

# Environmental harms

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| **How can extreme wealth produce environmental harms?** | A distinction should be drawn between the role of extreme wealth in relation to the distribution of emissions and its direct role in affecting emissions levels. Emissions inequalities see the very rich bear greater responsibility for climate harms. On the other hand, extreme wealth and wealth concentration could directly increase emissions and thus generate environmental harms. The environmental impact of extreme wealth can occur through consumption – e.g. by supporting carbon-intensive behaviours and luxury lifestyles — but also through capital ownership. Extreme wealth can contribute to environmental harm through control over production systems that shape the economy and lead to the concentration of capital in carbon-intensive sectors. Extreme wealth can also affect climate policy via political capture, with the potential of resulting in inaction or outright obstruction to climate policy. | |
| **Evidence assessment** | **Certainty** of evidence | **Strength** of relationship |
| | **High certainty of emission inequalities**: Strong, consistent evidence that extreme wealth is associated with high individual emissions and concentration of emissions (accounting studies). | **Strong distributional effects:** The top 10%—and especially the top 1%—account for a disproportionate share of global emissions, often by large multiples compared to less advantaged groups, and this concentration has increased over time |
| | **Moderate certainty on the effect of inequality on total emissions**: Mixed and inconsistent evidence, with substantial heterogeneity across contexts and methods. Research focused on wealth is still emerging and limited but tends to find more consistently positive associations – albeit not uniform —particularly for top-end concentration. | **Moderate / variable (aggregate effects):** Effect of inequality on total emissions depends on context and inequality is largely found to be a contributing factor – e.g. moderating the relationship between growth or democracy and climate outcomes |
| **Threshold** | Clear top-end distributional threshold, with emissions highly concentrated among the top 10% and especially top 1% (robust evidence from accounting studies).<br><br>Nonlinear macro-thresholds (e.g. Environmental Kuznet Curve turning points mediated by inequality levels), these are heterogeneous and context-dependent, with no single global tipping point. | |

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| **Contextual factors** | • **Level of economic development** shapes whether inequality increases or decreases environmental pressures, with effects often differing between low-, middle- and high-income countries.<br>• **Energy systems and industrial structure** influence how wealth and income concentration translate into emissions<br>• **Wealth composition and ownership structures** affect environmental impacts, as wealth concentrated in carbon-intensive sectors may generate greater harms than wealth invested in lower-emission activities.<br>• **Institutional quality**, **governance and state capacity** influence the extent to which economic power can be converted into environmentally harmful production, investment, or consumption patterns.<br>• **Social factors and social norms:** public attitudes towards climate crisis affect demand and acceptability of climate policy, while status competition and luxury consumption drive patterns of consumptions and resource-intensive lifestyles.<br>• **Globalisation and international supply chains** influence the location and visibility of environmental harms, allowing emissions and other impacts to be displaced across countries through trade and investment. |
| **Evidence gaps** | • Evidence remains skewed towards studies focused on income rather than wealth. More econometric studies are needed to examine the impact of wealth concentration and extreme wealth on emissions.<br>• A stronger connection is needed between emissions inequality and the environmental impacts of inequality. While a growing literature documents the disproportionate emissions of top income and wealth groups, stronger evidence is needed on how this concentration translates into aggregate environmental harms, or the identification of extreme wealth thresholds.<br>• More empirical evidence is needed around political economy channels (elite influence, lobbying, structural power) and their connections with other mechanisms and harms. In particular, political economy mechanisms have rarely been studied through the lens of quantifying the impacts of extreme wealth and the relationship between political and environmental harms.<br>• The present focus is on emissions and climate change, but a more comprehensive assessment could examine the role of extreme wealth in relation to different environmental harms (e.g. biodiversity and land-use; resource depletion and pollution) and distinguish/identify common mechanisms. |
| **Examples of strong studies** | **On wealth concentration and emissions inequality**<br>Apeti, A. E., Bambe, B. W. W., Edoh, E. D., & Ly, A. (2025). Wealth inequality and carbon inequality. *Ecological Economics*, *227*, 108406<br><br>Büchs, Milena, Tim Goedemé, Sarah Kuypers, and Gerlinde Verbist. 2024. "Emission Inequality: Comparing the Roles of Income and Wealth in Belgium and the United Kingdom." *Journal of Cleaner Production* 467:142818<br><br>Chancel, L. (2022). Global carbon inequality over 1990–2019. *Nature Sustainability, 5*(11), 931–938. |

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| | Starr, J., Nicolson, C., Ash, M., Markowitz, E. M., & Moran, D. (2023). Assessing US consumers' carbon footprints reveals outsized impact of the top 1%. *Ecological Economics*, *205*, 107698.<br><br>**On nonlinear/context dependent effects of the impact of economic inequality emissions**<br>Haciimamoglu, T., Sungur, O., Yildirim, K., & Yapar, M. (2025). Rethinking the Climate Change–Inequality Nexus: The Role of Wealth Inequality, Economic Growth, and Renewable Energy in CO2 Emissions. Sustainability, 17(8), 3335.<br><br>Dorn, F., Maxand, S., & Kneib, T. (2024). The nonlinear dependence of income inequality and carbon emissions: Potentials for a sustainable future. Ecological Economics, 216, 108016.<br><br>Bua, K., Coronese, M., Lamperti, F., Marino, C., Palagi, E., & Roventini, A. (2026). The carbon content of billionaire wealth: Composition, concentration, and taxation. *Fiscal Studies*. Advance online publication. |

**Narrative review**
by Irene Bucelli

**Emissions inequality: There is now strong consensus that wealth inequality has a profound effect on the distribution of emissions. Accounting studies consistently show that emissions are highly skewed toward top income and wealth groups, with large disparities both within and between countries. The top 10%—and especially the top 1%—account for a disproportionate share of global emissions, often by large multiples compared to less advantaged groups, and this concentration has increased over time. This makes it difficult to dispute that extreme wealth is associated with very high individual environmental footprints, and that it plays a central role in shaping who contributes most to climate change.**

One of the main strands of the literature focused on emissions inequality consists of accounting and attribution studies, which use consumption-based or ownership-based frameworks combined with input–output methods to allocate emissions across income or wealth groups. These studies do not attempt to estimate causal relationships; instead, they provide highly detailed and empirically grounded descriptions of how emissions are distributed across populations. Their findings are remarkably consistent: emissions are highly concentrated among top income and wealth groups, with the richest deciles accounting for a substantial share of total emissions, and this concentration increasing over time, particularly within countries (Chancel, 2022; Oswald et al., 2020; Schöngart et al, 2025). Moving beyond descriptive accounting, some recent papers (Apeti et al, 2025) find that wealth inequality contributes to emissions inequality. Alongside factors such as level of development, population growth and demographics,

institutional framework and democracy level, wealth inequality itself is a significant contributory factor explaining emissions associated with the richest groups – while income inequality has no statistically significant influence on emissions inequality after controlling for these other factors. This relationship holds in higher incomes countries and some large emerging economies (China, India), especially in countries with highest levels of emissions inequalities.

At the same time, an important distinction must be drawn between household carbon footprint and the carbon intensity of consumption. The disproportionate emissions of affluent households stem mainly from the scale of their consumption but emissions inequality can be overestimated by methods that assume income or expenditure elasticity values. Pottier (2022) points to how carbon footprint grows less rapidly than expenditure and income. As households become wealthier, they tend to save and invest a growing share of their income, weakening the relationship between income and emissions. The types of goods and services purchased and their respective emissions intensities also varies across income groups. Lower-income households devote a larger share of their budgets to emissions-intensive necessities such as food, heating, housing, and energy, whereas affluent households spend relatively more on less carbon-intensive services. The elasticity of the carbon footprint is also country-dependent and the relationship also between affluence and emissions varies substantially across countries and time periods, reflecting differences in energy systems, prices, technologies, and consumption structures. Notably the marginal emissions elasticity suggests that the climate consequences of inequality reduction depend on how this interacts with consumption changes. Redistribution of income or wealth may increase aggregate consumption and, consequently, consumption-related emissions.

In the US, Starr et al (2023) adopt a bottom-up approach to account for these differences, basing their analysis on a mean point income to $CO_2$ elasticity values of 0.32 (pre-tax) and 0.43 (post-tax) – by comparison, studies estimating emissions using a constant emissions elasticity values often locate this around 0.9-1.0. While smaller than studies using these top-down methods, their results still find significant disparities: the top 0.1% has an emissions share 23 times higher than their population share and 57 times higher than a bottom decile household. Carbon emissions are highly concentrated at the top of the income distribution: in 2019, the top 10% were responsible for 24% of US consumption-based emissions, the top 1% for 6%, and the top 0.1% for 2.3%. The bottom 50% accounted for 31%. Moreover, from 1996 to 2019, national average household emissions declined 16% and while the top decile also shows overall decline of 6%, the top 1% emissions increased 23% and the 0.1% by 50%. Finally, Starr et al (2023) also identify a small group of "super emitters": 1.5% of the top 0.1% households (around 1900 households) who have emissions over 3000 tonnes of $CO_2$ annually.

These findings suggest that while emissions associated with the marginal dollar decrease as income increases, at the extreme upper tail some households own and consume things that are qualitatively different from the rest of the population. Barros and Wilk (2021) attempt to establish billionaire carbon footprints based on public records to trace houses, vehicles, aircrafts, and yachts for 20 US and Western billionaires. Even without accounting for emissions from corporate activities, or consumptions of families, servants, and entourages they find that total annual footprints averaged 8194 t per billionaire. Emissions related to dwellings averaged 189 t per year, superyacht emissions average 7018 t per vessel, and private jet and other transportation

emissions average about 2700 t. These findings are aligned with other studies that underscore how high-income households have higher-carbon lifestyles, particularly in sectors such as transport, housing, and luxury goods (Moorcroft et al., 2025; Baltruszewicz et al., 2022). This aligns with theories such as the Veblen effect, where inequality drives status-based, carbon-intensive consumption (Aye, 2020).

A major development in the accounting literature is the differentiation between consumption-based and investment-based pathways through which inequality shapes emissions. Recent work has significantly expanded the examination of the role of capital ownership. The wealthiest individuals derive a growing share of their emissions not from direct consumption, but from ownership of carbon-intensive assets and firms (Chancel & Mohren, 2025; World Inequality Report, 2026;). This has led to the recognition that emissions inequality is not just about lifestyles, but about control over production and investment decisions. In fact, for the very richest groups, investment-related emissions often dominate total footprints, accounting for the vast majority of their climate impact (Chancel & Mohren, 2025).

**Impact of inequality on aggregate emissions: the effect of extreme wealth and wealth inequality on total emissions is much less clear. Econometric studies provide mixed evidence (and often focus on income rather than wealth): some find that greater inequality increases emissions, others find no significant effect. Others find that the relationship changes depending on context, and contextual variation makes aggregate relationships difficult to identify. Overall there is no single, universal relationship between the economic inequality and emissions: the link is heterogeneous, nonlinear, and strongly context-dependent.**

While accounting studies identify emissions inequalities, a different strand of the literature attempts to estimate whether inequality increases or decreases total emissions. However, the results of these analyses are not consistent: some find positive relationships (Aye, 2020; Knight et al., 2017), others find weak or insignificant effects (Mader, 2018), and still others identify nonlinear or context-dependent patterns (Dorn et al., 2024; Haciimamoglu et al., 2025). This divergence reflects both methodological challenges—such as model specification and endogeneity—and the complexity of the underlying relationship.

Angel et al (2026) also show that climate impacts may also depend on different strategies for reducing income inequality: through a large cross-country study, they find that inequality reduction via redistribution is associated with a greater increase in consumption-based emissions compared to inequality reduction via predistribution (reducing market inequality pre-taxes and transfers). Boz et al (2025) show instead that income redistribution—measured in both absolute and relative terms—is associated with reductions in average per capita carbon emissions but does not appear to significantly reduce emissions among the top 1% income group.

A key emerging pattern is the growing distinction between income inequality and wealth inequality, with the latter shown to be more relevant for explaining emissions. Studies based on income inequality—particularly those using the Gini coefficient—tend to find weak, unstable, or insignificant effects (Knight et al., 2017; Çatık et al., 2024; Jorgenson, 2017). The use of the Gini smooths over important differences within the distribution, especially at the top where emissions are most concentrated. By contrast, studies focusing on top income shares (e.g. top 10%, top 1%) and wealth find much stronger and more consistent associations, particularly for wealth (Apeti et al, 2025; Aye, 2020; Angel, 2026; Büchs et al., 2024; Haciimamoglu et al., 2025; Cambridge Sustainability Commission, 2021). In a cross-country comparative study, Angel (2026) distinguishes between concentration of wealth and income and finds that a greater share of wealth held by the top 1% and 10% significantly increases CO2 emissions from land use change (e.g resulting from deforestation or agricultural expansion), this relationship is not found for income measures. This distinction is also underscored in other studies in relation to emissions in general (Aye, 2020; Knight, 2017).

A growing body of research has emphasised the context-dependent nature of the inequality–emissions relationship (Cho; 2021; Maranzano et al. 2022). The effect of inequality depends critically on factors such as: level of economic development; energy mix; economic structure; institutional quality and political systems which shape how inequality translates into emissions across countries and over time (Dorn et al., 2024; Andersson, 2024; Haciimamoglu et al., 2025; Martínez-Zarzoso & Pilgrim, 2023). These studies often find that inequality has different impacts depending on whether it is above or below certain levels of GDP per capita or stage of development (Wang et al., 2023; Dorn et al., 2024; Martinez-Zarzoso and Pilgrim, 2023). Some studies identify thresholds above which the positive association between inequality and environmental deterioration reverses: Wang et al (2025) shows that, in China, this would occur only at an extremely high level of inequality (Wealth GINI above 0.80). In general, there is a stronger association between inequality and emissions in high-income, high-consumption contexts (Apeti et al, 2025; Martinez-Zarzoso and Pilgrim, 2023). Dorn (2024) shows how countries like Germany, the UK, and Australia exhibit both positive and negative relationships at different times, while others like the US show more consistently positive associations. The relationship is also consistently strong in some countries (the US and France) and weaker/medium in others (Germany, the UK). The study also shows that reducing fossil energy share weakens link between inequality and emissions in high-income countries; that democracy tends to weaken the link, but effects differ in magnitude (e.g. weak in low income countries).

The literature therefore increasingly rejects the idea of a single global relationship, instead proposing that inequality operates within a set of regimes, with different mechanisms dominating in different contexts. This perspective also helps explain why earlier studies produced conflicting results: linear models effectively average across these regimes, masking underlying heterogeneity (Mader, 2018).

Several macroeconomic studies assess the role of inequality (largely focusing on income rather than wealth) in relation to the idea of an Environmental Kuznet Curve (EKC) – which posits an inverted U-shaped relationship whereby economic growth increases environmental pressure up till a threshold country income point beyond which further growth leads to environmental

improvements (e.g. as economies transition toward cleaner technologies, services, and stronger environmental regulation). Consensus has not been reached around the EKC, with some evidence that economic growth does not have a uniform environmental impact – e.g. the EKC hypothesis is only found in higher income countries and in relation to some type of emissions (Martinez-Zarzoso and Pilgrim, 2023) or only in high-income high-inequality contexts. In others the relationship appears also shaped by other factors, such as education (Maranzano et al, 2022). While the debate in this area has not been settled, what emerges is that inequality doesn't just affect emissions directly, but is a factor that changes how a country's growth translates into emissions and environmental degradation. Several studies show that inequality modifies and shapes the growth-environmental degradation relationship – for instance in altering the shape and turning point of the hypothesised curve. Some studies, such as Wang (2023), suggest that inequality (measured as top 10% income share) transforms the standard inverted-U EKC into an N-shaped curve, with double-threshold effects whereby economic growth has different impacts on carbon emissions in various income inequality ranges: initially increases per capita carbon emission, reduces them beyond a certain point but then increases them again at higher inequality levels. This relationship is especially marked in high- and upper middle income countries.

Other studies find that inequality shifts the Environmental Kuznets Curve (EKC) turning point so that higher levels of per capita income are required before environmental improvements occur . Ridzuan et al. (2019) estimate that a one-point increase in the Gini coefficient raises the income turning point by around US$1,920 per capita, suggesting that inequality may delay decarbonisation by prolonging the stage of development during which emissions continue to rise. More generally, inequality appears to condition the economic growth – emissions nexus. For instance, Akinci et al (2026) use top 1% and 10% income shares and find that income inequality amplifies the marginal effect of economic growth on carbon emissions, making growth more environmentally detrimental as top shares of income concentration increase. The effect is marked in both rich, developed economies, especially those with high emissions, and in more unequal middle-income economies which experience a more pronounced environmental cost of economic growth.

**Mechanisms**

The literature converges strongly on a set of underlying mechanisms linking inequality to emissions – Green and Healy (2022) provide a good summary. These can be grouped into three broad categories:

**Consumption mechanisms**

Inequality increases high-carbon consumption among the rich and induces status-driven consumption across society, raising overall demand for carbon-intensive goods (Chancel, 2022; Oswald et al., 2020; Aye, 2020; Morrison et al., 2025; Qin, 2022; CSC, 2021; Green and Healy, 2022).

Notably, while there is evidence that green behaviours and green adaptations increase with income/wealth (Maglicic and Vasconcelos, 2025; Moorcroft et al, 2025), they do not continue to rise (and in fact plateau or reverse) at very high levels income/wealth. An adequate level of resources is needed, especially to adopt capital intensive low-carbon technologies (EVs, heat pumps) (Moorcroft et al, 2025). However, Buchs et al (2024) for instance explore whether there is evidence of a "low-carbon elite" but find that emissions remain high and continue to rise at the top of both the income and wealth distribution. Moorcroft et al (2025) finds evidence of behavioural "lock-in" at high levels of wealth in the UK: very wealthy individuals have inelastic consumption patterns, less responsive to price signals and maintain high-carbon behaviours – for instance, because they are more likely to have global networks, which in turn lead to markedly higher global mobility and lock in aviation demand. The study also identifies some psychological mechanisms: e.g. association of over-consumption and wellbeing and underestimation of lifestyle impacts – these lead to normalising high-carbon practices. Other studies have pointed to performativity and social signalling in motivating ecological engagement. For instance, Fan and An (2025) find evidence of contradictory behaviours: on the one hand higher socioeconomic status correlates with visible pro-environmental behaviours (e.g. recycling, green adaptations) but show less willingness to make private economic sacrifices (e.g. pay higher taxes or prices).

**Investment and ownership mechanisms**

Wealth concentration leads to disproportionate ownership of carbon-intensive assets, with emissions driven by capital allocation decisions rather than direct consumption (Chancel et al., 2026; Chancel & Mohren, 2025; Büchs et al., 2024; Green and Healy, 2022; World Inequality Report, 2026). Recent evidence suggests that the climate impact of extreme wealth reflects not only the scale effect (owning more assets) but also a composition effect (owning disproportionately carbon-intensive portfolios). Bua et al (2026) analyse the asset holdings of the world's 501 richest billionaires and links them to firm-level greenhouse gas emissions using an ownership-based accounting framework. The authors find that emissions are substantially more concentrated than wealth itself: around 50 billionaires account for approximately three-quarters of all emissions attributable to the sample. Importantly, 97% of the variation in emissions is explained by differences in portfolio carbon intensity, indicating that investment choices matter more than wealth levels alone. Ownership stakes in carbon-intensive sectors, particularly Basic Materials, Industrials and Utilities, account for a disproportionate share of attributed emissions, while the highest-emitting billionaires derive between 44% and 66% of their portfolio emissions from hard-to-abate sectors

There is also a growing body of research on the individual motivations and structural dynamics underpinning these investments. In Denmark, Andersen et al (2024) find that investors allocate a larger fraction of their portfolios to responsible assets after windfalls, consistent with the idea that responsible investing is perceived as a luxury good – and this is more likely to occur among those who were already more socially-oriented (e.g. had a prior history of charitable giving). Giglio et al (2025) find that investors in the US have a limited motivation to invest in green assets and have a general expectation that these underperform. The highest green portfolio holdings are among individuals who report ethics-driven investment motives and a very small minority that has return expectations. Beyond investors' preferences, there is also evidence that structural

aspects of financial markets lead to a 'pollution premium' (Hsu et al, 2023; Bolton and Kacperczyk, 2021), with firms with higher toxic emissions generating higher returns than cleaner firms within the same industry. High-emission firms are more exposed to regulation regime change risk and thus earn higher average excess returns as risk premia – this means that investors demand higher returns in face of risk associated with climate mitigation policies. This is reflected in the fact that a carbon/pollution premium varies across countries, and it is stronger in regions with stricter or more uncertain climate policy (Bolton and Kacperczyk, 2021).

**Political economy mechanisms**

Political economy channels are consistently evoked in the literature to explain the environmental impacts of wealth. Economic elites can exert disproportionate influence over policymaking, leading to weaker environmental regulation and delayed climate action (Morrison et al., 2025; Stoddard et al., 2021; Boyce, 1994, Green and Healy, 2022). The empirical evidence of this channel in econometric studies is emerging, for instance, Apeti et al (2025) finds that inequality can erode regulatory capacity in contexts of weak governance. Some studies identify inequality as moderating the influence of democracy on environmental performance (Bakaki et al, 2022). They also find evidence of some threshold effects, whereby democracy is positively linked to environmental outcomes only at relatively low levels of inequality (Income Gini ≈ 0.35), while the effect weakens becoming not significant and eventually turns negative (and significant) at higher levels (≈ 0.45 and above). Not directly addressing the issue of inequality or wealth, Boyce et al (1999) conducted a cross-sectional analysis to find an association between higher levels of power inequality (measured as voter participation, tax fairness, Medicaid access, and educational attainment) and weaker environmental policy stringency across U.S. states. In a recent review of the economics literature, Drupp et al (2025) find still a limited evidence base exploring political influence channels, pointing to the difficulties raised by the many factors which co-vary with both inequality and environmental outcomes. In a similar scoping review – considering a broader literature, including on wealth inequality – Elie et al (2025) find stronger evidence that inequality hinders the adoption of environmental policies in low-income countries, but also that greater inequality increases environmental degradation in more democratic regimes. They link these findings to a different political economy channel – whereby inequality lowers the income of the median voter relative to the mean, reducing demand for environmental protection and thereby weakening political incentives for environmental protection policy (Magnani, 2000). There are thus suggestive relationships with other mechanisms and harms explored in the reviews: the effects of inequality on poverty, for instance, are linked to climate harms as those in a more insecure financial position are more likely to oppose climate policies due to perceived inflationary effects on salient household consumption items or their limited ability to invest in costly energy-efficient or low-carbon products (Green and Heath, 2022).

Harms to social cohesion can also bear on environmental outcomes, as weaker social bonds between groups can make people less likely to cooperate for the collective good and take collective action on environmental issues (Smith and Mayer, 2018; Davidovic and Harring, 2020, Tamasiga et al, 2024). A further mechanism, difficult to study or establish empirically, concerns the structural influence of wealthy concentration and its link to control over production. When extremely wealthy actors consistently invest in carbon-intensive activities and dominate key

economic sectors, political leaders may be incentivised to accommodate their interests. This dynamic can occur even in the absence of direct influence, such as lobbying or corruption, as policymakers anticipate the preferences of powerful economic elites and avoid policies that could threaten their investments thereby reinforcing carbon-intensive development pathways.

There is also a growing literature on climate obstruction. This literature, encompassing perspectives from political science, law, environmental sociology, has not quantified impacts but has detailed how industries, wealthy individuals, and their foundations coordinate their efforts in a variety of ways to slow or stop regulatory efforts and advance ideas ranging from climate denial to dismissing and resisting climate solutions (Brulle, 2014; Brulle et al, 2024; Farrell, 2016; Lamb et al, 2020; Franta, 2022). This literature has shown, for instance through analysis of public transcripts and policy documents, key informant interviews or direct observation of negotiations, the different tactics used, across decades, by different actors to slow climate action progress at both national and more local level in different countries (Falzon et al, 2023; Eskridge-Aldama, 2025). In their volume on climate obstruction in Europe, Roberts and Brulle (2024) point to how the structural economic conditions in each country shape both climate action and the range of actors and strategies relevant to climate obstruction. Climate obstruction takes place by engaging directly with policy-makers through lobbying, or via revolving door mechanisms connecting politics and business, but also by trying to shape public narratives using media, think tanks, university programmes, PR and law firms, and front groups. They also underscore the importance, and growing role, of international networks which, often originating in US conservative think tanks, export their approach to obstructing climate action to Europe and other countries. The most prominent example of this is the Atlas Network (Graham, 2024; Vucetic, 2024). While a large focus is on the US and Western countries, there is an emerging literature underscoring both commonalities across contexts and specificities rooted in both history and economic structure. For instance, there is a growing literature on climate obstruction in Brazil and the role of agribusiness and its political ties (Diaz and Issberner, 2026; Milani and Doctor, 2024; Milani et al, 2026).

This is not to overlook the significant resources that many extremely wealthy individuals devote to climate philanthropy (Ackva et al, 2021; Gadd and McLeod, 2026). Philanthropic climate funding has been growing in the past decade and it plays an important role in different regions of the world in terms of supporting climate mitigation, especially around renewable energy transition, low-carbon cities, and capacity-building (Kwanhi et al, 2025). Between 2020 and 2023, private philanthropy_contributed approximately USD 3.7 billion to general environmental protection, accounting for 5% of total philanthropic funding for development (OECD, 2026). There is an emerging literature examining the role of billionaires and philanthropic foundations as leaders of climate governance (Gruby et al, 2026). Liu and Monier (2023) describe the hybridity of climate philanthropy, which can be seen in relation to some prominent public cases where several philanthropic foundations supporting climate action were found to still invest in fossil fuels or in environmentally harmful activities. As both mission and financial actors, a tension can emerge between value-driven and profit-driven activities, grounded in the endowment that financially underpins their mission work and which can take contradictory turns depending on the investment policy. Limited but rapidly growing, the academic literature underscores several challenges in terms of a lack transparency and accountability, limited democratic participation in agenda-setting and marginalization of alternative solutions and voices (Betsill et al, 2022; Papin and Beauregard, 2024). Some studies have further underscored how financial support for

environmental programmes and initiatives has been used as political leverage to extract substantial political and fiscal commitments (Beer, 2023; Barral, 2025). This underscores not only the unequal capacities of these actors to participate in policymaking and extract benefits in the political and economic realm, but also points to challenges in connecting strategies relying on extreme wealth to achieve environmental progress and political harms

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