Climate Policy

ISSN: 1469-3062 (Print) 1752-7457 (Online) Journal homepage: www.tandfonline.com/journals/tcpo20

Climate finance and global justice

Yannis Dafermos

To cite this article: Yannis Dafermos (02 Apr 2025): Climate finance and global justice, Climate Policy, DOI: 10.1080/14693062.2025.2482104

To link to this article: https://doi.org/10.1080/14693062.2025.2482104

CLIMATE POLICY
https://doi.org/10.1080/14693062.2025.2482104

Taylor & Francis
Taylor & Francis Group

RESEARCH ARTICLE

Climate finance and global justice

Yannis Dafermos

Department of Economics, SOAS University of London, London, UK

ABSTRACT

As the climate crisis deepens, efforts to incorporate climate issues into finance intensify. However, a significant limitation of the ongoing climate-related initiatives and policies in finance is that they ignore global climate justice issues, enhancing thereby processes that increase injustice. This paper first provides a classification of the channels by which climate finance initiatives and policies are exacerbating global climate injustice. These are (i) the 'exposing by self-protecting' channel that reflects how the ongoing attempts of private finance to protect itself from climate risks can increase climate vulnerability in the Global South, (ii) the 'decarbonising by exploiting' channel that captures how climate finance can exacerbate green extractivism and (iii) the 'climate derisking' channel that refers to the attempts of private global financial institutions to create new sources of profitability at low risks by exploiting the need for climate change mitigation and adaptation in the Global South. The paper then puts forward three pillars that should be incorporated into national and international climate finance so as for climate finance injustices to be addressed and the financial system to become consistent with global climate justice principles. Pillar I refers to the differentiated climate responsibilities for Global North and Global South financial institutions. Pillar II captures the need for Global North financial institutions' climate mitigation actions to be consistent with global justice. Pillar III suggests the establishment of permanent mechanisms by which the Global North will support the financing of climate spending in the Global South, based on climate debt responsibilities as well as capabilities associated with the hierarchies of the global financial architecture. The paper also outlines the political economy and technical challenges that the incorporation of these pillars into the global financial system would face.

ARTICLE HISTORY
Received 1 April 2024
Accepted 14 March 2025

KEYWORDS
global climate justice; climate-aligned development; central banking; public banking; climate finance; global financial architecture

Key policy insights

- By failing to consider global justice issues, recent climate finance initiatives and policies are exacerbating climate injustice.
- Efforts to make financial systems climate-aligned should follow a 'one size doesn't fit all' approach. In the Global South the climate alignment of financial systems should pay specific attention to country-specific developmental challenges and the urgency of climate adaptation.
- Green extractivism conditionalities should become a central component of the decarbonization of financial systems in the Global North.
- Permanent climate justice financial mechanisms, such as a Climate Justice Facility and climate just collateral frameworks, should become an integral part of a holistic policy framework aiming at addressing global climate injustice.
- Public authorities should play a leading role in addressing the technical challenges associated with the incorporation of global justice into climate finance.

CONTACT Yannis Dafermos Yannis.Dafermos@soas.ac.uk Department of Economics, SOAS University of London, Thornhaugh Street, Russell Square, London WC1H 0XG UK

1. Introduction

The climate crisis is increasingly becoming a central issue in finance. Recent years have seen a growing number of central banks and financial supervisors conducting climate stress testing exercises (Alogoskoufis et al., 2021; Bank of England, 2022; Baudino & Svoronos, 2021) and introducing financial and monetary measures conducive to the decarbonization of the financial system (Bangladesh Bank, 2024; Bank of England, 2021; ECB, 2022; People's Bank of China, 2021; RBI, 2023). Furthermore, private banks and institutional investors have been paying a growing attention to climate risks and net zero agendas, credit rating agencies have started adjusting their credit risk models to account for climate-related financial risks (Mundey et al., 2022), while public banks have developed strategies to support green lending (Güngen, 2023; Marois, 2021). At the same time, the amount of international climate finance has been increasing (OECD, 2024) and new targets for higher international finance have recently been set in COP29 (UNFCCC, 2024).

However, a major limitation of the ongoing climate-related initiatives in finance is that they overlook issues of global climate justice. These are specifically related to (i) the historically higher responsibility of the Global North for the climate crisis, (ii) the higher disproportionate effects of the climate crisis on the Global South and (iii) the subordinate position of Global South countries in the global financial architecture that, in combination with their lower level of development, restricts their ability to finance climate action.[1]

The lack of explicit consideration of global justice perspectives in national and international climate finance has several implications. First, the recent climate initiatives and policies in finance are likely to be exacerbating climate injustice. This might be happening because of actions aiming at reducing the exposure of Global North financial institutions to climate risks, including exposure to climate vulnerable countries in the Global South. It might also be happening via decarbonization actions of public and private financial institutions that might encourage green extractivist practices, as well as via attempts of Global North private financial institutions to exploit profit opportunities in climate projects in the Global South based on derisking practices.

Second, attempts to incorporate climate change into finance typically suffer from an 'one size fits all' approach: financial institutions in the Global South are adopting methods and practices used in the Global North without appropriate adjustments. From a justice perspective, Global South governments, companies, households and banks should not be assessed about climate mitigation targets and risk exposure in the same way as their counterparts in the Global North.

Third, the absence of a concrete climate justice agenda in climate finance initiatives is a barrier to the development of international financial mechanisms that would contribute to the reduction of global climate injustice (see also Stephens & Sokol, 2024). The current international climate finance mechanisms do very little to cover climate spending in the Global South in a sustainable way. Without putting justice at the core of climate finance mechanisms, the challenges that the Global South is facing will be exacerbated.

Against this backdrop, this paper's contribution is two-fold: first, to provide a classification of the channels through which climate finance is reinforcing global climate injustice, and, second, to identify the pillars that should be incorporated into national and international climate finance in order for (i) climate finance injustices to be addressed and (ii) the global financial system to become consistent with global climate justice principles. The incorporation of these pillars into climate finance is urgently needed if climate finance is to play a positive role in addressing climate challenges in a just way.

The rest of the paper is structured as follows. In Section 2, I analyse how the ongoing climate-related initiatives in private finance, public banking, central banking and financial supervision/regulation are exacerbating global climate injustice. I then present the pillars of a globally climate just financial system (Section 3) and discuss the political and technical barriers to the development of such a system (Section 4). In Section 5, I summarize the policy implications of the analysis and outline limitations that can be addressed in future research.

2. How is climate finance exacerbating global injustice?

2.1. The global justice lens to the climate crisis

Global climate justice approaches to the climate crisis use as starting point the fact that, even though the cumulative greenhouse gas emissions that have caused climate change have mostly been generated by countries in the Global North, climate change disproportionately affects countries in the Global South. In addition, the global justice lens to the climate crisis highlights the subordinate position of Global South countries in the global financial system that restricts their capacity to finance climate spending (Svartzman & Althouse, 2022). Colonial legacies have been a significant driver of this subordination (Alami et al., 2023).

From a compensatory justice perspective, the above suggest that countries in the Global North should compensate countries in the Global South that are experiencing losses and damages due to climate change (Okereke, 2010; Schinko et al., 2019; Wallimann-Helmer et al., 2019). Distributive justice implies that, since the Global North has a higher capacity to pay for climate mitigation and the Global South is in greatest need for financial support due to its higher climate vulnerability, the global climate-related resources should primarily be allocated to the Global South (Galanis et al., 2025; Okereke, 2010; Schinko et al., 2019; Wallimann-Helmer et al., 2019). Finally, from a procedural justice perspective, there is a need to adopt inclusive frameworks and procedures that ensure that those who are mostly affected by the climate crisis play an important role in how climate-related decisions are taken (de Ridder et al., 2023; Okereke, 2010).

Global climate justice has been explicitly recognized by the United Nations Framework Convention on Climate Change (UNFCCC) which states that countries should protect the climate system 'on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities' (UNFCCC, 1992, p. 4). However, the UNFCCC principle of Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC) has only been partially and unsatisfactorily applied to international climate finance and has not been integrated into the way that the financial system works as a whole. Since the 2015 Paris agreement goal of making financial flows climate consistent, the UNFCCC has paid more attention to the financial system as a whole, but confusion remains on the interpretation of this goal and its alignment with global justice (Zamarioli et al., 2021).

This lack of concrete global justice perspectives in finance has as a result that the financial responses to climate change are reinforcing global injustice instead of attenuating it. I Identify three channels through which this is happening: (i) the 'exposing by self-protecting' channel; (ii) the 'decarbonising by exploiting' channel; and (iii) the 'climate derisking' channel (Table 1).

2.2. Exposing by self-protecting channel

The 'exposing by self-protecting' channel suggests that climate finance injustice can arise from the ongoing attempts of private finance to protect itself from climate risks, primarily physical risks (see also

Table 1. Climate finance injustice channels.

Channel	Description	Examples
Exposing by self-protecting	The financial system increases climate vulnerability in Global South countries by trying to protect itself from exposure to physical risks.	Credit rating agencies downgraded Namibia, Pakistan and Sint Maarten due to climate-related events; climate stress testing exercises can lead Global North financial institutions to stop buying bonds issued by climate vulnerable countries.
Decarbonizing by exploiting	Financial measures support decarbonization actions that rely on green extractivism.	The lack of green extractivism conditionalities in the design of ECB's decarbonization of its corporate bond holdings indirectly encouraged company practices conducive to the exploitation of people and ecosystems in the Global South.
Climate derisking	Private global financial institutions create new sources of profitability at low risks by exploiting the need for climate mitigation and adaptation in the Global South.	World Bank's Scaling Solar programme in Zambia used several derisking practices (such as beyond-the-normal tax incentives, payment guarantees and reduced land costs) with adverse effects on local macrofinancial stability.

Dafermos, 2023; UNCTAD, 2023). The starting point for understanding this channel is the fact that the increasing severity and frequency of climate-related events disrupts economic activity, which in turn can lead to credit and market losses that can adversely affect the liquidity and solvency of financial institutions. As a response to this, these institutions are trying to reduce their exposure to these risks to ensure their financial viability.

However, the attempts of financial institutions to reduce this exposure can be detrimental to the Global South. Take, for example, the bonds issued by Global South sovereigns. If climate stress testing exercises show that these bonds are characterized by higher physical risks due to the climate vulnerability of these countries, Global North financial institutions might decide to reduce their exposure to these risks by selling these bonds. This can put a downward pressure on bond prices, increasing the cost of borrowing for these governments. Through this reaction of financial institutions, the governments (and the corporates) of these countries might face higher debt burden problems and their ability to finance spending — including climate adaptation spending — might be undermined. This is in line with the so-called climate-public debt vicious cycle (Beirne et al., 2021; Fresnillo, 2020; Kling et al., 2021):

Credit rating agencies can magnify this process. As they are incorporating physical risks into their credit assessment models (see e.g. Mundey et al., 2022), Global South countries with high climate vulnerability are likely to see a downgrade of their ratings, simply because they are susceptible to climate-related events that they have low responsibility for. Actually, credit rating agencies have already downgraded countries in the Global South for reasons associated with climate-related events. For example, in 2019 Fitch linked their downgrade of Namibia's rating to acute drought conditions in the country; in 2021, Moody's referred to the macrofinancial implications of the 2017 Hurricane Irma as one of the reasons justifying their downgrade of Sint Maarten's rating; and in 2022, Fitch's downgrade of Pakistan's rating was partly justified by the widespread floods that took place in the country in the same year (Sun et al., 2023).

2.3. Decarbonizing by exploiting channel

Climate finance policies and initiatives that focus on climate mitigation aim at incentivising companies and governments to reduce their emissions. However, they typically do so without introducing any conditionalities on how decarbonization will be achieved from a justice perspective. The 'decarbonizing by exploiting' channel refers to the process via which climate finance measures that lack global justice conditionalities induce governments and companies in the Global North to achieve decarbonization based on green extractivist practices, i.e. practices associated with the extraction and expropriation of resources in a way that harms local populations and ecosystems in the name of 'green transitions' (Bruna, 2022; Hu, 2023).

Green extractivism can take three interconnected forms (see also Fornaroli, 2023). The first form has to do with the fact that investments in solar panels, wind turbines, electric vehicles and batteries rely on specific transition minerals and metals, such as copper, lithium, cobalt and nickel, which are primarily located in the Global South (Bruna, 2022; Dorn et al., 2022; Franz & McNelly, 2024; Voskoboynik & Andreucci, 2022). Companies that invest in these green technologies depend – through their supply chains – on the extraction of such minerals and metals. This extraction often takes place under precarious working conditions and, in some cases, it leads to the violation of human rights (e.g. due to child or forced labour). Mining activities can also lead to the displacement of communities and land disputes that are conducive to conflicts and can destabilize local ecosystems and create water stress conditions (Church & Crawford, 2018; Zografos & Robbins, 2020).

The second form of green extractivism is associated with large-scale renewable energy projects in the Global South that are typically land-intensive. Global energy corporations that run such projects often engage in land grabbing practices that create conflicts and have several adverse socioecological implications (Hesketh, 2022; Hu, 2023; Tornel, 2023).

The third form of green extractivism is linked to the carbon offsets that companies buy to reduce their reported net emissions. Many of these carbon offsets are associated with land-use projects in the Global South which can impoverish communities that depend on certain forests and land for survival and social reproduction. For example, as part of carbon offset projects, local people have been forcibly evicted from their land

and have been constrained from harvesting crops, hunting and fishing, with negative implications for food security (Bruna, 2022; Fairhead et al., 2012; Lyons & Westoby, 2014).

To illustrate the link between green extractivism and climate finance, consider the decarbonization of the corporate bond holdings of the European Central bank (ECB) which mostly took place between October 2022 and July 2023 (see Dafermos et al., 2023; ECB, 2022a, 2022b). During this period, the ECB tilted its purchases towards bonds that had been issued by companies that have a relatively better climate performance based on their emissions profile. However, the ECB introduced no conditionalities about the ways by which companies green their operations. For instance, a company that had reduced its emissions by (i) relying on green materials that had been extracted in the Global South under exploitative labour conditions and/or (ii) buying carbon offsets that had forcibly displace indigenous people from their land was treated, under this decarbonized programme, in the same way as a company that had a similar emissions profile but had not relied on such practices (see also Fornaroli, 2023). From a global justice perspective, these two companies should have been treated differently.

2.4. Climate derisking channel

The 'climate derisking' channel captures how the derisking of climate projects in the Global South by public authorities can create profit opportunities for Global North financial institutions. Climate derisking refers to the use of measures that reduce existing or potential risks facing private actors that invest in climate projects.

The starting point of the climate derisking agenda is the argument that, due to their limited fiscal space, Global South countries do not have the capacity to undertake sufficient climate investment by relying on public financial resources (IMF, 2022; Monsod et al., 2023). To address that, this agenda calls public authorities to introduce measures that would derisk private financial investments, allowing the mobilization of private financial resources in the context of the so-called 'Wall Street Consensus' (Dafermos et al., 2021; Gabor, 2021; Gabor & Sylla, 2023). In practice, derisking can take place via subsidies that are provided to the private sector to reduce uncertainty about future returns on climate projects, as well as via regulations and guarantees that make these projects less risky. For example, in the Scaling Solar programme in Zambia that was launched in 2015 by World Bank's International Finance Corporation, derisking has taken the form of cheap debt financing, beyond-the-normal tax incentives, payment guarantees, project preparation support, political risk mitigation and reduced land costs (Emery, 2023; Sial, 2024). Derisking tools can also create contingent liabilities for the governments in the Global South and increase public spending without necessarily contributing to climate-aligned development.

The derisking approach to climate investment is particularly problematic from a justice perspective (Dafermos, 2023). For a long time, Global North financial institutions have been financing carbon-intensive companies and projects that have contributed to global warming. Although they have profited from this type of financing which has disproportionately harmed the Global South, they now wish to increase their profitability at the expense of the Global South, exploiting the needs that have been created due to the climate crisis.

3. Towards a globally climate just financial system: key pillars

The three climate finance injustice channels illustrate why the lack of a global justice lens in the ongoing climate finance initiatives is likely to disproportionately harm communities and ecosystems in the Global South. These climate finance injustices cannot be addressed without fundamental transformations in finance. Transforming the financial system so that it is consistent with global climate justice primarily requires actions from governments and global coordination. But it also necessitates actions by central banks, financial regulators/supervisors and (national, bilateral and multilateral) public banks. If successful, these actions can lead to the development of a 'globally climate just financial system'. Table 2 shows the main pillars of such a system that aim at addressing not only the climate finance injustices described in the previous section, but also the traditional climate injustices (compensatory, distributive and procedural injustice).

Table 2. Pillars of a globally climate just financial system.

Pillar	Description	Examples	Type of climate injustice that the pillar tries to address
I: Differentiated climate responsibilities between Global North and Global South financial institutions	Climate adjustments to monetary and financial tools in the Global North prioritize mitigation, while these adjustments in the Global South place more emphasis on adaptation.	Decarbonized collateral frameworks and asset purchases in the Global North; climate adaptation credit controls in the Global South	Compensatory and distributive injustice
II: Alignment of Global North financial institutions' mitigation actions with climate justice	Actions for decarbonizing Global North financial systems penalize companies that engage in green exctractivism.	Introduction of green extractivism conditionalities in collateral frameworks and the lending practices of public banks; higher capital requirements for 'climate unjust' green loans	'Decarbonising by exploiting' injustice
III: Permanent climate justice financial mechanisms	Mechanisms by which the Global North supports the financing of climate spending in the Global South on the basis of climate debt responsibilities	Climate Justice Facility; climate just asset purchases and collateral frameworks	'Exposing by self-protecting' and 'climate derisking' injustice; compensatory, distributive and precedural injustice

3.1. Pillar I — Differentiated climate responsibilities between Global North and Global South financial institutions

3.1.1. Climate mitigation and adaptation tools

Climate monetary and financial tools can be classified into mitigation and adaptation tools (Dafermos, 2023; UNCTAD, 2023). Climate mitigation tools improve the financing conditions for climate mitigation activities and discourage dirty activities. Climate adaptation tools support the financing of activities that help households, communities, corporations and governments to adapt to climate change.

Several monetary and financial policies can be converted into climate mitigation or adaptation tools, or both. They include asset purchases, collateral frameworks, refinancing operations, capital requirements and credit controls (Dafermos, 2022; Dafermos et al., 2022; Dafermos & Nikolaidi, 2022; NGFS, 2021). Let me use collateral frameworks as an example. Collateral frameworks can become a climate mitigation tool if the haircuts and the eligibility of bonds that can be mobilized as collateral from banks to get access to central bank liquidity are adjusted based on the emissions performance of the companies that issue these bonds or the greenness of the underlying projects. At the same time, collateral frameworks can become a climate adaptation tool when they treat favourably (i.e. with lower haircuts and higher eligibility) private or public bonds issued with the purpose of supporting climate adaptation projects.

National public banks can also be instructed by governments to take action that supports climate mitigation and adaptation. For example, they can be asked to allocate a specific proportion of their loans to mitigation or adaptation projects. In some countries, a similar approach can be applied to private banks as well via credit controls.

3.1.2. The role of differentiated responsibilities

In the context of climate justice, decisions about the climate adjustment of monetary and financial policies need to be guided by climate justice considerations. This suggests that Global North and Global South countries need to adopt a 'one size doesn't fit all' approach to the climate alignment of their financial systems. In the Global North, the implementation of climate mitigation tools is urgently needed so as for the financial system to contribute to the reduction of emissions of countries that have the highest responsibility for the climate crisis. On the contrary, in the Global South more emphasis should be placed on how monetary and financial policies can be adjusted to support adaptation.

This does not mean that monetary and financial tools should not be used in the Global South to facilitate the financing of climate mitigation, which is particularly important for avoiding carbon lock-in during the development process. However, when climate mitigation tools are used to support decarbonization in the Global South, the penalties for dirty activities need to be less strict compared to what should be the case in the Global North. The rationale is two-fold: first, Global South countries have a lower responsibility for the climate crisis, and, second, penalties for carbon-intensive activities should not undermine development.

The differentiated responsibilities of Global North and Global South financial institutions would help address the compensatory injustice associated with the high past emissions of the Global North. The differentiated responsibilities would also help address the distributive injustice related to the unfairly higher climate harm in the Global South and the lower capacity of countries in the Global South to address this harm due to the hierarchies of the global financial architecture.

3.2. Pillar II — Alignment of Global North financial institutions' mitigation actions with climate justice

From a global justice perspective, simply decarbonizing their monetary and financial policies would not be sufficient for Global North countries. As explained above, many companies that try to reduce their emissions – and might be supported by Global North financial systems via climate mitigation tools – rely (directly or indirectly) on green extractivist practices that have adverse effects on societies and ecosystems in the Global South.

The 'decarbonising by exploiting' finance injustice suggests that when they use climate mitigation tools to support the financing of decarbonization, Global North governments, national public banks, central banks and financial supervisors/regulators should ensure that companies that engage in green extractivism are not supported. The same is the case for public banks and private financial institutions that might provide 'green' loans in favourable terms (e.g. with lower interest rates) to companies that potentially exploit Global South communities to achieve climate mitigation targets. Any support to such companies should be conditional to the lack of green extractivist practices. In addition, penalties (e.g. higher capital requirements) should be introduced for 'climate unjust' green loans. This would require the collection of data on how companies address their needs for transition materials (e.g. whether the supply chains and renewable energy projects of companies are conducive to conflicts), the local implications of large-scale renewable energy projects and the exact carbon offsets that companies rely on in order to achieve decarbonization targets (i.e. to what extent these carbon offsets are linked with projects that adversely affect Global South communities).

This data needs to be collected by public authorities and 'green extractivism' conditionalities should be incorporated simultaneously into several policy tools, most notably fiscal, regulatory and trade tools, not just monetary/financial tools. For example, companies that produce electric vehicles should not be allowed to receive green subsidies from governments unless they present credible data showing that their green materials have not been extracted in ways that have harmed indigenous people and local ecosystems; or governments should not allow companies to place 'green' products on the markets of their countries unless these companies prove that they greenness of the products is not associated with land grabbing and other green extractivist practices.[2]

3.3. Pillar III — Permanent climate justice financial mechanisms

The financing of the growing climate-related spending in the Global South cannot rely only on national policies. Support from Global North to Global South governments is essential as well. This has been recognized by the UNFCCC which has called for financial assistance from Annex II Parties to non-Annex I Parties. As a result of this call, climate finance from Global North to Global South has increased over the last years. However, the amount of finance has remained very low and the vast majority of it has been in the form of loans and covers mitigation (OECD, 2024), despite the urgency of investing much more in adaptation in the Global South.

3.3.1. Key climate justice facts and principles

To develop proposals that can support climate financing in the Global South in a way that reduces climate-induced instability and is consistent with compensatory and distributive justice perspectives, we need to use the following facts as starting points. First, for several decades, central banks in the Global North have supported the financing of public spending through money creation. They have been able to do so due to the powerful position of their countries in the global financial architecture. Central banks in the Global South have not been able to support public spending in the same way. This was very clearly illustrated during the COVID-19 crisis when fiscal spending in the Global North increased much more compared to fiscal spending in the Global South (Stevano et al., 2021). Therefore, compared to governments in the Global North, Global South governments have a lower capacity to finance climate mitigation and adaptation, as well as spending related to loss and damage.

Second, Global North countries owe a climate debt to Global South countries — a historical debt that these countries have acquired due to their disproportionated contribution to greenhouse gas emissions (Adow, 2020; Warlenius, 2018). Climate justice financial mechanisms should, thus, be designed such that they lead to the repayment of this climate debt instead of creating more debt for countries in the Global South. This would be consistent with compensatory justice.

Third, climate loss and damage will increase exponentially in the coming years (even in the scenario that global warming will be limited to less than 2 °C) and will require an increasing amount of climate spending. The increasing need for spending on loss and damage suggests that mechanisms that allow the automatic financing of spending for losses and damages are essential. For instance, if discussions about the provision of financial support take place only after a severe climate-related event has occurred in a Global South country, it is very likely that the support will be delayed and fragmented.

3.3.2. Existing proposals and initiatives

Recent years have seen several proposals and initiatives that try to address the climate reality associated with some of these facts. These include debt relief programmes and debt-for-climate swaps (Chamon et al., 2022; Essers et al., 2021; Thomas & Theokritoff, 2021; Volz et al., 2020; Zucker-Marques & Volz, 2023), as well as the climate use of Special Drawing Rights (SDRs) (Mariotti, 2022; Persaud, 2023). These proposals can partially deal with some of the structural problems that stem from the global financial architecture. But they do not explicitly address the existence of climate debt and they are not designed to cover the increasing amount of climate adaptation, loss and damage spending.[3] The Loss and Damage Fund that was established in COP28 (see UNFCCC, 2023) has the potential to cover some loss and damage spending for countries in the Global South. However, a key limitation of the Fund is that the contributions of Global North countries to the Fund are not mandatory. This reflects the failure to recognize the existence of a climate debt and makes it unlikely that the funds collected will be enough to cover the needs of the Global South on loss and damage spending.

In contrast to the above proposals, climate reparations (Fanning & Hickel, 2023; Perry, 2021) or a fossil fuel levy that would fund reconstruction spending after a climate event in climate vulnerable countries (Persaud, 2023) can deal more explicitly with the climate injustice issues that are directly associated with the existence of climate debt. However, reparations and levies rely on pre-existing financial resources and, thus, their size cannot be sufficiently high to cover the growing needs for spending on climate adaptation, loss and damage.

3.3.3. The Climate Justice Facility

To address the climate reality facing the Global South we, therefore, need a more holistic framework. Such a framework should rely on the establishment of climate justice financial mechanisms that would create a commitment for governments in the Global North to provide, on a permanent basis, climate financing support to Global South governments, in the context of global climate justice. The main climate justice financial mechanism would be what I call a *Climate Justice Facility* (CJF). This would involve the creation of money by Global North central banks for the provision of climate justice loans to Global South governments. The CJF would have the following features:

- The climate justice loans to Global South governments would be perpetual: they would not have a maturity date and, thus, their principal would not be repaid. The lack of principal repayment would compensate for the climate debt that Global North countries owe to the Global South.

- Global North countries would contribute to the finance provided by the CJF based on their historical emissions and capabilities, in line with compensatory and distributive justice. Global East countries would be both contributors to and recipients of the finance provided by the CJF. They would contribute to the CJF based on their historical emissions and capabilities but, contrary to the Global North countries, they would also receive finance from the CJF to cover spending on adaptation and losses and damages.
- The interest rate on climate loans should be equal to zero to avoid increasing the financial burden of Global South countries. Alternatively, the interest rate could be slightly higher than zero to (partially) compensate for the potential adverse implications that the CJF would have for the value of the currencies of Global North countries.

Figure 1 shows the steps involved in the provision of climate justice loans through the CJF. First, Global South governments that need to invest in climate adaptation and/or need to spend money to cover climate-related losses submit funding requests to the CJF. Then, as a second step, the CJF processes these requests. If it accepts them (based on certain criteria), it automatically submits requests to Global North central banks to issue reserves according to the climate responsibilities of their countries. In the third step, the Global North central banks issue reserves and provide climate justice loans to the CJF. Then, as part of the fourth step, the CJF collects these loans from the different central banks and creates pools of climate justice loans that it provides to Global South governments. These loans can be denominated in a Global North currency (e.g. USD), in the currency of the Global South country or in a combination of these currencies. This depends on the needs of the Global South government that should be specified in the request that is made as part of the first step.

Figure 2 provides an example of how the CJF would work from a balance sheet perspective. Suppose that Barbados suffers from a climate-related event and needs a perpetual climate justice loan to deal with climate-related financial losses in properties and infrastructure. Once its request to the CJF has been accepted, Global North central banks (in the figure I use only six of them as an illustration) will be asked by the CJF to issue reserves, which will appear on the liability side of their balance sheet. This money creation will allow them to provide climate justice loans to the CJF — these loans will be added to the asset side of their balance sheet. The CJF will then collect the loans which are in different currencies

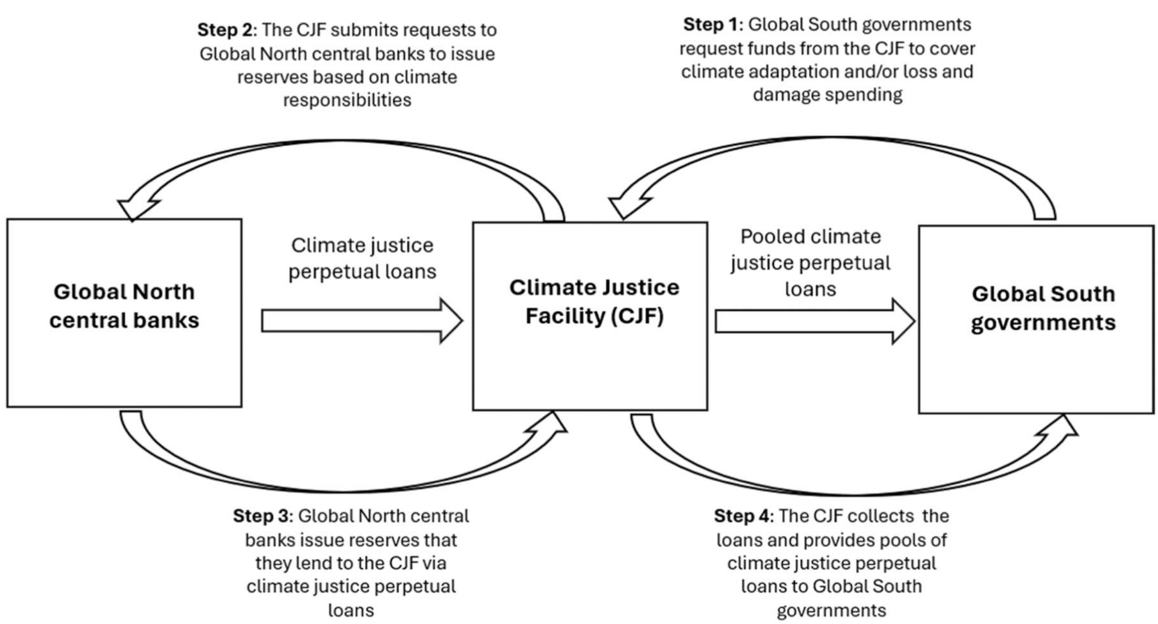

Figure 1. Steps involved in the provision of climate justice loans through the Climate Justice Facility.

ECB	
+EUR climate justice loan	+EUR reserves

Fed	
+USD climate justice loan	+USD reserves

Bank of England	
+GBP climate justice loan	+GBP reserves

Bank of Japan	
+JPY climate justice loan	+ JPY reserves

Reserve Bank of Australia	
+AUD climate justice loan	+AUD reserves

Bank of Canada	
+CAD climate justice loan	+CAD reserves

Climate Justice Facility (CJF)	
+BBD/USD pooled climate justice perpetual loan	+EUR climate justice loan
	+USD climate justice loan
	+GBP climate justice loan
	+JPY climate justice loan
	+AUD climate justice loan
	+CAD climate justice loan

Government of Barbados	
+ BBD/USD deposit	+ BBD/USD pooled climate justice perpetual loan

Figure 2. Balance sheet representation of the mechanics of the Climate Justice Facility: illustrative example.

and will transform them into a pooled climate justice loan in BBD and/or USD (depending on the request of the Government of Barbados) that will appear on the asset side of the balance sheet of the CJF. After that, the Government of Barbados' CJF deposit account will be credited and the pooled climate justice loan will be added to the liability side of the balance sheet of the government, remaining permanently there since it will never be repaid.

A few additional points about the CJF are in order:

- The funds that countries would receive from the CJF for climate adaptation purposes could be managed by national designated authorities or accredited entities, drawing for instance on the processes that have been developed by the Green Climate Fund (see Caldwell & Larsen, 2021). However, such processes should substantially improve from a transparency and accountability perspective; see Kalinowski (2024) for the problems that have been faced in the case of the Green Climate Fund. At the same time, formal mechanisms need to be developed that ensure that local knowledge is properly integrated into the design of projects and that local communities are at the core of decision-making processes, in line with procedural justice (Omukuti et al., 2022; Soanes et al., 2021).[4] Civil society and community-based organizations can play a key role in that.[5]
- Fast track processes should be put in place to ensure that those affected by acute climate-related events receive funds quickly. Loss and damage associated with gradual changes in climate patterns can rely on procedures like those used for climate adaptation.
- The CJF should be viewed as a complementary tool and not as a substitute for other climate justice initiatives that governments of Global North countries need to take (such as debt relief programmes, climate use of SDRs and climate reparations). A specific advantage of the CJF is that – instead of relying only on pre-existing financial resources – it would lead to the creation of new financial resources through the endogenous creation of money by central banks in the Global North. This could significantly expand the financial capacity for undertaking climate spending.

- The CJF would reduce the power of global private financial institutions since it would make their presence for climate finance purposes in the Global South less necessary. Thus, it would reduce the 'derisking' climate finance injustice. It would also allow governments in the Global South to focus on how to develop climate projects that work for the local population, instead of using resources to create an environment that is conducive to the profitability of private financial institutions, but does not necessarily promote effective climate solutions and procedural justice.
- The existence of a permanent mechanism for financial support for climate vulnerable Global South countries would reduce their physical risks and would, therefore, limit the deterioration of their ratings by credit rating agencies. It would, thus, attenuate the strength of the 'exposing by self-protecting' channel.
- The CJF can create both depreciation and appreciation exchange rate pressures on Global North currencies (versus Global South currencies). The depreciation pressures are related to the issuance of Global North currencies which would increase the supply of these currencies. The appreciation pressures are associated with the fact that a part of the climate spending in the Global South would take the form of Global North exports (e.g. machineries and technologies to the Global South to build climate-resilient infrastructure).

3.3.4. Other climate justice financial tools

Apart from the CJF, additional climate justice financial mechanisms could include climate just asset purchases and climate just collateral frameworks. Climate just asset purchases would involve the purchase by Global North central banks of climate bonds issued by Global South governments and non-financial corporations. Climate just collateral frameworks are frameworks whereby these climate bonds are included in the assets that Global North central banks accept as collateral for the provision of central bank money to financial institutions. Both climate justice asset purchases and collateral frameworks would reduce the cost of borrowing for climate-related spending in the Global South, since they would increase the demand for these bonds.

4. Is a globally climate just financial system politically and technically feasible?

4.1. Political economy challenges

From a political economy point of view, developing a globally climate just financial system would face several barriers. First, governments in the Global North would need to accept that their climate debt has created a moral responsibility to support climate spending in the Global South on a permanent basis. This view might not be very popular among citizens in the Global North. However, higher political support could be achieved if Global North governments highlight in their narratives that their countries can benefit from higher economic stability in the Global South (which would, for instance, reduce the number of climate refugees), as well as that part of the money that their central banks would create to support climate spending in the Global South (through the CJF) would return to Global North countries in the form of additional exports.

Second, powerful Global North private financial institutions are unlikely to support the development of a globally climate just financial system since this would reduce their structural power. Currently, the lack of financing mechanisms that address climate justice allows these institutions to affect policy making in the Global South since they can present themselves as 'climate fixers' in the sense that they can provide finance to climate projects that Global South governments cannot fund due to their limited policy space. It is, therefore, likely that these institutions will undermine initiatives that can reduce their ability to influence political decisions in the Global South.

Third, the mandates of the central banks in the Global North would need to be modified to support the commitments of their governments to address global climate justice. Once governments have made such commitments and these commitments are reflected in their policies, most Global North central banks would automatically be required to support global climate justice commitments as part of their secondary mandates. This would not, however, be sufficient for implementing the Pillar III mechanisms. For this to happen it would be necessary for governments to instruct central banks to put global climate justice commitments above primary mandates. This would be politically challenging since central banks typically resist to take responsibilities for issues that go beyond their standard mandates, such as inflation targeting.

Despite these challenges, the political feasibility of an agenda that would be conducive to a globally climate just financial system might gradually change. As the climate crisis deepens and the global injustices of climate change become even more visible, governments in the Global South are likely to increase their pressure on Global North governments to address the injustice problem.

4.2. Technical challenges

The development of a globally climate just financial system also faces significant technical challenges. Public authorities need to play a leading role in addressing these challenges. A very crucial technical challenge is how to define climate adaptation projects. Several taxonomies of sustainable activities include adaptation activities (see, for example, CBI-UNDRR, 2023; UNEP, 2024, p. 59). However, specific screening criteria should be developed in identifying these projects at the micro level.

An additional technical challenge is the quantification of the climate debt responsibilities of Global North countries in the context of climate justice mechanisms and the development of the technical details about the issuance of climate loans from Global South governments.[6] Equally challenging is the collection of data for the impacts that Global North companies have on Global South communities though green extractivist practices. The quantification of these impacts is essential for the incorporation of climate justice criteria in financial regulation, monetary policies and the lending practices of private and public banks. Such quantification can rely on collaborative projects of activists and researchers, such as the Global Environmental Justice Atlas (Temper et al., 2015), as well as on new types of data collection, such as satellite monitoring. Capacity building programmes, organized through equitable partnerships, can also play a crucial role.

5. Conclusion

Using a global justice perspective, this paper has analysed how climate finance has failed to address compensatory, distributive and procedural climate justice issues, reflecting the structural problems of the global financial architecture. The paper has also specified how climate finance initiatives have created new sources of climate injustice associated with the risk exposure approaches of financial institutions, as well as with green extractivism and climate derisking.

To address these injustices, the paper has made the following key recommendations. First, efforts to make financial systems climate-aligned should follow a ‘one size doesn’t fit all’ approach. Second, green extractivism conditionalities should become a central component of the decarbonization of financial systems in the Global North. Third, permanent climate justice financial mechanisms, such as a Climate Justice Facility and climate just collateral frameworks, should become an integral part of a holistic policy framework aiming at addressing global climate injustice. Fourth, public authorities should play a leading role in addressing the technical challenges associated with the incorporation of global justice into climate finance.

Three limitations of the paper should be highlighted. First, the paper has only focused on global climate justice: other types of climate injustices, such as those related to gender and race, have not been analysed.[7] Second, developing a climate just financial system would not be sufficient to address the injustices of the climate crisis. The latter would also require significant transformations to fiscal, regulatory and trade policies, but also to several structural features of the global financial system. Third, the injustices associated with environmental problems that move beyond climate, such as water scarcity, deforestation and biodiversity loss, have not been explored. Adopting a broader environmental justice perspective is essential for a successful transformation of finance.

Notes

1. It is beyond the scope of the paper to define which countries should be classified as Global North and South. However, for the purposes of the paper, Global North could be considered as the Annex II Parties in the United Nations Framework Convention

on Climate Change (UNFCCC) framework and Global South as the Non-Annex I Parties that are also ODA (Official Development Assistance) recipients. This binary distinction does not imply that every country should belong to one of these two categories. A large number of countries, often referred to as the Global East, have semi-periphery characteristics that do not allow them to qualify neither as Global North nor as Global South (Müller, 2020). Identifying these countries requires a more dynamic approach that goes beyond the rigid categorisation adopted by the UNFCCC framework (Pauw et al., 2024). The Global East can include not only the economies in transition (such as Poland and the Russian Federation) and the non-Annex I Parties that are not ODA recipients (such as Qatar, Singapore, South Korea and United Arab Emirates), but also other non-Annex I Parties that are ODA recipients, but have sufficiently high historical emissions, their per capital income is relatively high, their climate vulnerability is relatively low and their indebtedness is not high. Since some of these features can change as time passes, throughout the paper it is implicitly assumed that countries can dynamically move between the Global South and the Global East categories.
2. Such policies could be designed following the example of the EU Regulation on Deforestation-free Products according to which companies are not permitted to place specific products on the European market unless they can prove that these products are deforestation-free (European Union, 2023).
3. For the limitations of debt-for-climate swaps, see Fresnillo (2023) and Latindadd (2023). For the limitations of SDRs, see Pforr et al. (2022) and van Tilburg et al. (2022).
4. Some useful lessons can be learned from Kenya's County Climate Change Funds; see Climate Investment Funds (2024).
5. For the role of such organisations in climate adaptation fund projects, see Manuamorn et al. (2020).
6. For the quantification of such responsibilities, see Callahan and Mankin (2022), Fanning and Hickel (2023), Rajamani et al. (2021) and Skeie et al. (2017).
7. For the disproportionate impact of climate change on women and racialised communities, see e.g. Pearse (2017), Eastin (2018), Abimbola et al. (2021), Ahmed and Eklund (2021) and Perry (2023).

Acknowledgements

I would like to thank the editor, Pieter Pauw, and two anonymous reviewers for their constructive comments that significantly improved the paper. Previous versions of the paper were presented at the 24th Annual Conference of the Association for Heterodox Economics (July 2022), the seminar series of the SOAS Centre for Global Finance (March 2023), the Progressive Economics conference at the University of Greenwich (June 2023), the 27th FMM Conference (October 2023), the Financial Innovation Laboratory in Brazil (October 2023), the Federal University of Minas Gerais (December 2023) and the Bank of England (March 2024). I am grateful to participants, and especially to Marco Aurélio Crocco, Oswald Mungule and Victor Murinde, for useful comments. The paper has also benefited from comments by Antonio Andreoni, Manuel Garcia Dellacasa, Angelos Diamantopoulos, Tobias Franz, Vaibhav Mishra, Miguel Niño-Zarazúa, Surbhi Kesar, James McDonald, Maria Nikolaidi and Ezgi Unsal. The usual disclaimers apply.

Disclosure statement

No potential conflict of interest was reported by the author.

References

Abimbola, O., Aikins, J. K., Makhesi-Wilkinson, T., & Roberts, E. (2021). *Racism and climate (in) justice: How racism and colonialism shape the climate crisis and climate action*. Heinrich Böll-Stiftung, Washington, DC. https://us.boell.org/en/2021/03/19/racism-and-climate-injustice-0

Adow, M. (2020). The climate debt: What the West owes the rest. *Foreign Affairs*, *99*, 60–68. https://www.foreignaffairs.com/articles/world/2020-04-13/climate-debt

Ahmed, S., & Eklund, E. (2021). Climate change impacts in coastal Bangladesh: Migration, gender and environmental injustice. *Asian Affairs*, *52*(1), 155–174. https://doi.org/10.1080/03068374.2021.1880213

Alami, I., Alves, C., Bonizzi, B., Kaltenbrunner, A., Koddenbrock, K., Kvangraven, I., & Powell, J. (2023). International financial subordination: A critical research agenda. *Review of International Political Economy*, *30*(4), 1360–1386. https://doi.org/10.1080/09692290.2022.2098359

Alogoskoufis, S., Dunz, N., Emambakhsh, T., Hennig, T., Kaijser, M., Kouratzoglou, C., Muñoz, M. A., Parisi, L., & Salleo, C. (2021). ECB economy-wide climate stress test: Methodology and results, ECB Occasional Paper 281. https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op281~05a7735b1c.en.pdf

Bangladesh Bank. (2024). *Quarterly review report on sustainable finance of banks and financial institutions*. Sustainable Finance Department, July-September 2024. https://www.bb.org.bd//pub/quaterly/greenbanking/qrrsf_jul_sep2024.pdf

Bank of England. (2021). *Options for greening the Bank of England's Corporate Bond Purchase Scheme*. Bank of England Discussion Paper, London. https://www.bankofengland.co.uk/paper/2021/options-for-greening-the-bank-of-englands-corporate-bond-purchase-scheme

Bank of England. (2022). *Results of the 2021 Climate Biennial Exploratory Scenario (CBES)*, London. https://www.bankofengland.co.uk/stress-testing/2022/results-of-the-2021-climate-biennial-exploratory-scenario

Baudino, P., & Svoronos, J. P. (2021). *Stress-testing banks for climate change: a comparison of practices*. Bank for International Settlements, Financial Stability Institute. https://www.bis.org/fsi/publ/insights34.pdf

Beirne, J., Renzhi, N., & Volz, U. (2021). Feeling the heat: Climate risks and the cost of sovereign borrowing. *International Review of Economics & Finance*, *76*, 920–936. https://doi.org/10.1016/j.iref.2021.06.019

Bruna, N. (2022). A climate-smart world and the rise of green extractivism. *The Journal of Peasant Studies*, *49*(4), 839–864. https://doi.org/10.1080/03066150.2022.2070482

Caldwell, M., & Larsen, G. (2021). *Improving access to the green climate fund: How the fund Can better support developing country institutions*. Working Paper. World Resources Institute. https://doi.org/10.46830/wriwp.19.00132

Callahan, C. W., & Mankin, J. S. (2022). National attribution of historical climate damages. *Climatic Change*, *172*(40). https://doi.org/10.1007/s10584-022-03387-y

CBI-UNDRR. (2023). *Designing a climate resilience classification framework*. Climate Bonds Initiative and UN Office for Disaster Risk Reduction. https://www.undrr.org/publication/designing-climate-resilience-classification-framework-facilitate-investment-climate

Chamon, M. M., Thakoor, M. V. V., & Zettelmeyer, M. J. (2022). *Debt-for-climate swaps: Analysis, design, and implementation*. International Monetary Fund, WP/22/162. https://www.imf.org/en/Publications/WP/Issues/2022/08/11/Debt-for-Climate-Swaps-Analysis-Design-and-Implementation-522184

Church, C., & Crawford, C. (2018). *Green conflict minerals: The fuels of conflict in the transition to a low-carbon economy*. International Institute for Sustainable Development. https://www.iisd.org/publications/report/green-conflict-minerals-fuels-conflict-transition-low-carbon-economy

Climate Investment Funds. (2024). *Transformational climate finance: Kenya's County Climate Change Funds*, April. https://www.cif.org/sites/cif_enc/files/knowledge-documents/tcf_kenya_case_study_apr11-compressed.pdf

Dafermos, Y. (2022). Climate change, central banking and financial supervision: Beyond the risk exposure approach. In S. Kappes, L.-P. Rochon, & G. Vallet (Eds.), *The future of central banking* (pp. 175–194). Cheltenham, UK and Northampton, MA, USA: Edward Elgar. https://www.elgaronline.com/edcollbook/book/9781839100932/9781839100932.xml

Dafermos, Y. (2023). *Climate change and central banking in least developed countries*. Background paper commissioned by the UNCTAD secretariat for the 2023 edition of the Least Developed Countries Report. https://unctad.org/system/files/non-official-document/ldc2023_bd-yannis-dafermos_en.pdf

Dafermos, Y., Gabor, D., & Michell, J. (2021). The Wall Street consensus in pandemic times: What does it mean for climate-aligned development? *Canadian Journal of Development Studies / Revue Canadienne D'études du Développement*, *42*(1-2), 238–251. https://doi.org/10.1080/02255189.2020.1865137

Dafermos, Y., Gabor, D., Nikolaidi, N., Gogolewski, J., & Vargas, M. (2023). *Broken promises: The ECB's widening Paris gap*. SOAS University of London; University of Greenwich; University of the West of England; Greenpeace. https://www.greenpeace.de/publikationen/EZB_Report%20_Broken_promises.pdf

Dafermos, Y., Gabor, D., Nikolaidi, M., & van Lerven, F. (2022). *Greening collateral frameworks*, The INSPIRE Sustainable Central Banking Toolbox. Policy Briefing Paper 7. SOAS Centre for Sustainable Finance; LSE Grantham Research Institute on Climate Change and the Environment. https://www.lse.ac.uk/granthaminstitute/publication/greening-collateral-frameworks/

Dafermos, Y., & Nikolaidi, M. (2022). *Greening capital requirements*. The INSPIRE Sustainable Central Banking Toolbox, Policy Briefing Paper 8. SOAS Centre for Sustainable Finance; LSE Grantham Research Institute on Climate Change and the Environment. https://www.lse.ac.uk/granthaminstitute/publication/greening-capital-requirements/

de Ridder, K., Schultz, F. C., & Pies, I. (2023). Procedural climate justice: Conceptualizing a polycentric solution to a global problem. *Ecological Economics*, *214*, 107998. https://doi.org/10.1016/j.ecolecon.2023.107998

Dorn, F. M., Hafner, R., & Plank, C. (2022). Towards a climate change consensus: How mining and agriculture legitimize green extractivism in Argentina. *The Extractive Industries and Society*, *11*, 101130. https://doi.org/10.1016/j.exis.2022.101130

Eastin, J. (2018). Climate change and gender equality in developing states. *World Development*, *107*, 289–305. https://doi.org/10.1016/j.worlddev.2018.02.021

ECB. (2022). *How are we decarbonising our corporate bond holdings?* European Central Bank, https://www.ecb.europa.eu/ecb/educational/explainers/html/decarbonising_corporate_bond_holdings.en.html, 19 September 2022 (updated on 1 October 2022)

Emery, T. (2023). *Solar can't scale in the dark*. Energy for Growth Hub. https://energyforgrowth.org/wp-content/uploads/2023/06/2023-05-08_Teal-Emery_Scaling-Solar.pdf

Essers, D., Cassimon, D., & Prowse, M. (2021). Debt-for-climate swaps: Killing two birds with one stone? *Global Environmental Change*, *71*, 102407. https://doi.org/10.1016/j.gloenvcha.2021.102407

European Central Bank (ECB). (2022a). *ECB takes further steps to incorporate climate change into its monetary policy operations*. Press release, 4 July. https://www.ecb.europa.eu/press/pr/date/2022/html/ecb.pr220704~4f48a72462.en.html

European Central Bank (ECB). (2022b). *ECB provides details on how it aims to decarbonise its corporate bond holdings*. Press release, 19 September. https://www.ecb.europa.eu/press/pr/date/2022/html/ecb.pr220919~fae53c59bd.en.html

European Union. (2023). Regulation (EU) 2023/1115 of the European Parliament and of the Council, Official Journal of the European Union, L 150/206, 9/6/2023. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R1115

Fairhead, J., Leach, M., & Scoones, I. (2012). Green grabbing: A new appropriation of nature? *Journal of Peasant Studies*, *39*(2), 237–261. https://doi.org/10.1080/03066150.2012.671770

Fanning, A. L., & Hickel, J. (2023). Compensation for atmospheric appropriation. *Nature Sustainability*, *6*(9), 1077–1086. https://doi.org/10.1038/s41893-023-01130-8

Fornaroli, P. (2023). *Green extractivism and the decarbonization of monetary policy: The case of the ECB's corporate QE programme* [Unpublished Master's thesis]. EPOG.

Franz, T., & McNelly, A. (2024). *The "Finance-Extraction-Transitions Nexus": Geographies of the green transition in the 21st Century*. https://doi.org/10.1111/anti.13049

Fresnillo, I. (2020). *A tale of two emergencies: The interplay of sovereign debt and climate crises in the Global South*. European Network on Debt and Development (eurodad). https://www.eurodad.org/a_tale_of_two_emergencies_the_interplay_of_sovereign_debt_and_climate_crises_in_the_global_south

Fresnillo, I. (2023). *Miracle or mirage? Are debt swaps really a silver bullet?* European Network on Debt and Development (eurodad). https://www.eurodad.org/miracle_or_mirage

Gabor, D. (2021). The Wall Street Consensus. *Development and Change*, *52*(3), 429–459. https://doi.org/10.1111/dech.12645

Gabor, D., & Sylla, S. S. (2023). Derisking developmentalism: A tale of green hydrogen. *Development and Change*, *54*(5), 1169–1196. https://doi.org/10.1111/dech.12779

Galanis, G., Napoletano, M., Popoyan, L., Sapio, A., & Vardakoulias, O. (2025). Defining just transition. *Ecological Economics*, *227*, 108370. https://doi.org/10.1016/j.ecolecon.2024.108370

Güngen, A. R. (2023). New multilateral development banks and green lending: Approaching scalar complexities in the Global South. *Development and Change*, *54*(2), 251–279. https://doi.org/10.1111/dech.12755

Hesketh, C. (2022). Clean development or the development of dispossession? The political economy of wind parks in Southern Mexico. *Environment and Planning E: Nature and Space*, *5*(2), 543–565. https://doi.org/10.1177/2514848621991764

Hu, Z. (2023). Towards solar extractivism? A political ecology understanding of the solar energy and agriculture boom in rural China. *Energy Research & Social Science*, *98*, 102988. https://doi.org/10.1016/j.erss.2023.102988

IMF. (2022). *Global Financial Stability Report: Navigating the high-inflation environment*, October. https://www.imf.org/en/Publications/GFSR/Issues/2022/10/11/global-financial-stability-report-october-2022

Kalinowski, T. (2024). The green climate fund and private sector climate finance in the Global South. *Climate Policy*, *24*(3), 281–296. https://doi.org/10.1080/14693062.2023.2276857

Kling, G., Volz, U., Murinde, V., & Ayas, S. (2021). The impact of climate vulnerability on firms' cost of capital and access to finance. *World Development*, *137*, 105131. https://doi.org/10.1016/j.worlddev.2020.105131

Latindadd. (2023). *Debt-for-climate swaps: can they be aligned with debt and climate justice?* November 2023. https://latindadd.org/informes/debt-for-climate-swaps-can-they-be-aligned-with-debt-and-climate-justice/.

Lyons, K., & Westoby, P. (2014). Carbon colonialism and the new land grab: Plantation forestry in Uganda and its livelihood impacts. *Journal of Rural Studies*, *36*, 13–21. https://doi.org/10.1016/j.jrurstud.2014.06.002

Manuamorn, O. P., Biesbroek, R., & Cebotari, V. (2020). What makes internationally-financed climate change adaptation projects focus on local communities? A configurational analysis of 30 adaptation fund projects. *Global Environmental Change*, *61*, 102035. https://doi.org/10.1016/j.gloenvcha.2020.102035

Mariotti, C. (2022). *Why the IMF Resilience and Sustainability Trust is not a silver bullet for Covid-19 recovery and the fight against climate change*. eurodad. https://www.eurodad.org/resilience_and_sustainability_trust_not_silver_bullet_covid19_climate_change

Marois, T. (2021). *Public banks: Decarbonisation, definancialisation, and democratisation*. Cambridge University Press. https://www.cambridge.org/core/books/public-banks/0EC8E41F837E1F10BE53FC31DA83D012

Monsod, T. M. C., Majadillas, M. A., & Gochoco-Bautista, M. S. (2023). Unlocking the flow of finance for climate adaptation: Estimates of 'fiscal space' in climate-vulnerable developing countries. *Climate Policy*, *23*(6), 735–746. https://doi.org/10.1080/14693062.2023.2224281

Müller, M. (2020). In search of the Global East: Thinking between North and South. *Geopolitics*, 25(3), 734-755. https://doi.org/10.1080/14650045.2018.1477757.

Mundey, P., Amiot, M., & Sifon-Arevalo, R. (2022). *Weather warning: assessing countries' vulnerability to economic losses from physical climate risks*. S&P Global Ratings. https://www.spglobal.com/_assets/documents/ratings/research/101529900.pdf

NGFS. (2021). *Adapting central bank operations to a hotter world: Reviewing some options*. Network for Greening the Financial System. https://www.ngfs.net/en/publications-and-statistics/publications/adapting-central-bank-operations-hotter-world-reviewing-some-options

OECD. (2024). *Climate finance provided and mobilised by developed countries in 2013–2022*. OECD Publishing. https://www.oecd.org/en/publications/2024/05/climate-finance-provided-and-mobilised-by-developed-countries-in-2013-2022_8031029a.html

Okereke, C. (2010). Climate justice and the international regime. *Wiley Interdisciplinary Reviews: Climate Change*, *1*(3), 462–474. https://doi.org/10.1002/wcc.52

Omukuti, J., Barrett, S., White, P. C., Marchant, R., & Averchenkova, A. (2022). The green climate fund and its shortcomings in local delivery of adaptation finance. *Climate Policy*, *22*(9-10), 1225–1240. https://doi.org/10.1080/14693062.2022.2093152

Pauw, W. P., König-Sykorova, M., Valverde, M. J., & Zamarioli, L. H. (2024). More climate finance from more countries? *Current Climate Change Reports*, *10*(4), 61–79. https://doi.org/10.1007/s40641-024-00197-5

Pearse, R. (2017). Gender and climate change. *Wiley Interdisciplinary Reviews: Climate Change*, *8*(2), e451. https://doi.org/10.1002/wcc.451

People's Bank of China. (2021). *The People's Bank of China launches the carbon emission reduction facility*, November. http://www.pbc.gov.cn/en/3688110/3688172/4157443/4385345/index.html

Perry, K. K. (2021). The new 'bond-age', climate crisis and the case for climate reparations: Unpicking old/new colonialities of finance for development within the SDGs. *Geoforum; Journal of Physical, Human, and Regional Geosciences*, *126*, 361–371. https://doi.org/10.1016/j.geoforum.2021.09.003

Perry, K. K. (2023). (Un)Just transitions and Black dispossession: The disposability of Caribbean 'refugees' and the political economy of climate justice. *Politics*, *43*(2), 169–185. https://doi.org/10.1177/02633957211041441

Persaud, A. (2023). Breaking the deadlock on climate: The Bridgetown Initiative, GREEN. *Géopolitique, réseaux, énergie, Environnement, Nature*, *3*, 99–103. https://shs.cairn.info/journal-green-2023-1-page-99?lang=en

Pforr, T., Pape, F., & Murau, S. (2022). *After the allocation: What role for the Special Drawing Rights system?* Institute for New Economic Thinking. Working Paper 180. https://www.ineteconomics.org/uploads/papers/WP_180-Murau-et-al.pdf

Rajamani, L., Jeffery, L., Höhne, N., Hans, F., Glass, A., Ganti, G., & Geiges, A. (2021). National 'fair shares' in reducing greenhouse gas emissions within the principled framework of international environmental law. *Climate Policy*, *21*(8), 983–1004. https://doi.org/10.1080/14693062.2021.1970504

Reserve Bank of India (RBI). (2023). *Framework for acceptance of green deposits*. https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=12487

Schinko, T., Mechler, R., Hochrainer-Stigler, S., Mechler, R., Bouwer, L. M., Schinko, T., & Surminski, S. (2019). The risk and policy space for loss and damage: Integrating notions of distributive and compensatory justice with comprehensive climate risk management. In: R. Mechler, L. M. Bouwer, T. Schinko, S. Surminski & J. Linnerooth-Bayer (Eds.), *Loss and damage from climate change: Concepts, methods and policy options* (pp. 83–110). Cham, Switzerland: Springer Nature. https://link.springer.com/book/10.1007978-3-319-72026-5

Sial, F. (2024). *Blended finance for climate action: The experiences of South Africa and Zambia*. European Network on Debt and Development (eurodad). https://www.eurodad.org/blended_finance_for_climate_action_good_value_for_money

Skeie, R. B., Fuglestvedt, J., Berntsen, T., Peters, G. P., Andrew, R., Allen, M., & Kallbekken, S. (2017). Perspective has a strong effect on the calculation of historical contributions to global warming. *Environmental Research Letters*, *12*(2), 024022. https://doi.org/10.1088/1748-9326/aa5b0a

Soanes, M., Bahadur, A., Shakya, C., Smith, B., Patel, S., Rumbaitis del Rio, C., Coger, T., Dinshaw, A., Patel, S., Huq, S., Musa, M., Rahman, F., Gupta, S., Dolcemascolo, G., & Mann, T. (2021). *Principles for locally led adaptation: A call to action*. International Institute for Environment and Development, London. https://www.iied.org/sites/default/files/pdfs/2021-01/10211IIED.pdf

Stephens, J. C., & Sokol, M. (2024). Financial innovation for climate justice: Central banks and transformative 'creative disruption. *Climate and Development*, *16*(9), 762–773. https://doi.org/10.1080/17565529.2023.2268589

Stevano, S., Franz, T., Dafermos, Y., & Van Waeyenberge, E. (2021). COVID-19 and crises of capitalism: Intensifying inequalities and global responses. *Canadian Journal of Development Studies*, *42*(1-2), 1–17. https://doi.org/10.1080/02255189.2021.1892606

Sun, X., Shen, Y., Guo, K., & Ji, Q. (2023). Sovereign ratings change under climate risks. *Research in International Business and Finance*, *66*, 102040. https://doi.org/10.1016/j.ribaf.2023.102040

Svartzman, R., & Althouse, J. (2022). Greening the international monetary system? Not without addressing the political ecology of global imbalances. *Review of International Political Economy*, *29*(3), 844–869. https://doi.org/10.1080/09692290.2020.1854326

Temper, L., Del Bene, D., & Martinez-Alier, J. (2015). Mapping the frontiers and front lines of global environmental justice: The EJAtlas. *Journal of Political Ecology*, *22*(1), 255–278. https://doi.org/10.2458/v22i1.21108

Thomas, A., & Theokritoff, E. (2021). Debt-for-climate swaps for small islands. *Nature Climate Change*, *11*(11), 889–891. https://doi.org/10.1038/s41558-021-01194-4

Tornel, C. (2023). Energy justice in the context of green extractivism: Perpetuating ontological and epistemological violence in the Yucatan Peninsula. *Journal of Political Ecology*, *30*(1), 846–873. https://doi.org/10.2458/jpe.5485

UNCTAD. (2023). *Crisis-resilient development finance: The Least Developed Countries report 2023*. United Nations, Geneva. https://unctad.org/system/files/official-document/ldc2023_en.pdf

UNEP. (2024). *Adaptation Gap Report 2024, United Nations Environment Programme: Come hell and high water — As fires and floods hit the poor hardest, it is time for the world to step up adaptation actions, Nairobi*. https://www.unep.org/resources/adaptation-gap-report-2024

UNFCCC. (1992). *The United Nations Framework Convention on Climate Change*, May, New York. https://unfccc.int/sites/default/files/convention_text_with_annexes_english_for_posting.pdf

UNFCCC. (2023). Matters related to finance: Operationalization of the funding arrangements for responding to loss and damage referred to in paragraph 2, including the fund established in paragraph 3, of decisions 2/CP.27 and 2/CMA.4, November, United Arab Emirates. https://unfccc.int/sites/default/files/resource/cp2023_09_cma2023_09.pdf

UNFCCC. (2024). *Matters related to finance: New collective quantifiable goal on climate finance*, November, Baku. https://unfccc.int/sites/default/files/resource/cma2024_L22_adv.pdf

van Tilburg, R., Simić, A., & Timonen, R. (2022). Leaving no country behind: A monetary contribution to close the climate finance gap. Sustainable Finance Gap, working paper. https://sustainablefinancelab.nl/wp-content/uploads/sites/334/2022/11/Leaving-no-country-behind.pdf

Volz, U., Akhtar, S., Gallagher, K. P., Griffith-Jones, S., Haas, J., & Kraemer, M. (2020). *Debt relief for a green and inclusive recovery: A proposal*. Heinrich-Böll-Stiftung; SOAS University of London; and Boston University. https://drgr.org/files/2021/01/DRGR-report.pdf

Voskoboynik, D. M., & Andreucci, D. (2022). Greening extractivism: Environmental discourses and resource governance in the 'Lithium Triangle'. *Environment and Planning E: Nature and Space*, *5*(2), 787–809. https://doi.org/10.1177/25148486211006345

Wallimann-Helmer, I., Meyer, L., Mintz-Woo, K., Schinko, T., Serdeczny, O., Mechler, R., Bouwer, L. M., Schinko, T., Surminski, S. (2019). The ethical challenges in the context of climate loss and damage, In: R. Mechler, L. M. Bouwer, T. Schinko, S. Surminski, & J. Linnerooth-Bayer (Eds.), *Loss and damage from climate change: Concepts, methods and policy options* (pp. 39–62). Cham, Switzerland: Springer Nature. https://link.springer.com/book/10.1007978-3-319-72026-5

Warlenius, R. (2018). Decolonizing the atmosphere: The climate justice movement on climate debt. *The Journal of Environment & Development*, *27*(2), 131–155. https://doi.org/10.1177/1070496517744593

Zamarioli, L. H., Pauw, P., König, M., & Chenet, H. (2021). The climate consistency goal and the transformation of global finance. *Nature Climate Change*, *11*(7), 578–583. https://doi.org/10.1038/s41558-021-01083-w

Zografos, C., & Robbins, P. (2020). Green sacrifice zones, or why a green new deal cannot ignore the cost shifts of just transitions. *One Earth*, *3*(5), 543–546. https://doi.org/10.1016/j.oneear.2020.10.012

Zucker-Marques, M., & Volz, U. (2023). *Another lost decade or a decade of action? Debt relief for a green and inclusive recover*. Heinrich-Böll-Stiftung; SOAS University of London; and Boston University. https://drgr.org/files/2023/04/DRGR_PB_001-_FIN.pdf