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# Climate Nationalism

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**Abstract**

This article draws on wide multidisciplinary literature, spanning climate science, economics, history, and evolutionary biology to argue that rather than uniting humanity against a common problem, climate change will progressively aggravate tensions between countries, and possibly also within them. In the face of climate-induced uncertainty, citizens will seek solidarity and protection from their in-group, which in the best-case scenario will be their nation-state. A strengthening of this bond in turn will imply a broad tilt towards nationalism, rather than internationalism. Drawing the policy implications, climate mitigation carried out in the pursuit of national interest, including by means of green industrial policies with elements of economic nationalism, is surely less efficient with respect to a concerted global response, and yet is likely to prove the most viable course of action. Scientific and technological innovation that will be successful in rapidly reaching carbon neutrality while avoiding resource scarcity, feelings of uncertainty, and losses associated with climate change, will reduce the likelihood of the conflictual scenario prospected above.

"*The real problem of humanity is the following: We have Palaeolithic emotions, medieval institutions and godlike technology*."
E.O. Wilson

## 1. Introduction

Climate change is a phenomenon that transcends geographical boundaries, making it impossible to read it through the confines of a national perspective. Nevertheless, the international political system remains dominated by nation-states, which are increasingly influenced by nationalist ideologies (de Bolle and Zettelmeyer, 2019). Despite this, the connection between climate change and nationalism has received relatively little scholarly attention (Conversi and Friis Hau, 2021). This has notably changed since the adoption of the Inflation Reduction Act (IRA) in 2022, which was passed, in large part, under a narrative of establishing national dominance in key energy technologies, especially vis-à-vis China (Mazzocco, 2022). On one side, the IRA could be seen as a positive development for the world, as a landmark piece of climate legislation in the second largest emitter of greenhouse gasses in the world. On the other hand, given its strong protectionist elements, such as a focus on national content requirements, it is likely to induce counter-tariffs in other countries, fragmenting global trade, increasing the cost of the green transition, and overall reducing the scope for multilateral coordination on climate change (Kaufman, Saha and Bataille, 2023). Similar considerations have been extended to the European Union's Carbon Border Adjustment Tax (Sun *et al*., 2024). After all, we are frequently reminded that the first-best solution to the climate crisis would be a globally-coordinated carbon tax (Parry, Black and Roaf, 2021), given climate change is at its essence a global externality problem (Stern, 2006).

This article contributes to this policy debate, making the claim that internationalistic solutions to climate change are elusive and this is not due to contingent factors, such as narrow-minded leadership in selected countries, but rather deep structural factors, whose roots can be traced back to cultural evolutionary biology. Drawing on decades of multi-disciplinary evidence, combining insights from science and social sciences, as now widely advocated by the literature (Barnes *et al*., 2013; Hartman *et al*., 2017; Benati and Guerriero, 2021), this paper comes to a cautionary conclusion. The way climate change will materialise in practice, combined with some basic human evolutionary traits, implies there are very few chances that it will be contrasted by means of a global coordinated response, or unprecedented international solidarity. Crucially, this is only likely to become truer as time goes by.

Rather than uniting humanity against a common problem, climate change will aggravate tensions between countries, and possibly also within them. While this fact is well established in the literature, its profound policy implications have not been considered in full. Although climate mitigation carried out today in the pursuit of national interest is less efficient with respect to a concerted global response, it is likely to prove the most viable course of action. This does not rule out future climate treaties or ambitious collaboration agreements, particularly among smaller groups of like-minded countries (Nordhaus, 2015), which can take multiple forms (Chan, Stavins and Ji, 2018). But it suggests that considerations on direct national interest will continue to prevail. It also means that the adoption of green industrial policies today should be welcome, even when marked by economic nationalism, rather than disparaged on the basis that it might reduce the potential for a first-based cooperative global solution. In all likelihood, it would be like waiting for Godot. This paper therefore reinforces and complements recent economic arguments in favour of green industrial policy (Acemoglu *et al*., 2012; Rodrik, 2014; Aghion *et al*., 2019; Tagliapietra and Veugelers, 2020; Juhász, Lane and Rodrik, 2023; Terzi, 2023).

This article evidently falls within a long-standing debate in the international relations and economics literature with regards to the origins of and scope for international cooperation on climate change (Barrett, 2007; Aldy and Stavins, 2010; Underdal, 2017; Chan, Stavins and Ji, 2018; Kotchen, 2018). However, its main contribution stems from establishing a link with an expanding stream of closely related science literature, in particular works in cultural evolutionary biology, together with other social sciences, and crucially drawing their implications for climate policy today. Such an approach is recently becoming common practice within the economics literature (Nunn, 2021, 2022), including when focussing on climate policies (Carattini, Levin and Tavoni, 2019). In the context of this paper, the main benefit of weaving in a historical and evolutionary perspective is that it allows to project expectations of feasible climate policies into the long-term future, rather than simply analyse current political dynamics. As such, it stands as a complement to the extensive economics literature on incentive dynamics within climate treaties (Barrett, 2007).

The remainder of the paper is organised as follows. Section 2 carefully considers the science literature to show how climate change will materialise in practice. Section 3 briefly discusses what optimal climate policy at the global level would look like. Section 4 will then argue that competition rather than cooperation is more likely in a climate-changing world, which Section 5 backs up with evidence originating from humanity's experience with past climate changes. Section 6 details what this implies for policy and offers some concluding remarks.

## 2. Climate change: from theory to practice

While when framed at an abstract level climate change is evidently a shared global problem, it is worth looking at how it will materialise in practice. Detailed climate models suggest it will do so in the form of an increased frequency and violence of extreme weather events, including drought, flooding, hurricanes, wildfires, rising sea levels, and desertification (IPCC, 2021). If left unchecked, these events will then cause decreased agricultural yields and biodiversity loss, opening the way, at least in agrarian societies representing two and a half billion people today, to possible malnourishment, disease, a drop in human population and a large-scale human crisis (Zhang *et al.*, 2011).

Some countries and regions will be hit sooner and harder than others, meaning that there will be great heterogeneity across the planet. This is the case for two reasons. The first has to do with simple geographical considerations. Several studies show that some areas will be exposed more and earlier to extreme weather events, such as desert regions (e.g. in Sub-Saharan Africa) or lowlands (e.g. Bangladesh), making livelihood consequently harder (Burke, Hsiang and Miguel, 2015b; Desmet *et al.*, 2021; Carleton *et al.*, 2022; Cruz and Rossi-Hansberg, 2023; Klusak *et al.*, 2023). The second has to do with adaptation to a changing climate. Because of historical legacy and diverse levels of technological advancement, societies in some regions will have greater means to try and break the chain of events enunciated above. Containing the damage generated by extreme weather events such as flooding might require reinforcing riverbanks or building dikes. Safeguarding agricultural yields in light of droughts and floods could call for a push towards vertical indoor farms or crop gene editing techniques. Preventing deaths from exposure to excess heat could require commensurate investment in cooling technology, or strengthening emergency response (e.g. early warning systems). Securing access to water might prescribe the set-up of desalinisation facilities. Finally, rebuilding damaged infrastructure, including housing, will be needed in the aftermath of natural disasters (Kahn, 2021). All of these interventions fall under the headline of climate adaptation, and will not come cheap (Carleton *et al.*, 2022). This explains why two lowlands like Bangladesh and The

Netherlands (respectively 75% and 50% of territory below sea level) will be equally exposed to rising sea levels, and yet are expected to face very different outcomes (Germanwatch, 2004).

Over the coming decades countries will need to assign greater resources to crisis management, perceiving climate change as a reduced control over the natural environment, and a source of heightened uncertainty and (relative) scarcity with respect to the *status quo* (Boccaletti, 2021). For countries that do not have those resources, climate mitigation will need to go through an old technique: migration, which by some estimates could affect 300 million people by the end of the 21st century (Burzyńskia *et al.*, 2019; Altschul *et al.*, 2020).

It is important to note that, no matter how active the efforts to accelerate decarbonisation are over the coming years, some of these effects will be observed, as the climate is already changing (Wadhams, 2017). In other words, this is the backdrop against which any type of global collaboration on climate change will need to take place.

## 3. First-best global climate policy

For what concerns climate mitigation, the broad scientific and political agreement reached in Paris in 2015 implies that the world should strive towards climate neutrality by mid-century. A benevolent social planner aiming to achieve this goal while maximising global welfare would enact an optimal strategy composed of commonly-agreed stringent, binding and pervasive decarbonisation rules, and global taxes, such as the global pricing of carbon emissions (Stern and Stiglitz, 2017; Carattini, Levin and Tavoni, 2019; Parry, Black and Roaf, 2021). Crucially, these provisions would need to remain in place for an extended period of time.

On the adaptation front, the optimal global approach would entail an increasing and sustained large-scale transfer of resources across countries, from advanced economies to emerging markets, to help with investments in climate mitigation and adaptation (Lall, Rajan and Schoder, 2024). For instances where this is not sufficient, the optimal global approach should also make international borders more porous to enable climate-induced migration as a form of last-resort adaptation. This could be further underpinned by the moral consideration that when considering historical $CO_2$ emissions, rich countries, which industrialised first, are often the ones that contributed the most to generating the problem of climate change in the first place (Skeie *et al.*, 2017; Jones *et al.*, 2023).

It is worth getting a sense of the scale of resource transfer that would be needed. Global adaptation costs for developing countries alone are expected to be roughly around $70 billion a year now, increasing to $140-300 billion in 2030 and $280-500 billion in 2050 (UNEP, 2016). This pales when compared to the global upfront capital investment of $3.5 trillion a year between now and 2050 needed to keep global warming below 1.5 degrees Celsius (IPCC, 2018). Note that these are transfers on a scale that has never been seen voluntarily between countries, even when considering large aid programs like the Marshall Plan (approximately $50 billion per year for three years, in today's dollars), or the totality of global official development assistance ($160 billion in 2020) (Terzi, 2022).

The whole policy recipe, both on the mitigation and adaptation front, would of course have to occur voluntarily, as there is no world government and nations retain the right to withdraw from international agreements, particularly in the aftermath of an election (Barrett, 2007). Notable examples in this respect are Canada, who left the supposedly binding Kyoto Protocol in 2011, and the United States (US), who left the Paris Agreement in 2020.

As we saw in the previous section, climate change will imply that citizens in each country will face heightened uncertainty and a perception of scarcity with respect to the *status quo*, albeit in a differentiated manner. And these feelings of vulnerability, combined with diverse national and cultural priorities, will in turn make such a type of long-term deep international collaboration and large-scale transfer of resources less (rather than more) likely, for reasons we will now inspect.

## 4. Cultural evolution and cooperation

Humans have an inherent tendency to form groups and favour those within their group, a phenomenon known as "in-group bias", which has been fundamental to human cultural evolution (Brewer, 1999; Berreby, 2005; Wilson, 2013; Christakis, 2019; Whitehouse, 2024). A wide variety of studies show that this tendency to create strong groups, beyond direct genetic ties, is what draws humans apart from other primates, paving the way for teaching and learning at scale, and ultimately a unique collective knowledge that has proved instrumental to "our success" as a species (Henrich, 2016). Aside from collective knowledge, the in-group bias paves the way for joint decision-making (i.e. government) and large-scale sharing of resources through policy tools such as taxation and public spending (North and Thomas, 1973; Henrich and Muthukrishna, 2021). Importantly, the in-group bias is possibly also what enables an institution like liberal democracy. This is because the feeling of being tied by a shared destiny makes it possible for one ideological group (or political party) to be willing to peacefully yield power to another after an open and fair confrontation (Rodrik, 2011; Lieven, 2020). To date, nation-states are the largest in-group that has proved tight enough to allow for democracy, a shared government, significant taxation and voluntary redistribution. Indeed, Alesina and Spolaore (2003) have convincingly shown that the current size of nations emerged as a consequence of this logic, namely a balancing act between the benefits of large size and the costs of heterogeneity, in terms of delivering services and formulating policy.

For what concerns strong multinational climate policy, the question we should effectively be asking is whether it is possible for all of humanity to become an 'in-group' in the face of climate change. This would lay the foundations for joint decision-making and large-scale global solidarity and make the optimal global solution described in the previous section feasible. In this respect, prospects look rather bleak.

Studies in social psychology suggests that an in-group requires an outgroup (Taifel, 2003; Christakis, 2019). Who we are is defined just as much by who we are not. So while it is perfectly possible to be members of multiple groups at once, as defined by country, language, religion, profession, and even a sport fan club (Sen, 2006), it is not likely that everybody will be in one group at once. It then comes as no surprise that while some degree of solidarity and financial transfers do occur between countries (e.g. foreign aid), and within international in-groups (e.g. donations within a religious group across continents), we consistently observe what economists call a 'geographical discount factor' (Hannon, 1994; Perrings and Hannon, 2001). That is, groups have a tendency to share and cooperate more with people who are closer to them, and decreasingly so as distance increases. For this reason, large differences in income level between countries have not so far given rise to a global welfare mechanism, on a comparable scale to those that we observe within (cohesive) countries (Alesina and Glaeser, 2004).

While different groups can join forces against a common threat, as extensively documented in experiments (Sherif, 1958; Sherif *et al.*, 1961; Christakis, 2019), climate change will not materialise like a one-off event, just as, say, an asteroid collision would. Rather, as we saw in Section 2, it will be experienced as a heterogeneous web of cascading natural disasters over decades, and with no obvious single solution, making pan-human sustained collaboration more elusive. As a matter of fact, the 'in-group bias' and accompanying intra-group solidarity is likely to have emerged in the very face of inter-group conflict over scarce resources during the Pleistocene, when the climate and environment were much more unstable (Kurzban and Leary, 2001; Henrich, 2004; Bowles, 2009; Richerson *et al.*, 2016; Wilson, 2019).

Climate change will lead to increasingly perceived scarcity and uncertainty, stoking societal anxiety and fear. And when this happens, people tend to look to their in-group for greater protection and solidarity (Kurzban and Leary, 2001; Henrich, 2004; Bowles, 2009; Richerson *et al.*, 2016; Wilson, 2019). Achieving this type of cooperation will in turn require a further strengthening of the in-group bond with respect to the *status quo*. To achieve this, based on historical patterns, it is highly likely that in-group solidarity will come at the expense of an out-group (Balliet, Wu and De Dreu, 2014; Bauer *et al.*, 2016; Christakis, 2019). Given the sheer efforts that go into fostering the feelings of national belonging, this dynamic is expected to occur most strongly at the level of nation-states (Elgenius, 2011). In other terms, nationalism is much more likely than internationalism in the face of climate change (Lieven, 2020). And, because of similar considerations, borders are likely to become harder, not more porous, in an effort to reinforce the in-group bond (Alesina, Murard and Rapoport, 2021).

Within the context of global climate negotiations, this international conflictual dynamic will probably take the initial form of a blame game, with one side (poor countries) blaming the lack of international cooperation on rich countries' failure to provide enough help, and rich countries blaming emerging economies for not decarbonising fast enough, to the detriment of all. Some of this is already on display at Group of Twenty G20 meetings, and other international fora such as the Conference of the Parties (COP).

These conflictual dynamics between countries will be further exacerbated as time goes by due to a set of factors. First, poor countries will be hit first. Second, catastrophes will most affect those who have contributed the least to the problem, notably citizens in Africa and India (each accounting for just 3% of cumulative global $CO_2$ emissions), strengthening feelings of unfairness (Gosnell and Tavoni, 2017). Third, the resulting migration towards richer countries will destabilise internal politics, leading to a hardening of borders and more conflictual international relations, based on long-term historical patterns since the establishment of territorial political boundaries (Zhang *et al.*, 2007). All this suggests that international cooperation may be more challenging as climate impacts intensify. This reasoning is in line with theoretical analyses on the self-enforcing potential of climate agreements, based on game theory (Carraro and Siniscalco, 1993; Barrett, 1994).

## 5. Historical evidence

The Holocene is dotted with instances when the climate and the environment have started changing. We can draw important lessons by reviewing this evidence and observing how human societies have reacted to it. This will show how some of the principles described in previous sections have actually already played out before (Parker, 2013; Jackson, Dugmore and Riede, 2018; Fagan and Durrani, 2021). Several studies have now shown that when the climate changed significantly in the past, such as during the Holocene Humid Period or the Medieval Climate Anomaly, it prodded societies and civilisations to use the best of their technology and devote resources to cushion the shock (Orlove, 2005; Zhang *et al.*, 2007; Pearson and Pearson, 2012; Xoplaki *et al.*, 2016; Petraglia *et al.*, 2020). Some succeeded, and in particular, those that had inclusive economic and political processes, and a strong culture of cooperation (Campbell, 2010; Benati and Guerriero, 2021). Those that did not display a high level of resilience, or at least did not manage to retain it over a sustained period of time, such as the Akkadians, the Assyrians, the Maya, the Khmer Empire of Angkor, and the Greenland Norse, eventually collapsed (Dugmore *et al.*, 2012; Kennett and Beach, 2013; Hartman *et al.*, 2017; Haldon *et al.*, 2018; Sinha *et al.*, 2019; Penny and Beach, 2021).

Environmental pressure reduced agricultural output, engendering resource scarcity. This led to a dangerous combination of runaway food prices, heightened corruption, and an increase in violence—both between groups and directed at neighbours—particularly in unequal societies, where tensions often centred around conflicting religious and political authorities (Chaney, 2013). In some cases, this led to a breakdown of the social order, civil war, a fall in population, a drop in social, economic and technological complexity, urban abandonment and the eventual collapse of entire states/civilisations (DeMenocal, 2001; Fagan, 2001; Zhang *et al.*, 2007; Butzer, 2012; Butzer and Endfield, 2012; Pei *et al.*, 2014; Fagan and Durrani, 2021). Societies that were too heterogeneous to achieve tight cooperation broke down into smaller sub-groups that were more homogeneous, hence reverting to an equilibrium.

While these cases come from civilisations with a lower level of technological sophistication, this does not imply that no lessons can be drawn even for today's middle- and high-income nations. In particular, while industrialisation has paved the way for food abundance, making climate-induced starvation highly unlikely, it is the perception of scarcity and insecurity with respect to the current *status quo* that incites in-group solidarity and out-group conflict (Homer-Dixon, 1991; Zhang *et al*., 2007), or civil unrest in non-inclusive unequal societies. As late as 2011, climate-induced droughts led to high commodity prices, sparking civil unrest, civil war and government toppling across the Arab world (Johnstone and Mazo, 2011; Sternberg, 2012; Boccaletti, 2021). These considerations are particularly important given that the socio-political consequences of environmental stress were a problem of first-order magnitude vis-à-vis the significant, and yet much smaller, direct impacts of natural disasters and environmental stress (Butzer and Endfield, 2012).

To a large extent, these historical case studies were instances of localised environmental pressure. But past global climate events, like the Little Ice Age, have also triggered widespread conflict and political crises, further demonstrating that scarcity often leads to out-group discrimination. This is documented in several studies, covering also in greater detail Europe, the Middle East, and China (Fagan, 2001; Zhang *et al*., 2006, 2007; Tol and Wagner, 2010; Büntgen *et al*., 2016; Iyigun, Nunn and Qian, 2017b). Moreover, the phenomenon has been shown to be symmetric. When new drought-resistant sweet potatoes were introduced for instance, this led to a persistent reduction of rebellions in China between 1470 and 1900, as was the case in Europe and the Middle East (Jia, 2014; Iyigun, Nunn and Qian, 2017a). Abundance paves the way for cooperation, within and between groups, just as much as scarcity sparks conflict.

An ample amount of past evidence also confirms the prediction that climate-induced scarcity will aggravate out-group stereotyping and discrimination. For instance, during the 15th and 16th centuries, colder temperatures linked to poor crop yield made it significantly more likely that a Jewish community would be expelled from European cities. This effect was larger in areas with poor quality soil and with weak states (Anderson, Johnson and Koyama, 2017). Historians have suggested this is because Jews were convenient scapegoats for social and economic ills. A strengthening of the in-group came at the expense of an (unfortunate) out-group. Likewise, the witchcraft trials in Europe were found to be strongly associated with the fall in temperatures connected to the Little Ice Age, and consequent economic malaise (Oster, 2004). And these patterns are not relegated to a faraway past. A similar dynamic was documented in modern Tanzania, linking extreme rainfall (drought or floods) to witch murders

(Miguel, 2005). More broadly, the fact that a changing climate is associated with an increase in violence between, and possibly within groups, has been extensively documented in the recent past, especially in Africa (Burke *et al.*, 2009; Hsiang, Meng and Cane, 2011; Burke, Hsiang and Miguel, 2015a; Carleton, Hsiang and Burke, 2016).

## 6. Implications for the 21st century

While most of this evolutionary and historical literature is well established, too little attention has been devoted to its implications for climate policy in the 21st century. Two broad lessons can be drawn to inform the current debate and policymakers as they grapple with climate change over the coming decades.

The first lesson relates to international cooperation. A changing climate will turn the tidal wave of history towards nationalism rather than internationalism. This suggests that this global problem will not be addressed chiefly through a global binding treaty, nor unprecedented deep cross-national cooperation, in line with the optimal approach. In other words, it rules out what Chan, Stevins and Zou (2018) classified as "strong multilateralism". This suggests the prospects for a global price on carbon or a large-scale redistributive facility are grim.

To an extent, this echoes what we have seen during the COVID-19 pandemic, and specifically the tool to bring it under control: vaccines. Nations that were in the position to do so, first inoculated their own citizens. This was the case even in the face of solid evidence suggesting the optimal (scientific) approach to fighting the pandemic would have been to prioritise vaccine distribution wherever an outbreak arose in the world to prevent the emergence of new variants (Brown, De Bolle and Obstfeld, 2021). Faced with vaccine scarcity and pandemic uncertainty, in-groups will privilege their own. A failure to do so would unravel the very principle of imagined community on which modern nations are built (Anderson, 1983). Only once a greater feeling of safety and (vaccine) abundance is restored does large-scale global solidarity become a possibility (Barrett, 2007). And this is not a peculiarity of COVID-19 or simply a failure of our current political leaders. The fight against smallpox in the post-war period was no different. First, vaccines allowed smallpox to be eradicated in industrialised economies. And only then was an ambitious international agreement reached, including between the US and the Soviet Union, to scale up production and inoculation to eradicate it globally (Barrett, 2007). Polio followed a similar pattern. These sound like particularly relevant cautionary tales given that a higher frequency of pandemics is considered to be one of the  ways in which climate change will manifest itself (Mora *et al.*, 2022).

As the effects of climate change become more severe, people are likely to retreat to their in-group, which at the highest level will probably refer to their nation. If it is a sub-group of that, such as regions, ethnicity, ideological factions or religious group, this opens the doors to possible internal struggles over resources and civil strife. However, without precluding local adaptation and experimentation, preserving scale in the face of a high frequency of natural disasters is important. Following basic insurance principles, a larger scale allows to diversify the risk territorially and increase the risk-sharing pool (Noy *et al.*, 2023). On the other hand, a small scale, often implying a tendency to concentrate economic activity on few sectors, historically contributed to reduced societal resilience and maladaptation to a changing climate (Dugmore *et al.*, 2012).

To be sure, the arguments presented in this paper do not imply that global treaties, such as the Paris Agreement, or international fora, such as the COPs, are of no use. On the contrary, they can be a useful avenue for coordination, discussion, exchanges of best practices, agreements on standards (e.g. on reporting greenhouse gas emissions), and some positive peer pressure (Barrett, 2016). Moreover, nothing prevents future ambitious cooperation treaties from being signed, including between fewer parties (e.g. G7 members) or focused on a specific aspect (e.g. deforestation) (Nordhaus, 2015; Tagliapietra and Wolff, 2021). This is particularly likely between countries that are closer in terms of level of development, culture, and value systems such as environmental sensitivity. All this paper aims to conclude is that considerations of direct national interest will continue to dominate, including when crafting future cooperation agreements. This should set clear expectations about what is feasible and enable policymakers to set priorities straight in international climate negotiations. It also means that the adoption of green industrial policies today should be welcomed, even when marked by economic nationalism, rather than disparaged on the basis that it might reduce the potential for a first-based cooperative global solution. In all likelihood, it would be like waiting for Godot.

The second important lesson for contrasting climate change in the 21st century is about the crucial role of technological innovation, and therefore also science and research aimed at allowing a rapid transformation to a sustainable economic model, and staving off the worst effects of extreme weather events. As long as new technological solutions help maintain a degree of control over the environment—avoiding feelings of uncertainty, perceived scarcity, and losses in human lives and livelihoods—they will reduce the chances of the conflictual scenario described above. This paper therefore underscores the crucial role of climate adaptation, which is present in the literature (Kahn, 2016, 2021), but is receiving less than due attention in policy debates.

Conflict between and within groups is in no way inevitable. People are not powerless pawns in the hands of climatic and environmental stress, against concepts of 'environmental determinism' and societal passivity (Terzi, 2024). Complex societies do have a degree of resilience, which will be repeatedly tested over the coming years. In our time, and particularly in advanced economies, climate resilience will mainly go through the capacity for innovation.

At the government level, in order to avoid a hyper-conflictual scenario, nations should prioritise two actions. First, invest in inclusive political processes and contain internal socio-economic inequalities, as a way of ensuring cohesiveness and therefore societal resilience in the face of climate change (Benati and Guerriero, 2021). Second, embrace efforts to accelerate as much as possible on the green transition to reduce the likelihood of extreme weather events.

To some extent, rich countries will find it in their direct national interest to help other countries that do not have the resources or technologies to fight the worst effects of a changing climate, as this would allow win-win solutions, including the prevention of conflict-inducing mass-scale migration. However, expectations on the size of these transfers should be clear. While struggling with climate-induced shortages and the challenges of their own green transitions, wealthy countries will contribute only a small fraction of the costs for climate mitigation and adaptation in poorer nations. This is of relevance for current discussions surrounding a Loss and Damage Facility. Moral considerations such as historical emissions will hardly change the evolutionary principles and consequent electoral arithmetic that dictate this logic.

Looking ahead, future research should prioritise integrating the considerations of adaptation and social cohesion discussed in this paper more deeply into climate models, fostering stronger collaboration between climate science and the social sciences. A climate science that aims to inform policymaking but focuses solely on optimal decarbonisation scenarios without addressing the social consequences of mitigation and adaptation, risks being ignored. The feasibility of any policy package depends on understanding these broader social dynamics.

While the challenges are significant, advancing climate damage simulations must increasingly account for the complex relationship between environmental impacts and societal resilience. Environmental economists developing climate damage functions to evaluate policy options should incorporate models that assess the likelihood and consequences of conflict, such as quantitative tools predicting social unrest (Aerts, Stracca and Trzcinska, 2024). Ignoring these factors risks perpetuating a narrative that pits “pure” science against “messy” politics—a stance that may gain short-term traction but could ultimately lead to a public rejection of expert advice and fuel populist movements.

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