to nominate an NDA to act as the focal point for the GCF’s country activities. The NDAs differ from AEs in that they are nominated by the governments to offer information and have oversight on the GCF projects without going through a rigorous accreditation approval process. Typically, NDAs are relevant ministries that oversee climate projects. The information intermediaries play an important role in drawing attention to climate challenges and funding opportunities that address these challenges, and, in turn, influence the focus of climate activities in countries.

5.2. Intermediaries as Brokers

To address the complex and distributed challenge of climate change, a larger collaboration needs to emerge to find a solution. Intermediaries, as brokers, play an active role beyond offering information to provide a platform and broker connections for collaboration [3,4]. These intermediaries are a bridge between parties where direct interaction is difficult due to high transaction costs (e.g., locating a suitable partner to collaborate with) or due to communication gaps arising from differences in culture, interests, and capacity to absorb or exchange knowledge [2,6]. The

role is purely transactional and ceases once the connection is made through a formal agreement between the parties. Specialised investment advisory firms, consulting firms, and financial institutions are prominent in the broker role, helping set up project consortiums and facilitating the funding application process for the GCF in exchange for a fee. AEs also play the broker role because all the GCF applications have to go through the AEs formally, whether the AEs participate in the transaction or not. Many AEs actively identify parties and projects for the GCF, although the flow of projects and capacity of local parties remain a challenge in developing countries. The intermediaries play an important role in creating enthusiasm for country climate action, identifying projects attractive to the GCF, and connecting actors to take these project ideas forward, thus influencing country climate activities in turn.

5.3. Intermediaries as Concept and Project Designers

Where there is lack of clarity of concept or action in the interaction, the intermediary can play an important role in conception and design [4]. In tackling climate change, the actions and actors necessary for robustness are not always apparent. Important expertise is invariably spread across several actors to bring sufficient funding knowledge and operational know-how for success, which requires a pragmatic and participatory approach [41]. The conception and project design intermediaries perform activities not only as service providers, facilitators, or brokers of someone else's knowledge, but also as architects, co-creators, and enablers of collective knowledge creation [4]. Examples of such concept and design intermediaries include niche platforms, consulting firms, project design firms, and advisory firms that bring the right actors into the room to co-innovate and facilitate the concept and design process, thus creating new opportunities and ideas [42]. The lack of a credible and sustainable project pipeline is a shared challenge across all developing countries, as these countries still lack capacity and innovation in climate projects, which need support with rigorous scientific input, balanced with local needs. The AEs play an important role in designing projects, as they sit between the GCF and a country's priorities. National AEs with on-ground presence have sound knowledge of local priorities, whereas international and regional AEs can bring multi-country experience to support local activities. Supported by other intermediaries, AEs can become a strong repository of credible and implementable projects that, in turn, shape what activities get funded and promoted in country.

5.4. Intermediaries as Implementers

Much research on intermediaries focuses on the role of intermediaries in brokering, innovation, and transformation [1]. However, intermediaries play an important role in actually delivering the GCF projects. Research highlights that many projects fail during implementation due to the 'state capability trap', because administrative systems in many developing countries lack capacity to implement even the most routine tasks [43]. Since state actors dominate national climate action, intermediaries have an important role in overcoming the state/capability gap by offering much-needed expertise and support for successful implementation of the GCF projects. The AEs are generally the central delivery intermediaries, as they are involved in setting up the projects. The AEs work with other intermediaries, including specialist consulting and project management firms, government entities (that own the projects or are relevant), development organisations, and the private sector to bring relevant expertise and resources for successful completion. Most projects sit in some government department and, hence, the involvement of the relevant government department in the project is crucial to get strong buy-in and to ensure the continuity of the project beyond the funding period.

Combined, through these four roles, the intermediaries are instrumental in mobilising finance and shaping action in developing countries. They influence how action is understood, which local priorities are addressed, which projects move to funding, how these projects are implemented, and which actors are involved in the process. This, in turn, gives intermediaries considerable power and influence to shape actions and impact the landscape of climate change, both nationally and globally. The roles of intermediaries are not static, as climate change is an evolving challenge that requires

constant adaptation in knowledge and skills. New intermediaries may emerge, and old ones disappear, which may create conflicts between intermediaries, causing disruption. As the climate financing mechanism stabilises, roles of intermediaries, especially in implementation, may be taken over by formal government agencies, making intermediaries less important [44]. Nonetheless, intermediaries will continue to play a vital role in climate finance. The next section introduces and analyses three propositions in the context of these important roles of intermediaries.

6. Proposition Analysis

6.1. Proposition 1—*The GCF Funding is Heavily Skewed towards International Intermediaries, Reinforcing the Historical International Dominant Development Model*

A central tenet of the GCF is to offer country ownership for projects. The GCF Board has repeatedly reaffirmed that projects have to be owned by developing countries through their AE intermediaries. However, it is ambiguous how the GCF defines country ownership, leading to significant gaps in monitoring of its application [45]. While the ratio of national AEs to international AEs is at par, the same is not true for the allocation of funding. An analysis of the approved project portfolio shows a huge skew towards international AEs. Of the 132 projects in the GCF portfolio, only 17 projects are managed by national AEs, and the balance is led by regional AEs with 12 projects and international AEs with 103 projects. Only 13% of the projects are with the national AEs. Of the 43 national AEs, only 12 have managed to secure a project, and the remaining 31 AEs either have no projects in the pipelines or their projects have yet to be approved. When the quantum of funding is analysed across entity types, it portrays an even bleaker picture. National AEs received a total of 396 million USD from the GCF—the bulk of it as grant funding—representing a mere 6% of the total committed funding. The balance of the 5.69 billion USD of committed funding, or 94%, went to regional and international AEs. This highlights a serious departure from the core GCF objective of a country-driven approach. The withdrawal of the US from the Paris Agreement and anticipated shortfall of 2 billion USD from the pledged amount will disproportionately affect the national AEs, whose project pipeline is expected to increase in the future as their numbers increase.

The analysis of GCF funding to the top ten AEs in Figure 1 shows that all are international AEs. The six funding proposals presented for consideration in the latest Board meeting in 2020 were all from international AEs [46]. It further cements the current dominance of a small subset of international entities, mainly multilateral institutions, channelling most of the approved GCF funding. The United Nations Development Programme (UNDP) has the largest portfolio of projects with 26 projects, representing 842 million USD, or 15% of all approved GCF project funding, which is more than double the total funding support from the GCF to national AEs. The World Bank, as the trustee of the GCF, offers an interesting case. It has secured eight projects, or 7% of the total, valued at 381 million USD, which is more than the total national AE funding portfolio. Its role as both trustee and beneficiary of the GCF funding has caused concern among developed country board members about the Bank's independence and possible conflict of interest.

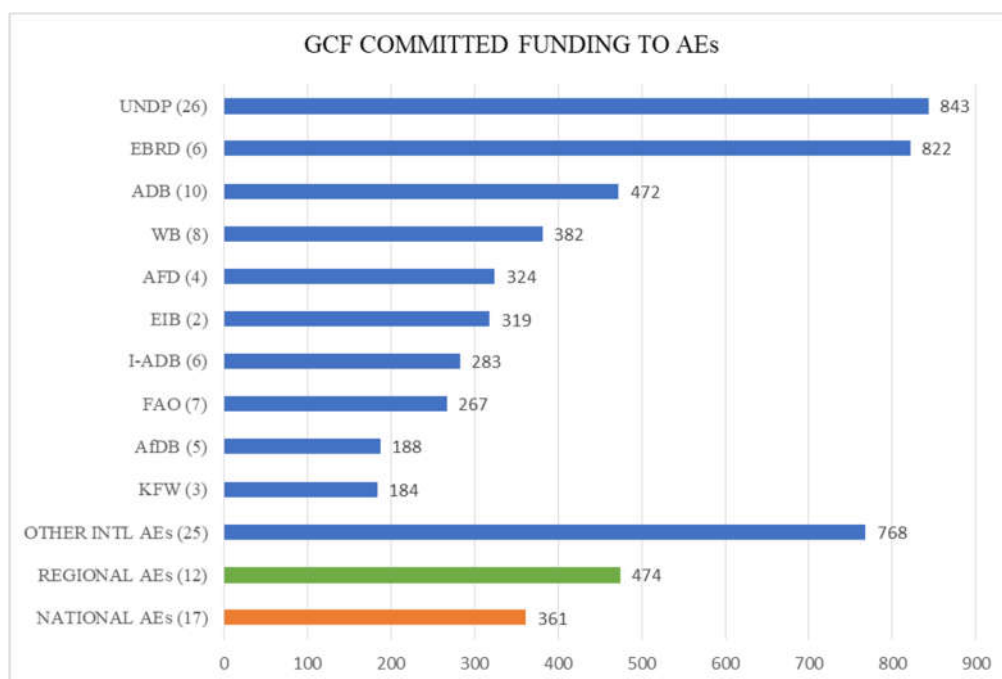


Figure 1. The Green Climate Fund (GCF) funding to the top ten accredited entities (AEs) and other international, regional, and national AEs. All figures are in million USD. The number of projects for each AE are shown in brackets. Data source: GCF AE and Project Database. Adapted from the GCF financial planning report (<https://www.greenclimate.fund/document/gcf-b21-33-rev01>).

Overall, the analysis of funding affirms the proposition that the GCF is heavily skewed towards international AEs and reinforces the historical global development model [47,48]. It highlights a concentration and dominance of a few international agencies in the GCF. This is unlikely to change until national AEs can produce higher-quality projects, address the lack of key intermediaries, and put pressure on the GCF to increase its portfolio of projects to maintain the momentum of the Paris Agreement. While this situation exists, the beneficiaries will be international AEs.

6.2. Proposition 2—The Pipeline of Projects from National Intermediaries Will Slow down over Time as Compared to International Intermediaries

The number of national AE intermediaries has been rising steadily, showing the commitment of the GCF to taking a country-driven approach. However, only 12 national AEs so far have approved projects, and of those, only three have more than one project in their portfolio. One reason for the lower national-AE-led projects is the dearth of intermediaries and many key roles missing at the country level to compete successfully. Conceiving and developing projects that meet the GCF's stringent criteria [49] requires strong project development and design as well as robust implementation plans with measurable outcomes. While national intermediaries have played a reasonable role in information dissemination, the conception and implementation roles have been largely missing in developing countries, leading to weaker proposals. Historically, international agencies such as the World Bank, Asian Development Bank, and UNDP have supported most efforts in tackling climate change. This dependence on international agencies, which generally operate independently, has progressed action, but at the cost of a weak ecosystem of national intermediaries [50]. To overcome this dependence, the GCF encourages AEs to develop concept notes and further supports them with the Project Preparation Facility (PPF) to develop funding projects. To date, 31 applications for the PPF have been approved (<https://www.greenclimate.fund/projects/ppf>), of which 11 (35%) were from national AEs. Despite these efforts, national AEs, with limited experience, have too low of a technical and financial capacity to develop projects independently. An interview with a national AE revealed that its two concept notes lay with the focal ministry (the NDA), which did not

have the expertise and capacity to review the concept notes; without the NDA's no objection certificate, these concept notes could not be submitted to the GCF. Furthermore, the AE was struggling to develop a pipeline of local projects from other local intermediaries that also faced similar challenges of low financial and technical capacity.

International AEs, on the other hand, with their healthy rostrum of international consulting and advisory intermediaries, extensive global experience, financial muscle, and high-quality technical manpower, are able to churn out strong project proposals quickly. Having robust structures, procedures, and policies in line with the GCF guidelines makes these international AE projects attractive for funding. These AEs, with support of global intermediaries, can take on multiple roles as knowledge providers, brokers, concept designers, and implementers at the same time [4] when dealing with climate finance. This is evident in several international AEs securing multiple projects. A total of 25% of all the GCF project portfolio sits between the UNDP and the World Bank. With growing GCF project implementation experience, these international AEs create a virtuous cycle of securing more projects and helping the GCF achieve its funding targets. This sets a dangerous double standard for national AEs, whereby more powerful international AEs are able to negotiate less stringent terms for compliance with the GCF mandates than others. The question also arises on the additive financing of the international AEs—could their projects have been implemented in the same form without the GCF's financial support, therefore leaving more funding for national AEs?

With a widening gap between the national and international AEs' credentials in project conception, delivery, execution, and, in turn, successful implementation, the project pipeline from national AEs will likely dwindle compared to that from international AEs.

6.3. Proposition 3—The Quantum of Climate Adaptation Funding Will Go Up, but the Gap between Adaptation and Mitigation Funding Will Widen in Favour of Mitigation because of Missing Key Intermediary Roles in Adaptation

The GCF was set up with the objective of narrowing the gap between mitigation and adaptation financing. With much smaller greenhouse gas emission footprints and lower capacity to adapt to the climate challenges, developing countries have been demanding adaptation financing to be on a par with mitigation financing under the CBDR principle [51]. Global climate financing, however, continues to flow toward mitigation, which accounted for 93% of total global flows in 2017/2018, or an annual average of 537 billion USD, with the bulk of it directed towards low-carbon energy transition and transportation [33]. This skewed allocation is also present in the GCF's funding portfolio, with financing for mitigation projects at 42%, cross-cutting projects at 34%, and adaptation projects at only 24%. The majority of adaptation projects are funded through grants by the GCF, which brings into question their long-term sustainability. While the GCF's funding mix is better than global allocations, it is still far from achieving the committed goals.

With the initial funding for GCF closed and activation of the replenishment funding period in place in 2020, funding for adaptation is likely to decrease, widening the gap for the following reasons. First, funding for the replenishment period will decrease because the US pulled out of the Paris Agreement and due to the weaker commitments from other countries in light of the current economic and health crisis. Several countries have stepped forward to fill this funding gap, but many of these pledged commitments remain unconfirmed. Innovative solutions, such as smart contracts, may help restrict the funders from shirking their commitments, creating stronger visibility of funding flows [52]. Nonetheless, with reduced funds and rising demand from national AEs, the GCF will have to prioritise projects with demonstrably high impacts. Measuring adaptation has historically been hard because the impact and outcomes are difficult to measure and require considerable expertise [53]. Mitigation, on the other hand, is quantifiable in CO₂ equivalence and makes it easier for the GCF to demonstrate impact. Global intermediaries in brokering and project development, with their vast networks, are able to identify technologies, partners, and funders in mitigation projects. The same is not true for adaptation projects that are mostly supported by development intermediaries that are strong in their commitment, but lack the financial muscle to develop, implement, and monitor adaptation projects. A recent study commissioned by the Climate Investment Funds (CIF) and the

GCF analysed projects for confluence and synergies with multiple climate funds. Overall, it found fewer instances of convergence for funding in adaptation than mitigation [54]. Second, the GCF plans to multiply its funding by leveraging funding from external financing intermediaries. For each dollar invested, the GCF plans to leverage three times the funding from external intermediaries, with ambitions to raise this to seven times. While this approach will help the GCF reach closer to the global target of funding 100 billion USD annually for climate change, it will push the GCF towards projects that offer demonstrable economic returns for the external funding intermediaries. Mitigation projects with demonstrable economic returns will be prioritised over adaptation that does not have standard economic measures, as discussed earlier. The current GCF project portfolio demonstrates the greater role of leveraged funds in low-carbon energy and transportation projects. Finally, mitigation projects are not always a priority for national AEs and their local populations [55]. Building on arguments in Propositions 1 and 2, international AEs, with their expertise in mitigation and collaborations with intermediaries in this space, will fill the role. With a successful track record of projects and higher funding, the international AEs will shift the tilt towards mitigation projects.

Combined, these factors of decreased funding commitment, increased reliance on leveraged funding, and strong expertise of international AEs in mitigation reaffirm the proposition that the gap between mitigation and adaptation funding will widen in favour of mitigation. This will also disproportionately lower the flow of projects and finance allocation to national AEs that have low expertise in mitigation projects. The GCF will have to create an 'integrity system' [56] to uphold and adhere to the values that it has publicly declared for the balance between mitigation and adaptation. These commitments should not be simply a paper exercise, but something concrete and observable.

7. Discussion

The GCF offers a unique opportunity to study the largest public global climate funding mechanism as it evolves and takes shape. Intermediaries are playing a key role in this evolution by shaping which projects get funded, how they are funded, and in what geography they are implemented. The intent behind the GCF is to offer equitable and transparent mechanisms with country-driven ownership and balanced governance between developed and developing nations. This research shows that these intentions are difficult to achieve in a structure that is evolving and shaped by many intermediaries with their different roles, agendas, and capabilities. The three propositions point to the disproportionate influence and role of international AEs and allied intermediaries in the funding allocation, the widening capacity and experience gap between international and national AEs, and the skew towards mitigation by leveraging external funding. These factors reinforce the business-as-usual scenario in climate finance, and will likely face increasing discontent and resistance from developing countries. To truly achieve its goal in helping developing countries tackle the threats of climate change, the GCF will have to make a paradigm shift in how it uses its funds and operates through the intermediaries. It has to keep national AEs at the core of its funding mechanism. International AEs, with their greater experience, expertise, and global structures, have a role to play. However, this should not be without incorporating the national AEs. One way to ensure this is for national AEs to be an integral part of all projects developed and executed by international AEs. The GCF will also have to play a stronger role in empowering national AEs through transparent and equitable funding allocation, capacity building, simpler accreditation, and rapid project approvals. There are many lessons to be learned from this evolution of the GCF. It is hoped that the GCF does not become a tool for political wrangling, but a transparent mechanism with clear objectives of funding the most vulnerable. I offer three learning models to capture the current ideas and address some of the challenges identified in the three propositions in an effort to keep the climate financing process progressing positively. Tenets of these learning models can be traced across multiple disciplines, from network analysis [57], law [58], organisational theory [59], to social development [60].

7.1. Learning Models

7.1.1. The Bilateral Learning Model

This is the current learning model prevalent in the GCF's mechanism. As shown in Figure 2, in the bilateral learning model, the AEs and the GCF interact directly in the climate funding process. The AEs take support from other intermediaries and follow the GCF's structured process for accreditation and project funding. The GCF offers some financial and knowledge support for accreditation and developing project concept notes and proposals. There are benefits of speed in this model through direct interactions, and it has been applied with some success in the GCF to create a panel of AEs and build a healthy portfolio of projects to deploy the GCF's commitments. However, the knowledge gained in the process is contained within the AEs and the GCF, without any mechanism for wider exchange. This model disproportionately benefits the international AEs, as they already have substantial project experience and knowledge of implementing climate projects, and further learning augments their project capabilities. The international AEs, with their vast networks, can take on the intermediary roles of knowledge, brokerage, conception, and design and implementation without needing to involve the national AEs. The national AEs, with fewer projects and less experience, fail to break into this interactive networking process and therefore learn less, creating an unproductive vicious circle. Where the model offers speed of interactions and learning, it lacks in fair access for all, and therefore contributes little to local knowledge.

Bilateral Learning Model



Figure 2. Bilateral learning model where the GCF and AEs interact directly.

7.1.2. The Brokerage Learning Model

The brokerage learning model offers a natural progression from the bilateral learning model by expanding the scope of interactions. As the numbers of AEs joining the GCF's fold increase and more projects are funded, best practices, new lessons, and challenges emerge from the funding process. While AEs and other intermediaries generate project experiences, the GCF acts as gatekeeper and broker of these new learnings, using these to improve and guide its operational and funding processes. The information flow is centralised with the GCF, as shown in Figure 3, which interacts with multiple AEs, synthesising learning and sharing with others. The GCF takes on the intermediary role of information sharing and, to some extent, brokering. The AEs, on the other hand, continue to operate in silos without any direct interactions with other AEs and have to rely on the GCF for collective guidance. With five years of work, the GCF has produced a steady flow of information on practices and lessons that have been learned from the projects [61]. Some regional and international AEs that operate multiple projects or run projects across multiple countries benefit from this much wider experience. However, cross-fertilisation is limited between AEs, thus cementing the central role of the GCF and a selected few international and regional AEs. Where this model offers reliable

learning opportunities, it suffers from restricted access to learning for smaller and local AEs. Local AEs are therefore effectively excluded from the GCF.

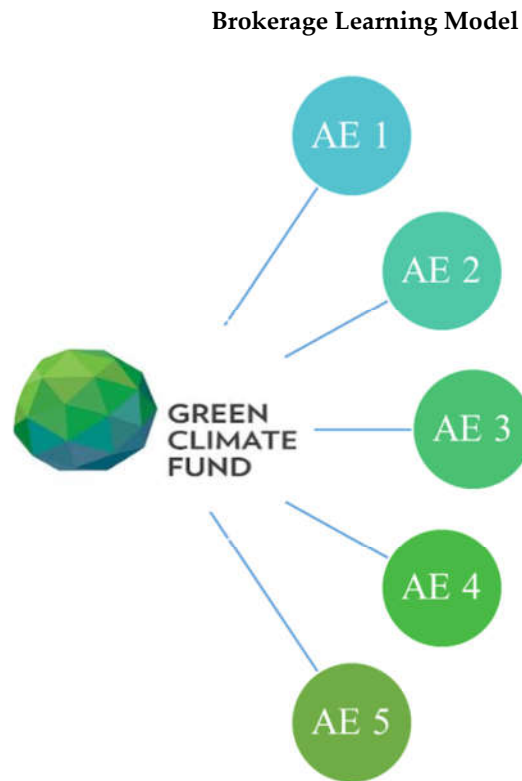


Figure 3. Brokerage learning model with the GCF as the central actor for AEs.

7.1.3. The Network Learning Model

Under the network learning model in Figure 4, project learning is shared freely across the AEs, other intermediaries, and the GCF. The GCF can continue to act as the architect and central actor in the network [62,63], but is no longer the sole gatekeeper of learning and information flows. The intermediaries undertaking continuous relational interactions are able to generate new knowledge and identify common challenges encountered across multiple projects. They can support development and diffusion by sharing this knowledge widely across the network, helping subsequent projects to benefit from the accumulated experience [64]. International AEs, national AEs, and other intermediaries can be encouraged (or mandated) to collaborate on projects, as climate change is too complex for a single intermediary to tackle, and requires the participation of many actors to succeed [65]. The AEs and other intermediaries can bring their respective expertise and roles to develop robust projects and meet the GCF's central objective of country ownership. For example, International AEs, with their vast project experience and networks, can take on the role of information sharing and brokering and can co-design projects with national AEs, whereas national AEs, with their strong local presence, can take the lead role for implementation. By building projects around national AEs, network efforts can translate into building their capacity, helping them take on more critical roles of concept, design, and implementation. Other intermediaries can be included to fill voids with the aim of building local capacity and ownership. To encourage innovation and offer wide learning opportunities, the GCF has to move from its current bilateral and brokerage learning models to the network learning model. Where the network learning model offers collective and open learning that enhances local knowledge and capability, it suffers from the greater complexity of curating and maintaining the open networks needed. This learning model is closely aligned with the CGF's objectives of amplifying local capacity to adapt to and mitigate climate change over the long term.

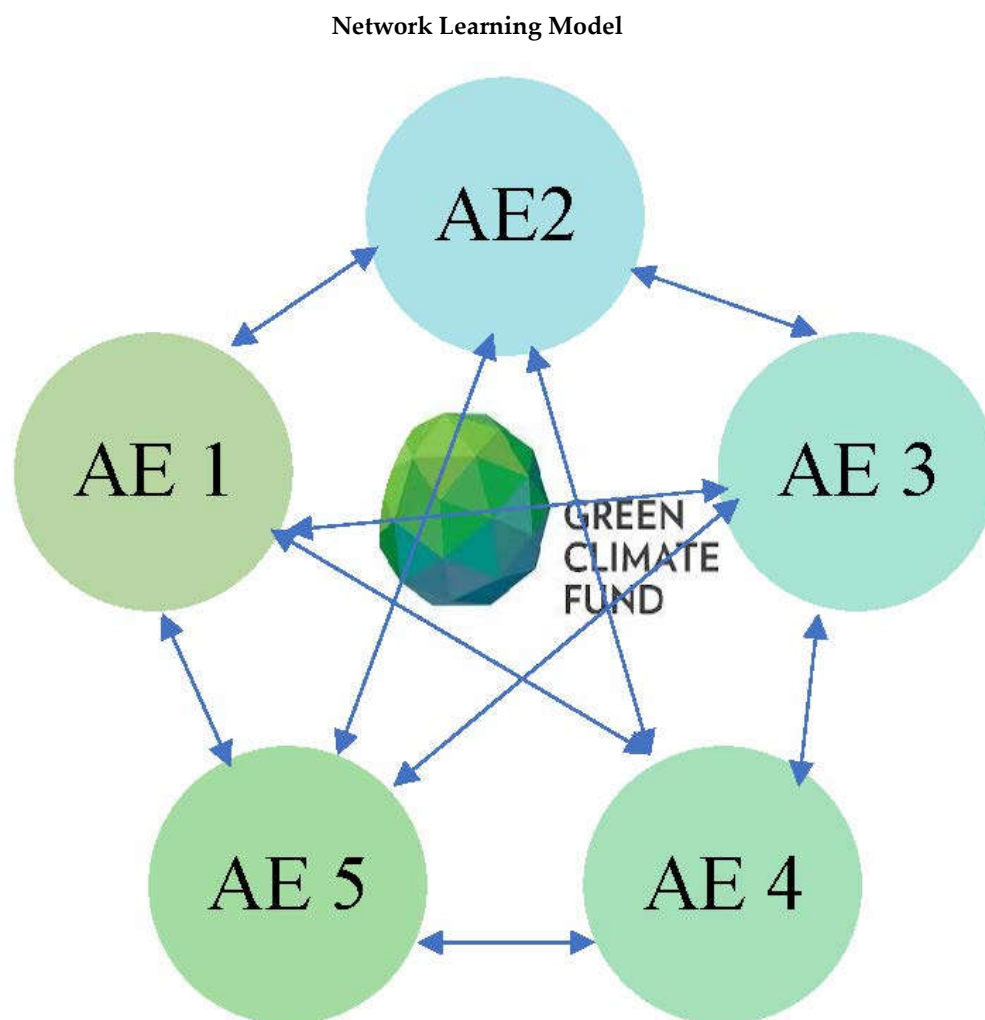


Figure 4. Network learning model for open AE and the GCF interactions.

7.2. Future Research

In this paper, I have identified four key roles of intermediaries, posited three propositions, and offered three learning models to improve climate action in developing countries. This is a work in progress. There are several interesting and important propositions that can be tested to strengthen the GCF's approach and, in turn, climate action. Some of these are:

1. The approval process of projects for national AEs is much longer than for international AEs, making the national projects outdated and costly.
2. National AEs execute projects independently, thus limiting exposure of other local intermediaries to the GCF process.
3. National AEs develop projects that are aligned with their organisational expertise and capabilities, narrowing their scope for country climate action.

Funding: This research was conducted under the British Academy Postdoctoral Fellowship programme.

Acknowledgments: I would like to thank the special issue editor Axel Marx for organising the paper discussion workshop and the helpful comments of the co-participants on the early draft of the paper. The paper has also greatly benefited from the constructive comments of the three anonymous journal reviewers.

Conflicts of Interest: The authors declare no conflict of interest.

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