

What explains global patterns of climate activism? A macro-level, cross-national analysis of collective environmental action

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Abstract

Activism in response to climate and ecological breakdown is a defining feature of 21st-century societies. Yet, the factors underpinning its global variation remain insufficiently understood. We address this research puzzle through a cross-national analysis of collective environmental action events between 2018 and 2022: a pivotal moment in climate mobilisation. Drawing on an original dataset of 25,626 events across 148 countries, our findings suggest that collective environmental action is associated with market-oriented economies, income inequality, democratic regimes, stronger anti-system movements and location in the Global North. In the North and in democracies, we find a *movement-amplification configuration*, with collective environmental action most prevalent in wealthier, liberal polities with anti-system movements. In the South and under authoritarian rule, a *frontline communities configuration* prevails: collective environmental action is linked to higher inequality and a larger private role in the economy. Our findings point to the unequal political and socio-economic conditions underpinning environmental mobilisation.

Keywords

climate activism, contentious politics, democratic governance, environmental protest, Global South/North

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Introduction

With every society and ecosystem on the planet facing the threat of climate and ecological breakdown, collective environmental action ('CEA' herein) in response to it has proliferated on a global scale (Bressler, 2021). Forms of collective action on the issue stretch back at least five decades; however, post-2018, climate movements have become notably contentious and transnational in character (Almeida, 2019; Borbáth and Hutter, 2025; Boucher et al., 2021; Chase-Dunn and Almeida, 2020). Environmental protests have taken place in almost every country worldwide in the last decade but have been unevenly spread in number and intensity (Boucher et al., 2021; Carvalho and Gardner, 2025; Gardner et al., 2022).

A considerable body of research has examined the micro-level determinants of climate and environmental protest (i.e. drivers of individual participation; see Bamberg et al., 2015; Cheon et al., 2021; Cologna et al., 2021; Landmann and Naumann, 2024; Wallis and Loy, 2021); however, the macro-level factors (i.e. the system-level or structural conditions underpinning collective action) associated with these cross-national differences remain largely unknown. Meanwhile, work on grassroots climate action has largely focused on Global North contexts, with less attention paid to the Global South. This article provides a cross-national analysis of the variables associated with CEA, investigating: (1) the role of economic factors, political factors and region associated with the prevalence of CEA; and (2) how these variables differ between the Global North and South and between democratic and non-democratic regimes. We draw on a dataset of 25,626 climate-related collective action events across 148 countries that were registered on Fridays For Future's (FFF) website between 2018 and 2022. This youth-led environmental movement organises mass mobilisation and coordinated school strikes on a global scale (Bowman, 2019; Pickard, 2022). Although this dataset includes many events undertaken by FFF, the dataset incorporates a high volume of events from other environmental movements and campaigns, youth-centred or otherwise, as the movement's website was not restrictive over what forms of environmental protest activities were to be included. This unique dataset allowed us to undertake a cross-national macro-level analysis of CEA worldwide.

This article offers a novel contribution to the field by bridging a long-standing divide in the social science literature on environmental movements. In the Global North, environmental action tends to be characterised as a materially secure middle-class movement (Inglehart, 1990), while in the Global South, the literature speaks more of an 'environmentalism of the poor', where marginalised communities defend their communities against resource extractivism (Guha and Martínez-Alier, 2013). Yet these two literatures largely speak past one another, and their core claims remain weakly assessed beyond specific national or regional cases. We treat this divide as an empirical question by bringing a global perspective and testing under what conditions environmental activism emerges.

Our findings speak to patterned variation in mobilisation dynamics across the global landscape. In the affluent democracies in the Global North, a *movement-amplification configuration* prevails, with wealth, democratic institutions and system-challenging social movements providing the infrastructure for mobilisation. In the Global South, a *frontline communities configuration* is more salient, as extractivism and inequality stimulate protest, but under more constrained conditions. Rather than two distinct types of

environmentalism, our findings suggest context-specific configurations, yielding high levels of action in wealthy democracies with strong anti-system mobilisation and more constrained, grievance-driven activism around extractive frontiers in the Global South.

The article proceeds through four sections. First, we outline the current literature on environmental movements and derive our hypotheses. After outlining the methodology, we detail our findings. Fourth, we discuss these findings and outline the article's core implications for contemporary environmental protest.

Resources, opportunities and movement fields in environmental activism

Environmental movements represent a distinct sub-group of social movements, with its own trajectory and set of protest repertoires, having risen to visible and organised prominence in the post-1968 era (Kriesi et al., 1995). Giugni and Grasso (2015) suggest these movements are characterised by their high degree of heterogeneity in terms of actors (from individuals and loosely structured local groups to transnational and professionalised institutions), issues (from traditional conservation to radically transformative ecologies) and strategies (incorporating an exceptionally varied set of repertoires and protest frames). The environmental movement has also witnessed a specific trajectory of institutionalisation from the 1960s onwards, in the form of Green parties, non-governmental organisations (NGOs) and dedicated government departments, while grassroots organisations have witnessed a scaling up to the transnational arena (Rootes, 1999).

In the Global North, the political salience of environmental issues has been associated with the so-called 'New Social Movements' in the post-1968 era: a period in which – it is claimed – the new middle class, with their basic material needs largely secured, began to shift towards the post-material issues, such as identities, lifestyles and the transformation of societal norms and values (Inglehart, 1990). However, the conceptualisation of contemporary climate and ecological movements as post-materialist has been criticised for overlooking how deeply rooted many of these movements are in material interests, struggles over land and production, and class structures (Schlosberg, 2025). Indeed, movements such as Extinction Rebellion and FFF have been associated with the educated middle class (Bell and Bevan, 2021) and individual lifestyle-based claims (Zamponi et al., 2022), despite evidence suggesting more nuanced cross-class alliances than usually depicted in the media (Della Porta and Portos, 2023). Meanwhile, in the Global South, in addition to the rise of environmental activism among the educated middle classes, scholars point to the 'environmentalism of the poor': longstanding traditions of contention related to imperialist and capitalist production processes and resource extractivism that connect to domination and marginalisation on the basis of class, race and gender (Guha and Martínez-Alier, 2013; Martínez-Alier, 2002).

Despite the particularities of environmental activism, these movements nonetheless remain subject to many of the same structural and socio-political restraints and factors that shape other social movements. Hence, to develop our hypotheses on the cross-national variables related to CEA, we drew on both the specific dynamics of environmental movements and the wider scholarship on social movements and political participation. We

conceptualise cross-national variation in CEA through three approaches: (1) resource mobilisation approaches, focused on wealth and political-economic organisation; (2) opportunity structure-oriented perspectives, which stress democratic openness and civil society openness; and (3) social movement spillover.

Cross-national studies have found a strong linear relationship between macroeconomic conditions and protest (Almeida and Walker, 2006; Dalton et al., 2010), highlighting the importance of resources and political economy for understanding social movement mobilisation. Despite individual subjective feelings of deprivation or dissatisfaction with governmental management of the economy contributing to the likelihood of protest, this effect is moderated by the per capita size of the country's economy (Dalton et al., 2010; Grasso and Giugni, 2016; Power, 2018). In states with higher per capita income, social movements have greater access to the tangible resources necessary to support protest activities (Dalton et al., 2010; Freeman, 1979). However, Pearson et al. (2025) found evidence that gross domestic product (GDP) per capita is negatively related to climate mobilisation, with citizens in poorer states being more likely to participate in environmental protest. Meanwhile, analysis of the relationship between collective action and the degree of state ownership of the economy has yielded ambiguous results. While many posit that privatisation, austerity and financialisation begets public protest to some extent (Almeida, 2007; Almeida and Walker, 2006; Bailey et al., 2022), others point to decreases in protest in the wake of such policies (Kurtz and Lauretig, 2022) or, indeed, political contention in the wake of state capital accumulation (Lim, 1985). In several global contexts, state ownership of the fossil fuel industry is associated with lower levels of organised opposition than private – especially foreign private – ownership of this sector (Hess, 2010; Wegenast and Schneider, 2017). Paired with the association of neoliberalism with ecological crisis (Fremstad and Paul, 2022), we suggest that high levels of state ownership of the economy are likely to be associated with lower levels of CEA. Thus, we expect GDP per capita to have a positive association with CEA, as wealth increases the availability and capacity of actors to sustain their actions [H1]. We expect the same association for market-oriented economies, as privatisation appears to increase the exposure to global markets, extractivism and ecological crisis [H2].

Social movement studies research has long considered the potential relationship between economic inequality and forms of collective action (Gurr, 1970; Scott, 1985). While cross-national analysis of this factor has yielded mixed results (Grasso et al., 2019; Solt, 2010), there is some evidence to suggest that more unequal societies may have higher levels of collective action (Dalton et al., 2010; Schock, 1996). As such, our expectation is that CEA will be positively correlated with economic inequality, given the distributive conflicts that are at the core of many environmental struggles [H3].

Broadly speaking, the research outlined above suggests that levels of public protest are positively related to wealth (Petrova, 2010). We use 'Global North' and 'Global South' as broad geopolitical descriptors (Dados and Connell, 2012), with the latter referring to historically marginalised regions with comparatively lower incomes. Beyond estimating overall prevalence, we compare CEA across these regions to assess whether theories developed largely in Western contexts travel, and to surface region-specific logics of mobilisation. Our study extends prior work (Borbáth and Hutter, 2025; Pearson et al., 2025) by analysing macro-level associations in a global dataset and, through regional

disaggregation, identifying configurations that enable or constrain environmental protest. We expect higher levels of CEA in the North, given the concentration of resources, and lower levels in the South due to greater dependence on extractivist economies [H4].

In contrast to resource-focused approaches, scholars examining the political opportunity structure in which social movements emerge have suggested that collective action is more likely in societies with open, democratic institutions (Almeida, 2003; Kitschelt, 1986; Meyer, 2004; Tarrow, 1989, 1998; Tilly, 2007, 2015). The responsiveness of political institutions to citizens' demands represents a crucial determinant of collective action. In democracies, individuals, groups and networks can advocate for their interests, mobilise citizens and hold governments accountable without state interference or restriction, whereas in authoritarian regimes such political opportunities are more restrained (Kitschelt, 1986; McAdam, 1982; Meyer and Minkoff, 2004; Tilly and Tarrow, 2015). In relation to environmental action, Borbáth and Hutter (2025) show that, between 2000 and 2021, environmental protests became central to the protest arena in Europe. Their cross-national analysis of the drivers of environmental protest in Europe found that the number of such events is shaped by access to resources, while participation responds more to political opportunities. Regarding the latter, protest was found to peak under relatively progressive and better-performing governments, suggesting positive feedback loops between state action and mobilisation rather than simply a response to political inaction. Countering these findings, Pearson et al. (2025) found democracy to be negatively associated with climate mobilisation, as citizens in less democratic societies were more likely to engage. Pearson et al.'s finding aside, we nonetheless expect that higher levels of CEA will be observed in democratic countries, in line with political opportunities and understandings of contention that view democratic states as able to normalise and integrate conflict through institutional channels [H5]. While there are certainly overlaps between the resource-focused and political opportunities approaches, drawing out their underlying mechanics of mobilisation and comparing these cross-nationally allows us to ask whether variation in climate contention is better understood as a geographical North–South divide or as a result of institutional opportunities that cut across this divide.

Departing from the two approaches outlined above, the 'social movement spillover' approach contends that activist organising begets further developments in activist organising, as social movements influence each other through the sharing – directly or indirectly – of tactics, frames, organisational structures and networks (Meyer and Whittier, 1994: 277). This results in forms of 'spillover' that catalyse the development of new movements and the evolution of existing ones (Meyer and Tarrow, 1998; Meyer and Whittier, 1994), while interactions among individual activists, social movements, civil society organisations and political parties open up the potential for the creation of alliances, the sharing of organisational resources and the production of a social movement infrastructure (Hutter et al., 2018; Wang et al., 2018). The presence of radical and counter-hegemonic social movements calling for fundamental transformations to the political, economic, ideological or social status quo – or using non-normative, disruptive repertoires to do so – tends to embolden others to engage in forms of political dissent (Haines, 1984). The 'radical flank effect' has been widely documented in the social movement literature, suggesting that radical actors may expand the discursive and tactical space available to broader constituencies (Almeida, 2019; Kriesi et al., 1995; Van

Dyke, 2003). As such, in our analysis, we expect anti-system movements to boost and widen protest infrastructure that stimulates CEA [H6].

In what follows, we use a range of variables to test the cross-national factors associated with CEA. Before doing so, we first detail the methodology employed in this study.

Methodology

This article analyses a dataset retrieved from the FFF website that maps CEA worldwide. Since 2018, events have been self-reported by organisers or participants via online submission, added to a digital map and shared under the Creative Commons Attribution-ShareAlike 2.0 license (CC BY-SA 2.0). Events recorded in the dataset extend well beyond FFF, ranging from those of transnational groups like Extinction Rebellion to small-scale local initiatives. Each recorded event includes its date, area (town or city), position (e.g. in front of Parliament), geographic coordinates, organiser and repertoire of action. The latter variable includes a wide set of actions, such as demonstrations, strikes, meetups, meetings, non-violent direct actions, individual actions, online actions, vigils, violent demonstrations and flashmobs. As participant numbers are not consistently provided, this was not included in our analysis. Our dependent variable, CEA, is a count of all actions between 2018 and 2022, comprising 25,626 self-reported events.

The dataset adheres to the methodological logic of protest event analysis (PEA) (Carvalho, 2024; Hutter, 2014): a social movements studies methodology that quantifies protest occurrences to understand ‘how protests co-vary with the changes in their environment’ (Hutter, 2014: 336). PEA typically draws on media sources to produce a standardised catalogue of events, mapping social movement actors, claims and repertoires across time and space. As our dataset depicts movements beyond protest, providing a granular picture of movement activity, it is closer to what Accornero and Carvalho (2025) call ‘Engagement Event Analysis’: a systematic mapping of the full gamut of movement activities.

Where traditional PEA is susceptible to bias through the selection of and reliance on media sources (Carvalho, 2024), our dataset introduces a potential source of attenuation bias due to the events being self-reported. Given FFF’s European origins, it is likely that protest activities in the Global South are under-reported relative to regions with denser networks and stronger internet connectivity. Nevertheless, the self-reported nature of the events in our dataset allows us to track events beyond those typically reported in media sources, providing unique insights into CEA on a global scale. Our country-level counts should therefore be interpreted as conservative estimates of CEA, particularly outside affluent democracies. We therefore treat our data as measuring the geography of digitally visible, FFF-linked CEA, rather than the entirety of environmental protest worldwide.

Our dataset maps levels of CEA across 148 recognised states. A total of 47 countries were excluded from the analysis due to missing data on independent variables (Hong Kong, Palestine, Bahrain, Cuba, Libya, Kuwait, Equatorial Guinea, Barbados, and a range of microstates), and/or an absence of CEA events registered (Belarus, Moldova, Russia and Ukraine). The dependent variable is a count of the number of CEA events, ranging from one (e.g. Cape Verde) to 4558 (USA), averaging 173.17 events per country.

Independent variables were selected on theoretical grounds, as outlined in the previous section. GDP per capita and state ownership of the economy reflect the resource and political-economic environment of mobilisation; the Gini index represents distributive inequality

Table 1. Descriptive statistics: dependent and independent variables.

Variable	Average	Standard deviation	Min.	Max.	Year(s)	Sources
CEA	173.17	554.58	1	4558	2018–2022	Fridays for Future
Population (millions)	50	167	0.1	1423	2020	Our World in Data
State ownership of economy	0.72	0.98	–2.04	2.78	2018	V-Dem
GDP per capita (log)	2.36	1.16	–0.31	4.51	2019	V-Dem
Gini index	36.6	8.39	23.2	63	2007–2022	World Bank
Anti-system movements	–0.52	1.04	–3.24	2.05	2021	V-Dem
Regime type	5.37	2.75	0	9	2021	V-Dem
Global South	0.70	0.46	0	1	2022	UNCTAD

Note. CEA: collective environmental action; GDP: gross domestic product; UNCTAD: United Nations Conference on Trade and Development; V-Dem: Varieties of Democracy. For the state ownership of the economy variable, higher values indicate less direct state ownership/control (i.e., a greater private role in the economy).

structure; regime type indicates political opportunity; anti-system movements point to protest infrastructure and spillover dynamics; and the Global North/South variable marks a broader structural location in the world system. Population is included not as a substantive explanatory variable, but as an adjustment for country size. Because some of these variables are empirically related (e.g. democracy and Global North location), we assessed collinearity as a diagnostic check rather than as a criterion for variable inclusion. Variables were retained if they represented distinct theoretical mechanisms. The independent variables were collected from a range of sources, including the Varieties of Democracy (V-Dem) project (state ownership of the economy, GDP per capita, anti-system movements and regime type) (Coppedge et al., 2021); and the World Bank (Gini index) (Table 1). The Global North/Global South variable was drawn from the United Nations Conference on Trade and Development (UNCTAD) classification.

The degree of state ownership of the economy and GDP per capita provide information on the political economy of each country included in the dataset. The former reports the extent to which ‘the state owns or directly controls important sectors of the economy’: the lowest values correspond to higher levels of state control, while the higher the value the less capital belongs to the state (i.e. higher scores indicate less direct state ownership/control) (Coppedge et al., 2021: 184). We use V-Dem’s continuous latent estimate of this concept, which is comparable across countries and can take negative or positive values; higher scores always indicate less direct state ownership. We use GDP per capita in natural logs (*ln* GDPpc). Log-transforming GDPpc reduces right-skew and compresses outliers, and it makes coefficients interpretable in proportional terms. We included the Gini index as a measure of income inequality, with figures for this variable ranging from 23.2 (Iceland) to 63 (South Africa).

A third block of variables measures regime type and the prevalence of anti-system movements. For regime type, we use a continuous measurement of democracy ranging between 0 (closed autocracies) and 9 (fully liberal democracies). For the initial descriptive analysis, we present a binary indicator of regime type with the cut-off at the boundary between electoral autocracy (4) and electoral democracy (5). When used in regressions, we use the continuous variable. The ‘anti-system movements’ variable provides a measure of the strength of groups ‘organised in opposition to the current political system’ (Coppedge et al., 2021: 196). This variable captures the extent to which civil society groups challenge a political regime – capturing, for example, from left-wing anti-austerity protests to right-wing mobilisations, which can be equally disruptive. As with state ownership of the economy, we use V-Dem’s continuous latent estimate of this concept, which is comparable across countries and years; higher scores indicate stronger anti-system mobilisation posing a greater threat to the regime.

Finally, to distinguish between the Global North and the Global South, we use the UNCTAD classification of economies, which differentiates between developed and developing economies. Following UNCTAD’s usage, ‘Global North’ is shorthand for the group of economies that incorporates Northern America, Europe, Australia, Aotearoa New Zealand, Japan, the Republic of Korea and Israel. ‘Global South’ corresponds to countries in Africa, Latin America, the Caribbean, and parts of Asia and Oceania not listed as Global North above. This division is analytically and politically contested – representing a broad-brush-stroke approach that fails to recognise the heterogeneity within both regions. We use these terms to operationalise broad global asymmetries in wealth, power, development and infrastructure, rather than as fixed or homogeneous blocs. UNCTAD’s classification offers a transparent and reproducible way of operationalising these structural differences for the purposes of our cross-national analysis.

As our CEA measurement is a count variable over a fixed interval of time that does not follow a normal distribution, we model the count of CEA using a negative binomial regression (in IBM SPSS) to account for over-dispersion in the outcome in our analysis. In what follows, we present the main descriptive results of our dependent variable. We then proceed first by analysing the main correlates of the CEA, then comparing the models between North–South and democratic–authoritarian countries.

Explaining cross-national variation in CEA

In this section, we present our analysis of the macro-level factors influencing collective action in response to climate and ecological breakdown. Our dataset demonstrates that CEA is a pervasive, global phenomenon, with events recorded in 148 countries: 75% of all recognised states. Nevertheless, considerable cross-national differences in the prevalence of this phenomenon are observable.

Figures 1 to 3 present descriptive data concerning the levels of CEA by region and a comparison between regime types in the Global North and South. As these figures illustrate, CEA is particularly concentrated in Europe, North America and Oceania, with considerably lower – but nonetheless noteworthy – levels observed across South America, Asia and Africa. Although Oceania appears to occupy a middle ground in the number of CEA events recorded (as shown in Figure 1), a clear division is observable between the

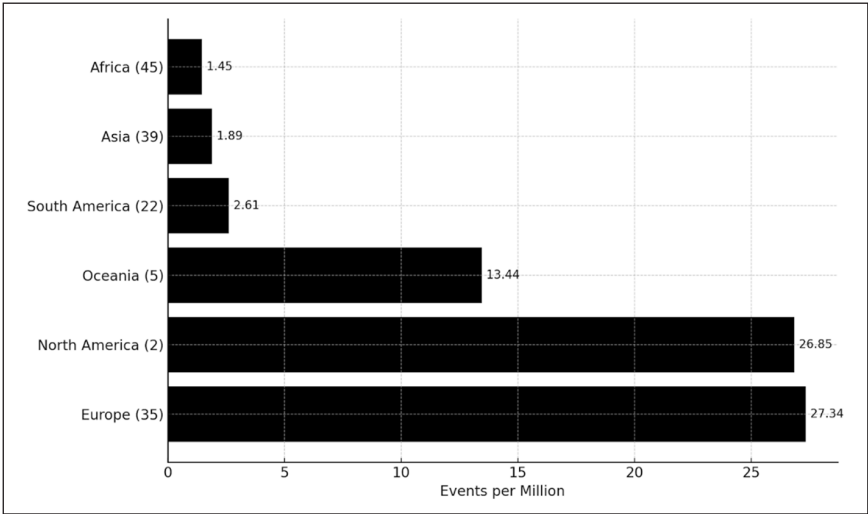


Figure 1. Collective environmental action (CEA) event count per million inhabitants by continent (mean).
Note. The numbers in parentheses represent the number of cases in each continent.

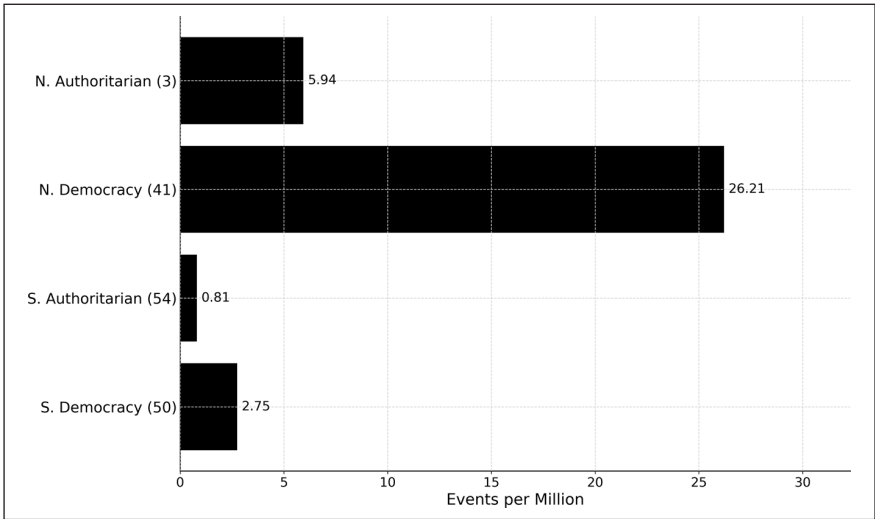


Figure 2. Collective environmental action (CEA) event count per million inhabitants by region and regime (mean).
Note. N: Global North; S: Global South. The numbers in parentheses represent the number of cases in each group.

high number and rate of such events in Australia and Aotearoa New Zealand (comparable to countries in Western Europe and North America) and the considerably lower levels recorded elsewhere in this continent (Fiji, Papua New Guinea and Vanuatu). Comparing

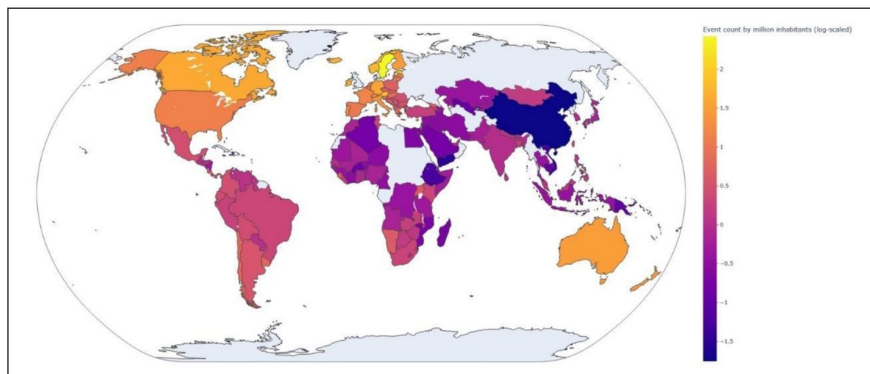


Figure 3. Map of the collective environmental action (CEA) event count per million inhabitants.

the Global North and South by regime type shows that, in the latter, there is barely any difference in the extent of environmental action between democracies and non-democracies. However, in the Global North, the difference is substantial, which is likely to be influenced by the small number of non-democratic states in the Global North. These results point to important differences between the Global North and South, which we explore below.

Macro-level correlates of collective environmental action

This section presents our analysis of the cross-country correlates of CEA for the dataset as a whole. National population size, included as a control variable, is positively and significantly associated with CEA (incidence rate ratio (IRR) = 1.01), indicating that, in general, the higher the population the higher the CEA event count: a one-unit increase in population corresponds to 1% more expected actions.

For our economic variables, we find that the level of state ownership of the economy is associated with CEA, while the logged GDP per capita is not. State ownership of the economy is positively related to action (IRR = 1.35), indicating an expected count about 35% higher per unit where the private ownership in the economy is greater. Income inequality also shows a positive association: a higher Gini index value is associated with more environmental action (IRR = 1.05), implying roughly a 5% increase in the expected count per one-unit increase in the index. Regarding the political factors, countries scoring higher on the anti-system movements dimension exhibit somewhat higher levels of action (IRR = 1.20). Regime type is positively related to action (IRR = 1.16), suggesting that moving towards more open regime characteristics is associated with about 16% more collective environmental events. A clear regional pattern emerges: countries in the Global South display lower expected counts of environmental action when controlling for other variables. The IRR for the Global South dummy is 0.12, which implies about an 87.9% reduction in expected actions relative to countries in the Global North.

These results suggest a combination of structural conditions (population size, location and inequality) and political conditions found in democratic countries with a contentious civil society. In particular, the positive association with anti-system orientations points to the role of political contention repertoires and frames in facilitating mobilisation.

In the following section, we add further detail to this picture through a split-sample analysis, bifurcating the dataset and comparing the association of these variables across (i) region (Global North and Global South) and (ii) regime type (democratic and non-democratic).

Comparing across region and regime type

Regression models for the Global North and the Global South reveal distinct patterns of CEA (Table 2). Population size is a strong associate of action in both regions: in the Global North, each additional million inhabitants corresponds to a 2% increase in the expected number of CEA events ($IRR = 1.02$), while this increase is about 1% in the Global South ($IRR = 1.01$).

In the Global North, GDP per capita has a strong, positive association ($IRR = 5.34$), indicating that wealthier Northern countries experience substantially more CEA events. Regime type also matters: more democratic regimes display higher levels of CEA ($IRR = 1.42$). Anti-system movements are also positively related to CEA ($IRR = 1.83$), whereas state ownership of the economy and income inequality are not significantly related to environmental contention.

In the Global South, structural and distributive factors are more important than regime characteristics. States with a larger private role in the economy display significantly higher levels of CEA ($IRR = 1.46$). Income inequality is also strongly associated with CEA: each one-point increase in the Gini index raises the expected count of events by about 7% ($IRR = 1.07$). However, in the Global South, GDP per capita, anti-system movements and regime type were not found to be significant once the other variables were controlled for.

Comparing democratic and non-democratic regimes, we find population size to be a strong, consistent correlate of CEA across both contexts, with larger populations associated with higher levels of CEA (authoritarian $IRR = 1.01$; democratic $IRR = 1.01$). In authoritarian regimes, two structural factors stand out. First, state ownership of the economy is positively associated with action ($IRR = 1.58$); second, income inequality is positively related to action ($IRR = 1.06$), implying roughly a 6% increase in events per additional Gini point. GDP per capita and anti-system movements have insignificant associations. Meanwhile, CEA occurs more often in authoritarian regimes in the Global North than in the Global South ($IRR = 0.27$). In contrast, in democratic regimes, GDP is strongly associated with CEA ($IRR = 1.85$), while the presence of anti-system movements shows a positive, though weaker, association ($IRR = 1.36$). While private ownership has a modest positive association ($IRR = 1.44$), inequality is not significant. Democracies in the Global South still display markedly fewer CEA events than those in the Global North ($IRR = 0.16$).

Taken together, these results indicate that, while population size matters everywhere, the factors diverge by regime type: inequality and private ownership are most consequential under authoritarian rule, while economic development and contentious civil society are more salient in democracies. The persistent negative relationship between CEA and location in the Global South points to a broad geographic penalty in expected mobilisation, even after accounting for other economic and political factors.

Table 2. Negative binomial regression models for collective environmental action (CEA): global, North–South and authoritarian–democratic.

Variable	Global model (<i>N</i> = 148)	Global North (<i>n</i> = 44)	Global South (<i>n</i> = 104)	Authoritarian (<i>n</i> = 57)	Democratic (<i>n</i> = 91)
Population	1.01*** [1.005, 1.01]	1.02* [1.00, 1.03]	1.01* [1.00, 1.01]	1.01*** [1.00, 1.01]	1.01*** [1.00, 1.01]
State ownership of economy	1.35*** [1.08, 1.70]	0.77 [0.34, 1.74]	1.46* [1.14, 1.86]	1.58** [1.19, 2.11]	1.44* [0.93, 2.27]
GDP per capita (log)	1.26 [1.03, 1.53]	5.34** [1.11, 24.83]	1.17 [0.96, 1.44]	1.11 [0.85, 1.48]	1.85** [1.35, 2.55]
Gini index	1.05*** [1.02, 1.08]	0.99 [0.90, 1.11]	1.07* [1.04, 1.10]	1.06*** [1.02, 1.11]	1.03 [0.99, 1.07]
Anti-system movements	1.20* [0.98, 1.46]	1.83* [0.91, 3.69]	1.13 [0.92, 1.40]	1.07 [0.80, 1.42]	1.36* [1.01, 1.83]
Regime type	1.16** [1.04, 1.30]	1.42* [0.94, 2.10]	1.05 [0.93, 1.17]	–	–
Southern countries	0.12*** [0.06, 0.25]	–	–	0.27* [0.06, 0.92]	0.16*** [0.06, 0.44]

Note. Incident rate ratios with 95% confidence intervals in brackets. Significance levels: ****p* < 0.001; ***p* < 0.05; **p* < 0.1. For the state ownership of the economy variable, higher values indicate less direct state ownership/control (i.e., a greater private role in the economy).

Discussion and conclusion

In this article, we analyse the macro-level factors of CEA across the world, drawing on a 148-country dataset of more than 25,000 environmental activist events. Our findings highlight the structural foundations of CEA across contexts, demonstrating that political, economic and social movement factors interact rather than operate in isolation. Due to the specificities of our dataset, our findings reflect patterns specific to environmental activism; however, we acknowledge that some structural correlates may also apply to other protest types. As our descriptive analysis indicates, CEA in 2018–2022 took place with the greatest frequency in Europe, North America and Oceania, with notably lower – but nonetheless substantial – levels in South America, Asia and Africa. This pattern of distribution is broadly in line with prior research on post-2018 environmental activism (Gardner et al., 2022).

Our analysis brings together three approaches from the social movement studies literature: resource mobilisation, opportunity structure and social movement spillover, treating these as alternative perspectives rather than mutually exclusive factors of environmentalism. We find broadly supportive evidence across our hypotheses (H1–H6), with clear regional and regime-based differentiation in both the direction and *intensity* of associations. In the global model, CEA is positively associated with market-oriented economies (H2), income inequality (H3), democratic regimes (H5), anti-system movements (H6) and location (H4). CEA was found to be more frequent in countries that are more populous, market-oriented, unequal, democratic, feature stronger anti-system movements and are located in the Global North. Population size has a small but notably consistent association in all models, indicating that larger polities systematically experience more events. Overall, then, the ideal-typical country for high levels of CEA appears to be a wealthy, neoliberal democracy, marked by economic inequality and some degree of anti-system movement activity.

When we compare the Global North and the Global South, as well as democratic and non-democratic regimes, context-specific configurations emerge between regions. In the Global North and across democratic societies, what matters most in explaining CEA is the strength of democracy and the prevalence of anti-system movements. Although GDP is significant in both the Global North and democratic subgroup models, private ownership and inequality are not consistently significant across them. This provides some evidence in support of the post-materialist explanation for environmentalism in the Global North; however, this explanation must be tempered by recognising the importance of political opportunity (democracy) and social movement spillover (anti-system movements) mechanisms. As the factors associated with environmental contention in the Global North cut across all indicators considered key for activist mobilisation, we describe this as the *movement-amplification configuration* (Table 3). This presents an explanation for the emergence of movements like FFF in Sweden and Extinction Rebellion in the UK, but also the strength of their diffusion to countries such as Germany, Switzerland, the Netherlands and the United States (Gardner et al., 2022; Uba, 2025).

If high levels of democracy constitute an open political opportunity for the emergence of CEA, where activists' willingness to participate is buttressed by confidence in secure civil liberties, then the recent wave of protest criminalisation across liberal democracies in the Global North stands to have a chilling effect on climate protest (Selmini and Di

Table 3. Regional configurations.

Configuration	<i>Movement-amplification</i>	<i>Frontline communities</i>
Regions	Global North Democratic states	Global South Non-democratic states
Resource mobilisation factors	GDP; <i>openings for post-materialist and lifestyle activism</i>	Inequality and private ownership of the economy; <i>environmentalism of the poor</i>
Political opportunity factors	Democracy; <i>more secure civil liberties</i>	
Spillover factors	Anti-system movements; <i>emboldened by radical collective actors in civil society</i>	

Note. GDP: gross domestic product.

Ronco, 2023). The expansion and intensification of state repression of activism in France (Fritsch, 2025), the passing of the Police, Crime, Sentencing and Courts Act 2022 and the Public Order Act 2023 in the UK (Martin, 2025), and the introduction of new anti-protest laws across several Australian states (Gulliver et al., 2023) have altered the risk profile of activism in these countries. While more granular analysis is needed to examine the outcomes of such criminalisation and repression (Honari, 2018), our research indicates that democratic freedoms were an important part of the story of CEA in 2018–2022.

Our research found anti-system movements to be a strong correlate of CEA for the *movement-amplification configuration* (see Table 3). Radical activism and a dense movement field appear to beget more environmental action, whether the latter incorporates radical critiques of the status quo or not. While many contemporary climate movements have framed their tactics and approach as inspired by the Suffragettes, the US Civil Rights movement, and anti-Apartheid campaigns, our research suggests that post-2018 climate movements also grew directly out of the political soil of more recent anti-system movements, such as Occupy, 15-M, anti-austerity movements, Black Lives Matter, and Standing Rock. Equally, as our anti-system movements variable spans the political spectrum, it includes far-right and ultra-nationalist campaigns; hence, it is also possible that CEA in 2018–2022 has a counter-movement component.

Meanwhile, activist organisations often considered the climate movement's 'radical flank', such as Just Stop Oil (UK), Last Generation (Italy, Germany and Canada) and Blockade Australia, have been criticised for their disruptive protest tactics, especially for their potential to generate public backlash (Joly et al., 2025). However, what such debates do not consider is the potential for system-challenging movements to embolden all forms of environmental protest. Our findings are in line with the view that radical activism widens the tactical space, normalising disruptive action, providing organisational resources that environmental actors can draw on (Almeida, 2019; Kriesi et al., 1995; Van Dyke, 2003) and opening the space to make demands commensurate with the scale of climate and ecological breakdown (Svensson and Wahlström, 2023).

In the Global South and in non-democratic contexts, political economic factors (market orientation and inequality) emerge as important for explaining cross-national variation in CEA. The ideal type here is a comparatively more unequal country with low levels of

state ownership. We interpret this as indicating support for the ‘environmentalism of the poor’ approach (Martínez-Alier, 2002), where marginalised communities in economically unequal societies resist environmental degradation, with the survival of the community tied to threatened ecosystems, especially by transnational extractivist corporations. In this way, our article provides the first global comparative quantitative analysis to find evidence for the structural conditions underpinning this thesis.

We describe this as the *frontline communities configuration*. Global South and non-democratic models show that the level of democracy is not a significant factor for CEA. Non-democratic countries with high inequality and a strong market orientation can still display environmental contention, especially where extractive projects directly threaten livelihoods, and where limited associational spaces provide minimal organisational infrastructure. In line with these findings, we see modest levels of CEA, even in states like Turkey, Algeria and Sudan. Our findings echo research demonstrating that protest can emerge under constrained opportunities when grievances are intense and when state strategies of accumulation generate localised conflicts (Bornschier and Vogt, 2024; Taylor and Bonner, 2017). Indeed, states that score highly on these indicators, such as Brazil, Chile, South Africa, Kenya and India, witnessed higher levels of CEA over the 2018–2022 period. With inequality and low levels of public ownership emerging as significant factors underpinning CEA in the Global South, it would appear that, in many cases, the structural conditions for environmental contention here were produced or exacerbated by the so-called ‘shock-therapy’ programmes of the 1980s and 1990s (Forster et al., 2019).

While levels of public ownership are not significant for the Global North in our models, this variable becomes important when examining all democratic contexts (including democracies in the Global South). This points to what we term *contentious extractive democracies*: a grouping that includes states such as Australia, Canada, Norway, South Africa, Brazil, Uruguay and India, where democratic institutions open the space for anti-system mobilisation and the contestation of extractive industries. Overall, our results do not point to a simple North–South or democratic–authoritarian divide; rather, they underline the context-specific nature of CEA, suggesting that different mixes of political opportunities and threats shape its emergence. The two configurations we outline in this article are complementary, producing different outcomes depending on context.

We identify three limitations of our analysis. First, a scarcity of relevant survey data across our cases meant that we were unable to test the impact of variables related to environmental values and attitudes, such as the degree of climate concern. We acknowledge that CEA may be triggered by immediate climate-related crises, such as floods, droughts or wildfires, activating latent grievances and mobilising public action. However, we were unable to incorporate these variables into our model, as both datasets linking ecological crises to protest timelines and consistent, comparable records of environmental shocks remain limited. As our findings indicate that GDP per capita serves as a driver of CEA, and this factor is strongly linked to rates of greenhouse gas emissions, we tentatively suggest that our study points towards a connection between CEA and emissions. However, further research is needed to assess whether – and to what extent – emissions and acute environmental crises interact with structural conditions to produce protest.

Second, our analysis investigates macro-level determinants at a cross-national scale and so the findings outlined in this article are necessarily broad-brush strokes. As the dependent variable is simply the number of CEA events observed, we are unable to speak to the

societal importance, impactfulness or cultural relevance of each event. It is possible that a small set of intrepid activists in non-democratic states breaking with cultural norms and repressive state apparatuses to hold a simple street demonstration (Gardner et al., 2024) might be more impactful than a similar event held in an open democratic state. Such specificity is not possible to include in our models; hence, more granular, descriptive analyses are needed to answer questions in this regard. However, a recent systematic review of 50 empirical studies (Thomas-Walters et al., 2025) concludes that climate activism shifts public opinion, media coverage, voting behaviour and politicians' communication.

Third, as our dataset relies on self-reporting to a transnational movement that originated in northern Europe, it may under-report events beyond this context. Such self-reporting could be dependent on – and reflective of – the extent of links that environmental groups have with movements based in the Global North. Despite these limitations, this article nevertheless provides a general picture of the core variables associated with CEA at the cross-national scale.

This article opens up an under-considered dimension of FFF. Emerging in Sweden, its repertoire of Friday school strikes spread rapidly across both the Global North and the Global South (Uba, 2025). Our findings show that FFF acted as a catalyst for a wide range of climate activism worldwide, with its open online protest event register becoming a platform for repertoires and activist demographics extending well beyond youth school strikes. In this sense, FFF became both a symbolic reference point and an organisational node within a broad transnational network through which actors could co-inspire and co-amplify diverse forms of collective action on the climate crisis. Its repertoires travelled through transnational activist networks, digital communication infrastructures and the movement's event-registration system; in Global South contexts, these forms were not simply emulated, but adapted to local struggles around extractivism, inequality and environmental injustice. FFF thus acted as a flexible infrastructure through which diverse actors could localise and amplify climate contention.

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