A PLAN TO STRENGTHEN THE PARIS CLIMATE AGREEMENT

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INTRODUCTION

The Paris Agreement on climate change reached in December 2015 was a historic achievement in international diplomacy.[1] Nearly every nation in the world—from North Korea to the United States—pledged to reduce their greenhouse gas emissions to prevent a global rise in temperature beyond 1.5 degrees Celsius (2.7 degrees Fahrenheit).[2] The scientific community is telling us that a rise in the Earth's temperature beyond 2 degrees Celsius (3.6 degrees Fahrenheit) will yield catastrophic effects upon the planet's weather.[3] The Paris Agreement—like all international agreements—stands, however, upon the unstable foundations of mutual commitment and good will. The agreement provides no consequences if countries do not meet their commitments. Consensus of this kind is exceedingly fragile. Even a trickle of nations exiting the agreement will, in all likelihood, trigger the withdrawal of more governments, bringing about a total collapse of the agreement. Environmental agreements are uniquely susceptible to this pattern of failure—everyone needs to be onboard and stay onboard. At the heart of the problem is what is known as the "tragedy of the commons"—a unique dynamic that sabotages cooperation. On a domestic level, the tragedy of the commons is easily solved through regulation. On a supranational level, however, governance mechanisms tend to collapse. Cooperation is crippled by the lack of a central authority with sufficient

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1. Conference of the Parties, *Adoption of the Paris Agreement*, U.N. Doc. FCCC/CP/2015/L.9/Rev.1 (Dec. 12, 2015).

2. Joby Warrick & Chris Mooney, *196 Countries Approve Historic Climate Agreement*, WASH. POST (Dec. 12, 2015), http://www.washingtonpost.com/news/energy-environment/wp/2015/12/12/proposed-historic-climate-pact-nears-final-vote [http://perma.cc/43A2-62YM].

3. Thomas L. Friedman, Opinion, *Paris Climate Accord Is a Big, Big Deal*, N.Y. TIMES (Dec. 16, 2015), http://www.nytimes.com/2015/12/16/opinion/paris-climate-accord-is-a-big-big-deal.html [http:// perma.cc/5MTH-MLRY].

coercive power to prevent countries from overexploiting shared resources—our air, oceans, marine life, et cetera.

Sustainable use of common-pool resources is extremely tricky to maintain. Indeed, the failure of the Kyoto Protocol is a stark testament to this challenge.[4] This short discussion offers a potential solution to this crisis of coordination. This Article proposes a mechanism to mitigate the impact of the tragedy of the commons and help ensure that the world's nations live up to their commitments under the Paris Agreement.[5] The challenge to international cooperation that the tragedy of the commons creates is pernicious. The question of how to tackle the tragedy of the commons—and I say this without a trace of exaggeration—is arguably the most pressing problem we face as a species. We need a stable framework for collective action *now*. The Paris Agreement offers our best hope yet for rallying international cooperation. Yet a cloud of cynicism already surrounds the agreement. After the collapse of Kyoto, a failure of the Paris Agreement could fatally hobble global environmental governance.

I. WHAT IS THE TRAGEDY OF THE COMMONS?

In a tragedy of the commons, a group of actors behaving according to rational self-interest undermines the entire group's long-term interests by depleting a common resource.[6] The classic example is a group of farmers overgrazing a common pasture until it can no longer be grazed.[7] Because each farmer wants to maximize their income by increasing the number of their own cattle—a tempting option because the costs of doing so are shared—the pasture becomes overstocked with cattle and quickly becomes overgrazed. In this kind of situation, the problem is that no one can trust

4. Robert B. Semple Jr., Editorial, *Remember Kyoto? Most Nations Don't*, N.Y. TIMES (Dec. 3, 2011), http://www.nytimes.com/2011/12/04/opinion/sunday/remember-kyoto-most-nations-dont.html [http:// perma.cc/CS27-3X68]; *see also* Jeffrey Ball, *Why the Paris Climate Talks Won't Amount to Much*, WALL STREET J.: EXPERTS (Nov. 19, 2015, 10:06 AM), http://blogs.wsj.com/experts/2015/11/19/why-the-paris-climate-talks-wont-amount-to-much [http:// perma.cc/R9G7-944L]; Lucas Bretschger & Eth Zurich, *To Get a Climate Agreement, First Set Out Principles for Fair Cost-Sharing*, ECONOMIST (Nov. 20, 2015, 1:46 PM), http://www.economist.com/blogs/freeexchange/2015/11/calculated-approach [http:// perma.cc/MN9R-MQP3].

5. The reader should note, however, that this approach in fact has a wide breadth of application. Its usefulness extends far beyond the Paris Agreement and may be utilized to reinforce any species of treaty. It could be used to reinforce existing, as well as future, treaties of any kind. However, as explained below, this approach is especially suited to solving a tragedy of the commons dynamic.

6. Although the concept can be traced back as far as Aristotle, the tragedy of the commons was first formulated in a rigorous way by Garrett Hardin in the late 1960s. *See* Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968). Hardin was not the first to recognize the problem. *See* H. Scott Gordon, *The Economic Theory of a Common Property Resource: The Fishery*, 62 J. POL. ECON. 124 (1954); Anthony Scott, *The Fishery: The Objectives of Sole Ownership*, 63 J. POL. ECON. 116 (1955); *see also* ARISTOTLE, POLITICS bk. II, at 1148 (Richard McKeon ed., Benjamin Jowett trans., Random House, Inc. 1941) (c. 350 B.C.E.) ("For that which is common to the greatest number has the least care bestowed upon it.").

7. *See* Hardin, *supra* note 6, at 1244.

that other group members will conserve the resource, which triggers a race to the bottom—a race to deplete. The tragic irony is that even when everyone wants to conserve the resource, players in this odd game of distrust are driven by rational self-interest to deplete the common resource to everyone's disadvantage, including their own.[8] In a tragedy of the commons, *everyone* loses. Cooperation is extraordinarily difficult to sustain—suspicion of just one "cheater" will cause cooperation to unravel. The tragedy of the commons manifests with respect to a broad range of common-pool resources. Clean air, forest and ocean management, and desertification are but a few salient examples. Global warming, however, is perhaps the ultimate example.

So what can be done? There are standard solutions to the tragedy of the commons. These are: (a) *top-down regulation*: wherein third-party enforcement coordinates the parties' behavior through negating, with the threat of sanctions, any incentive to cheat; (b) *privatization*: wherein the externality of overexploitation is internalized to the resource owner, thereby providing an incentive to preserve the resource; and (c) *voluntary small group cooperation*: wherein, as the political economist Elinor Ostrom demonstrated (for which she won a Nobel Prize), rules and institutions can emerge to ensure shared management of resources in close-knit communities.[9]

All these solutions, however, falter on an international level. Indeed, the tragedy of the commons is uniquely malicious between state actors. The first solution—top-down regulation—is extraordinarily difficult to achieve because the global community is a fragmented jumble of legal authorities that lacks a central authority with true coercive strength able to enforce regulation. The second solution—privatization—is an unattractive option for several reasons: (1) there are serious normative issues in creating private monopolies over global resources, (2) it is often logistically impossible to privatize global commons, (3) there is no guarantee that private actors will have sufficiently long time horizons (indeed, these actors may be publically listed companies legally obligated to maximize short-term profits), and (4) the poor may be priced out of the resources and underprivileged communities may be bypassed altogether in terms of access to the resource. Finally, Ostrom's approach is simply not viable on the international level. By definition, it does not pertain to global actors. The international community is the antithesis of a close-knit community able to develop strong norms of conservation.[10]

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8. In game theory, this cooperative dilemma can be modeled as a two-person Prisoner's Dilemma (PD). However, in a multiperson PD, the "game" typically becomes even more unstable.

9. *See* ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION (1990) (arguing that common-pool problems may be solved by voluntary organizations rather than by a coercive state or privatization).

10. Although, given a sufficiently high degree of repeated interaction, it is not inconceivable that the international community may demonstrate some of the traits of a small community.

II. A PLAN TO SOLVE THE TRAGEDY OF THE COMMONS

In light of these deficiencies, this discussion proposes a solution. The idea—the commons management fund deposit scheme (CMF)—would work as follows: states would contribute an upfront "deposit" to an international regulatory body with the understanding that part or all of their contribution would be forfeited if they fail to honor their conservation commitments. The goal of the scheme, however, is not to remedy particular instances of noncompliance; rather, it is to stimulate a sufficient degree of initial confidence in other parties' level of commitment in order to prevent a tragedy of the commons from emerging. The working assumption here is that states want to comply. This is the reason why nations enter into environmental agreements such as the Paris Agreement in the first place. The problem is simply one of trust. The CMF is designed to build trust.

The CMF would be an international regulatory body that could be established under the auspices of the United Nations. Any group of states could register a treaty (i.e., the Paris Agreement) with the CMF, and the deposit would be kept in reserve.[11] This deposit would have to be large—very large. The deposit with accrued interest would be returned to member states after a specified period of time (i.e., the conclusion of the treaty). For minor infractions, a deduction could be made. For major breaches, the entire deposit would be forfeited (to the other parties in order to incentivize monitoring). The CMF would create a regulatory body that would be charged with investigating alleged breaches. To accommodate the disparity in wealth between states, a percentage-based variant of the deposit scheme based on gross domestic product (GDP) or other relevant metrics could be designed. A percentage-based deposit would maintain its efficacy in that it would signal the same degree of commitment (building trust). Such a scheme has the benefit of remaining financially accessible to all states regardless of the size of their economies. It could be left to the parties to determine how large a deposit would be needed to signal commitment and build trust as the parties themselves are best positioned to know how strong of a commitment signal is required. The proposal here is that this framework should be grafted onto the Paris Agreement to strengthen compliance and avert the potential collapse of the accord.

III. WHY THIS PLAN IS UNIQUE

How does the CMF differ from other treaty compliance mechanisms? The tragedy of the commons is a unique dynamic that calls for a unique solution. This becomes immediately apparent when one understands why most treaties fail. The usual problem for treaty compliance is that parties may cheat if incentive structures change, so ex post (after the fact) punitive measures are required to stop cheating. However, in the case of treaties

11. The CMF need not be limited to merely environmental agreements. However, the focus here is on the tragedy of the commons, a problem that manifests starkly with respect to conservation.

exhibiting a tragedy of the commons dynamic, incentive structures may not change at all; yet, simply due to a lack of trust, parties otherwise willing to honor their commitments may still cheat. In a tragedy of the commons, the mere fear of others cheating induces cheating. This is not the case with, for example, a multilateral trade agreement (at least it is not the primary problem). Such agreements are less vulnerable to perceptions and thus can better withstand the blow of a party withdrawing from the agreement or cheating. In a tragedy of the commons situation, because the primary problem is one of trust, robust ex ante (before the fact) signaling can be particularly effective in solving the dilemma.[12] A sufficiently large deposit achieves this, producing an initial burst of confidence that stabilizes the agreement and keeps the tragedy of the commons at bay.

Ex post penalties are far weaker signals. This is because enforcement is actually quite rare in multilateral environmental agreements.[13] Actors can simply withdraw from such agreements. In other cases, violations often go unpunished because parties to the treaty do not wish to bear the costs of enforcing the agreement.[14] A tragedy of the commons is unique in that so much turns on mere perception—the perception that others will not live up to their commitments triggers a downward spiral into noncooperation. As such, it makes more sense to "front-end" costs. This allows parties to signal their commitment at a far more crucial stage, nudging perceptions in the right direction and stymieing the emergence of a tragedy of the commons.[15]

CONCLUSION

The overall efficacy of the approach is difficult to predict. The only true test of the scheme would come with actual implementation. What is not in serious debate, however, is this: action on a massive scale needs to be undertaken now to prevent further climate change. The stakes are high. Now more than ever, a solution to the tragedy of the commons on a supranational level is desperately needed. The international community pulled off a remarkable feat of consensus in Paris. Now, however, comes the challenge of keeping these commitments. We must now move quickly

12. I have written elsewhere on the usefulness of signaling in stabilizing cooperation. *See, e.g.*, Bryan Druzin, *Opening the Machinery of Private Order: Public International Law As a Form of Private Ordering*, 58 ST. LOUIS U. L.J. 423 (2014) (arguing that treaties that require positive actions, as opposed to merely the absence of action, encourage compliance because this allows for signaling); *see also* Bryan Druzin, *Law, Selfishness, and Signals: An Expansion of Posner's Signaling Theory of Social Norms*, 24 CAN. J. L. & JURIS. 5 (2011) (arguing that the primary function of social norms is to signal cooperation).

13. *See* ABRAM CHAYES & ANTONIA HANDLER CHAYES, THE NEW SOVEREIGNTY: COMPLIANCE WITH INTERNATIONAL REGULATORY AGREEMENTS 32–33 (1995).

14. Beth A. Simmons, *International Law*, *in* HANDBOOK OF INTERNATIONAL RELATIONS 352, 367 (Walter Carlsnaes et al. eds., 2d ed. 2013).

15. The CMF in fact mirrors strategies employed by commercial actors laboring under similar conditions of distrust. Commercial parties desiring to collaborate where there is no third party enforcement (or where such enforcement is unreliable or costly) often ask for deeds of guarantee, deposits, or upfront investments in the form of heavy capital costs. The CMF simply brings this same process to the supranational level of treaty compliance between nations.

to prevent the collapse of this fragile consensus by providing a mechanism through which countries can clearly signal the seriousness of their commitment to each other. Given the current legal and political fragmentation of the world, meaningful action on climate change is a formidable task. Nonetheless, it is critical that the tragedy of the commons be brought to heel. The international community does not have the luxury of waiting for the slow, natural advance of global governance. We must accelerate this process through any means at our disposal if we are to halt the climactic impact of over two hundred years of break-neck industrial production.