# REIMAGINING THE HUMAN-ENVIRONMENT RELATIONSHIP

## From Reimagination to Action: Incentivizing Change

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**This paper forms part of the volume *Reimagining the Human-Environment Relationship* for Stockholm+50. This curated collection of ideas captures, interrogates, and elevates alternative paradigms of the human-nature relationship – existing and new, and from various disciplines and societies – creating a space to recast our relationship with the environment and inform future policymaking.**

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# Introduction

The headlines of the Stockholm+50 Conference state: "it's time for bold choices, it's time for urgent action."[1]  Anchored in a Decade of Action for sustainable development and aiming to build on 50 years of "global environmental action," the conference sets out an ambitious agenda for the global community to take proactive steps to prevent catastrophic climate change. This ambition is the result of UN General Assembly Resolutions[2] that call for far more robust action on intergenerational responsibility and fulfilment of and acceleration on existing environment commitments to realize the 2030 Agenda for Sustainable Development.

Unfortunately, this bold narrative is directly undercut by the reality of climate inaction today. A survey of 33 heads of UN entities ahead of Stockholm+50 points to a resounding "lack of urgency" as the key obstacle hindering progress on the environment.[3] The message is clear: shortfalls in political will across global leadership is the principal obstacle to meeting our collective climate challenge.[4] And while the rhetoric around the climate emergency has gained popularity over recent decades, meaningful global policy response has lagged far behind. Following decades of continued investment in fossil fuels and rapid expansion of energy-intensive development, the reality of passing the crucial 1.5 degree Celsius mark is both imminent and inevitable,[5] while the war in Ukraine may have perversely triggered a greater investment in brown technologies that are accelerating climate change every day.

The paper is part of a collection of reflections that share the same objective: to shift the human-environment relationship and help policy audiences focus on underconsidered challenges and opportunities at Stockholm+50 and beyond. The collection opens the possibility of a kaleidoscopic approach to the human-environment relationship. The authors offer complementary perspectives but adopt starkly contrasting points of departure, from astrobiology to religion, from Earth system law to indigenous understandings of the environment. Rather than see our planet as a resource to support our growth, these perspectives demand that we shift from a liberal, capitalist, and exploitative relationship to our planet to a more entangled, holistic, and humble one. Indeed, as the astrophysicist and astrobiologist Adam Frank points out, we may need to think in terms of a planetary intelligence where we are part of a broader system that must evolve together, or expire.

This paper attempts to move from that reimagination to collective action. Building on the perspectives of the authors in this series, we address the question of how to generate political will at the global and local levels, how to catalyse the kind of shift that could eventually reverse climate change trends and move us towards a state of equilibrium with the planet. To do this, we argue, we must re-evaluate what kinds of processes and approaches tend to generate behavioural changes among individuals, communities, and our increasingly networked global society. Specifically, we examine the current framework of penalties and restrictions that dominates today's climate response, asking whether a system of rewards might generate a more effective, globally scaled response.

Drawing from advances in behavioural science, we argue that the Stockholm+50 conference and its follow-up should help to develop a "choice architecture" that offers clear rewards and incentives in three areas: (1) unlocking data monopolies around climate science; (2) strengthening accountability via networked forms of governance; and (3) building momentum against climate apathy.

Such an architecture stands a much better chance of triggering the kind of radical changes in global behaviour and decision-making proposed by the other authors in this project, helping to build the kind of multi-scalar global response suggested by Reyers and Bennett, reverse the ineluctable dirty growth critiqued by Hickel, draw in the perspectives of marginalized voices as demanded by Paredes and Abumoghli, evolve a more holistic Earth system approach outlined by Kotzé and Frank, and incentivize the kind of environmental ethics demanded by Kelbessa and Watane.

## The Paris Framework: Commitments, Financing, and Reductions

The dominant global framework for addressing climate change is the 2015 Paris Agreement, a legally binding convention requiring economic and social transformation to reduce greenhouse gases, build capacity for green energy, and implement nationally determined contributions.[6] As such, the framework is largely driven by a combination of restrictions – limitations on production of greenhouse gases – and financial commitments to other forms of energy. Wealthier, higher-emitting countries have committed to greater contributions, helping less developed, more vulnerable countries to both adapt to climate changes and make the leap to green technology. This combination of mitigation and adaptation can be thought of in broad terms as a set of limitations on how countries commit to develop, alongside a shift in resources from those countries that are more responsible for greenhouse gases to those that are suffering most from the effects of global warming.

This framework has generated important actions and has demonstrated some of the clear benefits of global cooperation, but has fallen well short of the kinds of transformative change needed to slow global warming. Indeed, there is mounting evidence that emissions have continued to rise, while commitments have failed to turn into reality. In this context, the General Assembly resolution[7] calling for the Stockholm+50 Conference may seem more worrying still: limited to a "summary of discussions" as its main deliverable, the General Assembly clearly did not wish to generate a binding commitment or any new legislative frameworks. Of course, not all intergovernmental meetings need to generate enforceable provisions to be effective. Soft law commitments – like the Sustainable Development Goals (SDGs) – have proven effective at raising awareness, building coalitions, and defining targets for collective action. They have also led to tangible progress in hard law too. While Kotzé takes a critical view of the power of soft law frameworks to usher in the radical change we need, he nevertheless recognizes that they "have some normative power and steering effect." Indeed, a 2021 review of Voluntary National Reviews found that an increasing number of States are enacting laws (as well as decrees and other legal instruments) to give practical effect to the SDG agenda in national contexts, without an enforcement mechanism in the background.[8] While the SDGs may not trigger a total reversal of capitalist inclinations, the incentives it provides through 'nudging' are important and consequential on a global scale.[9]

Building on this, we argue for a refocusing on incentives instead of penalties. Rather than trying to turn soft commitments into more enforceable restrictions, we ask whether a system of incentives and a reward-based "choice architecture" might work better. Indeed, our thesis builds on early work on incentives and rewards, including by the UN Environment Programme (UNEP),[10] which we argue should be sustained and scaled up across a broader set of networks relevant to climate action.[11]

## Choice Architecture: The Importance of Incentives

A crucial insight from behavioural science is that perceived rewards generate different responses than losses or penalties. In fact, in many cases, actors faced with gains and rewards produce better results on both efficiency grounds (pareto optimality) and psychological grounds (behavioural differences).[12] This insight helps move beyond the rational choice theory that has dominated economic models of governance – where a penalty and a reward are viewed as roughly equivalent – and offers a more nuanced understanding of how to influence decision-making.[13] Specifically, behavioural science suggests that "issue framing" matters: whether a decision is couched as a potential reward or a penalty has an enormous impact on the actor, even if the decision may result in the same outcome from an economic point of view. If climate mitigation is framed as risk avoidance, for example, negotiators may take a more protectionist, self-interested approach, resulting in less common ground than a framing that demonstrates the potential benefits of cooperation.[14] Indeed, some scholars have suggested that the relative success of Paris over Copenhagen was the result of more positive framing of climate response.[15]

Behavioural science is well established and needs not be summarized in full here. Instead, we suggest that its focus on incentives and rewards can have a useful application in three specific areas where progress must be made if we are to achieve meaningful action to safeguard the environment:

1. Incentives to unlock data monopolies;
2. Incentives to strengthen networked accountability; and
3. Incentives to combat climate apathy.

In each, we offer the beginning of a choice architecture designed to help break deadlocks, demonstrate the value of cooperation, and advance the stated goals of the Stockholm+50 conference. This does not mean we undervalue the importance of restrictions, penalties, and legal accountability; all have crucial roles to play in the global governance of the environment. Instead, we suggest that for some of the most crucial areas in need of global cooperation, a broader set of behavioural tools is required.

## Unlocking Data Monopolies

Data monopolies are a shorthand description of a variety of contemporary challenges surrounding the gathering, storage, sharing, and monetizing of data in fields such as big tech, security, health, scientific research, and finance. While they come in many shapes and sizes, data monopolies tend to evolve in systems of low regulation that allow early leaders to obtain and preserve advantage over later entrants and/or less well-resourced actors. Some data monopolies create efficiencies (e.g., a well-functioning search engine), but most lock away value, distributing it ineffectively and often inequitably. Today, it is well understood that monopolistic control of data has a strong tendency to undermine crucial collective outcomes[16] – from vaccine justice[17] to security transparency[18] – adding significantly to global and local inequalities in a wide range of arenas.

The downsides of data monopolies are readily apparent in the global debt crisis. The world's poorest nations have been rapidly absorbing a high amount of variable debt that will quickly become unserviceable if interest rates move against them, even in small and incremental steps.[19] Creditors

behind this debt are diverse and a significant number are invisible, creating a phenomenon of "hidden debt."[20] The threat of this hidden debt to global environmental efforts and sustainable development more generally is massive and underappreciated. This is because the ability of countries to invest in public services and conservation, green industry, and provide safety nets to absorb the labour shocks that will result from decoupling growth from extractive industries all depend on the health of the public purse. Hidden debt not only obscures our collective knowledge of where such resources might be located, it actively inhibits effective investment in equitable green industries.

> A common feature of debt crises has been a sudden jump in debt levels […]  Because these crises are associated with lower growth, higher inflation, and setbacks in the fight against poverty and other development goals, protracted defaults are damaging to the economic and social fabric of the debtor country. […] The boom in hidden debts has given way to a rise in unrecorded debt restructuring and hidden defaults. Comparatively little is known about the terms of these debts or their restructuring terms.[21]

In a January 2022 policy paper, for example, the Bretton Woods Committee's Sovereign Debt Working Group noted that "there currently is no consensus among market participants regarding what information should be disclosed, how to compel or encourage the relevant parties to make such disclosures, or what the consequences for failing to do so should be."[22] Today, there is no platform able to capture accurate debt levels and, by extension, debt default risk, because developing economies' liabilities and their terms are not fully known and creditor data lies siloed and hidden.[23]

Debt transparency is only one example of a data monopoly where new incentives are required to foster better sharing practices. The same threats to progress in the debt architecture – data silos, exclusive data access rights, and an inconsistent or reluctant adoption of sharing practices – also undermine global environmental responses, including in the areas of tracking pollution, disaster response, combating environmental crime, preventing biodiversity loss, and environmental conservation. Indeed, across many of the "global public goods" identified in the Secretary-General's *Our Common Agenda* report, a major impediment to more effective, equitable distribution of public goods is hidden, monopolized data.[24]

The problem of siloed data is increasingly recognized by the leaders of the Conference of Parties (COP) on climate change. For example, in the most recent COP in Glasgow, the #Data4BetterClimateAction demonstrated a clear recognition that scientific data must be shared, accessed, and instrumentalized towards common goals. And here the IPCC model – which involves the global sharing and vetting of scientific data on climate change – is one that could be expanded and adapted to new fields, helping to break down silos and more self-interested uses of scientific data.

In some senses, breaking out of the data monopoly problem requires the creation of a virtuous competition – a race to opening data silos – where dispersed scientific communities find benefits in pooled data resources.[25] Shared Environmental Information Systems, for example, have been promoted to gather, *inter alia*, data from community-based citizen observatories where data is collected for environmental monitoring, knowledge sharing, joint decision-making, and cooperative planning. While clearly useful and effective, such systems have not been widely adopted. In a 2019 study, Wehn and Almomani note that community-based monitoring systems lack active buy-in by all stakeholders, especially private citizens, policymakers, private data aggregators, and scientists.[26]

The question then becomes how to create a set of incentives for rewarding and encouraging such data sharing behaviours across sectors that may have longstanding and deeply entrenched interests in protecting and hiding information. Such approaches do not require a total breakdown of ownership, especially where data collection can drive innovation, but should aim to prevent the kind of high levels of exclusion that can lead to a monopoly.[27] For example, in the case of green technology, a temporal horizon could be placed on exclusive intellectual property rights, paired with global commitments to finance the spread of the technology to developing countries. In the case of information about biodiversity loss, States could be incentivized to share information about changing ecosystems through reciprocal support arrangements.[28] As the Open Data Institute notes, "when intentional design, investment and energy is put into creating effective data ecosystems, supported by the right mix of openness, incentives and data institutions, data can deliver a step-change in how problems are solved."[29]

Recent behavioural science research has shown that these incentives can be built into existing legal and non-legal structures, offering a wider range of options for unlocking data monopolies and inducing greater cooperation.[30] In particular, they allow us to look beyond purely monetary incentives for decision-making: naming and praising can provide valuable reputational benefits,[31] and States have seen enormous value in the admission or readmission into cooperative arrangements (indeed, the recent bid by Sweden and Finland to join NATO underscores the enormous importance of that cooperative security arrangement, which is largely based on transparency and information sharing as well).[32]

Unlocking data monopolies would also advance many of the proposals articulated by the other authors in this collection. For example, one of the biggest impediments to more equitable financing for Global South countries grappling with the exploitative environmental practices of the Global North is hidden debt. Global data transparency is a necessary step toward the kind of global rebalancing suggested by Hickel, to put an end to the direct exploitation of marginalized communities described by Paredes, and to create the multi-scalar transnational response proposed by Bennett and Reyers. Creating common, pooled data on the environment is also crucial to the development of an Earth system law outlined by Kotzé.

## Incentivizing Networked Accountability

Environmental accountability brings to mind punitive measures in national and international law, encoded in the language of treaties and legislation that together form the bedrock of global environmental governance. Indeed, critics of the Paris Agreement and the COP framework have rightly pointed to the lack of "teeth" in such frameworks, where voluntary commitments are easily broken without repercussion. This is a valid criticism and should prompt a reinvigorated push for the Earth system legal framework[33] proposed by Kotzé. However, rather than push exclusively for stronger laws and penalties as the only route towards improved behaviour, we argue that a State-based, juridical view of accountability fails to account for the increasingly hybrid nature of environmental governance – indeed, it misses much of the accountability toolbox. Instead, we suggest that incentives towards the kind of multi-scalar, networked forms of accountability (described in detail by Reyers and Bennett) offer a viable complementary route to change.

Since the 1990s, there has been a rising interest in shifting from government-centred forms of global governance to more complex, multi-actor models. This is in part the result of globalization,

where a growing number of actors have become increasingly involved in the governance of major issues like health, financial systems, digital space, trade, and security. This proliferation of actors has given rise to "governance fragmentation," where overlapping, inconsistent, and uncoordinated governance regimes lead to distinct clusters without a broader organizing framework.[34] Lacking a single or bi-polar geopolitical governance power, today's world is better characterized as "polycentric," where many powerful actors compete with each other in an increasingly disorderly manner.[35]

In response to this growing complexity, major intergovernmental organizations like the EU, UN, International Monetary Fund, World Bank, and others have launched extensive "multistakeholder" processes bringing together States, NGOs, private sector actors, and others. These alliances of different categories of actors acting in concert towards a common goal, are called networks.[36] Rather than attempt to govern behaviour in a top-down, binding manner, networks attempt to build coalitions of actors collected on the basis of a common objective. As Reyers and Bennett note, networks not only reflect our deep interdependencies, but also empower local actors to generate a global impact. They also build towards the kind of transboundary approach to the environment described by Kotzé and can function as a disruptor of the exploitative North/South relationship critiqued by Hickel.

Networks are different from hierarchies and markets, but they share some characteristics of both. One well-known definition of global governance networks is: "the coordinated management and regulation of issues by multiple and separate authorities, the interventions of both public and private actors … formal and informal arrangements, structured by discourse and norms, and purposefully directed toward particular policy outcomes."[37] Coordinated management and common goal approaches may mimic some aspects of a hierarchical structure, but the informality and independence of the actors within the network align more closely with a market approach.

Building on this definition and an examination of many models below, global governance networks tend to share the following key characteristics – they:

1. Bring together different actors from the public and private spheres (State/non-State), all of whom have some role in decision-making;[38]
2. Have some degree of institutionalization or collective purpose beyond a mere market;[39]
3. Allow for the individual actors and institutions to remain formally independent and autonomous;
4. Tend to involve voluntary processes of negotiation and coordination aimed at specific policy outcomes (though, in some cases, there are clear obligations); and
5. Contribute to some form of common or public good.[40]

The extent to which networked governance may involve binding mechanisms or hierarchical decisions is not clear.[41] In some cases, there may be fairly formal, binding aspects to a network (e.g., the International Seabed Authority[42]). But there is general agreement that global governance networks are not ruled by a single authority and tend not to have formal dispute resolution mechanisms, instead relying on reciprocity, trust, and voluntary commitments to achieve their goals.[43] Indeed, while there are often deeply lopsided distributions of power and resources in many global governance networks, the principle of equality of membership nonetheless appears to be an important aspect of many of them (and has given rise to interesting notions like "differentiated responsibilities" in implementing climate obligations).[44]

> Understanding the motivations for accountability that animate different authority holders, and where if at all the environment appears in those motivations […] can reveal important governance dysfunctions and, ultimately, failures to curb environmental degradation of the earth's systems.[45]

Networked approaches to global governance have proliferated in the environmental arena. One of the most common is the public-private partnership (PPP) in which public institutions and private companies enter into a set of reciprocal obligations and commitments, holding each other accountable via mutual tracking and transparency mechanisms.[46] Such partnerships include the World Summit on Sustainable Development, and Clean Development Mechanism, both of which have built reciprocal, non-juridical forms of accountability. The Intergovernmental Panel on Climate Change (IPCC) is also a networked form of governance, allowing a worldwide group of scientists to pool resources, feed Member States conclusions, and ultimately drive global policy on emissions reductions. Other models include mayors/cities networks,[47] which collaborate transnationally on climate mitigation and adaptation;[48] the World Business Council for Sustainable Development, which brings together private sector actors;[49] and subnational networks like The Chicago Climate Exchange, a voluntary cap-and-trade system with membership including private firms, NGOs, universities, and State and local governments.[50] As the Environmental, Social, and Governance (ESG) movement has expanded around the world, cross-sectoral approaches to environmental accountability have taken deeper root, helping to expand these forms of networked governance.

The question is not so much whether networked approaches to climate governance work – the evidence is quite strong that they accomplish what the Paris Agreement and related international legal frameworks have thus far failed to do: build greater accountability. A range of scholarship has demonstrated that networked accountability around climate can do more than merely challenge authority holders for falling short on commitments, but also challenge how major players frame environmental problems, offering more fertile ground for policies that will respond to them.[51] Of course, networks are not a panacea and can be criticized for a number of shortcomings, including access barriers for youth, hegemonic approaches[52] by the financial sector, and a "democracy deficit"[53] in how they are organized. However, facing stagnation in the formal legal mechanisms for shaping global climate policy, we argue that the prospect for networked accountability is the best we can hope for today.

As such, we suggest the most important question facing global leaders today is: *how to build incentives into the global governance system that will nudge it in the direction of networked accountability?* One answer lies in the costs of accessing environmental justice and accountability institutions. As Kotzé recognizes, "courts around the world have recently been stepping forward in an effort to, among others, expose this lack of normative ambition, forcing governments and corporations to take more urgent and drastic action to address the climate crisis." However, today, those wishing to bring formal claims on environmental grounds face a number of barriers, including the cost, complexity, and willingness of judiciaries to hear such cases.[54] In response, efforts to establish a "green bench" of courts with knowledge and accessibility for environmental claims have relied on networked approaches, such as the Asian Judges Network on the Environment[55] that relies on a partnership with the Asian Development Bank, UNEP, and a range of other actors. There is growing evidence that such forms of climate litigation domestically can provide an important challenge function,[56] not only to ensure that authority holders live up to their commitments but also nudge them toward bolder targets and discourses on the environment.[57]

Sustainability-oriented shareholder activism offers another potential incentive to build networked accountability into global environmental governance. A recent paper[58] on shareholder engagement on ESG performance observes that "while a vast number of financial institutions, including banks and funds, are signatories of the UN-supported Principles of Responsible Investment, the incentives to make ESG an important investment criterion are ultimately driven by investor demand."[59] There is growing evidence that even fairly passive investors are trending towards a greater interest in sustainability, not only because of the long-term costs of unsustainable growth, but also due to the normative shift in which ESG is becoming part of investment.[60] A recent study found that more than half of today's global investment firms are following ESG criteria in their strategies.[61] Indeed, the number of proposals on ESG topics from shareholders has more than doubled over two decades, indicating an appetite not only for financial returns but also a moral dividend.[62]

Building networks that improve access to environmental justice and develop greater accountability structures within global financial institutions are two crucial ways global environmental governance could shape behaviour even absent progress at the inter-State level. Indeed, improving access to environmental justice could be an important step in beginning to address the systematic exploitation of Global South communities described in Paredes' reflection on climate activism, while greater financial accountability could form a cornerstone of Hickel's degrowth proposals. More broadly, networked arrangements reflect what Reyers and Bennett describe as a "relational, dynamic" approach to our interdependent planetary ecosystem: they move easily from local to global, evolve more naturally to the kind of accelerating changes we see in climate and environmental change, and are more capable of affecting the underlying rules and patterns of complex systems.

## Transforming Climate Apathy into Action through Transparency and Trust

The loss of trust in global and national leaders to deliver on climate promises is one of the most important impediments to global behavioural change. While the Secretary-General has – fairly euphemistically – referred to loss of trust as a "frayed" social contract,[63] we argue that the deepening trust deficit presents a greater risk to the sustainability agenda than is normally acknowledged. The risk goes by various names and can be described on a spectrum from climate apathy[64] to eco-nihilism,[65] describing a loss of confidence in the ability to effectuate change in a world headed towards planetary disaster. The American Psychological Association notes that psychological responses to climate change, such as conflict avoidance, fatalism, fear, helplessness, and resignation, are growing.[66] What climate apathy and eco-nihilism share in common is the view that the climate crisis and ecological breakdown are inevitable in a world where institutions and individuals are guided principally by self-interest and lack the will to invest in collective action or acknowledge shared responsibilities.[67] Eco-nihilism is the antithesis of a strengthened social contract – it is a belief system that thrives in the absence of strong bonds between government and denizens. In short, it tends to fracture societies and erode the interconnectedness fundamental to accountability.

> Build back better. Blah, blah, blah. Green economy. Blah blah blah. Net zero by 2050. Blah, blah, blah. This is all we hear from our so-called leaders. Words that sound great but so far have not led to action. Our hopes and ambitions drown in their empty promises.[68] - *Greta Thunberg*

One of the most important ways to generate and renew trust is to establish common sources of information, reference points that even polarized communities can refer to as a basis for action. Despite intense scrutiny and second-guessing in some quarters,[69] the IPCC has emerged as a viable example of such a common reference point, where scientific consensus built around climate change carries real weight around the world. In fact, the IPCC is an example of networked approaches to climate, a structure where the scientific community is able to feed directly into global policymakers and interact with civil society. Moreover, research has indicated that increased trust in scientific findings is strongly correlated to improved climate behaviours, much more so than growing trust in institutions.[70] As such, the IPCC may be one of the most important networked models of governance, one which could potentially be replicated and/or expanded to a broader range of issues than global temperature rises (could we have an IPCC for biodiversity, for pollution, forests, ice shelves, or even the entire planet?).

Beyond scientific consensus, we argue that well-placed investments can provide signals that progress is possible and achievable, helping to counteract the forces of apathy. An important starting point is investment and rewards for building bulwarks against disinformation. Rewarding and incentivizing reliable sources of public information could create and sustain a market advantage for trustworthy news outlets, creating a virtuous cycle of improving knowledge and transparency. The Reporters Without Borders' Journalism Trust Initiative[71] is one noteworthy example. This interactive online application can be used to check, disclose, and promote compliance of editorial processes with best practices to create better news ecosystems.[72] Indeed, initiatives to reward greater transparency and trust in the media could be paired with the kind of scientific consensus created by the IPCC, creating a positive relationship that would validate and reward global consensus around the environment.

Here the rise of the genomic justice movement[73] provides one useful way of thinking of rewards alongside penalties, connecting the private sector with indigenous researchers to help understand environmental impacts on indigenous communities (including biopiracy).[74] Greater investment in frameworks that enable equitable data sharing across traditionally marginalized groups – for example, by supporting native biobanks[75] – could help strengthen their hand in the climate governance processes at a global level, gradually building greater trust in a process that has thus far excluded them.

The third element of trust-building that could be incentivized is the inclusion of traditionally excluded groups in climate governance processes. Crucial to this would be the meaningful participation in global governance by indigenous communities (Paredes and Watene), religious leaders (Abumoghli), and a range of subnational actors who operate as crucial nodes in our interconnected system (Bennett and Reyers). Such a step would certainly aid in combating the apathy of populations that have seen little benefit from the climate movement (such as minorities in climate-affected developing countries and youth).

## Conclusion

The view advanced in this paper is not that incentives and voluntary action alone can solve the challenge of unconstrained consumption, profit seeking, and the commodification of the environment. There is a rich history of scholarship that suggests that change will most likely come through the application of both rewards and penalties. However, attention to the value and effect

of rewards – and in particular novel reward structures applied to networked activities – is lacking and therefore our understanding of their potential benefits remains underdeveloped in comparison to our understanding of the effectiveness of penalties.

Finally, our conclusions point to a potential reimagination of the role of global climate governance today, aligned with the perspectives in the other papers in this collection. Rather than understand global governance as a set of top-down rules that deliver order and predictability, our cohort of authors see the need for structures that connect actors, build common sources of information and transparency, and ultimately establish an evidence-based incentive for cooperation. In our view, anyone who comprehends the trajectory of climate change today must see the need to act in a more transformative way than we have to date. Global climate governance will need to galvanize action by building that global common comprehension.

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