

Perspective

Policy making under scarcity: reflections for designing socially just climate adaptation policy

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SUMMARY

Limited information and insufficient resources are inherent challenges for climate policy, and policy makers must grapple with how to design and implement adaptation policies under conditions of scarcity. Drawing on empirical evidence from Honduras, Ethiopia, Haiti, and Puerto Rico, and analysis of the global landscape of adaptation finance, this perspective identifies ways that designing policy under conditions of scarcity can inadvertently lead to adaptation policies that reinforce inequality and fail to address underlying social vulnerabilities. It reflects on two sources of scarcity that impact adaptation policy—lack of data and lack of finance—and acknowledges that despite the non-ideal conditions this scarcity creates, adaptation policy will be designed under these conditions. The perspective highlights issues to be aware of when designing adaptation policy and calls for greater attention to the social justice implications in the policy design process.

INTRODUCTION

Limited information and insufficient resources are inherent challenges for climate policy, and policy makers must grapple with how to design and implement adaptation policies under conditions of scarcity. These challenges are particularly acute for developing countries with weak historical climate data and where resources to implement adaptation policies must compete with other urgent priorities. However, it is widely acknowledged that developing countries will be the most impacted by climate change and urgently need adaptation policies to reduce vulnerability and increase resilience. This creates a particular challenge, as the very conditions that hamper the policy-making process contribute to the urgency of adaptation policy in these contexts. However, adaptation policy also provides an opportunity to address social justice priorities, as adaptation policy can be designed to reduce structural vulnerability and inequality. Despite the challenges scarcity creates, ensuring that adaptation policy prioritizes social justice should not be compromised.

The goal of this perspective is to reflect on two key sources of scarcity that can impact adaptation policy: lack of information and lack of finance, and how this scarcity creates challenges for designing and implementing socially just adaptation policy. The term “adaptation policy” refers to the diverse strategies that institutions, particularly government institutions, use to address the impacts of climate change, including climate variability and extremes, and includes a mix of policies and measures.¹ I argue that scarcity of data and finance not only makes adaptation policy making more challenging overall, but specifically make it more difficult to ensure that adaptation policies are socially just. By socially just adaptation policy, I refer to the *process* of policy design, the *beneficiaries* of adaptation policy, and the *outcomes* of adaptation policy. A socially just adaptation policy is inclusive in its design process, targets

the most vulnerable, and includes adaptation approaches that address underlying vulnerabilities and inequalities, rather than relying solely on technical fixes to climate impacts. Due to the incentives created by scarcity, and the ways that scarcity, real or perceived, influence the policy process, policy making under conditions of scarcity is less likely to result in socially just policies, unless explicit measures are taken to ensure inclusive adaptation processes that address underlying vulnerabilities and inequality.

Ten years after the world agreed that mitigation and adaptation should be equal priorities in Cancun, the field is now sufficiently advanced to reflect on the dynamics of scarcity and strategies to advance adaptation policy despite a continued lack of data and finance. Gone are the days in which adaptation was viewed as the “ugly stepchild” of climate policy; when an articulation of the need for adaptation was viewed as an admission of failure on mitigation.² Despite significant progress, however, a pervasive “adaptation gap” remains.^{3,4} Together, a lack of information and finance present formidable barriers for adaptation policy. While the ways that scarcity of information and finance serve as barriers to adaptation are widely discussed in the literature, this perspective acknowledges that, given the urgency of climate change, these are conditions under which adaptation policy *will* be designed. I identify ways that designing policy under these conditions can inadvertently lead to adaptation policies that reinforce inequality and fail to address underlying social vulnerabilities unless countered by a commitment to social justice principles, and call for greater attention to the social justice implications in the policy design process.

POLICY CHALLENGES AND SOLUTIONS

Rather than a comprehensive review of barriers to adaptation policy (see Biesbroek et al.⁵) this perspective focuses on the



Figure 1. The “idealized” process of adaptation policy design

This figure depicts a stylized process of designing adaptation policies. While the steps included in individual guidance vary, and most policy recommendations are more detailed than the simplistic

model portrayed here, the fundamental components are common. Many models also suggest that monitoring and evaluation should link back to the beginning, creating more of a cycle. In reality, policy design is less straightforward and linear, driven by path dependency and other complex factors rather than a logical progression based on data.

implications of insufficient data and finance on adaptation policy design at the national level. It is motivated by reflections from my empirical research in Honduras, Ethiopia, Haiti, and Puerto Rico, as well as analysis of the global adaptation finance landscape. Adaptation across scales is important,⁶ but the national level is particularly relevant, as national governments create the enabling conditions for local adaptation, serve as the primary intermediaries with the international system,¹ and are particularly well suited to address systemic issues of structural vulnerabilities and equity.

Lack of data

A lack of data or information is often the first barrier identified for adaptation policy development.^{1,7–10} Data of numerous kinds are scarce in developing countries, but of particular importance for adaptation policy is climate data: both historical climate data and projections of future climate. Vulnerability assessments that integrate climate data with socioeconomic data are also important data sources for adaptation policy.¹¹ Lack of information contributes to policy uncertainty: the directionality and scale of climate impacts and projected changes can be highly uncertain. Lack of evidence regarding the effectiveness of different adaptation strategies and how to choose among them create additional uncertainty.

This section examines: (1) the role of data in policy making in data scarce contexts and (2) what, beyond data, influence adaptation decision making and how this impacts the types of adaptation strategies that get prioritized. Significant efforts are in place to increase access to data for adaptation decision making, which will improve the capacity of developing countries to design evidence-based policies, but policy continues to be made under conditions of data scarcity, with important implications for vulnerability reduction and social justice.

The role of data in adaptation policy making

In guidance to policy makers, data are presented as the essential foundation for policy making. The adaptation policy process is frequently described as a series of steps, beginning with the identification of hazards or risks, continuing with a vulnerability assessment, moving to a comparison of policy options, often involving quantitative approaches, such as cost-benefit analysis or multi-criteria analysis, which leads to the selection of a policy. Monitoring and evaluation to assess the effectiveness of policy and inform future policy is also frequently included (Figure 1). For example, the Adaptation Database and Planning Tool (ADAPT), a widely promoted Excel-based tool by ICLEI, takes potential project activities, integrates hazard maps, and climate projections, resulting in a climate risk assessment that ranks activities according to their sensitivity, and produces a color-coded list of adaptation options.¹² The Adaptation Support Tool, designed by Climate-ADAPT to support adaptation across Europe, includes six

steps: (1) preparing the ground for adaptation, (2) assessing risks and vulnerabilities to climate change, (3) identifying adaptation options, (4) assessing adaptation options, (5) implementation, and (6) monitoring and evaluation.¹³ This process is highly data dependent.

Many developing countries do not have rich data on climate impacts, risks, or vulnerabilities upon which to base their policies, nor sufficient capacity to analyze complex data and employ it in policy design.^{14,15} As a result, one of the first things many countries invest in is climate information (CI) systems. CI systems can be defined as the data derived from climate observations in addition to mechanisms that track and analyze the data and a system for converting data into usable products.¹⁶ Scholars caution that, despite its potential, CI is often not usable by policy makers, and significant gaps exist between the generation of CI and its utility.^{17–19} More broadly, the value of CI has been questioned, as in some cases it may be sufficient to identify the directionality of climate impacts and sophisticated CI is not needed, while in others more robust information is warranted.^{8,20}

While adaptation policy is not a zero-sum game, there are limited resources available, and the systems required to collect and utilize CI are expensive, particularly in comparison with other adaptation strategies. Countries may want to build capacity to utilize existing data, including CI, and explore partnerships to increase access to data, but policy makers should recognize that investments in CI may come at the expense of other adaptation investments.²¹ The long-term benefits of CI may justify the costs, but other investments may have more immediate adaptation benefits. For example, design standards in most developing countries are insufficient to handle the current climate; investments to reduce current vulnerability would go a long way to addressing future vulnerability and do not necessarily require sophisticated data.²² In addition, investments in human capital can help increase the capacity of society to handle a variety of shocks and stresses, although not all development efforts necessarily reduce climate vulnerability.^{23–26} Adaptation strategies that target broad adaptive capacity rather than specific climate impacts can have development co-benefits. Identifying synergies with other development priorities, as well as working to ensure policy coherence, may enhance the political salience of adaptation policy, increase the efficiency with which limited resources can be invested, and have greater social justice benefits.^{27–29} If underlying vulnerabilities are not addressed, investments in additional data, particularly CI, are unlikely to benefit the most marginal members of society, who may not be in a position to take advantage of the opportunities provided by better information (i.e., investments in better seed varieties, insurance mechanisms, or even evacuation plans). It is critical to assess whether lack of information is the primary barrier to adaptation decision making or if there are other limitations to adaptation.

Past experiences and disasters as decision-making heuristics

In the absence of data, specifically climate projections, decisions are based on heuristics that may or may not be appropriate under climate change. Decision makers may rely on their past experiences, of, for example, past disasters to inform their policy making, even if the conditions that led to those disasters has changed, and even if the historical experiences do not align with the projected climate impacts in the region. This can have a profound impact on the design of adaptation policy. This impact is potentially positive but, if the path dependency of these past experiences remains unconscious, opportunities to enhance socially just adaptation options may be missed.

Despite the fact that historical experiences do not necessarily reflect future climate realities, they still play an important role in motivating climate policy. Focusing events: sudden, rare, harmful events that bring attention to an issue, are well known to drive policy.^{30,31} Current extreme events create policy windows of opportunity, while past extreme events shape narratives of climate change and the adaptation policies that develop as a result. We should pay more attention to the role of these historical experiences in shaping adaptation policy (in both positive and negative ways), particularly in data scarce contexts where they are likely to play a larger role. In particular, it is important to analyze if policies based on historical experiences reinforce systems of inequality, privileging certain groups over others, or if they enhance equity. As Naomi Klein's³² concept of disaster capitalism illustrates, not all opportunities that arise from disaster advance social justice priorities.

Two examples, based on fieldwork in Ethiopia and Honduras, illustrate the importance of disasters and the path dependency of adaptation policy. In both cases, disasters are indelibly marked in the memories of individuals across the country. While these events caused trauma, they also paved the path for adaptation efforts underway today. Because of the different historical situations, the adaptation strategies that evolved are quite distinct. In Ethiopia in the 1980s, significant rainfall shortages, along with domestic and international policies, led to food insecurity and famine estimated to have caused between 400,000 and 1 million deaths and left millions more destitute.³³ One of the key programs to emerge after the famine was the social protection program known as the Productive Safety Net Program (PSNP), a food/cash for work program supporting over 8 million chronically food insecure households in exchange for labor on public works projects. The PSNP has been recognized by both practitioners and academics for its contributions to resilience.^{34–36} The food/cash transfers are designed to ensure basic nutrition and protect against asset depletion, while the public works component of the program builds and maintains community assets, frequently through watershed rehabilitation activities, such as terracing, tree planting, and establishment of area enclosures. The PSNP serves as a key foundation for Ethiopia's adaptation strategies today. It has been effective in supporting many of the poorest households in the country, although the potential of the program to support "graduation" out of poverty remains a challenge.

In Honduras, in 1998, Hurricane Mitch destroyed over 80% of Honduras' GDP, caused over 7,000 deaths, left over a million people displaced and homeless, and devastated infrastructure

that took more than 10 years to rebuild.^{37–39} Individuals tend to describe life, even now, more than two decades after the hurricane, as "before" or "after" Mitch. After Hurricane Mitch, the country invested heavily in early warning systems and disaster response. A system of emergency committees, from the national level down to the village level, exists to coordinate disaster response and has resulted in efficient management of subsequent events, although this system was severely tested by two hurricanes in 2020, Eta and Iota, that have been compared with Hurricane Mitch. However, this emphasis on disaster preparedness and response has dominated adaptation strategies at the potential expense of investments in strategies to build broader adaptive capacity.

In both cases, the genesis of adaptation policy in the historical experience of disaster has led to an emphasis in adaptation strategies on the prevention of that specific disaster, and not on building broader adaptive capacity or empowerment. Stakeholders in both contexts have reflected on the missed opportunities and challenges for expanding conceptions of adaptation policy beyond these initial experiences.

The politics of policy making

Historical disasters can not only shape narratives, but also influence the data that inform adaptation policy. Although often presented as objective, data are never neutral. The choices of what data are collected, how they are presented, and how they inform policy are political. Vulnerability indicators, in particular, are deeply connected to issues of power. Nations are not passive recipients of vulnerability rankings and can and do mobilize rankings to their advantage. For example, some countries resist being upgraded from least-developed countries status because this status provides access to certain funding. Countries can use vulnerability rankings to demand higher financial flows from donor countries, and natural disasters have been shown to influence international aid allocation in the short term,⁴⁰ although many factors beyond vulnerability influence donor allocation.^{41,42}

Despite these potential advantages, certain vulnerability indicators may lead to disempowerment and inhibit action.^{43–45} For example, the Climate Risk Index (CRI) is a commonly cited index of disaster vulnerability that ranks countries based on historical disaster losses and annual weather patterns.⁴⁶ The cumulative ranking is based on historical losses over the past 20 years and strongly influenced by extreme events—for example, in the case of Honduras—by Hurricane Mitch in 1998. In Honduras, a country that has consistently ranked as the most vulnerable country in the index (although in the 2019 edition, Honduras was displaced by Puerto Rico), the index is referenced repeatedly across policy documents, including Honduras' nationally determined contribution (NDC), and is cited as a motivator for adaptation.⁴⁷ While motivating policy, being ranked the most vulnerable country in the world elicited perceptions of fatalism among both policy makers and individual citizens in Honduras. These perceptions were counterproductive to ambitious policy making, as they reduced people's sense of agency and empowerment and led to beliefs that vulnerability was inevitable. For Honduras, the CRI does not take into account current conditions or the enormous progress on disaster preparedness and response made in the past 20 years, providing a very inaccurate portrait of current vulnerability. Because the CRI is based on

historical losses and annual weather patterns, it is not particularly well suited for gauging adaptive capacity or adaptation needs. Such indices have been recognized as inappropriate for capturing long-term adaptation finance needs of developing countries,⁴¹ and its use in policy deliberations may lead to less ambitious adaptation policies or assessment that adaptation efforts have been futile.

While disasters and vulnerability can be mobilized to advance policy, there is no guarantee that the response to these opportunities will be positive. Moments of crisis can also re-entrench the status quo, and there will likely be resistance and lack of capacity for implementing new approaches, particularly by those who benefit from the current system.^{48–50} As seen by the backlash of right-wing responses to progressive change around the world, there is no guarantee that policy changes in response to crisis, including natural disasters, will advance an agenda of equality and social justice.^{51–54} There is a danger that, as climate impacts are increasingly felt around the world, rather than a response of socially just adaptation, societies will respond by hardening systems of inequality and policies privileging elites may gain momentum.

Acknowledging and paying attention to power dynamics inherent in adaptation policy making is a first step to addressing them. By emphasizing data-driven approaches, policy guidance often privileges the technical aspects of policy design, promoting a technocratic approach to decision making.^{55–57} As a result, the political nature of prioritizing risk and vulnerability is minimized, despite the fact that the process has significant implications for whose vulnerabilities are addressed.^{56,58} Recognizing that expert approaches to adaptation privilege technical perspectives, participatory approaches to the design of adaptation policy may broaden the types of adaptation strategies under consideration. However, it is difficult to ensure meaningful participation due to power and knowledge imbalances.^{59–61} Many funding mechanisms require extensive stakeholder engagement processes, but too often they are a bureaucratic process undertaken to meet funding requirements.⁶² If such processes only provide opportunities for stakeholders to comment on predetermined options, they may lend legitimacy to technical options without challenging the approach, reinforcing the dominance of this logic. While engaging stakeholders late in the process may increase awareness of policies, it is unlikely to fundamentally shift the direction of policy or allow space for alternative perspectives and voices to be heard.^{63–65} Ignoring these perspectives is likely to lead to the selection of more technical approaches to adaptation, which are often more expensive and more narrowly focused on climate impacts, limiting the potential for realizing development co-benefits or synergies with other sustainable development goals that could reduce underlying vulnerabilities and inequality.⁶⁶ Revealing and making explicit the political factors that drive policy-making processes is essential if we are to develop mechanisms to counter these forces.

Lack of funding

Lack of finance is another significant barrier to adaptation. This section focuses on the role of international climate finance in shaping domestic adaptation policy in developing countries and examines how funding incentives prioritize certain adaptation approaches that do not always align with social justice priorities. Because global finances for adaptation are scarce and

developing countries have insufficient domestic resources, it is important to “follow the money” to understand the influence of financial scarcity on adaptation policy design. While the investment criteria of international climate funds are intended to ensure the quality of adaptation investments, there can be unintended consequences for policy design. Although unintentional, the scarcity of adaptation finance can lead to policy design processes that are not inclusive, adaptation strategies that do not meet the needs of the most vulnerable, and are overly reliant on technical solutions as opposed to strategies that address structural vulnerabilities and inequality.

Climate finance for adaptation is insufficient

Increasing access to funding for adaptation for developing countries is critical. This is both an ethical imperative, as developing countries bear little responsibility for climate change but must undertake expensive efforts to adapt to its impacts, and a practical imperative, recognizing the globalized nature of our economies and societies. As recent migration crises in Europe and North America highlight, climate impacts felt in developing countries reverberate across supply chains and national borders.^{67,68} Collectively, developed countries pledged to mobilize \$100 billion per year by 2020 to support climate mitigation and adaptation. It is important for continued diplomatic efforts to pressure developed countries to fulfill their international commitments to developing countries for new and additional climate finance.^{69,70}

Although the costs of adaptation are highly uncertain, the amount of funding available to address adaptation is woefully insufficient (see Figure 2). The Global Commission on Adaptation estimates that adaptation may cost 180 billion annually.⁷¹ Adaptation receives significantly less than half of climate finance, despite commitments to a balance between mitigation and adaptation (Figure 2). Analysis by the Climate Policy Institute, which tracks a wide range of climate finance sources, found that mitigation finance accounted for 93% and adaptation for 7% of total flows in 2017–2018.⁷² Initial estimates of 2019 financial flows, based on data published in 2020, suggest that 2019 will be a record-breaking year, but the balance between mitigation and adaptation remains unchanged.⁷³ Despite this clear imbalance, the analysis also found that adaptation finance is rising quickly, with estimates that flows for 2017–2018 totaled \$30 billion,⁷² although these estimates are contested. Other estimates place the total at closer to \$15 billion, up from \$9 billion annually in 2015–2016.⁷⁴ A recent report by Oxfam suggests that, while adaptation finance is rising, due to the high proportion of public climate finance provided as non-concessional loans, climate-specific net assistance for adaptation (a measure of public aid that takes into account loan repayments and interest), may be only \$6–7 billion.⁷⁴ Further questions remain as to how much of this funding is reaching the local level.⁷⁵ Evidence also suggests that adaptation finance is not evenly distributed; multilateral climate finance for adaptation tends to flow to countries that are more physically vulnerable as opposed to socio-economically vulnerable, and countries with more capacity to absorb climate finance receive more funding, further exacerbating this inequality.^{76,77}

Multilateral development banks (MDBs) make up 40% of public climate finance, playing a critical role in the adaptation finance landscape,⁷⁴ and are responsible for making 2019 a record-breaking year, as overall increases are primarily due to increased investments from the MDBs.⁷³ In December 2018, the World

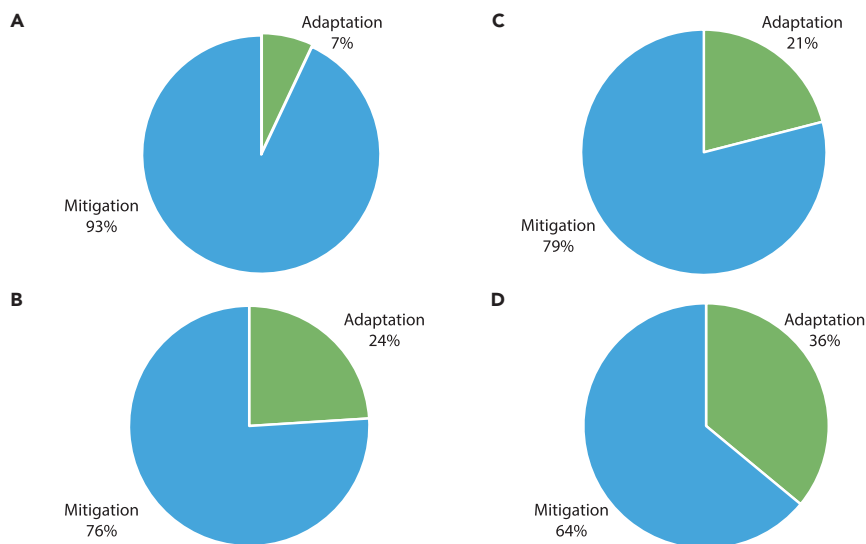


Figure 2. Finance for adaptation has not reached parity with mitigation

The balance between mitigation and adaptation across various sources of climate finance is not yet 50/50, despite commitments to achieve parity. Note that estimates of adaptation finance are highly uncertain and contested.

(A) The estimated overall balance across all sources of climate finance and geographic locations, including developed and developing countries and public and private funds for 2017/18, with 2019 estimated to be similar.⁷³

(B) Estimates from the multilateral development banks (MDBs) in 2019.⁷⁸

(C) Averages for bilateral climate finance for 2017–2018, the most recent data available.⁷⁴

(D) The total finance approved by the Green Climate Fund through 2020.⁷⁹

Bank announced a new commitment of \$200 billion toward climate change among the MDBs, to be invested equally in mitigation and adaptation.⁸⁰ In 2019, adaptation commitments made up 24% of funding; for the African Development Bank, this percentage was much higher at 57%.⁷⁸ However, for some banks, including the Asian Development Bank, the European Bank for Reconstruction and Development, and the Inter-American Development Bank, climate finance grew more slowly than the overall portfolio, indicating that climate finance as a percentage of investments actually fell.⁸¹ Thus, while the role of MDBs is very important, there is still room for improvement in the attention to adaptation.

Bilateral aid is another significant source of adaptation finance. While notoriously difficult to track, due to differences in accounting and reporting practices of different donors, based on OECD databases, adaptation-related bilateral finance in 2017–2018 was reported to be over \$7.3 billion.⁷⁴ Unlike the increases in adaptation funding from MDBs, bilateral flows of public adaptation finance have not increased since 2015 to 2016, with only 21% of funding on average going to adaptation.⁷⁴ Certain donors, such as the Netherlands, the UK, Sweden, Switzerland, and the European Commission and European Development Fund have increased their prioritization of adaptation, but for others, mitigation still significantly outweigh adaptation.⁷⁴

Dedicated climate funds are a third category of climate finance. By 2020, UNFCCC funds had approved approximately \$5.23 billion for adaptation since their inception.^{79,82–84} As of 2020, the Green Climate Fund, the largest dedicated source of climate finance, had approved \$2.6 billion for adaptation, compared with \$4.6 billion for mitigation.⁷⁹

Developing countries, therefore, cannot wait for other countries to deliver on their finance promises, but must move forward with adaptation policy under conditions of significant financial constraints.

Influence of international climate finance on adaptation policy making

The high dependence of developing countries on international climate finance and the competition for limited funds incentivize

developing countries to “design for the fund.” While there is widespread agreement that adaptation should be country driven (i.e., every nation should have autonomy to decide their own development path and climate finance should align with these national priorities), funding preferences influence policy making in developing countries, potentially creating misalignments between national priorities and funding sources.^{85,86} Understanding the ways that the investment criteria of climate funds influence the selection of adaptation strategies and policy design is critical to ensure that climate finance is supporting socially just adaptation.

The appropriate distinction between adaptation and development is one area where the interests of developing countries and funding sources are likely to diverge,^{87,88} with important implications for whether climate finance supports socially just adaptation policy. Owing to concerns that climate finance should not be a substitute for development assistance, there is a history of articulating arguments for the “additionality” of adaptation investments in climate finance. Additionality in the context of adaptation can be defined as the additional measures needed to build adaptive capacity, increase resilience, and reduce vulnerability due to climate change.⁸⁹ The requirement of additionality is motivated both by the recognition that climate change adds to the costs of development, necessitating additional finance beyond development finance, and by the desire to ensure that climate funds are targeted effectively at climate change. While additionality is not an investment criterion for the Green Climate Fund (GCF), a similar logic is at play with the requirement that projects demonstrate a clear “climate rationale,” in which project proposals demonstrate a clear linkage between activities and climate vulnerability and projections (Figure 3).^{20,90} Effectively, this requirement is intended to ensure that the adaptation strategies the GCF is supporting are closely linked to climate impacts and are not repackaged development.

A prominent example of how these criteria influence investment decisions was the decision of the GCF Board to reject a proposal for a project in Ethiopia entitled “Responding to the increasing risk of drought: building gender-responsive resilience of the most vulnerable communities.” Board deliberations cited concerns regarding the climate additionality of the project, among other concerns, and meeting notes stated:

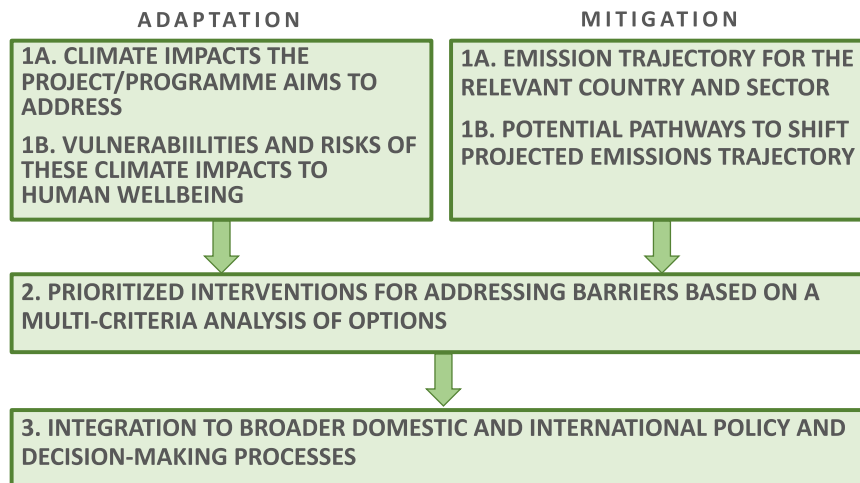


Figure 3. Climate Rationale of the GCF

In guidance from the Board on “Steps to enhance the climate rationale of GCF-supported activities” the GCF articulates the steps required to describe the climate rationale for mitigation and adaptation projects.⁹⁰

one [Board member] asserted that the project was based on standard rural development practices and lacked innovation ... Others raised the concern that the project was not sufficiently geared towards climate-related objectives, reiterating that while all climate change investments would bring sustainable development benefits, the converse was not always true ... A Board member said that the climate additionality and incremental costs were unclear, and another considered that it was essentially a rural development project which would better suit a development finance institution rather than the GCF. (GCF Board Meeting, 2016,⁹¹ pp. 44)

Although the project was eventually approved in an amended form (and significantly reduced in scope), these deliberations highlight the importance for the GCF of articulating a distinction between adaptation and development.

Additionality or strong climate rationale requirements lead to investments in approaches to adaptation that respond to specific climate impacts, rather than those that address the “adaptation deficit” or broader underlying vulnerabilities.⁹² These requirements also reinforce the logical data-driven approach to policy design discussed previously. Another (potentially unintended) consequence is a shift in investments toward CI systems.¹⁹ CI fits the logic of funders, in that the climate rationale for investments in CI can be clearly articulated. By investing in CI, countries may increase their capacity to compete for climate finance, potentially improving their access to scarce financial resources.

Another incentive that may influence the adaptation strategies countries pursue is the push for transformational adaptation.^{50,93–95} Although transformational adaptation is a contested concept, it is often conceptualized as adaptation that changes the fundamental attributes of a system in response to climate and its effects, and contrasted with incremental adaptation.^{96–98} In the context of the GCF, one of the investment criteria is the transformational potential, or “paradigm-shift” potential, which is operationalized in terms of scalability and replicability.⁹⁹ This may lead to bias toward approaches that are easily scaled and replicated, such as infrastructure or approaches that do not rely on behavior change, which can take a long time and

must be culturally appropriate.⁹⁵ While transformational change is certainly needed, transformations of underlying societal structures that create and perpetuate vulnerability can take a long time and may not be amenable to the 5-year project cycle of funding agencies.^{51,52,85}

Collectively, these incentives influence the process through which adaptation policy in developing countries is made,

potentially making it more difficult to engage in a truly inclusive process, and also prioritize certain adaptation strategies, including technical solutions, that may not align with the needs of the most marginal communities or address underlying vulnerabilities or inequalities.

Moving beyond climate finance

Rather than centering adaptation policy design around scarce international climate finance, to ensure socially just adaptation policy, the process must remain focused on the goals and priorities of the people it is intended to serve. Too often policies are designed to meet the requirements or desires of international actors^{58,77} and, as a result, do not challenge the status quo or disrupt power relations that are inherent in the mechanisms through which funding is provided.⁶⁰ While mechanisms such as “direct access,” are intended to mitigate this challenge, these measures to date have not been adequate.^{75,100} Continued experimentation with mechanisms to devolve climate finance to the local level, as well as greater emphasis on non-financial support for adaptation, may help strengthen the capacity of climate finance to support social justice goals.

One way to maximize the value of limited adaptation finance is to identify synergies with other development priorities,^{27,101} although addressing development priorities does not always address climate resilience and there can be trade-offs.^{24,26,102} An analysis of synergies between Haiti’s climate policies and the SDGs demonstrates this potential. While the SDGs are not explicitly mentioned in any of Haiti’s climate policies, including its NDC, National Climate Change Policy, and National Adaptation Program of Action, there are many areas of synergy. An analysis of these policy documents identified 310 connections to the SDGs, with the majority (254) for adaptation (41 were for mitigation and 15 were cross-cutting) (Figure 4).¹⁰³ Certain goals were well represented in Haiti’s climate policies. Goal 15 (*Life on Land*), Goal 16 (*Peace, justice and strong institutions*), and Goal 3 (*No hunger*) were particularly well covered. A strong case can be made that investments in climate action will help to achieve many of the SDGs, as investing in climate action also means investing directly in the implementation of many SDGs. While designing adaptation policies to fit the logic of international funders is not desirable, articulating the ways in which

CONNECTIONS BETWEEN PRIORITIES IN HAITI'S CLIMATE POLICIES AND THE SDGs

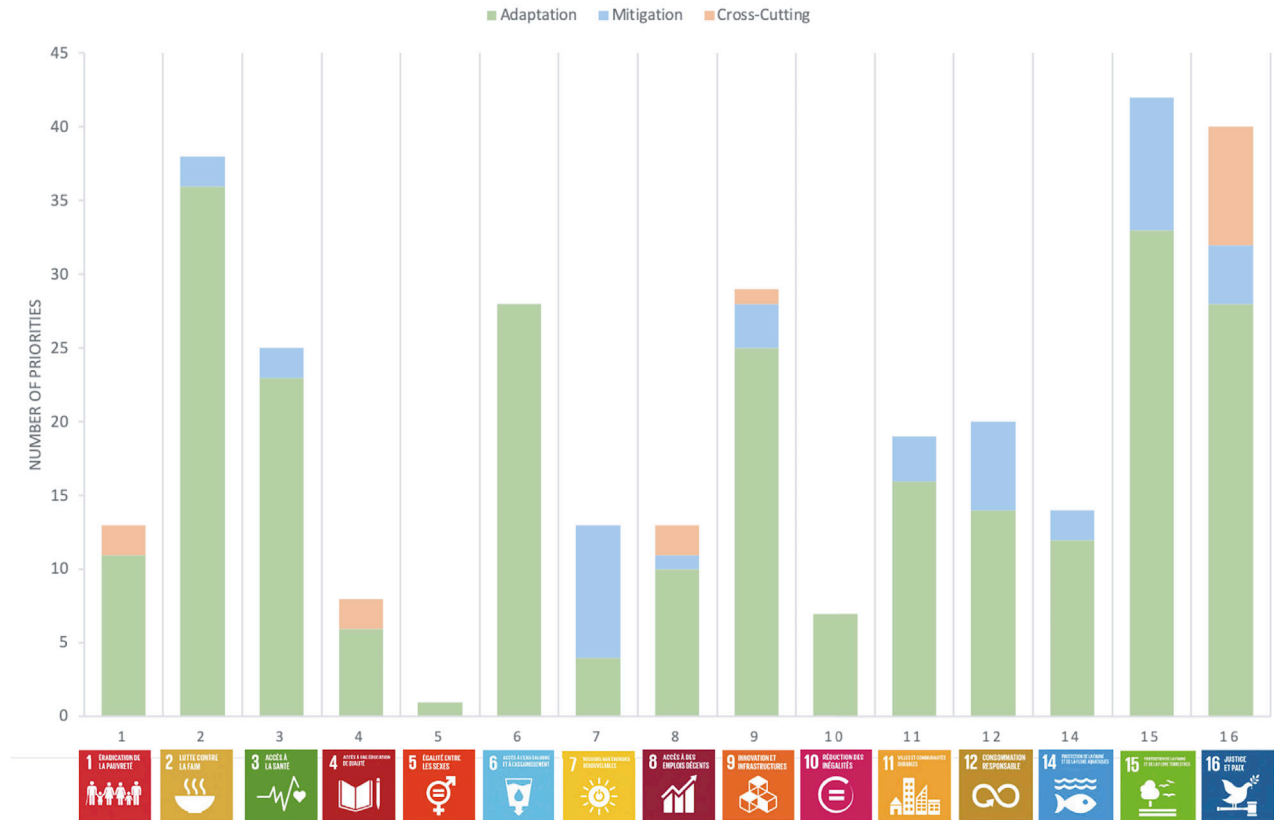


Figure 4. Connections between priorities in Haiti's climate policies and the SDGs

Priorities from Haiti's climate policies (NDC, National Climate Policy, and NAPA) were mapped to the SDGs. The number of adaptation, mitigation, and cross-cutting priorities that contribute to each SDG are listed. Note that Goals 13 and 17 are not included because all climate policies relate to Goal 13 (climate action) and Goal 17 (international collaboration is not relevant for domestic policies). Adapted from Kuhl (2019).¹⁰³

national adaptation priorities and strategies align with international finance may help countries identify ways to leverage these funding sources to advance socially just adaptation.

There is a strong push to engage the private sector in adaptation as a means of overcoming the limitations of public finance, but an over-reliance on the private sector is likely to exacerbate inequality. Identifying creative financial mechanisms that allow the private sector to invest in adaptation and contribute to building resilience is critical, but it is important to acknowledge that there are significant barriers to private sector engagement in adaptation.^{104–107} Some of these barriers, such as risk aversion associated with investments under uncertainty, can be addressed through financial arrangements, such as public sector de-risking or public private partnership agreements. Other barriers, however, are likely to remain. For example, meeting the needs of the most vulnerable, who are already underserved by the private sector, is unlikely to be an area of adaptation that can be left to the private sector. Similarly, many adaptation efforts have public goods features that are unlikely to attract private sector investment. Analysis of instruments for climate finance finds that debt, often at market-rates, is the most common source of finance (representing 66% of total finance), which

may be particularly ill-suited to meeting adaptation needs.⁷² Recognizing these constraints will allow for a realistic strategy in which the private sector contributes to those aspects that align with its interests and alternative financial strategies are put in place for other needs. Failure to acknowledge these constraints is likely to lead to adaptation policies that do not reach the most vulnerable and are not socially just.

Given the scarcity of international adaptation finance, this funding may be better conceptualized as a source of funding to pilot new approaches or fill gaps that cannot be met with domestic resources. Most adaptation needs will have to be met using domestic resources, including government and private sector resources. This is potentially an opportunity to prioritize processes and strategies that maximize social justice.

DISCUSSION: ACKNOWLEDGING TRADE-OFFS WHEN DESIGNING SOCIALLY-JUST ADAPTATION POLICY

No particular adaptation strategy will benefit everyone and there are likely to be winners and losers with any policy choice. As the just transition movement acknowledges, some climate policies have the unintended consequence of leaving people behind or

increasing the vulnerability of people and places.^{53,108} Despite the objective appearance of data-driven approaches to policy making, adaptation policies always have ethical consequences. Societal goals, priorities, and visions of the future are embedded in the policy process, and if these goals, priorities, and visions are not considered, adaptation policy runs the risk of reinforcing existing inequalities and vulnerabilities.^{49,51,52,60,109} Who gets to define adaptation and resilience? Who gets left out? Are adaptation narratives promoting change or the status quo? Policy-relevant research that seeks to address the implications of the scarcity of data and finance can help to elucidate these tensions and ensure that social justice considerations are not sidelined. Otherwise, there is a risk that adaptation policies are simply redistributing vulnerability.¹¹⁰

Tensions can emerge between adaptation at different scales and between different goals. Because most policy-making processes, as well as funding, occur at a national level, despite the global nature of our economic and social systems, repercussions can reverberate to other locations, potentially leaving those least capable of managing impacts suffering the consequences of others' adaptations.¹¹⁰ Strategies that may be adaptive at the level of the individual may be maladaptive at the systems level, requiring value judgements about whose adaptation to prioritize.¹¹¹ For example, in Honduras a project sought to introduce vegetable crops to smallholder farmers as a mechanism to reduce poverty and build resilience. Farmers were interested in growing a wide range of vegetables to spread their risk and increase their resilience, but agronomists explained that sufficient production of a single crop was needed to create economies of scale, creating tensions between adaptation strategies for individuals and for the market system as a whole.²⁴ Not only can this create tensions between climate and development priorities, there can also be tensions between mitigation and adaptation priorities, and adaptation priorities may be sidelined in the efforts to address climate mitigation as quickly as possible. While political and academic efforts exist to identify synergies between mitigation and adaptation (for example, the promised "triple-win" of climate-smart agriculture¹¹²⁻¹¹⁴ and urban climate policy integration),^{115,116} too often the potential trade-offs are under acknowledged, which likely benefits the status quo.

In addition to trade-offs, scarcity of information and funding can lead policy makers to deflect responsibility for adaptation policy. The burden of adaptation may be placed on vulnerable communities and individuals rather than recognizing the systemic nature of vulnerability and the need for public policy responses.^{51,117} Self-reliance, as a synonym for resilience, can become reified, relieving public agencies of their responsibility for addressing the drivers of vulnerability.^{118,119} For example, after Hurricane Maria in Puerto Rico, news reports chronicled the resilience of communities that supported each other as they waited for outside aid, and celebrated community initiatives to repair infrastructure and provide services, despite the fact that responsibility for these activities resides with the state. Narratives of the resilience of communities and the Puerto Rican people were placed in sharp contrast to the failures of FEMA (Federal Emergency Management Agency) and PREPA (Puerto Rico Electric Power Authority) to respond to the hurricane. Ensuring that adaptation policies support the most vulnerable and do not transfer the responsibility for adaptation to them is essential.

Scarcity, both real and perceived, combined with the urgency of climate change and the enormity of the adaptation challenge, can lead to approaches that seek expediency at the expense of approaches to adaptation that are inclusive, meet the true needs of developing countries, and address the underlying drivers of vulnerability and inequality. It is critical that the push for data-driven policy making and the pursuit of funding does not drown out these priorities or the resulting adaptation policies will likely not be socially just.

CONCLUSION

Designing adaptation policy that is socially just requires explicit attention to the process, the beneficiaries, and selection of adaptation strategies. While additional data may reduce the range of uncertainty surrounding future outcomes and additional finance may expand the range of possible solutions on the table, when strategies come into tension or decisions have to be made about whose adaptation to promote or what the goals for a resilient future look like, data and finance cannot resolve these issues. The appearance of objectivity created by a linear policy process driven by data and motivated by the desire to conform to the funding logic of external sources of climate finance may obfuscate these issues, creating a veil of objectivity, but ultimately, no amount of data or funding can determine how to resolve the trade-offs that inevitably emerge across adaptation strategies.

Despite the challenges raised in this perspective, there are many reasons to be optimistic. While adaptation finance needs will rise as countries progress in their implementation, costs will also decline as capacity is built, lessons are learned, and technology costs decrease. As countries gain experience with design and implementation and early actors share their experiences, it will increase access to information and spur innovation. With the support of engaged research, experiences can consolidate into best practices, while still allowing creativity and innovation. If the barriers associated with a lack of data and finance can be overcome, adaptation policy, as a process fundamentally related to social change and supporting the most vulnerable, has high potential to lead to a world where more adaptation is socially just.

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