A right to pollute versus a duty to mitigate: on the basis of emissions trading and carbon markets

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ABSTRACT
Emissions trading, also known as cap-and-trade systems, has not yet fulfilled its function of mitigating overall greenhouse gas (GHG) emissions. The reasons for this failure are manifold and have been broadly discussed at political and empirical levels in the last decades. However, much can still be said from a philosophical perspective. Such an analysis is not limited to the evaluation of cap-and-trade systems' lack of efficiency and the consequences arising from it but goes deeper into the moral questions underlying cap-and-trade systems. This is how this paper attempts to contribute to and expand the debate on emissions trading at different levels. By examining a popular analogy between traditional and climate commons, I challenge some of the economic and normative assumptions at the core of cap-and-trade systems. I argue that these assumptions lead to misguided conclusions in responding to the causes of climate change. This will partly explain why, although emissions trading is intended to fulfil a duty to mitigate greenhouse gases, we should not pin all our hopes on it just yet.

Key policy insights
- The problems associated with free access to the traditional and climate commons can be conceived of in an analogous way, but the solutions to address them cannot. These include market-based policies focusing on the distribution of property rights over the atmosphere’s capacity to absorb GHGs.
- Like other common resources, the atmosphere’s capacity to absorb GHGs is limited and subject to deterioration due to free access and competing consumption. Unlike other common resources, there is no ability to restrict, control or sanction non-cooperative behaviour that continues to pollute the atmosphere. This poses a major challenge to the effectiveness of cap-and-trade systems.
- Emissions trading systems can be attractive mechanisms for pursuing GHGs targets by minimizing the costs of pollution while limiting the impact of mitigation on the overall economy. Nevertheless, even efficient emissions trading systems fail to fully address the moral concerns that lie at the heart of our current climate crisis.

1. Introduction
Since its introduction in 1997 with the Kyoto Protocol, emissions trading, also known as cap-and-trade systems for greenhouse gases, have embodied the promise of reducing overall emissions by means of a marked-based approach. However, emission reductions are attributed to these systems only in localized cases and provided certain conditions are met (see Best et al., 2020; Haites, 2018; ICAP, 2021; Narassimhan et al., 2018). This discussion, although not recent, is addressed in the field of the political economy of emissions trading, where efficiency issues dominate the debate (see Spash, 2010, 2020). While acknowledging the political and technical
arguments of the discussion, this paper attempts to discuss the premises and assumptions underlying cap-and-trade systems and from there expand on the aforementioned arguments.

I shall argue that the distribution of pollution rights to the atmosphere, and the understanding of its capacity to absorb greenhouse gases (GHGs) as a traditional common resource, may not be the best way to reduce overall emissions. Instead, such a distribution may even increase a previously agreed amount of emissions, thus bypassing the main function of cap-and-trades. Hence, the aim of this this paper is to show that although cap-and-trades provide incentives to achieve GHG mitigation, pollution rights, analogous to private rights over common resources, they could potentially override an overarching duty to reduce avoidable emissions.

In order to make sense of this argument, I begin by examining the conception of cap-and-trades and some of the difficulties that arise when they are put into practice (Section 2). I then focus on the premises on which emissions trading systems are based and some of the main differences they have with other carbon pricing policies (Section 3). Based on this analysis, I elaborate on what a ‘right to pollute’ refers to (Section 4). In the last section (Section 5), I focus on what I call ‘the analogy problem’ and I try to show why the control measures drawn from a parallel between traditional and climate commons is misguided. Finally, I conclude by bringing all these discussion points together and showing how current cap-and-trades raise moral questions that persist despite technical redesigns and political readjustments. This will serve to identify not only the political and technical obstacles that prevent these systems from fulfilling their function, but also the more substantive problems in property-rights based approaches to addressing climate change.

2. Cap-and-trade systems

In economic terms, the emission of GHGs causes a market externality, that is, it constitutes an effect, or an ‘external cost’ derived from an activity which does not accrue to those carrying it out (Hashimzade et al., 2017). Negative externalities, such as the emission of GHGs, do serious harms and losses to people and to the environment, especially by contributing to climate change. An ‘inefficient’ situation is then created when those who cause these externalities have little or no incentive to account for the costs they entail. Conceived then as reward and deterrence systems, cap-and-trades aim to eliminate the inefficiencies that GHGs represent (Broome, 2012, pp. 39–40) and thus control climate change. Their underlying idea is as follows.

Most commonly, a government sets an upper limit or cap on the amount of GHGs that can be emitted in a particular period. It then divides this cap into emission permits that are either auctioned or distributed among polluters, such as industries, which can trade them in a carbon market; here, polluters can sell the excess permits and buy more, if necessary, from those who have surpluses. Importantly, the cap should be made stricter over time, i.e. permits should become scarcer and therefore more expensive, motivating polluters to reduce their emissions as quickly as possible. In short, to the extent that the progressive tightening of the cap drives up the price of carbon, polluters will always find it more profitable to mitigate their emissions than to buy more permits (Singer, 2011, p. 226). Thus, if the cap remains strict enough to keep the price proportionally high, polluters will have an incentive to innovate or invest in cleaner or non-polluting alternatives.

In terms of pricing, cap-and-trades set a price for GHGs according to the supply and demand of emission permits, giving emitters a signal to either abandon their polluting activity, mitigate their emissions, or simply pay to continue polluting. In practice, therefore, mitigation is only achieved if there is a continued relative scarcity of permits, if there are easy and cheap alternatives to polluting activities, and if there is a credible signal that prices will remain significantly high in the future. If we take the Paris Agreement (UNFCCC, 2015) target of limiting global warming to below 2 degrees Celsius compared to pre-industrial levels, the recommended carbon price corridor should have fluctuated between $40 and $80 per tonne of CO2 in 2020 alone (Stiglitz et al., 2017). However, only 3.76% of global emissions are covered by a carbon price in this range or above (World Bank, 2021). As this happens, markets remain too volatile, caps too high, and carbon prices too low to motivate a real change in the behaviour of polluters.

Cap-and-trade activity can be voluntarily adopted by companies, yet cap-and-trades are still mostly designed and enacted by governments, who are the ones responsible for allocating emission permits within a country through corresponding policies and laws (ICAP & PMR, 2021). This paper will focus on cap-and-trades as adopted by governments. Theoretically, cap-and-trades are particularly attractive at the international
level, as both high and low polluting countries can benefit from them. In reality, however, emissions mitigation is constrained, as mentioned above, by the tightening of the cap and the increasing price of carbon and, in overall, by varying national circumstances, regulations, enforcement mechanisms, penalty systems, etc.

In addition, there is currently a lack of evidence on whether caps are truly binding and restrictive (IPCC, 2014, p. 28). All this shows the political and technical difficulties associated with cap-and-trades. Beyond that, cap-and-trades have also come under fire by climate activists and moral philosophers who view their market orientation with suspicion and accuse them of potentially causing more damage than they are intended to repair (e.g. Hansen, 2009, 2010; Sandel, 2012; Shue, 2014). Even economists are actively debating best practices to address the shortcomings surrounding their design and implementation (e.g. Flachsland et al., 2020; Newell et al., 2013).

3. The market orientation

Policy makers were initially attracted to cap-and-trades because they presented a practical solution to declining ecosystem quality and air pollution. Particularly, interest in cap-and-trades arose around the challenges that certain forms of economic growth and (desirable) development activities brought with them, e.g. acid rain during the 1970s (see OECD, 1977; Rogers, 1990). Thus, building on privatization strategies to address problems related to the use of traditional common resources (e.g. forests, grasslands, and fisheries), the notion of a carbon market to trade pollution rights, later known as emission permits, would be proposed (e.g. Dales, 1968/2002; Sewell, 1969). Currently, cap-and-trades are framed by explicit carbon pricing policies, which determine the emissions cap and permits allocation criteria that make up these systems. However, it is the market that determines the carbon price. In contrast, carbon taxes, which also fall under explicit carbon pricing policies, set a price on carbon by defining a tax rate on GHGs or, more commonly, on the ‘carbon content’ of polluting energy sources.

Notably, what distinguishes these two pricing policies is that the emissions reduction outcome of a carbon tax is not predefined, while the carbon price is (see Kossoy et al., 2015; Newell & Pizer, 2003; Pearce, 1991). While design elements can reduce the differences between prices that work with and through the market, they are fundamentally different in conception, one being based on property rights and the other on taxation. In the case of carbon taxes, emissions prices can be set, at least in theory, according to the social cost of emissions rather than market dynamics. This would explain why, as climate regulations become increasingly unavoidable, companies would favour trading systems over outright bans, rationing, and heavy taxation, where they cannot so easily manage and subvert the carbon pricing process. I focus, thus, on cap-and-trade policies that, unlike taxation policies, base their response to the problem underlying GHG externalities on the allocation and exchange of pollution rights. Particularly because, unlike other non-market policies, cap-and-trades aim to address only the consequences of emissions in the most cost-effective way possible, albeit at the cost of various operational difficulties.

In terms of international compliance with these systems, for example, agreements such as the Bonn-Marra-kesh agreement seek to establish negative incentives for those who do not meet their national emissions targets in a given period, imposing stricter targets in subsequent periods and suspending their ability to trade more permits (Gardiner et al., 2010, p. 20). These sanctions can be counterproductive, though, as they may cause countries to refuse to participate in the systems altogether. Furthermore, a key element that can jeopardize compliance are market failures, the most prominent of these being carbon leakages (see Fischer & Fox, 2007; Jakob, 2021). In an ‘optimal’ global cap-and-trade system all this would be avoided, experts suggest, as any polluter would not only be able to participate but would have sufficient incentive to comply. This could be done, for example, through a homogenization of market prices (see OECD/IEA, 2019; Weitzman, 2014), so that countries’ dissimilarities allow everyone to get the highest possible pay-off (for larger emitters, emissions are more valuable and for smaller emitters, measures to reduce them are cheap). Such a system would not only be more efficient, but it would also be less gameable (The Economist, 23 May 2021).

Even in this case, however, many countries would prioritize their own interests, most of which would clash with the collective interest of reducing emissions, making them more prone to free-ride (Olson, 2012). In the
absence of such a system, the direct result is a leakage, whereby a company, usually a multinational, feels disadvantaged vis-à-vis its rivals and hence has an incentive to relocate somewhere where it can avoid paying for its emissions due to more relaxed rules, measurement failures, etc. In the face of carbon leakage, governments have resorted to ‘carbon border adjustments’, which, while offering a response to carbon leakage, also raise a number of policy and practical issues that increase the potential for carbon capture and manipulation. Nevertheless, the pressure to strengthen climate ambitions while protecting competitiveness has made many jurisdictions prone to adopt such adjustments (see European Parliament, 2021; OECD, 2020; World Bank, 2020, 2021). This would point in favour of direct taxation and even a global GHG tax system (see Morgan & Patomäki, 2021).

These are some of the shortcomings related to the cost-effectiveness of emissions trading systems. Moreover, cap-and-trades raise at least three moral concerns that go beyond this issue. The first revolves around the fair distribution of permits, i.e. how to allocate the cap fairly between countries and/or economic agents. The second relates to the way in which the costs caused by emissions are valued, i.e. to the problem of assigning a monetary value to the harms and losses caused by emissions. The last concern lies in the moral justification of a market-oriented system and of property rights over the atmosphere more generally. While the first two concerns relate to the question of how to deal with the (undesirable) consequences of GHGs in a fair and efficient manner, the third concern relates to the difficulties involved in even the efficient and fair distribution of the (undesirable) consequences of GHGs. Towards the end of this paper, special emphasis will be placed on this last point, but as they are all closely related, a few remarks on each of these three moral concerns are necessary.

4. A right to pollute

Until recently, and given the effects of climate change, the atmosphere was thought to be a common space into which GHGs could unlimitedly be ‘dumped’ (Broome, 2012, pp. 69–70). Given the difficulty of restricting access to this space, it makes sense to say that everyone who has free access to it will have a strong incentive to dump all the GHGs they want into it, since not doing so would only mean leaving more of it for others to take, even if this means destroying the space in the long run. Therein lies the famous Tragedy of the Commons (Hardin, 1968). Therefore, and since the depletion of a common space such as land prevents each of its users from obtaining any benefit from it to their long-term detriment, its use should be constrained. To this end, an attractive strategy is to establish a property regime to ‘enclose’ the common space (see Mitchell, 2015) and to distribute property rights over it. In the case of the atmosphere, these are pollution permits or annual GHG permits.

Regarding the allocation of these permits, it is philosophically relevant to analyze what these permits are and how to understand access to ‘a piece of the atmosphere’. Currently, emission permits exist in the form of electronic certificates but, in reality, they constitute access to a scarce valuable resource, namely the atmosphere’s capacity to absorb GHGs (Broome, 2012, p. 68f). Hence, when emission permits are being traded, rights over this resource are really being traded. Consequently, the question of how emission permits should be fairly allocated boils down to the question of how the atmosphere’s capacity to absorb GHGs should be fairly distributed. Under private property, this would give free access, use, and exchange to the holder of such permits. In this regard, most defensible views on fairness suggest that richer countries should bear most, if not all, of the costs of GHGs (Gardiner et al., 2010, p. 19). Nonetheless, given the nature of the atmosphere’s capacity to absorb GHGs, it does not meet the necessary conditions of the strategies implemented to avoid the tragedies of the traditional commons. So, more needs to be said if the atmosphere is to be distributed in the form of private rights among polluters.

5. The analogy problem

As discussed above, cap-and-trades aim to restrict unlimited emissions by allocating polluters emission permits, or property rights to the atmosphere’s absorption capacity, seeking to avoid a global tragedy. The idea behind this strategy is simple: If the tragedies of the climate commons can be understood in an analogous way to the tragedies of the traditional commons, the solutions proposed to avoid both could be analogous as well. There is
an analogy between the climate commons and the traditional commons, both epistemological and normative. Therefore, to the extent that the atmosphere is considered a common resource with a limited use capacity, the distribution of pollution rights as a GHG control mechanism makes perfect sense. The arguments for understanding GHG problems as a tragedy of the commons are strong and widely accepted (see Jamieson, 2014; Nordhaus, 1994). Here, I do not intend to reject the analogy altogether, but to contribute to its critical examination, by arguing that while the problems among the commons can be analogous, their solutions cannot. This is due to at least two difficulties that arise when looking beyond the rivalry and non-excludability that characterizes all commons.

To set the stage, it is safe to assume that the atmosphere’s capacity to absorb GHGs can be considered as a ‘fixed space’ as in the case of a patch of land. The first difficulty is that, unlike a patch of land, the atmosphere’s capacity to absorb GHGs is spread across the globe, making its fair distribution particularly difficult to achieve and its free access particularly difficult to restrict. In terms of access, it is especially difficult to apply sanctions to free-riders, who are unwilling to sacrifice their short-term wellbeing by cooperating (Gardiner, 2011, p. 118). Moreover, cooperation can be undermined, e.g. by measurement problems, a fact that underscores the complexity of GHGs as a global problem. I shall elaborate on this below. The second difficulty that I consider is that in both cases there may be economic incentives that favour, respectively, overexploitation or pollution, with consequences on very different scales.

When logging a forest for agricultural purposes, for example, some of the consequences associated with this activity, such as the destruction of certain species and ecosystems, the removal of carbon sinks, etc., can be identified relatively easily. Therefore, the costs and benefits of logging are weighed ‘more realistically’. In the case of pollution, given the chaotic nature of the atmospheric system, it can be more difficult to make this cost–benefit analysis (cf. Broome, 2019). This is especially relevant in the case of fossil fuel use, as the severity of its effects will be readily visible in the medium to long term. Consequently, it may seem more cost-effective for some countries to burn fossil fuels now and, at best, offset some costs of doing so by planting a few trees later. In doing so, they would be setting aside a common interest in immediately mitigating GHGs, which is what we need to avoid catastrophic scenarios.

5.1. Climate vs. traditional commons

The rationale behind cap-and-trades is the recognition of certain shared characteristics between traditional and climate commons. But it is the absence of certain similarities that prevents the solutions that were offered for the former from working for the latter. The first condition that the climate commons do not meet is being local or, at best, regional (Gardiner, 2011, p. 119). As Gardiner points out, one aspect that all solutions to commons problems should share, if they are to be successful, is that all parties involved commit to repeatedly interact in order to carry them out (Ibid.) and long-term and broader concerns are agreed upon (Gardiner, 2011; Ostrom, 1990; Robert, 1984). With respect to climate commons in particular, Gardiner further argues that countries should not only reach repeated agreements on emissions targets over time but should do so in a context in which issues such as global cooperation, the global economy, security, health, social inequalities, and other environmental concerns are included in the discussion (Gardiner, 2011, p. 119). This is an aspect that is not necessarily accounted for in the framework of cap-and-trades.

Moreover, approaches that focus on the application of public or private property regimes on any traditional commons have proven to be insufficient to address the full range of problems for which they were designed (see Ostrom, 1990; Ostrom et al., 2012). More specifically, privatization strategies to avoid depletion problems caused by uncontrolled use of traditional commons have not always been effective, even in localized cases. Indeed, privatization has even exaggerated the problem (Dahlman, 1980). Therefore, it is mistaken to think that they would work in a global context. As Dietz et al. highlight, communities of users have proven to be able to more easily solve problems related to the governance of the commons, not through the distribution of property rights alone. However, such strategies work only if the following conditions are met: (i) resources and their use can be monitored, and information can be verified and understood at relatively low cost; (ii) rates of change in resources, resource user populations, technology, and economic and social conditions are moderate; (iii) users maintain frequent face-to-face communication and social networks that increase the potential
for trust and reduce the cost of enforcing rules; (iv) outsiders can be excluded at a relatively low cost from resource use; and (v) users support effective monitoring and enforcement of rules (Dietz et al., 2003, p. 1908).

Based on these necessary, yet not sufficient, conditions, it is possible to understand more deeply the disanalogy between traditional and climate commons solutions. It is on this basis that Gardiner considers that solutions regarding other commons are not promising in relation to the atmosphere’s capacity to absorb GHGs and, in general, climate change. Most importantly, the characteristics that foster cooperation in the former case seem to be largely absent in the latter (Gardiner, 2011, p. 119). Other reasons account for the lack of international support for global regulations. Among them, the difficulty of excluding non-cooperators from emitting, and of monitoring emissions, as discussed above. Ultimately, climate commons are global and, therefore, do not meet the conditions that would allow, in the case of traditional commons, to limit their use and control their access through cooperative strategies.

Efforts to reduce GHGs are best addressed at multiple scales and levels, so a ‘polycentric approach’ to climate change is crucial to solving collective action problems (Ostrom, 2009). Hence, GHG problems should be tackled in a similar way to other global environmental problems, i.e. by establishing clear and immediate local, national, and regional incentives, but with long-term global benefits. Only in this way will global cooperation become possible (Stern, 2006, p. 512). In this light, although cap-and-trades are motivated by broader concerns, they do not always respond to the mutually conflicting interests of the parties involved, failing to generate sufficient incentives for global cooperation (Gardiner et al., 2010). Faced with the latest evidence on climate change, though, the immediate interest of all countries is in cooperation.11 Thus, the question is no longer whether countries should adopt emission reduction measures, but only the degree to which they should do so, as evidenced by the increasing adoption of carbon pricing instruments worldwide.12

Another important aspect regarding the traditional and climate commons is the way in which pollution rights are allocated and to whom. When it comes to granting property rights over traditional commons, the rights in question relate to what are called ‘units of use’ of a ‘core resource’, the nature of which is not contingent on the user. A fishery, for example, consists of a core resource, the fish, which define the stock variable of the entire fishery and provide a limited number of units of use, i.e. the units of fish that can be sustainably consumed before the fishery is overexploited (Ostrom, 1990, Chapter 6). Therefore, if sustainable use of the fishery is achieved, the type of fish that is distributed among users is not relevant, i.e. the core resource of the fishery remains the same regardless of how its units of use are distributed and among whom. For its part, the atmosphere also has a core natural resource in the form of its absorption capacity, which provides a limited level of GHGs (units of use) that can be added to the total atmospheric rate before catastrophic consequences can be expected.

However, some would argue that the nature or type of emissions should be considered differently depending on the user, which would also have an impact on the way emissions are distributed (Shue, 1993, p. 41). In the case of a fishery, once the units of use of its core resource have been established and distributed, they are maintained, otherwise they would run the risk of being overexploited. Moreover, once a fisherman is granted the rights to an X quantity of a Y type of fish, it is less relevant whether he will eat it, sell it, or give it away, or whether fishing for that fish would help him satisfy a basic need or not. In contrast, in the case of emissions levels, some argue that it is not only the rights to an X quantity emission that should be considered, but also the type of emissions that are released and the purposes to which they contribute; and, depending on this, the extent to which they may or may not be avoidable (see Falkner, 2019; Shue, 1993, 2014). According to Shue, a distinction must be made between ‘basic livelihood emissions’ and ‘luxury emissions’ (Shue, 1993).

If we consider the nature of the different types of emissions, it is possible to see why some levels of pollution may be more permissible than others. GHGs that respond to basic subsistence interests are much less avoidable than those emissions that respond to economic capital interests alone, and therefore should not be evaluated solely on the basis of the consequences that may result from them. It follows that cap-and-trade does not address the concern related to the fair distribution of emission permits. This is because it does not provide for certain levels of emissions to be considered more permissible or indispensable than others, depending on why they are released and by whom. With the risk being that the production of avoidable emissions becomes more permissible than the production of emissions linked to basic livelihoods.
5.2. Pollution over mitigation?

The second difficulty with the above analogy relates to the assumption that the production of avoidable emissions may be unfairly profitable for some, in that some could ‘use up’ the space of others with emissions that could be avoided. Concretely, while the harms and losses from increased GHGs occurring on a large scale, the benefits associated with GHG production accrue almost exclusively to a few actors, whose emissions may be particularly difficult to restrict. Arguing that higher production prices would lead to carbon leakage and thus to an overall increase in GHGs, a car company X producing cars with heavy-duty engines would want to pressure policy-makers to allow it to obtain more pollution rights at the lowest possible price or even for free. As a result, X would stay in business and continue to profit from the production of avoidable emissions. In a nutshell, not all agents with rights to the atmosphere will benefit in the same way from polluting activities, although all agents will suffer the consequences of these activities.

A final aspect related to the idea that pollution may be unfairly beneficial only to certain rights holders has to do with their financial capacity. Should countries with greater financial capacity decide to join a global cap-and-trade system, for example, they are likely to want to buy more permits from countries with less capital but more pressing needs. As discussed in section 3, this should create an incentive for the least polluting countries. However, this may come at the cost of their unavoidable emission permits: In the hypothetical case that all their permits could be sold, their subsistence emissions would remain; thus, exceeding the level agreed by a global target. In this case, those who benefit most from pollution are also those who can afford to continue to pollute, that is, if they decide to join the scheme and cooperate in the first place. But even if the participation of all countries in such a system is guaranteed, global dependence on fossil fuels – and the burden their absence places on people’s well-being – is likely to outweigh even genuine attempts to reduce emissions through cap-and-trades. This would strongly speak against fossil-fuels subsidies (see Sterner, 2007).

As for the global duty to mitigate emissions that underlies the function of cap-and-trades, the Paris Agreement forges a blueprint on how to understand it. The objective of this agreement is to prevent temperature increases through local policies and global targets. By adopting it, ‘the international community’ commits itself, albeit in a non-binding manner, to support the achievement of this objective and, in doing so, to perform or refrain from performing any act that would undermine it. Each country makes itself responsible for the policies resulting from the agreement and, thereby, for how it assumes its obligation to reduce GHGs or pay the costs associated with them. Each assumes what Caney understands as first-order responsibilities, which in the context of climate change include the responsibilities to reduce emissions, maintain GHG sinks, enable adaptation, and compensate people for the harm done (Caney, 2014, p. 134). As explored so far, cap-and-trades can serve to achieve the goal set by the Paris Agreement, only to the extent that each country and/or economic agent has sufficiently strong incentives to do so, and there are reliable means of verifying their emission reductions. Otherwise, these systems are unlikely to be binding (Singer, 2011, p. 225).

Nevertheless, after almost twenty years of attempts to tighten and restrict loose and non-binding caps, cap-and-trades are still being gamed. This happens even where real efforts have been made to prevent it (e.g. European Parliament, 2003, Article 16) (not to mention that carbon prices are still too low). As discussed throughout this paper, the overarching duty to mitigate GHGs may be difficult to discharge if cap-and-trades do not adopt efficient, proportionate, and dissuasive deterrents. Furthermore, even when certain countries implement systems that do this, their neighbours may not; an issue still not fully covered by carbon border adjustments. This only underscores the need to always understand carbon pricing policies as part of a ‘supportive policy package’ (World Bank, 2021) and to reassess, in particular, the framework in which cap-and-trades are embedded. Finally, it should be stressed that, even if cap-and-trades end up being effective and fair, there are other reasons for not wanting to adopt them.

On the one hand, given the nature of the climate commons, cap-and-trades can fulfil their function of mitigating GHGs only with great difficulty, so they focus mostly on dealing with the consequences of these emissions; that is, paying for the cost associated with them. As a result, the causes of GHGs are neglected (e.g. their seemingly uncontrollable production by some agents). In this scenario, even if some of the complex moral issues noted above are adequately addressed – that is, even if the social and environmental costs of GHG...
emissions are calculated to fully compensate for the harms and losses caused and allocated according to a fairness criterion – the undesirable (and probably unfair) causes of GHGs remain largely unaddressed.

On the other hand, and provided that cap-and-trades can effectively fulfil their function in mitigating GHG emissions by limiting emission rights, for example, to an X amount that effectively leads to the Paris Agreement target, there is no guarantee that these systems will distribute such rights fairly. Given that the price of carbon, and therefore the price of emission rights, is determined by the market, if the limit on rights is set at X, those countries and/or economic agents with the greatest purchasing power will surely want to hoard as much of X as possible. This would leave the rest of the population with rights to only unavoidable emissions. This means that effective cap-and-trades that allocate a minimum number of emission rights to the majority of the population would be clearly unfair. If we are to comply with a duty to mitigate GHGs, i.e. if we are to reduce the risks posed by climate change, all these aspects must be considered.

6. Conclusion

After almost twenty years of redesigns and implementation at subnational, national, and regional levels, cap-and-trade systems have not proven to be up to the challenge of mitigating overall GHG emissions. In this paper, I have analyzed some of the discrepancies between the theory and reality of cap-and-trades; discussed their technical and political shortcomings; and raised three moral concerns that, I argue, will not be satisfactorily addressed even if these systems prove to be truly effective. In challenging the assumptions used in parallel to address traditional and climate commons problems, I have sought to explore, from a philosophical perspective, the disanalogy that exists between them. Specifically, how climate change, in general, lacks the conditions necessary for privatization strategies, such as cap-and-trade systems, to succeed. By placing special emphasis on a duty to mitigate avoidable emissions and the right to emit unavoidable ones, this paper aims to broaden the debate on real cooperative strategies for urgent and fair global GHG mitigation.

Notes

1. Emissions trading was subsequently integrated into the UNFCCC documentation, notably through the efforts of the COP and, more recently, in the Paris agreement through Article 6 (UNFCCC, 2021; Carbon Brief, 2019). During COP26, Article 6 was finalized. Specifically, Articles 6.2, 6.4 and 6.8 were adopted (UNFCCC, 2022).
2. From now on cap-and-trades.
3. For a critique of externalities, see Gills and Morgan (2021).
4. For an analysis of the harm done by individuals’ emissions see Broome (2019).
5. As of 2021, there are 64 carbon pricing instruments (CPIs) in place and three scheduled for implementation (World Bank, 2021). These include carbon taxes and emissions trading schemes (ETSS), which account for cap-and-trade systems and baseline-and-credit systems at national, regional, and subnational levels. Notably, China launched its national ETS in February 2021. Also, the Coalition of Finance Ministers for Climate Action stands out as an international initiative aimed at the implementation of both instruments. For a discussion, see Carattini and Löschel (2021).
6. For a discussion on carbon pricing and the appropriate term to refer to it, e.g., shadow price of carbon, social cost of carbon, and social value of carbon, see World Bank (2017).
7. Current ETSS operate as part of policy packages and are often not the most important policy used by a country to address climate change (see ICAP & PMR, 2021; OECD, 2021). For the purposes of the article, ETSS practices have been oversimplified.
8. It should be noted that this is a highly contested concept, since, according to critics, it appeals to privatization, as evidenced, e.g., by McKean and Ostrom (1995).
9. For an extensive discussion on property regimes over commons see Ostrom (1965, 1990, 2007). On externalities and economic goods see Cornes and Sandler (1996).
10. For a discussion on intergenerational equity of GHGs burdens, see Nathwani et al. (2021); Nathwani & Artie (2019).
11. See the Sixth IPCC report (IPCC, 2021).
12. As of 2021, there are 64 carbon pricing instruments (CPIs) in place and three scheduled for implementation (World Bank, 2021).

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