



Integrated climate security programming in climate finance

An Analysis of Multilateral Climate Funds

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Abstract

Climate change and conflict are closely interconnected, with various pathways linking the two, such as loss of livelihoods, displacement, and increased vulnerability to extreme weather events. Climate finance has the potential to mitigate some of the negative impacts of compounded climate security risks, but the effectiveness of financial mechanisms in addressing these risks is still a subject of debate. This study aims to provide a comprehensive analysis of the state of climate finance and its intersections with peace and security. The paper asks if the allocation of resources is consistent with the climate security priorities of recipient countries, and if investments in climate-vulnerable and politically fragile contexts have sufficient elements of integrated climate security programming – i.e., dual climate action and peacebuilding objectives. To answer these questions, the study looks at 22 multilateral climate funds and their respective USD 28.3 billion financial allocations. Then, using an automated content analysis, the paper analyzes conflict sensitivity in projects from 37 countries that have a significant history of conflict compounded with high levels of climate vulnerability. The findings of the study show that there are significant gaps and lapses in the allocation of funding as well as in the operationalization of integrated climate security programming. As a result, it is argued, multilateral climate funds are exposed to unforeseen security and political risks, which can undermine the sustainability of investments. Overall, the paper generates novel insights and data on climate finance, providing actionable outputs on how to better use climate investments to support peace in countries with compounded climate security risks.

1. Introduction

Of 1.3 billion people exposed to climate hazards globally, approximately 40 percent reside in conflict-affected or “fragile” contexts (1). While conflict and climate vulnerability are not necessarily linked in a causal relationship, they often co-occur. On the one hand, conflict degrades available resources and reduces the adaptive capacity of affected households, increasing their vulnerability to future shocks and hazards. On the other hand, climate vulnerability increases loss and damage, potentially eroding livelihoods (especially in agriculturally-dependent areas) and increasing the risk of displacement (2). Depending on context-specific socio-economic variables, the impact of climate change can aggravate political grievances or lead to competition over the management of resources and ecosystems (3,4). Against this backdrop, climate finance appears as a promising vehicle for mitigating some of the compounded effects of climate vulnerability and insecurity (5). Questions, however, remain on the effectiveness of current financial mechanisms to alleviate risks along the climate security nexus.

As this study will show, climate finance does not appear to be particularly conflict-sensitive. Only a minority of disbursements from multilateral climate funds are allocated toward countries that have coupled climate security risks. Moreover, most investments in politically fragile contexts do not appear to practice integrated-climate security programming. Integrated climate security programming involves collaboration between different sectors and stakeholders, such as government agencies, NGOs, and local communities, and may include activities such as the development of climate adaptation and mitigation strategies that aim to also address the underlying drivers of insecurity, such as poverty, inequality, and marginalization. Unfortunately, many key providers of climate finance, notably the Green Climate Fund and the Adaptation Fund, lack conflict-sensitive investment frameworks (6). Consequently, most approved investment plans are conflict-blind, not including assessments on the intersections between project and security.

Lack of conflict sensitivity can be a missed opportunity for climate funds, as climate investments often happen independently of peacebuilding activities, even when both share the same geographical location and recipients. Additionally, climate investments can have important socio-economic co-benefits, yet their ongoing contribution to peace and stability is often ignored or discounted due to a lack of conflict-sensitive metrics and objectives. Furthermore, lack of conflict sensitivity can also become an operational risk for climate funds, as it can expose investments to unforeseen security and country risks that can have a significant impact on the ability of climate funds to achieve their goals. These risks can make it more difficult to implement projects and programs, increase costs, and reduce the overall effectiveness of the investments. Given the importance of the intersection of climate change, security and development, it is crucial for climate funds to take steps to assess and mitigate these risks in order to ensure the successful implementation of their projects. Additionally, it's worth mentioning that there is a need for more research in this area.

The purpose of this paper is to fill existing research gaps and offer a comprehensive examination of the state of climate finance in countries with compounded climate security risks. The study aims to provide new perspectives on the integration of climate security in climate finance and provide practical recommendations to decrease operational risks and enhance peace-related benefits. The study poses two overarching research questions. First, to what extent is the overall allocation of funds aligned with climate security priorities? Second, to what extent are individual investments conflict sensitive? To answer these

questions, the paper analyzes 22 multilateral climate funds and USD 28.3 billion in financial allocations. Particular attention is paid to project-level documents of investments worth USD 4.47 billion in 37 countries that are deemed to be particularly relevant from a perspective of climate security—i.e., countries with extremely high levels of vulnerability and low levels of readiness to adapt for climate change.

The first section of this paper will serve to introduce key terms, contextualize climate security, and summarize existing research in the field. This will be followed by a methodology section that explains the data collection and content analysis methods used in the study. The next section will present the findings from the analysis of the aggregate financial data as well as the project-level documents. The final sections will include a discussion of the results and their implications, as well as a conclusion that summarizes the main findings and provides recommendations for future research. Overall, this paper aims to contribute to the ongoing conversation on the intersection of climate change, security, and development by providing a comprehensive analysis of the current state of climate finance in countries with compounded climate security risks.

2. Contextualizing Conflict Sensitivity in Climate Finance

Research has shown that climate change and conflict can have a mutually reinforcing relationship (7,3). Conflict can undermine state capacity, ruin infrastructures, divert public finances, and de-prioritize investments in climate mitigation and adaptation (8). At the same time, climate change can add additional stresses to already fragile institutions and vulnerable populations, potentially reducing economic growth, causing loss and damage, and shifting power dynamics that can aggravate or create new grievances (9). On a positive note, this vicious cycle can be interrupted or reversed by conflict-sensitive climate finance. As shown by the literature, climate mitigation and adaptation can drive social change and development, which in turn can promote peace and security (10). For this to happen, however, mitigation and adaptation need to be coordinated across different levels and sectors to avoid unwanted social or environmental outcomes (11).

The practice of conflict sensitivity can be used as a blueprint to mitigate some of the risks posed by climate interventions while enhancing their peacebuilding potential. Conflict sensitivity can be defined as institutional awareness of the operational context aimed at minimizing violence and maximizing peace (12). It presupposes that climate interventions are designed and executed in appreciation of the security landscape in which they occur. This appreciation, which is always bounded by limited information, should in turn be guided by the normative principle that interventions should strive to minimize negative externalities while maximizing peace opportunities. Indeed, the conflict sensitivity of an intervention can be assessed on a spectrum of 'do-no-harm' to 'do-good' (13).

Conflict sensitivity, as data from this paper will show, is of critical importance for the successful deployment of climate finance. Some of the most vulnerable countries to climate change, especially in the sub-Saharan region, also happen to be some of the most politically fragile (14). What this means, in practical terms, is that conflict sensitivity can determine the success or failure of investments in countries with significant conflict dynamics. For this reason, it could be argued climate sensitivity should be

considered an integral part of due diligence and be mainstreamed in the project cycle of multilateral funds. Climate finance that does not take into account conflict sensitivity can lead to maladaptation that fuels grievances, create dependencies, and deepens insecurity (15,16). For example, in the case of forest management projects, Alusiola et al. have identified conflict drivers that were not taken into account by policymakers, such as injustices and restrictions over access and control over forest resources and the exclusion of community members from project participation (17). Similar findings have been noted in the work of Tänzler, who noted the importance of addressing questions of land tenure and land-use rights in climate investments (18).

The conflict potential of adaptation and mitigation projects has also been well analyzed by Sovacool et al. (19). One of the negative effects of policy interventions identified by Sovacool et al. is exclusion, which occurs when a project ignores or pushes away certain groups of people or limits their access to resources without proper process, fairness, and justice (19). Exclusionary practices can in turn increase entrenchment when projects aggravate the disempowerment of vulnerable social groups, including women, ethnic minorities, or the poor (19). Other unfair characteristics of climate finance can include enclosure, which happens when a project moves public or social assets into private ownership or increases the power and authority of private actors in a previously public area, and encroachment, which happens when a project harms the environment, disrupts the provision of ecosystem services, invades biodiversity conservation zones, or undermines mitigation efforts by increasing greenhouse gas emissions (19). In summary, while many studies show a broad connection between climate change and conflict (20–22), there is also mounting evidence of intersections between conflict, security, and climate finance (23,24).

Against this backdrop, it is important that interventions aimed at addressing the impacts of climate change do not worsen existing conflicts. Ideally, these interventions could also be leveraged to address the underlying causes of conflicts and promote climate resilient peace by addressing imbalances in access and distribution of power and resources generated by climate impacts (25). Addressing environmental challenges and resource-based disputes through adaptation and mitigation projects can also provide opportunities for collaboration and dialogue between opposing groups as well as promote the social integration of marginalized groups (26,27). For these reasons, environmental peacebuilding can play a key role in ensuring climate resilient peace and reducing operational risks (28). Ensuring conflict sensitivity in interventions may also incentivize further investments in conflict-affected settings. A recent study on the distribution of USD 14 billion in climate finance from the UNFCCC's vertical funds noted that only three of the top state recipients were classified as fragile or extremely fragile (29). In addition, investments in extremely fragile states were oftentimes much smaller than those in fragile or non-fragile states. Exercising conflict sensitivity in investments may help to remedy these discrepancies.

Despite the significant focus on the intersection of climate change and security in academic research and policy discussions, the impact of climate finance on conflict-affected and fragile settings has not been thoroughly studied (30). The landmark UN Security Council Presidential Statement from 2011 (PRST/2011/15) has brought more attention to the connections between climate change, conflict prevention, and sustaining peace (31). However, much of the literature on the topic still focuses on international negotiations, progress toward the goal of mobilizing 100 billion USD per year for climate action, and the impact of Covid-19 on finance streams (29). More research is still needed in the area of peace and climate finance. It is especially important to pay more attention to whether past interventions have been conflict-sensitive, how they have performed, and what lessons can be learned for future interventions (16,29,32,33).

3. Methodology

The study aims to provide a comprehensive analysis of the state of climate finance and its intersections with peace and security by analyzing the allocation of resources, the effectiveness of integrated climate security programming, and the potential co-benefits of peace in climate-vulnerable and politically fragile contexts. To provide a systematic analysis, the study used financial and textual data from 22 multilateral climate funds and initiatives, including the Green Climate Fund (GCF), the Adaptation Fund, and the Global Environment Facility (full list of funds in Annex I). The aggregated project-level data were obtained primarily from the Climate Funds Update (CFU) website, which tracks cumulative data on project approvals in multilateral funds (34). The dataset from CFU, published in January 2022, was manually updated to include data from the GCF databank (35,36). The financial data was then processed using Python and Gephi and matched with conflict and climate vulnerability data to identify destinations, beneficiaries, and gaps in funding (37,38). Altogether, the analysis assessed USD 28.3 billion in financial allocations on a global scale.

In a successive step, project levels documents in countries that were deemed to be relevant from a perspective of climate security were analyzed individually via automated content analysis. To identify relevant countries, the study matched national-level statistics on funds allocations with data from an index that measures compounded elements of climate and security, the Climate Security Priority index. This index, largely derived from the ND-GAIN index published by the University of Notre Dame, ranks countries based on vulnerability to climate change and readiness to improve resilience (39). For the scope of this analysis, the measure of vulnerability (i.e., levels of exposure, sensitivity, and adaptive capacity) was not modified from the ND-GAIN index, while the measure of readiness (i.e., economic, governance, and social readiness) was modified to include a security dimension. Accordingly, the existence of conflict in a given country was weighted equally alongside the other three proxy variables used to measure readiness, assuming that organized violence impacts state capacity negatively and reduces overall readiness and resilience. The conflict data were calculated using the ACLED dataset and by summing casualties from battles, remote violence and explosions, and riots between 2015 and 2020 (40).

As a result of the selection criteria, a total of 37 countries were assessed to be particularly relevant from a climate security perspective and were selected for further analysis. All the countries in this group feature a very high degree of compounded climate vulnerability and low readiness. These countries are located in regions that are particularly susceptible to the impacts of climate change, including extreme weather events, sea-level rise, and prolonged droughts. For example, Bangladesh, Haiti, and Mozambique are particularly vulnerable to sea-level rise and coastal flooding, while Ethiopia, Somalia, and Sudan are facing prolonged droughts and water scarcity. Additionally, many of these countries are also affected by poverty, political instability, and ongoing conflicts, making them particularly vulnerable to the negative impacts of climate change. Overall, all 37 countries appear to have a high need for climate finance to support compounded climate security risks.

Within this group of countries, a total of 250 projects (worth USD 4.47 billion) from 15 multilateral funds were selected for analysis. This data features virtually all climate finance channeled via multilateral climate funds to the 37 countries. Project level documents were downloaded manually from online data

repositories and converted into a homogenous digital format. The textual data was then parsed into a dataset and analyzed with LexiHound, a framework for natural language processing and content analysis written in Python (41). The LexiHound script tokenizes documents into individual sentences after lowercasing, stemming, and removing stop words. The sentences are then analyzed individually via a series of pre-defined queries that serve to determine if and to what extent documents engage with 1) environment, 2) security, 3) non-financial risks, 4) safeguards, 5) demographics, 6) mobility, 7) conflict-sensitivity, and combinations of the seven variables. The list of queries is available in the assessment framework included in the supplementary materials.

4. Findings

4.1 Mapping Climate Finance

This section provides a review of aggregate statistics from multilateral climate funds or programs to understand the direction and characteristics of investments in adaptation and mitigation, and how these investments overlap with insecurity and conflict geographies. As explained in the methodology, the mapping of financial flows used data on 22 funds that account for approximately USD 41.7 billion in pledges and USD 8.3 billion in disbursements. The list of funds extends from relatively small actors, like the Millennium Development Goals Achievement Fund and the Partnership for Market Readiness, to large entities, like the Green Climate Fund and the Global Environment Facility. Overall, the data presented in this section represent projects from 2003 to 2022 relevant to adaptation, mitigation, and cross-cutting issues. The features of the dataset were kept as wide as possible so that the systematic analysis can functionally capture broad systemic trends and provide a comprehensive mapping of financial flow.

The UN Framework Convention on Climate Change (UNFCCC) aims to direct funding from industrialized countries (Annex I Parties) and economies in transition (Annex II Parties) towards 154 developing countries (Non-Annex I Parties). At COP26, it was agreed that developed nations should double their collective provision of adaptation finance from 2019 to 2025 and strive for a 50:50 balance between adaptation and mitigation finance, with a specific focus on particularly vulnerable countries, such as African states, Least Developed Countries (LDCs), and Small Island Developing States (SIDS) (42). However, the directionality of funding, which is determined by climate negotiations, is not necessarily aligned with the specific levels of climate vulnerability and political fragility among developing countries.

To better understand the effectiveness of financial allocations it is necessary to go beyond politically agreed-upon labels assigned to groups of states and instead look at the socio-environmental data that provide a measure of climate vulnerability and readiness, factoring the compounded effects linked to the persistence of conflict. To this end, Figure 1 provides an overview of climate finance allocations with an overlay that measures the priority of countries from a perspective of climate security. As previously explained, the climate security relevance of a country is calculated via an adjusted version of the ND-GAIN index published by the University of Notre Dame (39). The derived Climate Security Priority (CSP) index relies on data across 46 indicators to rank 181 countries between 2015 and 2020 based on their

vulnerability and their readiness to adapt to climatic changes. The CSP index is used in this study to better identify countries in which conflict sensitivity applied to climate finance can yield the greatest results.

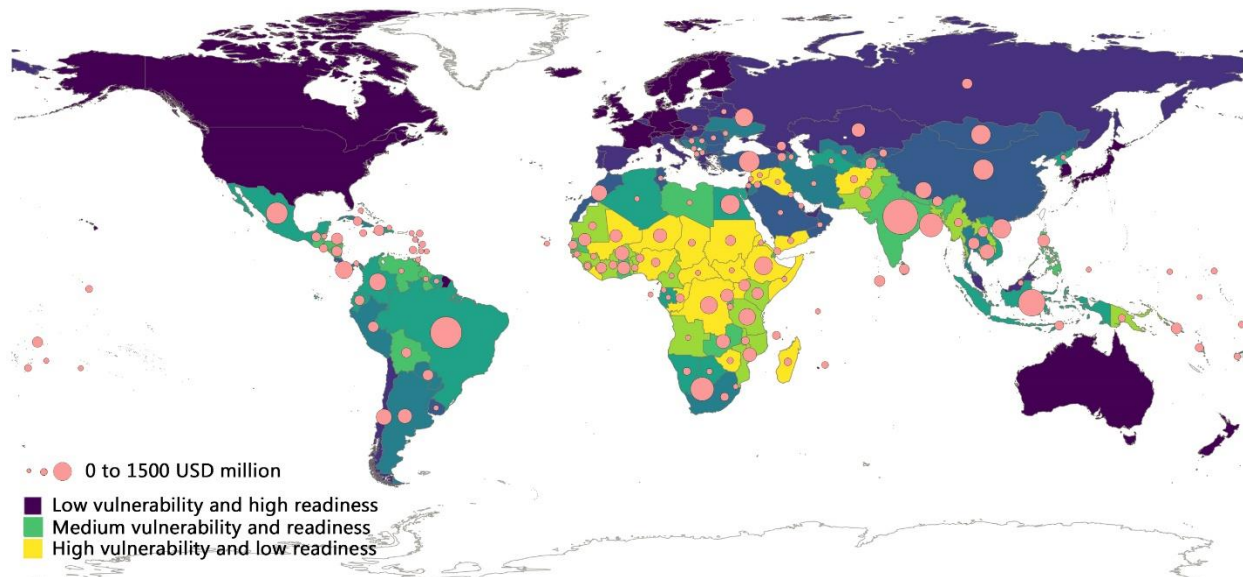


Figure 1. Allocated Funds (USD mn.) and compounded levels of climate vulnerability and readiness.

As can be observed in figures 1 and 2, the allocation of funding does not seem to prioritize countries from a perspective of climate security. Of all the funding analyzed in this study (approximately USD 28.3 billion excluding multinational projects), only 4.5 are allocated to countries that present the highest levels of vulnerability to climate change with the lowest levels of readiness (the priority groups are calculated from very high to very low using the following quantiles as thresholds: 0.9,0.8,0.6,0.4,0.2). Moreover, it appears that, within the very high priority group, mobilizations toward countries with the highest levels of conflict intensity are especially low (see Afghanistan, Yemen, Syrian Arab Republic, Iraq, and Somalia). This is consistent with the fact that high levels of insecurity and ongoing conflict or insurgencies impair the implementation of climate investments as well as de-prioritize climate adaptation vis-à-vis security contingencies.

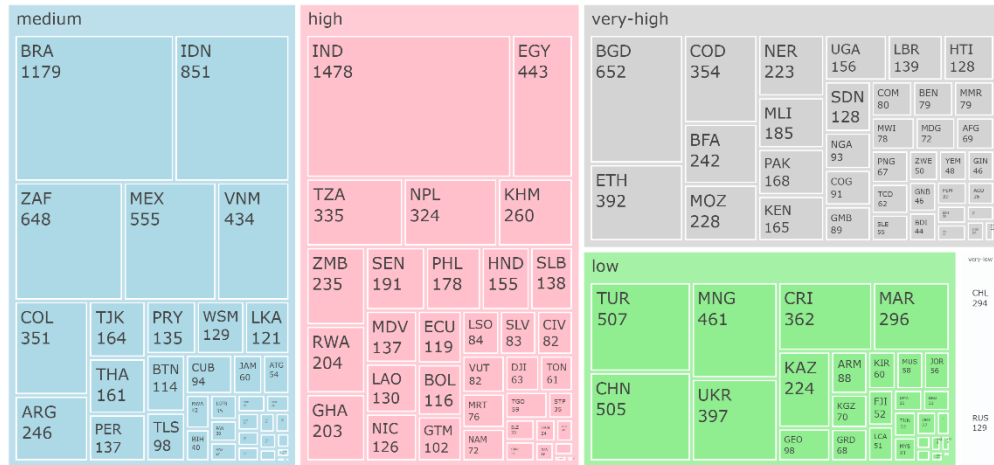


Figure 2. Allocated Funds (USD mn.) grouped by levels of climate security priority.

Examining the data with more granularity, and comparing high priority countries against others, it is possible to observe additional trends. Figure 3 displays the distribution of total climate finance by themes and how this distribution differs between very high priority countries and non- high priority countries. Observing the aggregate data, it is clear that most climate funding is channeled toward mitigation projects. Yet, in the case of high priority countries, the majority of funding is allocated to adaptation. This is perhaps unsurprising as high-vulnerability and low-readiness countries are highly sensitive to the immediate impacts of climate change, which can only be countered in the short term with investments in adaptation and resilience. In this regard, the overall allocations of funds appear to be consistent, from a thematic perspective, with the specific needs of countries that have a very high CSP.

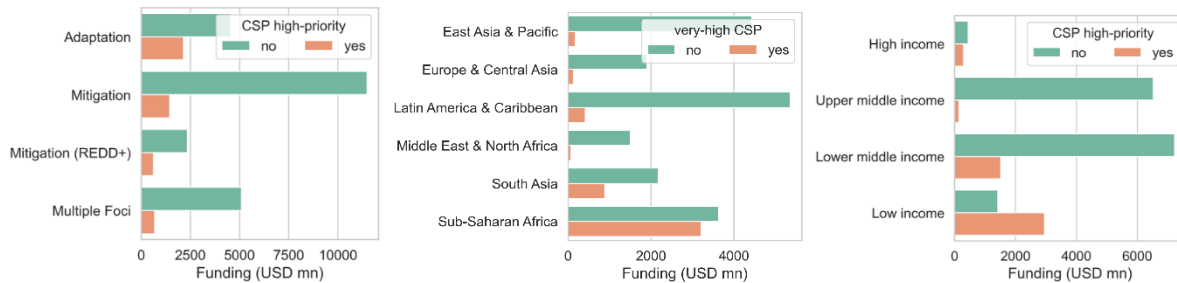


Figure 3. Allocation of funds in millions of USD per theme, region, and income bracket.

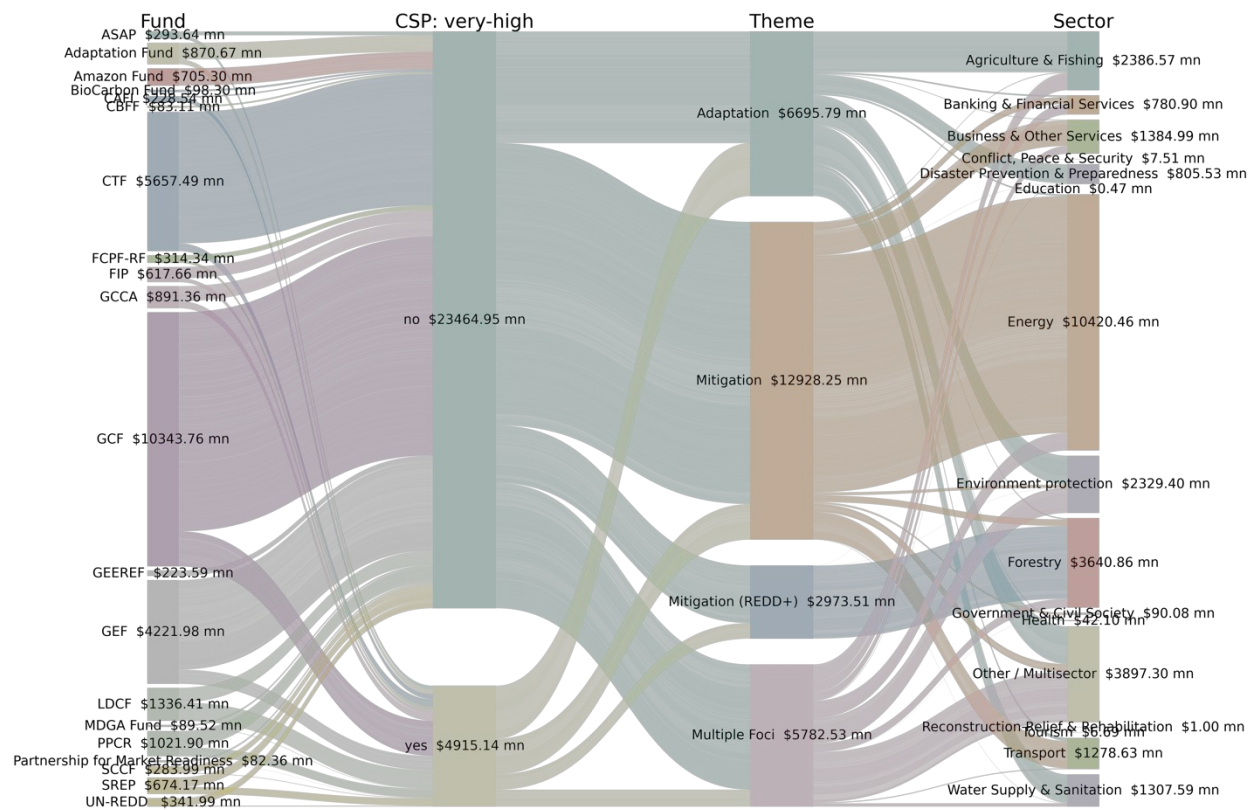


Figure 4. Allocation of funds in millions of USD divided by sources, CSP, themes, and sectors.

To better compare very high climate security priority countries with the others, it is useful to analyze the distribution of funds by sources, themes, and sectors. As illustrated in Figure 4, the energy sector, deeply interwoven with mitigation interventions, receives the highest sectoral allocation of climate finance in absolute terms (USD 10.4 billion). The energy sector is followed by investments in multisectoral projects, forestry, agriculture and fishing, environmental protection, business, water supply and sanitation, transport, and disaster prevention and preparedness. Conversely, in the case of the very high CSP countries, the largest amount of climate finance (USD 904 million) was allocated to agriculture and fishing, which is a sector mostly related to adaptation. This sector was then closely followed by investments in energy (USD 810 million), multisectoral projects (USD 754 million), and forestry (USD 646 million).

Overall, the findings on the distribution of funds across sectors outline a discrepancy between financial flows and countries' priorities. While, on the surface, the investments in adaptation in very high CSP countries are a positive trend, the disaggregated data questions the effectiveness with which adaptation funds are spent. For example, given the very low levels of readiness, it's remarkable to see that investments in education are missing from very-high CSP countries. Education levels are arguably one of several compounding socioeconomic factors that mediate readiness for climate risks (43). Further, investments in government and civil society plus banking and financial services account for only USD 26 million. Likewise, it is surprising to see that investments in conflict, peace, and security in the very-high CSP group amount to only USD 7.51 million despite high levels of organized violence and insecurity in

many recipient countries. In the same vein, the low levels of investments in disaster prevention & preparedness (USD 240 million) and reconstruction relief and rehabilitation (USD 1 million) appear to be at odds with the needs of very-high CSP countries, which are extremely vulnerable to climate change.

Finally, looking at the geographical and income distribution of recipient countries in Figure 3, it can be noted that Sub-Saharan Africa receives the most climate finance, followed by Latin America & the Caribbean, and East Asia & Pacific. It's apparent, though to varying degrees, that more climate finance is channeled to countries that do not have a very-high CSP. This discrepancy is most pronounced in East Asia and the Pacific, and Latin America and the Caribbean. Instead, the Sub-Saharan Africa region receives the most funding in relative terms for very high CSP countries. This is expected, given that 27 of the 37 countries identified as having very high CSP are located in the region.

Taking into account the average funding per capita among very high CSP countries, we see that the low income bracket has a per capita value of USD 10.82. On the other hand, the average funding per capita of very high CSP countries in the lower-middle bracket is USD 37.51. Yet, when removing Micronesia (which has the highest funding per capita of all very high priority CSP countries by around USD 249) from the lower middle bracket, this value drops to USD 4.10. When ranking very high CSP countries according to funding per capita, it can be noted that eight of the top ten are located in Sub-Saharan Africa. The per capita figure was calculated using the most recent national population census data available in 2021. South Asia receives the second most amount of climate finance for very high priority countries. However, Bangladesh, despite receiving USD 651.77 million since 2015—the most of any very high priority country—ranks 19th out of the 37 very high priority countries in funding per capita. In South Asia, this is followed by Afghanistan (31st) and Pakistan (35th). Considering income brackets, it appears that very-high CSP countries which are low-income receive the most climate finance. This is expected given the role that economic challenges play in increasing vulnerability to and diminishing readiness for climate hazards, as well as perpetuating unrest, instability and conflict. In addition, 26 of the 37 very high priority countries fall into the low income bracket.

4.2. Integrated Climate-Security Programming

This section analyzes the project-level documents of investments in 37 countries that are deemed to be particularly relevant from a perspective of climate security—i.e., countries with extremely high levels of vulnerability and low levels of readiness to adapt to climate change. A total of 250 projects from 15 multilateral funds were downloaded for analysis. In monetary terms, these projects account for approximately USD 4.47 billion. The project-level documents were processed, as explained in the methodology section, using an automated content analysis algorithm calibrated on a specific assessment framework that probed the integration of project documents with climate-security programming. Overall, the algorithm analyzed 257,626 individual sentences using 267 different parameters for each, producing a codebook that summarizes (at the document level) the topics featured, their relation to one another, and the extent to which they are discussed.

Figure 5 shows the main result of the content analysis, displaying, in the first half, the percentage of documents that engaged with specific topics and, in the lower half, the mean engagement of such documents with the topics (i.e., variables). Engagement was measured as the percentage of sentences

within a document that features the proxy measurement used to infer the presence of a topic. For example, looking at Figure 5, we see that 77.2 percent of the documents related to REDD+ discuss, at some point, environmental topics as well as topics related to security. However, looking at the mean of engagement, we see that among all sentences from these documents, only 39.02 percent of them are related to the environment, while just 7.18 percent are related to security. In sum, the engagement metric provides us with a quantitative measure of the attention that is paid by documents to specific discursive constructs, thus allowing for comparative analysis.

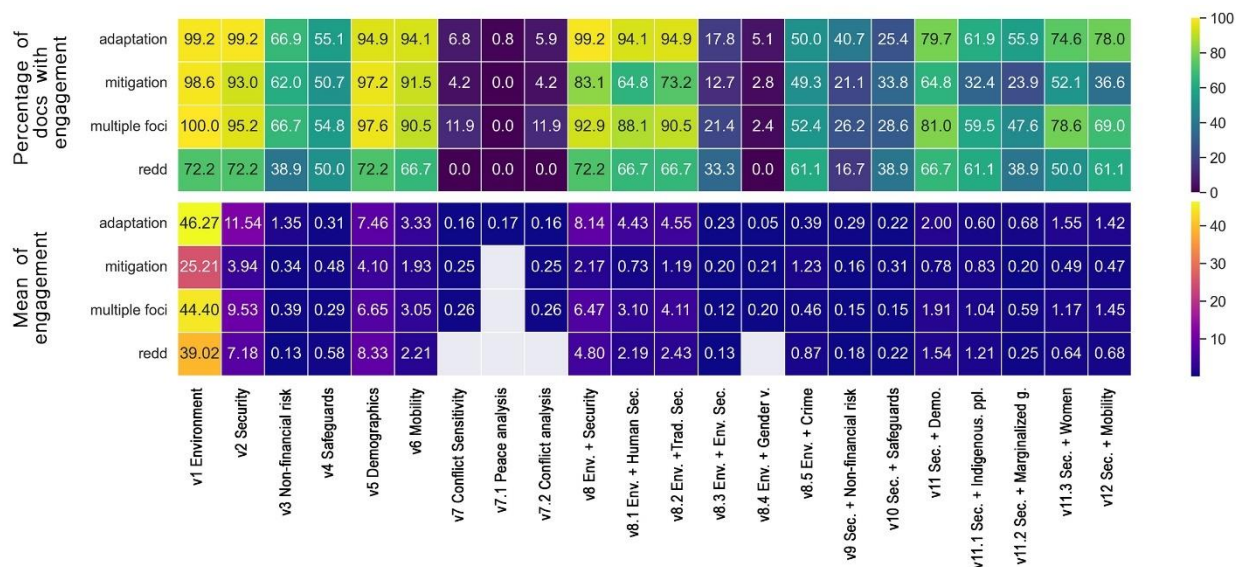


Figure 5. Documents' engagement with topics from the assessment framework, divided by themes.

The findings highlighted in Figure 5 show that, in absolute terms, security (v2) is broadly touched upon in most documents, especially those from projects on adaptation and multiple foci. This is not surprising as most countries included in this analysis have high levels of insecurity or political fragility. Moreover, the definition of security used in variable 8 was purposely broad, including topics ranging from human security to crime (see supplementary materials). What is interesting to note in Figure 5 is that mentions of security in co-occurrence with the environment (v8) are significantly lower than mentions of only security (v2). For example, 99.2 percent of documents in the adaptation sector mention either security or environment in relation to security. However, the extent of engagement in the former is 11.54 percent while in the latter it is 8.14 percent. This is because security is also discussed, regardless of environmental considerations, in the sections of project documents that serve to provide a background to the countries in which the investment takes place.

Regarding the framing of the climate security nexus, it appears that security is mostly discussed through the human (v8.1) and traditional security (v8.2) lenses, particularly among projects related to adaptation and multiple foci. Discussions of environmental security (v8.3) and gender violence (v8.4) are less frequent, appearing in a minority of documents and with a significantly lower extent of engagement. The data on gender violence is surprising as several funds, including the Green Climate Fund (GCF), have

gender mainstreaming policies. This finding should be interpreted with some caution as it might be the case that in some funds, gender violence is not directly discussed in project proposals, but rather in ancillary documents which were not included in this study. Finally, the data on crime (v8.5) presents an interesting finding, being the only metric of security that scored higher among mitigation projects than adaptation projects. This is consistent with the findings of Scartozzi (44), who showed that security in GCF investments was often discussed in relation to the protection of material assets, such as infrastructure related to power generation.

While there seems to be some engagement with various dimensions related to climate security, it is important to question how effective these documents are in framing the topic in a way that is programmatic. Data on the co-occurrence of discussions on security and non-financial risks (v9) or socio-environmental safeguards (v10) shows that security is not usually discussed in relation to regulatory frameworks or policies from climate funds. In particular, discussions on security related to risk in the mitigation and REDD+ sectors are absent from the vast majority of documents. This absence is important as risk frameworks or risk registers are the main way in which funds frame, measure, and operationalize security issues. These findings are consistent with the data from conflict-sensitivity (v7), which is never present in the REDD+ sector and only featured in 6.8 percent of adaptation, 4.2 percent of mitigation, and 11.9 in multiple foci documents—in all cases with an engagement below 0.3 percent. In sum, the nexus between environment and security is often acknowledged by documents, but not addressed in a programmatic manner that includes risk assessments or conflict analyses.

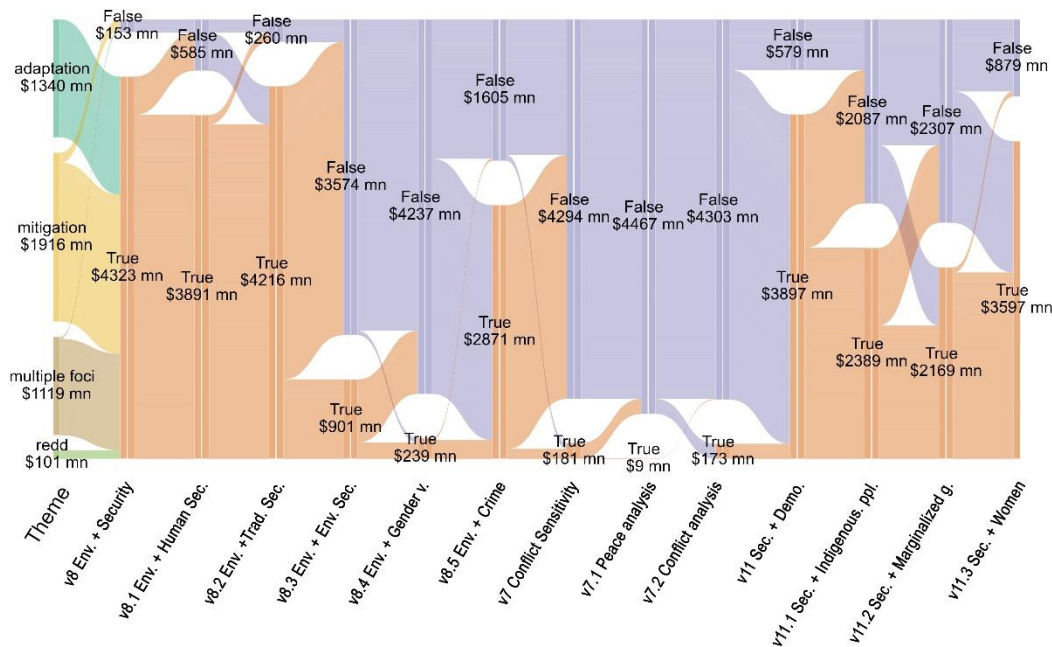


Figure 6. Distribution of allocated funds per selected variables.

In monetary terms, Figure 6 illustrates how the vast majority of funding, USD 4.3 billion, is allocated to projects that touch upon the intersections between environment and security (v8). However, only USD 901 million include discussions pertaining to topics related to environmental security (v8.3), and only USD

239 million to topics related to gender violence (v8.4). Moreover, only USD 181 million worth of projects incorporate elements of conflict sensitivity (v7), of which the majority are related to conflict assessments rather than peace analyses. In regard to demographics, the majority of funds (USD 3,6 billion) include discussions of women in relation to security (v11.3). While USD 2.4 and 2.1 billion are allocated for projects that discuss, respectively, indigenous people (v11.1) and marginalized groups (v11.2) in relation to security.

To find areas in which integrated climate security programming is lacking, we looked at sectors of investment and individual countries. As expected, the sector pertaining to conflict, peace, and security is the one that has the most holistic scores, with documents engaging with themes related to climate security as well as scoring well on operational metrics (i.e., conflict sensitivity, and security in relation to risk and socio-environmental safeguards). The agricultural and environmental protection sectors follow suit with strong thematic engagements but lower scores on conflict sensitivity and operational metrics. Similarly, albeit with zero conflict sensitivity, we see similar profiles of thematic engagement and low operational scores for the disaster and risk prevention, water and sanitation, forestry and energy sectors. By far, the largest gaps on climate security programming are present in the industry, transport, government and civil society sectors.

Finally, disaggregating data at the country level demonstrate gaps in the geographies of climate finance. The data shows that countries that have a good thematic engagement with environmental security also tend to have relatively higher chances of being conflict-sensitive and addressing security in operational terms (i.e., by framing it from a risk perspective and connecting it to socio-environmental safeguards). Nonetheless, the inclusion of conflict-sensitive practices in project proposals is inconsistent across projects as it appears to be driven by specific countries' contingencies or operational risks. As can be seen in Figure 7, projects from each country feature discussions on environment in relation to security. However, the extent varies between countries and across sectors. For example, investments in Mozambique engage with climate security across the following sectors: water and sanitation, forestry, environment protection, energy, banking and financial services, agriculture, and other multisector. By comparison, investments in Somalia only engage with environmental security in the water and sanitation sector.

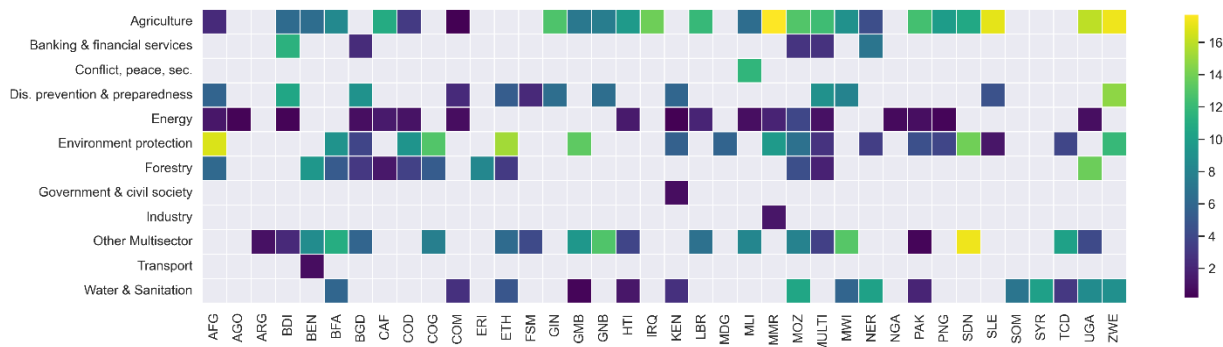


Figure 7. Mean of engagement with v8 (environment and security) per sector and country.

Considering sectors, environmental security is linked to agriculture in the majority of countries. Often, agriculture and environmental security are tied together through the impacts of climate hazards on the availability of resources and agricultural inputs. The impacts on rural livelihoods and the consequences for food security are also featured in discussions. For example, in Guinea-Bissau, concerns surround the insufficient coping abilities of individuals dependent on rural livelihoods (45). The concern translates into questions of food security in a pattern is repeated throughout many of the very high priority countries. In Liberia, the impact of climate change is expected to aggravate food insecurity and push low-income populations deeper into poverty (46). In Iraq, the risk of food insecurity and malnutrition has led to one project supporting the adoption of more climate resilient livelihoods (47). From the planting of a wider range of crop varieties to improving production technologies, such as irrigation, several measures are recommended to cope with climate hazards and food insecurity.

Many projects engage with environmental security through the water and sanitation sector. Like agriculture, many water and sanitation projects are concerned with the impact of climate hazards on rural livelihoods, namely through water availability and the impact of water shortages. Several projects recommend improving water access to improve the climate resilience of rural livelihoods and support livelihood diversification. Uganda, Syria, and Zimbabwe are just some of the countries containing projects that present environmental security through this lens (48–50). In addition, many projects underline the impact of water shortages and water quality on community health, such as in Syria and Pakistan. In Pakistan, for example, one project isn't only concerned with immediate danger to life from flash floods and riverine overflow, but also their impact on water quality through bacterial contaminants (51). Given that 70% of drinking water in Pakistan is sourced from underground aquifers, several projects target improved water infrastructures. As it is critical food, water, healthcare and sanitation, energy access is also presented as vital for negating the impacts of climate hazards on security.

The projects that engaged the most with the topic of environment and security are concerned with strengthening the resilience of local communities to environmental degradation. Whilst they may differ in the details of interventions, they both feature steps to either sustain livelihoods or promote alternative ones. *GCCA+ scaling-up agriculture adaptation to climate change in Uganda* scores the highest on integrating climate security programming, and therefore on average engages most with security and environment, conflict-sensitivity, and security and non-financial variables (52). The project aims to promote inclusive, gender-responsive interventions to boost the climatic resilience of agricultural production systems in Uganda's 'cattle corridor' by linking environmental hazards with human and traditional security concerns. Nomadic pastoralism, common to the area, is under threat from environmental degradation due to climate hazards, as well as increased stress as in-migration from neighboring countries leads more people to depend on the land. Moreover, the fragmentation of the corridor by private farming operations and increased mining activity are increasing the risk of localized conflict over productive resources.

In addition to traditional security, the *GCCA+* project is also concerned with human security, particularly through a gendered lens. The project notes how women are most vulnerable to the impacts of climate change, especially due to food insecurity and water and fuel shortages. Discriminatory social norms and customs are presented as preventing women and girls from successfully mitigating the harshest impacts of climate change. *Strengthening Local Communities Resilience to Climate Change in Sudan*, the project with the second highest overall score, also references the links between environmental factors and human and traditional security (53). The project seeks to address forced migration by reducing the impacts of

environmental degradation and desertification on local communities. Like *GCCA+*, the project seeks to encourage alternative and sustainable livelihood practices. It also incorporates gender considerations, highlighting the importance of gendered inequalities to the design of sustainable livelihood interventions.

However, while these two examples engage strongly with the topic of security and environment, they don't contain conflict or peace assessments, and they don't discuss security from a risk perspective. Indeed, this pattern is reflected in the ten projects which engage most in integrated climate security programming. Of these, only two consider conflict-sensitivity, three consider security and non-financial risk, whilst all engage with the topic of security and environment. One of the projects that does consider conflict-sensitivity, *RICE-Adapt: Promoting Climate-Resilient Livelihoods in Rice-Farming Communities in the lower Ayeyarwady and Sittaung River Basins*, applies conflict-sensitive principles in its design and implementation (54). These principles are guided by the Livelihood and Food Security Fund's (LIFT) Conflict-Sensitive Programming guidelines.

5. Discussion

The two previous sections have mapped global climate finance flows and analyzed integrated climate security programming in relevant countries via an automated analysis of project documents. The most obvious finding to emerge from the analysis of financial flows from the 22 multilateral funds is that there are important discrepancies and lapses in the allocation of funding from a climate security perspective. First, countries that have the highest climate vulnerability and lowest readiness (calculated compounding the presence of organized violence or conflict), are not prioritized in monetary terms. Instead, this group of countries receives approximately the same amount of funds as countries that have low to very low levels of vulnerability coupled with high to very high levels of readiness. Moreover, even among very high CSP countries, it seems that the allocation of funding is not prioritized based on countries' characteristics and capabilities. For example, very high CSP countries in the lower middle bracket are given less than half of per-capita financing than very high CSP countries in the lower-middle bracket.

Second, the sectoral allocation of investments in very high CSP countries appears to be largely inconsistent with climate security priorities. While high levels of investments on adaptation in very-high CSP countries are a welcome trend, questions remain on the sectoral distribution of adaptation funds. For instance, despite low levels of readiness, there are no investments in education and very few investments in capacity building directed to the governmental, civil society, and financial sectors. Also, despite high levels of climate vulnerability, investments in disaster prevention and preparedness are not prioritized, while investments in reconstruction relief are almost non-existent.

While many documents note security concerns in relation to environmental or climate hazards, most do not engage with the climate security nexus in a meaningful way. Although it's important to note the links between climate and security in background context analyses, investments must engage with the topic holistically and in a forward-looking manner. This involves mandating robust, new, and ongoing conflict analyses to ensure investment design and implementation are sensitive to actual conflict conditions—a critical means of counteracting their potential to drive new violence or amplify existing conflicts. Importantly, thought must be given to how investments can actively work toward the goal of climate

resilient peace. This entails considering how climate action can contribute to peacebuilding efforts as opposed to simply mitigating violence.

For better or worse, large investments influence governance priorities at the national level. If climate security is not integrated into climate investments, an opportunity is missed to urge national policymakers and civil society actors to prioritize it locally. Worse still, climate security may be pushed to the margins where national administrations do see it as a concern but must instead pivot toward the investment priorities of large financiers. As the climate security nexus is an inherently local phenomenon, this is an especially critical issue with investments flowing toward civil society. Civic leaders will be at the center—and, ideally, the vanguard—of effective climate security interventions. Climate finance needs to do a better job of recognizing this by supporting local actors to identify climate security risks and generate solutions.

Perhaps the greatest question that climate security finance must answer is not just how, but whether investments can be used to restructure the unequal power dynamics that are a primary driver of conflict in climate-vulnerable areas. Understanding that “positive peace encompasses the negation of structural violence through distribution of power and resources,” (25) successful climate security investments will seek not just to mitigate harm, but to actively redistribute political power and financial capital. The field of environmental peacebuilding—which views the same natural resources under threat by climate change as “incentives for cooperation and peace, rather than violence and competition” (55)—can provide practical guidance on how to design and implement investments. However, to successfully address climate security risks in high vulnerability, low readiness contexts, investments must work to address the reasons why these conflicts are high vulnerability and low readiness in the first place, while simultaneously providing financial returns for creditors. This is no small task. Critically, it is one that will require political will from the providers of climate finance in the Global North. With these providers still unwilling to make good on pledged financial allocations for climate investments, much less reform their own carbon-based economies, it is unclear if this political will is present.

6. Conclusion

This paper set out to fill existing research gaps and provide an up-to-date overview of the state of climate finance in countries with high vulnerability and low readiness for climate change. The paper asked if the allocation of resources from multilateral climate funds is consistent with the climate security priorities of recipient countries, and then whether investments in climate-vulnerable and politically fragile contexts have elements of integrated climate security programming. Evidence from the study suggests that the allocation of resources does not prioritize countries highly exposed to the climate security nexus. This evidence suggests that developing countries affected by compounded levels of climate vulnerability and political fragility are struggling to access climate finance. This is to be expected as instability and conflict can de-prioritize climate investments and reduce state capacity. This finding is, however, also a sign that climate funds are not doing enough to lower barriers to accessing credit.

Moreover, when adaptation funds are allocated toward conflict-affected contexts, it appears that they primarily target agriculture and fishing, energy, and forestry. Investments in civil society, readiness,

prevention and preparedness, and education are severely underrepresented. This suggests that investments, even in the adaptation sector, tend to favor projects that have tangible material outcomes (e.g., increase in crop yields or energy production) vis-a-vis social outcomes (e.g., disaster preparedness, education, adaptive capacity). This finding can be explained as multilateral funds, as explained by Scartozzi in relation to the Green Climate Fund, often lack adequate metrics to measure socioeconomic co-benefits that promote peace (44).

On integrated climate security programming, the findings presented by this paper warrant some cautious optimism. Engagement with climate security is present in the vast majority of projects from the 37 countries analyzed in this study that have extremely high levels of vulnerability and low levels of readiness for climate change. This engagement mostly occurs with debates on human and traditional security, and to some extent in relation to crime. Yet, the environmental security framing is surprisingly under-represented. Most importantly, security is seldomly discussed in operational terms and conflict-sensitive measures (i.e., conflict or peace assessments) are virtually absent. Taken together, these results suggest that security considerations are already widely present in discussions surrounding project proposals, but not fully developed to the point of leading toward programmatic actions.

Overall, it seems that there is still a significant gap in the integration of climate-security programming. The fact conflict sensitive measures were only featured in projects worth USD 181 million out of USD 4.47 billion, should ring an alarm bell. Unless the debates on climate security within project proposals lead to conflict-sensitive measures, much of the funding in post-conflict countries will remain exposed to operational risks emerging from the climate security nexus. A key policy priority should therefore be to plan for the security implications of disbursements and project implementation, as well as plan for the potential security risks emerging from countries' contexts.

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Annex I: List of Multilateral Climate Funds Included in the Study

Fund	Fund Type	Fund focus
Adaptation for Smallholder Agriculture Programme / IFAD (ASAP & ASAP+)	Multilateral	Adaptation
Adaption Fund	Multilateral	Adaptation
Amazon Fund	Multi Donor National	Mitigation - REDD
BioCarbon Fund	Multilateral	Mitigation - REDD
Central African Forest Initiative (CAFI)	Multi Donor Regional	Mitigation - REDD
Clean Technology Fund (CTF)	Multilateral	Mitigation - General
Congo Basin Forest Fund (CBFF)	Multi Donor Regional	Mitigation - REDD
Forest Carbon Partnership Facility - Carbon Fund (FCPF-CF)	Multilateral	Mitigation - REDD
Forest Carbon Partnership Facility - Readiness Fund (FCPF-RF)	Multilateral	Mitigation - REDD
Forest Investment Program	Multilateral	Mitigation - REDD
Global Climate Change Alliance	Multilateral	Multiple Foci
Global Energy Efficiency and Renewable Energy Fund	Multilateral	Mitigation - General
Global Environment Facility (GEF4, GEF5, GEF6, GEF7)	Multilateral	Multiple Foci
Green Climate Fund (IRM & GCF-1)	Multilateral	Multiple Foci
Indonesia Climate Change Trust Fund (ICCTF)	Multi Donor National	Multiple Foci
Least Developed Countries Fund	Multilateral	Adaptation
MDG Achievement Fund	Multilateral	Adaptation
Partnership for Market Readiness	Multilateral	Mitigation - General
Pilot Program for Climate Resilience	Multilateral	Adaptation

Scaling-Up Renewable Energy Program for Low Income Countries	Multilateral	Mitigation - General
Special Climate Change Fund	Multilateral	Adaptation
UN-REDD Programme	Multilateral	Mitigation - REDD