ORIGINAL PAPER

Ideology and non-state climate action: partnering and design of REDD+ projects

Benjamin M. Abraham[1]

Abstract

Scholars and policymakers working on non-state climate action have tended to focus on functional considerations, largely neglecting questions of ideology. This article brings them into the spotlight by investigating how ideology affects climate action initiatives. Based on a new database of 389 projects associated with reducing emissions from deforestation and forest degradation, the article examines how ideology affects project design and partnering. A quantitative analysis and four case studies of projects in Colombia and Peru show how environmental ideology shapes the preferences of project developers for project designs and partners. Two mechanisms that underlie this are also derived. The findings show how a focus on ideology can help open the black box of climate action initiatives and explain their substantive variation. They also offer insights into the ideological implications of the transnationalization of climate governance. Non-state climate action at once entrenches the neoliberal ideological status quo of climate politics and offers critical ideologies a foothold. This poses risks for the future effectiveness and legitimacy of non-state climate action and should be considered in the design of the emerging institutional architecture that supports it. This article also sets a platform for and outlines the contours of a future research agenda on ideology in climate action.

Keywords Climate change · Climate action · Non-state · REDD+ · Ideology · Projects

1 Introduction

With the Paris Agreement in place and focus turning to its implementation, a frame of action has ascended in global climate politics. This is epitomized in recent calls for "all hands on deck" and the rise of non-state climate action (Hale, 2016). The increasingly widespread engagement of subnational and non-state actors in climate governance (referred to in this article as "climate action" or "non-state climate action") has been examined through

✉ Benjamin M. Abraham
    abrahambm@gmail.com

1   Blavatnik School of Government, University of Oxford, Radcliffe Observatory Quarter, Woodstock
     Road, Oxford OX2 6GG, UK

various lenses, including transnationalism (Andonova et al., 2009; Bulkeley et al., 2014; Pattberg & Stripple, 2008), hybrid multilateralism (Bäckstrand et al., 2017), polycentrism (Dorsch & Flachsland, 2017; Jordan et al., 2018; Spreng et al., 2016), and private authority (Green, 2014; Zelli et al., 2017). Across these different lenses, scholarship of non-state climate action has largely focused on functional issues, such as participation (Hsueh, 2017; Roger et al., 2015); orchestration (Chan et al., 2018; Hale & Roger, 2014; Hickmann & Elsässer, 2020); effectiveness and impact (Hale et al., 2021; Kuramochi et al., 2020; van der Ven et al., 2016) and its relationship to national and international policymaking (Andonova et al., 2017; Chan et al., 2016). The role of ideology in climate action, however, has received little attention. What work does address it goes little beyond diagnosing the neoliberal ideological status quo of global climate politics and suggesting that ideational factors are important at a high-level (e.g., Bäckstrand & Lövbrand, 2006; Bulkeley et al., 2014). This mirrors policy developments where in the effort to promote partnerships and the immediate implementation of the Paris Agreement, and climate action has been depoliticized and ideological contestation papered over (Chan et al., 2019). Gajevic Sayegh (2020) systematically underscores the moral duty for subnational and non-state climate action, but does not consider the normative variation in what that action might entail. The ideological diversity that was prominent in the run up to Paris (Bäckstrand & Lövbrand, 2016) still exists, of course, but how it affects post-Paris climate action remains a neglected question.

Just as climate action scholarship has not focused on ideology, broader work on ideology in global climate politics has paid scant attention to non-state action. The period of global environmental governance in which Bernstein (2002) identified a "liberal environmentalism", during which environmental agendas became largely subsumed into a neoliberal economic ideology, was largely state-centric and before the rise of climate action. Ciplet and Roberts (2017) argue this has been further entrenched in recent years through "neoliberal environmental governance", but also through a state-centric lens. The rapid rise of non-state climate action has seen a fundamental diversification of where climate governance occurs and who participates. While the neoliberal ideological backdrop to this transnationalization has been thoroughly examined (e.g., Bäckstrand & Lövbrand, 2016; Okereke et al., 2009), how it might impact or be impacted by the rise of non-state climate action has not been studied in detail. Is climate action creating opportunities for critical ideologies to establish themselves? The voluntary, private nature of climate action initiatives reduces the need for them to align with the predominant normative agenda. Alternatively, is non-state climate action serving as a medium for neoliberal environmentalism to entrench and propagate into new domains? These are empirical questions that require getting "closer to the ground" and examining ideology at the actor level to answer.

This article takes a first step in this direction by considering how ideology is shaping projects associated with reducing emissions from deforestation and forest degradation (REDD+). I do not attempt to fully explain the design or impact of REDD+ projects but specifically use them as a comparable subset of non-state climate action to shed light on how it is shaped by ideology. Specifically, I examine how ideological variation among REDD+ project developers, operationalized through Clapp and Dauvergne (2011)'s "environmental worldviews", affects project design and partnering. Through quantitative analysis of a new database of REDD+ projects and four qualitative case studies, I show ideology to shape project developers' preferences for project designs and partners. The large-N quantitative analysis makes an important contribution to the climate action literature that has been lacking such approaches to date.

The findings highlight how a focus on ideology can improve our understanding of non-state climate action at both the initiative and system level. They also highlight priorities

for an expanded research agenda on these issues. At the initiative level, ideology can help explain substantive variation in climate action initiatives' focuses and activities. At a system level, the findings suggest that non-state climate action operates with the tables stacked in favor of neoliberal environmentalism but also offers opportunities for critical ideologies to become established. This, I argue, poses risks for the long-run effectiveness and legitimacy of climate action. Ideological considerations should be central to the emerging institutional architecture of non-state climate action.

Section 2 of this article introduces REDD+ projects as a focus area, while Sect. 3 outlines my theoretical framework and hypotheses. Section 4 presents the database and quantitative analysis that highlight ideology's impact on REDD+ projects. Section 5 then introduces the case studies, which ground truth the database coding and reveal how the quantitative findings manifest in practice. Section 6 discusses the findings and their contributions to our understanding of non-state climate action.

2 REDD+ projects

I use REDD+ projects to explore the impact of ideology on climate action. Although first conceived as an intergovernmental process within the United Nations Framework Convention on Climate Change (UNFCCC), REDD+ has also spawned transnational activity through hundreds of projects undertaken by a wide range of non-state actors. While the REDD+ literature is expansive, covering institutional, social, and project dynamics, REDD+ projects themselves have not been included in systematic studies of climate action to date. Databases of transnational initiatives such as that of Michaelowa and Michaelowa (2017) have included the voluntary standard schemes that many REDD+ projects are certified with, but not the projects themselves.

I use a definition of REDD+ projects from Simonet et al. (2015), whose list of projects provided the starting point for this article's database. They define "REDD+ projects" as those that meet four criteria: (1) "are located at the local or landscape, but not national, scale"; (2) "have the explicit aim of reducing emissions from deforestation and forest degradation, improving forest conservation or management, or enhancing forest sequestration"; (3) "are financed by REDD+ funds and/or carbon markets"; and (4) are "located in forested, non-Annex I countries and thus potentially involved in the UNFCCC REDD+ mechanism" (Simonet et al., 2015, p. 10). Any actor directly influencing project design is considered a "project developer".

REDD+ projects are used for testing the influence of ideology on climate action because, while born from a neoliberal logic, REDD+ has been a topic significant ideological contestation.[1] Three fundamental polemics are (1) the degree to which REDD+ should focus on carbon sequestration versus promoting socioeconomic and ecological co-benefits; (2) whether financing should come through market or non-market mechanisms; and (3) the degree to which measurement, reporting, and verification (MRV) processes should be conducted by external expert staff and be based on expert knowledge or also by local communities and based on local knowledge (Nielsen, 2014; Turnhout et al., 2017; Vijge, 2015). Using REDD+ projects as the empirical basis for this article also contributes to addressing the lack of research that focuses on climate action in the Global South or the project-level.

---

[1] The database in this article inevitably misses some of this ideological variation, as the groups most ideologically antithetical to REDD+ do not participate in related projects.

3 Theoretical framework: ideology as a source of preferences

In exploring its impact on climate action, I use "ideology" in a broad sense, referring to ideas about "means" and "ends". In the present context, this means normative and causal ideas about addressing climate change. I also refer to this as "environmental ideology", which I theorize to affect REDD+ projects by shaping the preferences of project developers as they pursue environmental interests. Interests are considered the principal objectives that actors seek to achieve, while preferences reflect the prioritization of options for pursuing them. Material interests are certainly also important in explaining project design and partnering, but this article focusses specifically on testing the effect of ideology in the pursuit of environmental interests, which can be assumed to be significant in the context of REDD+ projects.

This conceptualization of ideology's effect through preferences builds upon the significant body of research showing how norms and beliefs activate as key mechanisms driving pro-environmental behavior (PEB) (López & Cuervo-Arango, 2008; Steg & Vlek, 2009). The norm activation model, for example, emphasizes how normative ideas become activated and create functions with utility for acting in line with them and harm for failing to do so (Onwezen et al., 2013). In a similar vein, the value-belief-norm theory describes basic altruistic values as connecting with beliefs about the environment to creating a moral obligation for action (Stern et al., 1999; Turaga et al., 2010). In this article, rather than testing whether PEB occurs, I examine whether variation in environmental ideology leads to substantive variation in a PEB: participation as a REDD+ project developer.

While inevitably imperfect, an operational typology is necessary for studying ideology empirically at the large-N level. I use Clapp and Dauvergne (2011)'s framework of environmental worldviews to codify the ideologies of REDD+ project developers. The four environmental worldviews, market liberal, bioenvironmentalist, institutionalist, and social green are described below. They are broad categorizations of political and economic arguments about the means and ends of dealing with environmental challenges. The worldviews provide a consistent framework for coding project developers that captures the key contours of their ideological variation. The rationale for using environmental worldviews is that, firstly, they are held at the actor-level, rather than broad system-level ideologies or discourses. Secondly, they reflect "meso level" ideas (Schmidt, 2008), being more abstract than views about specific policies or activities but more specific than an overall vision of the world as they are limited to the domain of environmentalism. It is contestation over these types of ideas that have been papered over during the rise of non-state climate action. Thirdly, they align with the key ideological debates regarding REDD+ mentioned earlier. Fourthly, the environmental worldviews framework is already established in both the climate action and REDD+ literatures (e.g., Bulkeley et al., 2014; Visseren-Hamakers et al., 2012). Fifthly, they are at a level of generality appropriate for the level of detail in the source material I am coding.

Clapp and Dauvergne (2011) describe four environmental worldviews, which vary in their understanding of environmental problems, normative positions, and casual views about environmental solutions. These are summarized in Table 1. The market liberal and institutionalist worldviews, which see globalization and economic growth as positive for addressing environmental challenges, and the bioenvironmentalist and social green worldviews, which see these forces as drivers of environmental degradation. The market liberals and institutionalists differ in that the former place great faith in free markets to guide an efficient response to environmental problems, while the latter emphasize the need for strong institutions to ensure

Table 1 Summary of environmental worldviews

	Nature of environmental problems	Normative ideas	Causal ideas/solutions
Market liberal	Market failure, inefficiencies	Globalized world and economic growth	Economic liberalization, growth, technology transfer
Institutionalist	Collective action problem, failure of coordination	Institutionalized global governance	Strengthening international institutions and state capacity
Bioenvironmentalist	Overshoot of ecological limits	Steady-state/circular economy, strict protections of natural areas	Reduction of consumption, nature conservation, population control
Social green	Unsustainable economic system inextricably linked to exploitation and inequality	Transformed economic system, reduction of inequalities, decentralization of power	Poverty alleviation, North–South redistribution, empowerment of marginalized communities

cooperation. Bioenvironmentalists and social greens differ in that the former are concerned with the overexploitation of Earth's limited biocapacity, while the latter focus on how structures of global capitalism simultaneously cause environmental harm and reinforce global inequalities. The worldviews are not expected to precisely capture the ideology or beliefs of any one actor, but group project developers into broad categories that facilitate the testing of ideological variation.

3.1 Hypotheses

I theorize ideology as affecting REDD+ project developers' preferences for project designs and partners. Project design is conceived as a competitive bargaining process where following standard political bargaining theory (e.g., Moravcsik 1993), and designs are expected to reflect the respective bargaining power of the actors involved. I expect project developers' preferences for project design to be determined in significant part by their environmental ideology. In turn, the design of REDD+ projects should reflect the relative bargaining power behind those ideologies.

H1 Project developers will prefer REDD+ project designs that reflect their environmental ideology.

This means that, for example, market liberal project developers would prefer more market orientated project designs, while social greens would prefer those that focus on empowering local communities. Specific expected observable implications for each worldview are presented in the next section alongside the dependent variable coding. Regarding partner preferences, I expect project developers to prefer partnering along ideological lines as it reduces the risks associated with partnerships. Existing research has already established the importance of functional considerations in partnership decisions such as existing relationships (Gallemore & Jespersen, 2016) and assembling requisite capacities (Abbott & Snidal, 2009; Puig & Bakhtiari, 2020), but I expect ideological alignment to also be important for two reasons. These stem from the value of having a common cause and shared vision. Firstly, ideological alignment minimizes reputational risk that may come from a partner that has conflicting values and beliefs (Abbott & Snidal, 2009). Secondly, drawing from principal-agent theory, partners with similar environmental ideologies and preferences would be less likely to shirk or slip during implementation.

H2 Project developers will prefer partners that share similar environmental ideologies.

It is worth noting that examining the impact of ideological variation in a context that already has a strong ideological bias (in the case of REDD+, neoliberal) creates a hard test for my hypotheses. It offers relatively less ideological diversity from which to discern an independent and substantive effect of its variation. If such effects are found, however, they can be considered relatively more likely to apply in other, less ideologically constrained domains of non-state climate action.

4 Quantitative analysis of ideology's effect on REDD+ projects

4.1 Data and model

This section outlines the model and data for my quantitative analysis. Ideology's effect on project designs is given the most attention and examined through logistic regressions. The effect on partner preferences is considered through descriptive statistics that help inform more detailed testing through the case studies. The analysis draws upon an originally coded database containing 389 REDD+ projects located in 55 countries with 857 project developers. The median number of project developers per project is three. This database is expected to contain a sizeable percentage of the total population of REDD+ projects, of which there is no centralized official registry. It is based on the list compiled by Simonet et al. (2015), which amalgamates twenty-one diverse existing sources of REDD+ projects and should limit potential selection bias. Projects were coded on five key aspects of project design, along with several project and country level controls. Project developers were coded with an environmental worldview and actor type. I conducted all the coding and ran tests of inter-coder reliability that confirmed the method was robust. Standard errors were also clustered by host country to help account for variation stemming from unobserved factors at the country level.[2] The following subsections detail the model variables that are then summarized in Table 3. The full database, detailed coding procedures and examples, details of the inter-coder reliability tests, and a codebook can be found in the online appendix.

4.1.1 Dependent variables: project design

Each project was coded on five binary variables for emphasis (or not) on each of five design aspects reflecting the key REDD+ debates discussed earlier. They are (a) social and economic benefits for local communities, (b) ecological benefits beyond carbon sequestration, (c) financing from market mechanisms, (d) financing from non-market mechanisms, and (e) local participation in MRV processes. Drawing primarily on project design documents and websites, these design aspects are independent and considered to be emphasized if they are explicitly described as central to the project and not emphasized if they are not mentioned or only in passing. Strategic communication concerns are minimized by 75% of projects being either certified or intending to become certified by independent certification schemes, mitigating the risk of project developers offering misleading information.

4.1.2 Explanatory variable: project developer ideology

Project developers' environmental ideologies were coded with an environmental worldview using information available on their websites and project documents, particularly that outlined organizational missions, visions and philosophies of work. Different material was used than that which informed the dependent variable coding. Drawing on principles of content analysis (Mayring, 2000), these texts, particularly understandings of environmental

---

[2] Multi-level and fixed-effects models were also considered but found to be inappropriate. The former because the random-effects assumption cannot be assumed for the database as the "selection" of projects into host countries is unknown and there is insufficient data to control for this. The latter because of insufficient within-country variation due to low numbers of projects in some countries.

Table 2 Expected observable implications for relationships between environmental worldviews and aspects of project design

	Social benefits	Eco-logical benefits	Market financing	Non-market financing	Local MRV
Market liberal	−	−	+	n/a	−
Bioenvironmentalist	n/a	+	−	n/a	n/a
Social green	+	n/a	−	+	+

problems and favored solutions expressed in them, were systematically analyzed to associate their content with the best-matching environmental worldview. After analyzing each text and carefully considering their socio-political and institutional contexts, a worldview was assigned that best reflects the apparent ideology of each project developer. 61% of coded project developer worldviews were the market liberal worldview, 19% the social green, 18% the bioenvironmentalist, and 2% the institutionalist. Strategic communication is unlikely to be problematic as while there may be incentives to overstate the extent of environmental commitments, there is much less with regards to the type of environmentalism one supports.

Excluding the institutionalist worldview due to its negligible presence,[3] the percentages of project developers with each worldview in each project are used as the key explanatory variables for the quantitative model. Project designs are expected to reflect the ideologies with the greatest bargaining power behind them. As the bargaining power of project developers cannot be coded directly, the percentage of project developers with each worldview serves as an effective proxy given the pioneering nature of this analysis.

Table 2 presents expected observable implications for H1 that reflect the expected relationship between each environmental worldview and aspect of project design. They provide a systematic, refutable method to evaluate H1 and help highlight how this broad categorization captures the effect of actor level ideological variation on climate action initiatives. A positive relationship means that project developers with that worldview are expected to try and emphasize a project design aspect. A negative relationship means that project developers with that worldview are expected to de-emphasize that aspect. "n/a" means no significant relationship is expected. These reflect an ideal type understanding of the environmental worldviews and variation among them is expected.

4.1.3 Control variables

Actor types are controlled for as they constitute a competing explanation. By considering ideology as a key determinant of project developers' preferences, this article departs from the common approach of assuming material utility-maximizing preferences based on actor type (e.g., Keohane & Victor, 2011; Michaelowa & Michaelowa, 2017). My argument thus depends on showing that environmental ideology is a significant driver of preferences, independent of actor type. The quantitative model controls for actor types with variables representing the percentage of project developers of each actor type. Overall, NGOs account for 33% of developers, private sector actors for 31%, and the public sector 25%. A more detailed breakdown can be found in the online appendix.

---

[3] The near absence of the institutionalist worldview is unsurprising given its focus on institutional solutions to environmental challenges, which does not align well with project-based approaches. Sensitivity checks found its exclusion does not affect the results.

Land tenure is controlled for as the legal authority to approve or reject a proposed project based on land ownership is a major source of bargaining power. Control variables account for private, state, and community tenure. In some project areas, there can be more than one type of tenue, so the variables are not mutually exclusive and coded as three dummy variables. The data are from Simonet et al. (2015).

Projects falling inside a designated protected area are controlled for as these areas already have a legal conservation purpose that likely influences any projects in the area toward emphasizing ecological benefits. This is a dummy variable from Simonet et al. (2015).

Host country environmental policy is controlled for as stronger policies may influence project developers toward emphasizing ecological benefits, for example. Andonova et al. (2017) use the Yale Environmental Performance Index (EPI) Climate and Energy index score, but the lack of data for some countries that host many projects, such as the Democratic Republic of the Congo, make it inappropriate. The EPI Biodiversity and Habitat score was used instead as the best approximation for policy related to REDD+.

Civil liberties are controlled for because of their likely impact on the capacity of domestic communities and NGOs to pursue their preferences. They are also well established empirically as important to control for in cross-country analyses, including of non-state climate action (Andonova et al., 2017). The data from this are taken from the Freedom House database and coded based on project start years. The model was also robust to using Polity IV scores instead.

GDP per capita of the host country is controlled for to capture the likelihood that, on average, local actors in more wealthy countries will have greater capacity. As with civil liberties, GDP per capita has demonstrated importance in cross-country analyses of climate action (Andonova et al. 2017). I use the logarithm of GDP per capita of the host country in the project's starting year, taken from the World Bank (2017). Table 3 provides a summary of all the model variables that have been described in the subsections above.

Table 3 Summary of model variables

Variables	Obs	Mean	SD	Min	Max
Design aspects					
Social benefits	365	0.68	0.47	0	1
Ecological benefits	366	0.54	0.50	0	1
Market financing	356	0.82	0.38	0	1
Non-market financing	339	0.50	0.50	0	1
Local MRV	292	0.30	0.46	0	1
Environmental worldviews					
% Market liberal	387	50.5	36.4	0	100
% Bioenvironmentalist	387	15.8	25.4	0	100
% Social green	387	10.4	21.6	0	100
Actor types					
% Host private sector	385	14.6	27.2	0	100
% Int'l private sector	387	21.9	30.5	0	100
% MDB	385	3.40	11.9	0	100
% Host subnational public	385	7.31	17.0	0	100
% Host national public	385	9.71	18.8	0	100
% Int'l national public	385	5.17	11.8	0	50
% IGO	385	1.67	6.57	0	50
% Host NGO	385	15.3	23.2	0	100
% Int'l NGO	385	15.7	23.7	0	100
% University/research	385	3.22	9.92	0	75
Controls					
Private land tenure	315	0.38	0.49	0	1
State land tenure	315	0.57	0.50	0	1
Community land tenure	315	0.19	0.40	0	1
Protected area	382	0.31	0.46	0	1
EPI biohabitat score	370	81.5	11.8	31.9	98.6
Civil liberties	370	3.41	1.31	1.00	6.00
GDP per capita	370	8.54	0.96	6.35	10.4

4.1.4 Missing data exclusion criteria

Data limitations meant 32% of project developers could not be coded with a worldview. This was largely due to the lack of accessible data sources for many local actors in Global South countries detailing aspects of their environmental ideology. An exclusion criterion is therefore applied to exclude projects in which more than 50% of the project developers lack a coded environmental worldview. As a robustness check, the model was also run with this criterion tightened and loosened to exclude projects with more than 34% and 67% of developers lacking coded worldviews, respectively. As will be shown, variation in the exclusion criterion leads to minor variations in the results that reinforce the overall findings and argument.

Table 4 Regression results [main model, 50% exclusion criterion] (odds ratios)

Variables	Social benefits	Ecological benefits	Market finance	Non-market finance	Local MRV
Environmental world-views					
% Market liberal[a]	1.560	1.643	1.863	0.324	0.549
	(0.563)	(0.786)	(1.140)	(0.225)	(0.259)
% Bioenvironmentalist[a]	1.050	2.771***	0.505*	1.157	0.632
	(0.345)	(0.720)	(0.181)	(0.565)	(0.215)
% Social green[a]	2.073***	1.362	0.728	1.092	0.838
	(0.538)	(0.340)	(0.257)	(0.418)	(0.212)
Actor types					
% Host private sector	0.960	0.958*	0.986	1.032	0.967
	(0.031)	(0.024)	(0.061)	(0.065)	(0.025)
% Int'l private sector	0.972	0.955*	0.951	1.034	0.982
	(0.031)	(0.023)	(0.043)	(0.062)	(0.026)
% MDB	0.963	0.946*	0.883**	1.060	0.935*
	(0.037)	(0.029)	(0.043)	(0.069)	(0.034)
% Host subnational public	0.978	0.982	0.932	1.043	0.976
	(0.031)	(0.027)	(0.043)	(0.055)	(0.023)
% Host national public	0.966	0.949**	0.931	1.047	0.951**
	(0.027)	(0.025)	(0.048)	(0.062)	(0.024)
% Int'l national public	0.975	0.959	0.907**	1.097	0.974
	(0.031)	(0.036)	(0.044)	(0.071)	(0.029)
% IGO	0.983	0.977	0.877***	1.282***	0.992
	(0.041)	(0.030)	(0.024)	(0.108)	(0.033)
% Host NGO	0.992	0.962	0.974	1.029	0.998
	(0.031)	(0.026)	(0.043)	(0.057)	(0.021)
% Int'l NGO	0.977	0.951*	0.948	1.071	0.990
	(0.028)	(0.025)	(0.041)	(0.066)	(0.026)
% University/research	0.979	0.961	0.955	1.055	0.997
	(0.028)	(0.026)	(0.050)	(0.066)	(0.023)
Controls					
Private land tenure	0.820	0.888	2.348	1.458	0.823
	(0.254)	(0.415)	(1.890)	(0.746)	(0.496)
State land tenure	1.195	0.866	0.224**	1.197	1.672
	(0.382)	(0.487)	(0.164)	(0.681)	(0.660)
Community land tenure	2.321	1.231	0.424	0.500	1.806
	(1.216)	(0.513)	(0.294)	(0.309)	(0.871)
Protected area	0.842	1.951**	1.209	1.135	0.627
	(0.354)	(0.567)	(0.745)	(0.560)	(0.274)
EPI biohabitat score	1.002	1.003	0.989	1.000	0.982
	(0.015)	(0.014)	(0.025)	(0.018)	(0.015)
Civil liberties	1.295**	1.771***	1.899**	0.912	0.905
	(0.164)	(0.267)	(0.542)	(0.218)	(0.148)
GDP per capita	0.722*	1.217	0.676	0.868	0.716
	(0.136)	(0.204)	(0.210)	(0.271)	(0.153)
Constant	142.880	1.597	65,769.982**	0.041	245.714
	(436.418)	(4.883)	(365,835.932)	(0.315)	(880.398)

Table 4 (continued)

Variables	Social benefits	Ecological benefits	Market finance	Non-market finance	Local MRV
Observations	257	255	254	244	222
Prob > chi^2	0.000	0.000	0.000	0.000	0.000
Pseudo R^2	0.180	0.167	0.399	0.423	0.202

Robust standard errors in parentheses (clustered by host country)

***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

[a]Standardised z-score

4.2 Regression results

Table 4 presents the regression results from the main model with estimated coefficients presented as odds ratios and standard errors. It shows the prevalence of different environmental worldviews among project developers having a statistically significant effect on three aspects of REDD+ project design. As predicted, the bioenvironmentalist worldview was positively associated with the emphasis on ecological benefits and the social green worldview on social benefits. These are statistically significant at the 0.01 level. The expected negative relationship between the bioenvironmentalist worldview and market financing was also observed, significant at the 0.1 level.

These results align with the expected observable implications and sensitivity checks reinforce their theoretical congruence. In this primary model, three of the expected relationships were observed and none were, under any model variations, contradicted. When the exclusion criterion is either tightened to 34% or loosened to 67%, an additional expected implication is observed, with the market liberal worldview becoming positively associated with market financing, significant at the 0.1 level. An alternate model specification was also run to test for the possibility that some project design processes are not based competitive bargaining. This involved measuring the binary presence or absence of each worldview among project developers instead of their proportional representation. The results from this reinforce and build upon those of the main model. They also find, in addition to all of those found in the main model, the expected negative market liberal—local MRV relationship, and the positive bioenvironmentalist—non-market financing, market liberal—market financing, and social green—local MRV relationships to be significant.[4] Figure 1 summarizes these findings, showing how the constellation of results provides strong support for H1.

4.3 Descriptive statistics: a "like with like" trend in project partnering

These trends in project design are supported by descriptive statistics suggesting ideology is also driving partner preferences. For example, the number of projects where all project developers are coded with the same environmental worldview ("single-worldview projects") matches the respective distribution of each worldview among actor types. Projects are only possible if the developers can collectively supply the requisite capacities and the market liberal worldview is the most spread across actor types. This

---

[4] Diagnostics and regression tables for all model variations can be found in the online appendix.

Fig. 1 Post-analysis summary of expected observable implications compared to the results (gray = supported, white = inconclusive (no significant result), partially shaded = expected as n/a but observed as positive)

likely entails it being easier for market liberal actors to find the range of capacities needed for a project among ideologically aligned partners and, in turn, create a single-worldview project. The bioenvironmentalist worldview has the next widest distribution, followed by the social green worldview, as shown in Fig. 2.

The breakdown of single-worldview projects in the database mirrors this trend, with 74% being formed by market liberal developers, 17% by bioenvironmentalist developers, and 9% by social green developers. This supports the "like with like" tendency posited by H2 as the frequency of single-worldview projects reflects the relative ease of creating one. One potential caveat to this is that the pool of potential partners for a project will vary in size between and within countries. The level of detailed required to assess this is beyond the database used in this article, but clustering errors by country provide a limited control for it. Still, while the necessity to assemble the requisite capacities for a project can lead to partnerships forming across ideological differences, it appears there is a strong general preference among developers to partner along ideological lines. The case studies in the next section examine this trend in greater detail.

5 Case studies

Between July and September 2017, four case studies of projects were carried out featuring 28 semi-structured interviews with the key individuals from each project developer. Interviewees were identified through the information provided in project design documents. The case studies allowed ground truthing of the database coding and an in-depth exploration of how ideology shaped project design and partnering.
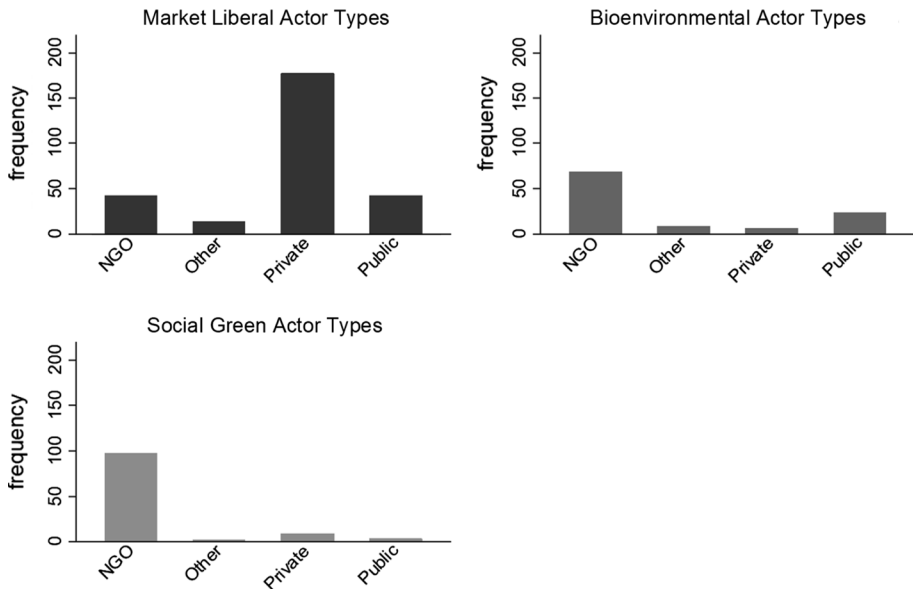
Fig. 2 Frequency of simplified actor types with each environmental worldview

5.1 Selection and overview

Cases were chosen from the 112 projects located in Latin America to facilitate the selection of more comparable cases and align with linguistic competency and existing connections. To help control for national-level variation, two were chosen in Colombia that primarily focused on afforestation and reforestation and two in Peru that primarily focused on reducing deforestation. Case selection also sought a diversity of project designs and project developers to facilitate a useful combination of both theory testing and building.

The Colombian projects are the Degraded Areas Project and the Vichada Project. The Degraded Areas Project was a run by Fundación Natura, a Colombian environmental NGO, a Colombian agribusiness company called AGROFUTURO, and a couple of technical partners. It aims to restore degraded lands and promotes agroforestry to generate carbon credits across two sites in Antioquia, Colombia. The Vichada Project is led by Fundación Natura, which works with forest plantation companies in Vichada to protect native forest stocks, watersheds, and biodiversity corridors near their plantations. The Peruvian projects are the Tambopata Project and the Martín Sagrado Project. In the Tambopata Project, the Peruvian NGO AIDER partnered with the forest carbon company Bosques Amazónicos to manage biological research and monitoring in the Tambopata National Reserve in a contract with the Peruvian national protected areas agency, SERNANP. They achieve this through development programs that support local communities to reduce deforestation in the project area. In the Martín Sagrado Project, Pur Project, an international regenerative agriculture company, partners with three cacao farmer cooperatives in the San Martín region of Peru to support agroforestry and reduce deforestation.

5.2 Ground truthing coding

Interviews with project developers and visits to the case study projects enabled ground truthing of the database coding. Interviews afforded both the opportunity to confirm project developers had been coded with the most appropriate environmental worldview and understand their ideology and its effects at a more granular level. Interviewees also provided their perspectives on the relative importance and emphasis of each aspect of design aspect. Observing project implementation provided another rich perspective on this. Overall, ground truthing found environmental worldview coding for all the project developers and for three of the four project designs to be accurate. Only the Degraded Areas project design varied significantly from its original coding. The primary reason for this is that, while there was one design document, it operated as two wholly independent projects. One led by Fundación Natura and the other by AGROFUTURO. Further details of each project and this ground truthing can be found in the online appendix.

5.3 Ideas in action: how ideology shapes climate action initiatives on the ground

The case studies provided the opportunity to test both H1 and H2 in detail. While project design and partnering were treated as independent activities for the quantitative analysis, the case studies highlight how they are often intimately related in practice, with the effect of ideology permeating both. In examining this effect, this section is structured around two key mechanisms identified in the case studies. These mechanisms, which I label "filtering", and "belief premium", elucidate how the trend identified in the descriptive statistics of partnering along ideological lines occurs on the ground.

The filtering mechanism occurs when a project developer initially only considers partners with whom they align ideologically. They filter out potential partners who may have conflicting environmental ideologies from initial considerations. This mechanism was evident in the instance of the Degraded Areas Project led. Fundación Natura immediately approached Carbono y Bosques, a local research institute, to be the technical partner without considering alternatives. Explaining this, a director said that they prefer partners who are "walking in the same direction". The director stressed they and Carbono y Bosques have "many things in common" and significant "synergy" in their approaches to conservation (Interview, 2017). There were numerous alternative potential partners that could have provided technical support for the project, but Fundación Natura's desire for an ideologically aligned partner was a strong filter that left Carbono y Bosques as the immediate preference. Both were coded with the bioenvironmentalist worldview and had strong dispositions toward conservation and ecological outcomes beyond carbon sequestration.

In the Tambopata Project, the filtering mechanism manifested when AIDER needed a partner for their project bid and looked straight to Bosques Amazónicos. They had an established relationship based on similar ideologies that both stressed the importance of community leadership in environmental projects. AIDER's search was heavily filtered and did not consider any of the many potential alternative partners to manage the carbon finance component of the project. Bosques Amazónicos eventually left the project and AIDER had to find a replacement partner, searching for more than two years to find another with whom they aligned ideologically (Interview, 2017). They ultimately could not and partnered with Althelia, a firm whose environmental ideology strongly embodied the market liberal worldview. With a strong bargaining position, Althelia was able to shape the project design in line with its diverging ideology and shift its priorities significantly toward

cacao production and away from conservation and social initiatives (Interview, 2017). The time and cost associated with AIDER's lengthy search is clear evidence of the filtering mechanism. The resulting involvement of Althelia also exemplified the effect of ideology on project design.

The belief premium mechanism causes project developers to evaluate potential partners with shared environmental ideologies more favorably than they otherwise might. This was significant in both the Vichada Project and Martín Sagrado Project. In the Vichada Project, Fundación Natura promoted the project to plantation operators in the region, ready to work with whoever would sign on. Interviews revealed those that joined the project were atypical in having environmental ideologies that also strongly emphasized conservation and the protection of biodiversity (Interview, 2017). This ideological resonance made joining the project more attractive, with material interest alone not enough to attract plantation owners with different ideological dispositions (Interview, 2017). The project required plantation owners to change their operations and work through cumbersome certification processes for an uncertain financial return from voluntary carbon markets with which they had no experience. In support for H2, the belief premium mechanism tipped the scales in favor of joining for those owners who resonated ideologically with Fundación Natura. In contrast, the calculus for joining did not make sense for those with contrasting ideologies.

In the Martín Sagrado Project, a belief premium led Pur Projet to partner with the cacao cooperatives based on their ideological commitment to locally led conservation, despite it entailing additional costs (Interview, 2017). The cooperatives are in remote areas making coordination so difficult and expensive that Pur Projet propped up the project with revenue from other business activities. Without a belief premium, it is hard to explain Pur Projet's preference for this partnership arrangement as a for-profit company. The ideological alignment, however, was valuable enough to make this a desirable partnership despite being financially unsound. Interviews also highlighted the role of ideology in shaping the design of the Martín Sagrado Project. Pur Projet's and the cacao cooperatives' ideologies aligned in their focus on community leadership but varied in their prioritization of direct conservation work versus economic development (Interviews, 2017). In line with H1, each cooperative tried to advance their preference during the project design process, until Pur Projet's financial power prevailed with their belief in an equal balance between the project activities (Interviews, 2017).

6 Discussion

This diverse but reinforcing evidence shows ideology to be an important factor shaping substantive variation in climate action initiatives. It also highlights how this can occur through shaping preferences. The quantitative model provided clear support for H1, showing variation in REDD+ project developer ideology to be clearly associated with related variation in project design. A "like with like" trend in the database also supported H2, with project developers appearing to prefer partnering along ideological lines. While the quantitative analysis is not strictly causal, it is more logical that the effect of ideology flows through actor preferences into project design and partnering than vice versa. The case studies ground-truthed the database coding reinforced these findings with qualitative evidence of how ideology has an impact on the ground. Importantly, the case studies highlighted how the filtering and belief premium mechanisms drive partnering along ideological lines. Doing so can reduce the risks and the lower transaction costs of partnerships; as

a representative of Carbono y Bosques stressed, actors with similar ideologies often "speak the same language" (Interview, 2017). These findings can enhance our understanding of non-state climate action, and its relationship to ideology in global climate politics more broadly. They also provide direction for a future research agenda on ideology and climate action.

6.1 Understanding non-state climate action

The results suggest that a focus on ideology can be a valuable complement to the existing literature on non-state climate action. Most climate action scholarship has focused on functional aspects, but little attention has been paid to the substantive variation in nuts-and-bolts initiative design. My results show that the ideological diversity of actors taking climate action and engaging in climate action is not epiphenomenal and has independent explanatory power for initiative design and partnering patterns. This is not to say ideology is the only important factor, of course. Several control variables were also significant in explaining variation in project designs. For the financing dependent variables, in particular, actor types were statistically significant in explaining much of the variation. Abbott and Snidal (2009) focus on the capacities of different actor types in initiative creation, to which the types of financing they can offer is fundamental. My results add another layer to the story by suggesting that while the right mix of capacities is critical to initiatives functioning, *who* provides those capacities, *how* they function, and *what* they focus on appear to be significantly shaped by ideology. It appears ideology can help open this black box and begin to explain the ends to which climate action initiatives are operating.

6.2 Non-state action and ideology in global climate politics

In an era when global environmental politics is underpinned by the norms of neoliberal environmentalism, non-state climate action, in theory, offers an avenue for alternative ideologies to establish. Voluntary, bottom-up climate action initiatives are less bound the 'global' norms that regulate international negotiations need only the buy-in of participating actors. My findings, however, suggest that the longer-term trend of non-state climate action may be to reinforce ideological status quos. With limited "space" in a particular niche (Abbott et al., 2016), a tendency for initiatives to form along ideological lines will see the niche become increasingly saturated with the predominant ideology. A greater number of actors sharing that ideology and looking to partner with each other will begin to crowd out initiatives and actors driven by alternative ideologies. In the domain of REDD+ projects, as has been shown, this means a trend toward reinforcing the ideas associated with the already predominant market liberal worldview.

Left unconstrained, this tendency toward ideological homogenization could undermine the legitimacy and efficacy of climate action. Significant ideological variation exists among climate-interested constituencies, even in domains such as REDD+ where market liberal ideas dominate. This was evident in my database, with social green and bioenvironmentalist project developers comprising significant minorities. A climate action regime that crowds out ideological difference risks disillusionment and loss of legitimacy from these ideologically diverging constituencies (Coscieme et al., 2020). Due to non-state climate action's increasing integration with the intergovernmental climate regime, a collapse in the legitimacy of the former also risks spilling over into the

latter. From an efficacy perspective, ideological homogenization is a risk for climate action's adaptive capacity. As the tangible impacts of much non-state climate action remain unclear (Hsu et al., 2019), maintaining ideological plurality in the system is prudent. If efforts stemming from the ideological status quo prove ineffective, scalable alternatives may not be readily available if alternative ideologies have been marginalized and unable to develop. Maintaining ideological diversity in the climate action system will be important to its adaptiveness over time.

Despite highlighting a tendency toward reinforcing the status quo, my results also demonstrate how actors with critical ideologies can seize the opportunity afforded by non-state climate action. Project developers coded with the bioenvironmentalist and social green worldviews managed to shape REDD+ project designs according to their environmental ideologies when they had power over project design. This supports other work showing how actors can successfully challenge neoliberal structures of global governance to the degree they are given the opportunity (e.g., Ciplet, 2019). Climate action thus remains a contested space where the dominant norms of liberal environmentalism propagate themselves, but critical ideologies can also find footholds. The degree to which the non-state climate action entrenches or challenges the ideological status quo over the long term remains to be seen but will be significantly shaped by the institutional architecture that is emerging to support it. At its heart, the Global Climate Action Agenda (GCAA) is an informal institution that showcases and supports non-state climate action through the UNFCCC. Chan and Amling (2019) have highlighted its bias toward mitigation initiatives that favor the interests of the Global North. Similarly, Race to Zero, the latest UNFCCC-linked initiative to mobilize non-state climate action, reflects dominant discourses of neoliberal environmentalism in its aim of supporting an economic recovery that "creates decent jobs and sustainable growth" (UNFCCC, 2021) through net-zero pledges. These pledges are also largely concentrated in the Global North (Data-Driven EnviroLab & NewClimate Institute, 2020). However, this architecture of non-state climate action is still in the process of creation. Policymakers interested in its ongoing effectiveness and legitimacy would be wise to support ideological pluralism or take precautions against ideological homogenization. This could be done by actively ensuring the GGCA includes initiatives that diverge from the neoliberal status quo, or ensuring criteria for participation in such initiatives do not exclude those embodying critical ideologies or priorities.

6.3 A research agenda for ideology in climate action

This article provides an empirical base demonstrating the importance of ideology in non-state climate action. There is a need for further research on the topic and I here suggest three priorities for this agenda. Firstly, replicating this analysis and testing the findings on new empirical material would be valuable to ensure the robustness of these initial findings. Such work should examine both other forms of climate action and additional REDD+ project case studies. They should also seek to develop controls for factors that this analysis could not, such as the size of potential partner pools, and partner power differentials.

Secondly, future research should interrogate the effect of ideology in more detail. As a first foray in this research direction, I used environmental worldviews as a broad, categorical measure to capture ideological variation at a high level. Further research, however, could use more granular measures or use environmental worldviews modularly, such as by coding actors with multiple or fractional worldviews. These are just two possible examples.

Further case studies, which, as in this article, allow much richer engagement with ideologies, are also advised. The potential intersubjectivity of ideology and the possibility that it is shaped by participation in climate action initiatives should also be investigated.

Thirdly, there is a need to examine the ideological interplay between non-state climate action and the wider regime of global climate governance more directly. I have made some initial suppositions based on trends observed among REDD+ projects, but analyses of the bigger picture are also required as non-state climate action continues to become a more central component of the climate regime. How this change affects the ideologies that shape what is possible and prioritized in efforts to tackle climate change could be profoundly important.

7 Conclusion

This article has made the case that ideology is an important, currently overlooked factor shaping non-state climate action that requires greater attention by scholars and policy-makers. Calls for "all hands on deck" should be interrogated closely when there is contestation over where the ship should be sailing. I examined the effect of ideological variation on climate action, finding that REDD+ project developers prefer project designs and partners that align with their environmental ideology. This highlights how greater attention to ideological diversity can help explain substantive variation in climate action initiatives, an important complement to the existing literature. The findings also offer some initial insights into the ideological development of the wider climate action system. The "like with like" trend of partnering will tend to reinforce the ideological status quo but the efforts of bioenvironmentalist and social green project developers also highlighted the opportunity afforded by non-state climate action for critical ideologies to gain a foothold. How this contested ideological space develops over time will partly be determined by the institutional architecture of global climate action that is currently being constructed. Policymakers involved with the GCAA and related institutions should be aware of trends toward ideological homogenization and the risks this entails for legitimacy and efficacy.

By extending upon the existing non-state climate action research in terms of both focus and methodology, this article faced several limitations that have already been discussed. These include data availability, the difficulty of measuring ideology, and the inability to quantitatively measure power differentials among project developers. The fact that, despite such limitations, theoretically aligned and statistically significant results were found and supported by case studies suggests that this direction of research is worth continuing.

8 Online appendix

https://osf.io/94qzm/?view_only=735a22b73af045039c581dda25e9f1cb

References

Abbott, K., Green, J., & Keohane, R. (2016). Organizational ecology and institutional change in global governance. *International Organization, 70*(02), 247–277. https://doi.org/10.1017/S0020818315000338

Abbott, K., & Snidal, D. (2009). The governance triangle: Regulatory standards institutions and the shadow of the state. In W. Mattli & N. Woods (Eds.), *The politics of global regulation* (pp. 44–74). Princeton University Press.

Andonova, L., Hale, T., & Roger, C. (2017). National policy and transnational governance of climate change: Substitutes or complements? *International Studies Quarterly, 61*(2), 253–268. https://doi.org/10.1093/isq/sqx014

Andonova, L. B., Betsill, M. M., & Bulkeley, H. (2009). Transnational climate governance. *Global Environmental Politics, 9*(2), 52–73.

Bäckstrand, K., Kuyper, J. W., Linnér, B.-O., & Lövbrand, E. (2017). Non-state actors in global climate governance: From Copenhagen to Paris and beyond. *Environmental Politics, 26*(4), 561–579. https://doi.org/10.1080/09644016.2017.1327485

Bäckstrand, K., & Lövbrand, E. (2006). Planting trees to mitigate climate change: Contested discourses of ecological modernization, green governmentality and civic environmentalism. *Global Environmental Politics, 6*(1), 50–75.

Bäckstrand, K., & Lövbrand, E. (2016). The road to Paris: Contending climate governance discourses in the post-Copenhagen era. *Journal of Environmental Policy and Planning, 21*(5), 519–532.

Bernstein, S. (2002). Liberal environmentalism and global environmental governance. *Global Environmental Politics, 2*(3), 1–16.

Bulkeley, H., Andonova, L., Betsill, M. M., Compagnon, D., Hale, T., Hoffmann, M. J., Newell, P., Paterson, M., Roger, C., & VanDeveer, S. D. (2014). *Transnational climate change governance*. Cambridge University Press.

Chan, S., & Amling, W. (2019). Does orchestration in the global climate action agenda effectively prioritize and mobilize transnational climate adaptation action? *International Environmental Agreements: Politics, Law and Economics, 19*(4), 429–446. https://doi.org/10.1007/s10784-019-09444-9

Chan, S., Boran, I., van Asselt, H., Iacobuta, G., Niles, N., Rietig, K., Scobie, M., Bansard, J. S., Pugley, D. D., Delina, L. L., Eichhorn, F., Ellinger, P., Enechi, O., Hale, T., Hermwille, L., Honegger, M., Epstein, A. H., Theuer, S. L. H., Mizo, R., Sun, Y., Toussaint, P., Wambugu, G. (2019). Promises and risks of nonstate action in climate and sustainability governance. *Wiley Interdisciplinary Reviews: Climate Change, 10*, e572. https://doi.org/10.1002/wcc.572

Chan, S., Brandi, C., & Bauer, S. (2016). Aligning transnational climate action with international climate governance: The road from Paris. *Review of European, Comparative & International Environmental Law, 25*(2), 238–247.

Chan, S., Ellinger, P., & Widerberg, O. (2018). Exploring national and regional orchestration of non-state action for a 1.5 °C world. *International Environmental Agreements: Politics, Law and Economics, 18*(1), 135–152. https://doi.org/10.1007/s10784-018-9384-2

Ciplet, D. (2019). Means of the marginalized: Embedded transnational advocacy networks and the transformation of neoliberal global governance. *International Studies Quarterly, 63*(2), 296–309. https://doi.org/10.1093/isq/sqz015

Ciplet, D., & Roberts, J. T. (2017). Climate change and the transition to neoliberal environmental governance. *Global Environmental Change, 46*, 148–156. https://doi.org/10.1016/j.gloenvcha.2017.09.003

Clapp, J., & Dauvergne, P. (2011). *Paths to a green world: The political economy of the global environment* (2nd ed.). . MIT Press.

Coscieme, L., Da Silva Hyldmo, H., Fernández-Llamazares, Á., Palomo, I., Mwampamba, T. H., Selomane, O., Sitas, N., Jaureguiberry, P., Takahashi, Y., Lim, M., Barral, M. P., Farinaci, J. S., Diaz-José, J., Ghosh, S., Ojino, J., & Alassaf, A. (2020). Multiple conceptualizations of nature are key to inclusivity and legitimacy

in global environmental governance. *Environmental Science and Policy, 104*, 36–42. https://doi.org/10.1016/j.envsci.2019.10.018

Data-Driven EnviroLab, & NewClimate Institute. (2020). *Accelerating net zero: Exploring cities, regions, and companies pledges to decarbonise*. http://datadrivenlab.org/wp-content/uploads/2020/09/Accelerating_Net_Zero_Report_Sept2020.pdf.

Dorsch, M. J., & Flachsland, C. (2017). A polycentric approach to global climate governance. *Global Environmental Politics, 17*(2), 45–64. https://doi.org/10.1162/GLEP_a_00400

Gajevic Sayegh, A. (2020). Moral duties, compliance and polycentric climate governance. *International Environmental Agreements: Politics, Law and Economics, 20*(3), 483–506. https://doi.org/10.1007/s10784-020-09494-4

Gallemore, C., & Jespersen, K. (2016). Transnational markets for sustainable development governance: The case of REDD+. *World Development, 86*, 79–94. https://doi.org/10.1016/j.worlddev.2016.06.009

Green, J. F. (2014). *Rethinking private authority: Agents and entrepreneurs in global environmental governance*. Princeton University Press.

Hale, T. (2016). "All hands on deck": The Paris agreement and nonstate climate action. *Global Environmental Politics, 16*(3), 12–22. https://doi.org/10.1162/GLEP_a_00362

Hale, T., & Roger, C. (2014). Orchestration and transnational climate governance. *The Review of International Organizations, 9*(1), 59–82. https://doi.org/10.1007/s11558-013-9174-0

Hale, T. N., Chan, S., Hsu, A., Clapper, A., Elliott, C., Faria, P., Kuramochi, T., McDaniel, S., Morgado, M., Roelfsema, M., Santaella, M., Singh, N., Tout, I., Weber, C., Weinfurter, A., & Widerberg, O. (2021). Sub- and non-state climate action: A framework to assess progress, implementation and impact. *Climate Policy, 21*(3), 406–420. https://doi.org/10.1080/14693062.2020.1828796

Hickmann, T., & Elsässer, J. P. (2020). New alliances in global environmental governance: How intergovernmental treaty secretariats interact with non-state actors to address transboundary environmental problems. *International Environmental Agreements: Politics, Law and Economics, 20*(3), 459–481. https://doi.org/10.1007/s10784-020-09493-5

Hsu, A., Höhne, N., Kuramochi, T., Roelfsema, M., Weinfurter, A., Xie, Y., Lütkehermöller, K., Chan, S., Corfee-Morlot, J., Drost, P., Faria, P., Gardiner, A., Gordon, D. J., Hale, T., Hultman, N. E., Moorhead, J., Reuvers, S., Setzer, J., Singh, N., … Widerberg, O. (2019). A research roadmap for quantifying non-state and subnational climate mitigation action. *Nature Climate Change, 9*(1), 11–17. https://doi.org/10.1038/s41558-018-0338-z

Hsueh, L. (2017). Transnational climate governance and the global 500: Examining private actor participation by firm-level factors and dynamics. *International Interactions, 43*(1), 48–75.

Jordan, A., Huitema, D., Van Asselt, H., & Forster, J. (Eds.). (2018). *Governing climate change: Polycentricity in action?* Cambridge University Press.

Keohane, R. O., & Victor, D. G. (2011). The regime complex for climate change. *Perspectives on Politics, 9*(1), 7–23. https://doi.org/10.1017/S1537592710004068

Kuramochi, T., Roelfsema, M., Hsu, A., Lui, S., Weinfurter, A., Chan, S., Hale, T., Clapper, A., Chang, A., & Höhne, N. (2020). Beyond national climate action: The impact of region, city, and business commitments on global greenhouse gas emissions. *Climate Policy, 20*(3), 275–291. https://doi.org/10.1080/14693062.2020.1740150

López, A. G., & Cuervo-Arango, M. A. (2008). Relationship among values, beliefs, norms and ecological behaviour. *Psicothema, 8*(4), 623–629.

Mayring, P. (2000). Forum qualitative sozialforschung/forum: Qualitative social research. *Qualitative Content Analysis, 1*(2), 1. https://doi.org/10.17169/fqs-1.2.1089

Michaelowa, K., & Michaelowa, A. (2017). Transnational climate governance initiatives: Designed for effective climate change mitigation? *International Interactions, 43*(1), 129–155.

Moravcsik, A. (1993). Preferences and power in the European community: A liberal intergovernmentalist approach. *JCMS: Journal of Common Market Studies, 31*(4) 473–524. https://doi.org/10.1111/j.1468-5965.1993.tb00477.x

Nielsen, T. (2014). The role of discourses in governing forests to combat climate change. *International Environmental Agreements: Politics, Law & Economics, 14*(3), 265–280. https://doi.org/10.1007/s10784-013-9223-4

Okereke, C., Bulkeley, H., & Schroeder, H. (2009). Conceptualizing climate governance beyond the international regime. *Global Environmental Politics, 9*(1), 58–78.

Onwezen, M. C., Antonides, G., & Bartels, J. (2013). The norm activation model: An exploration of the functions of anticipated pride and guilt in pro-environmental behaviour. *Journal of Economic Psychology, 39*, 141–153. https://doi.org/10.1016/j.joep.2013.07.005

Pattberg, P., & Stripple, J. (2008). Beyond the public and private divide: Remapping transnational climate governance in the 21st century. *International Environmental Agreements: Politics, Law & Economics, 8*(4), 367–388. https://doi.org/10.1007/s10784-008-9085-3

Puig, D., & Bakhtiari, F. (2020). Determinants of successful delivery by non-state actors: An exploratory study. *International Environmental Agreements: Politics, Law and Economics.* https://doi.org/10.1007/s10784-020-09482-8

Roger, C., Hale, T., & Andonova, L. (2015). *How do domestic politics shape participation in transnational climate governance?* https://www.bsg.ox.ac.uk/sites/www.bsg.ox.ac.uk/files/documents/BSG-WP-2015-001.pdf

Schmidt, V. A. (2008). Discursive institutionalism: The explanatory power of ideas and discourse. *Annual Review of Political Science, 11*, 303–326.

Simonet, G., Karsenty, A., Newton, P., de Perthuis, C., Schaap, B., & Seyller, C. (2015). *REDD+ projects in 2014: An overview based on a new database and typology* (Working Paper No. 32). http://www.chaireeconomieduclimat.org/en/publications-en/information-debates/id-32-redd-projects-in-2014-an-overview-based-on-a-new-database-and-typology/.

Spreng, C. P., Sovacool, B. K., & Spreng, D. (2016). All hands on deck: Polycentric governance for climate change insurance. *Climatic Change, 139*(2), 129–140.

Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behaviour: An integrative review and research agenda. *Journal of Environmental Psychology, 29*(3), 309–317. https://doi.org/10.1016/j.jenvp.2008.10.004

Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A., & Kalof, L. (1999). A value-belief-norm theory of support for social movements: The case of environmentalism. *Human Ecology Review, 6*(2), 81–97.

Turaga, R. M. R., Howarth, R. B., & Borsuk, M. E. (2010). Pro-environmental behavior: Rational choice meets moral motivation. *Annals of the New York Academy of Sciences, 1185*(1), 211–224. https://doi.org/10.1111/j.1749-6632.2009.05163.x

Turnhout, E., Gupta, A., Weatherley-Singh, J., Vijge, M. J., de Koning, J., Visseren-Hamakers, I. J., Herold, M., & Lederer, M. (2017). Envisioning REDD+ in a post-Paris era: Between evolving expectations and current practice: Envisioning REDD+ in a post-Paris era. *Wiley Interdisciplinary Reviews: Climate Change, 8*(1), e425. https://doi.org/10.1002/wcc.425

UNFCCC. (2021). *Race to zero Campaign.* https://unfccc.int/climate-action/race-to-zero-campaign#eq-2.

van der Ven, H., Bernstein, S., & Hoffmann, M. (2016). Valuing the contributions of nonstate and subnational actors to climate governance. *Global Environmental Politics, 17*(1), 1–20. https://doi.org/10.1162/GLEP_a_00387

Vijge, M. J. (2015). Competing discourses on REDD+: Global debates versus the first Indian REDD+ project. *Forest Policy and Economics, 56*, 38–47.

Visseren-Hamakers, I. J., McDermott, C., Vijge, M. J., & Cashore, B. (2012). Trade-offs, co-benefits and safeguards: Current debates on the breadth of REDD+. *Current Opinion in Environmental Sustainability, 4*(6), 646–653.

World Bank. (2017). *World development indicators.* World DataBank. http://databank.worldbank.org.

Zelli, F., Möller, I., & van Asselt, H. (2017). Institutional complexity and private authority in global climate governance: The cases of climate engineering, REDD+ and short-lived climate pollutants. *Environmental Politics, 26*(4), 669–693. https://doi.org/10.1080/09644016.2017.1319020