Compensating Climate Change Victims: The Climate Compensation Fund as an Alternative to Tort Litigation

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I. Introduction

Global climate change is undoubtedly one of the biggest and most complex environmental challenges facing the world today. A growing consensus has emerged regarding the science of climate change and its impact on the earth's natural ecosystems. In recent years, the issue has evolved from an uncertain theory to a scientifically backed global challenge. In 2007, the United Nation's Intergovernmental Panel on Climate Change (IPCC) asserted in its Fourth Assessment Report that the "warming of the climate system is unequivocal."[2] Moreover, "[o]bservational evidence from all continents and most oceans shows that many natural systems are being affected by regional climate changes, particularly temperature increases."[3]

Many individuals, groups, and societies across the globe are already being significantly impacted by these "unequivocal" changes. Observed changes relating to the anthropogenic release of greenhouse gases include the shrinkage of glaciers, thawing of permafrost, later freezing and earlier break-up of ice on rivers and lakes, poleward and altitudinal shifts of plants and animal ranges, declines of some plant and animal populations, lengthening of mid- to high-latitude growing seasons, and earlier flowering of trees, emergence of insects, and egg-laying in birds.[4] Such impacts could lead to the displacement of human populations, substantial property damage, economic loss, and an interference with the livelihood of those dependent upon the adversely impacted resources.

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[2] INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT, 30 (2008), *available at* http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf .

[3] *Id.* at 31.

[4] Daniel A. Farber, *Basic Compensation for Victims of Climate Change*, 155 U. PA. L. REV. 1605, 1606 (2007).

Until recently, efforts to address these impacts have focused on measures for mitigating climate change. As international law and policymakers gathered in Copenhagen in December 2009 for the Fifteenth Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) to negotiate the sequel to the UNFCCC's Kyoto Protocol, other important issues like adaptation, technology transfer, and financing have been placed on the negotiation table alongside mitigation. This shift in the focus of scientists, negotiators, international leaders, and law and policymakers is a response to a growing awareness that "whatever mitigation measures are adopted, a significant degree of climate change seems unavoidable."[5]

As the effects of climate change become more of an everyday reality, the resulting impacts on property and human health, if particularly significant and harmful, could result in viable claims for compensation. Traditional paths to compensation, such as tort litigation, may prove difficult for the complex issue of climate change, however. Lengthy and expensive trials are not only inconvenient for many plaintiffs, they also disfavor lower income victims. Once in the courtroom, plaintiffs face challenges in establishing standing and proving causation and damages. Furthermore, tort litigation invokes questions of fairness when a particular defendant is assigned responsibility for an issue of global magnitude, like climate change. With a potentially large pool of climate victims, tort litigation could impose substantial administrative burden on the courts. Finally, the unprecedented scale and scientific complexity of climate change begs the question of whether the courts are equipped to wrestle with such an issue.

Climate change presents uniquely complex environmental law and policy problems that warrant creative problem-solving. This article presents one such creative solution – a no-fault compensation fund for compensating victims of climate change. Compensation funds have proven successful in other contexts, such as vaccine injuries and terrorist attacks.

As a right to compensation is a necessary precursor to a compensation fund, Part II of this article discusses recent developments in climate tort litigation. Part III introduces the concept of a "compensation fund" for providing redress for victims and articulates how such approaches have been utilized in other contexts. Part IV suggests that creating a Climate Compensation Fund as an alternative to tort litigation will enable the U.S. legal system to more efficiently and effectively compensate victims of climate change.

The scope of this paper is limited to an analysis of a compensation fund approach as an alternative to climate tort litigation. This proposal for a Climate Compensation Fund is not meant to be a fully matured blueprint for compensation. Rather, this article hopes to encourage discussion of the idea by outlining the basic advantages and disadvantages of such a system. While not addressed in this article, many other alternatives to litigation, such as mandatory arbitration, summary jury trials, or government regulation of greenhouse gas emissions, could also prove highly effective. Also beyond the scope of this analysis is compensation of victims outside the United States, although a system of international compensation is certainly warranted as disproportionate impacts will be felt around the globe.

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[5] *Id.* at 1605.

II. The Momentum of Recent Climate Change Litigation

When one accepts that some impacts of climate change will be inevitable regardless of national, state, local, and individual efforts to mitigate, considerations of equity and corrective justice suggest that compensation is an appropriate next step. In fact, the U.S. judicial system has already begun to acknowledge the reality of harm from climate change. In its landmark opinion in *Massachusetts v. EPA*, the U.S. Supreme Court held that the Clean Air Act provides the Environmental Protection Agency (EPA) with the necessary authority to regulate greenhouse gas emissions from new motor vehicles, despite the EPA's claim to the contrary.[6] In a key procedural ruling in the case, the Supreme Court determined that the State of Massachusetts had the right (or standing) to challenge the EPA's action in part because the state had suffered a concrete injury – the loss of coastal land from rising sea levels due to climate change.[7]

When seeking compensation, climate change plaintiffs face significant procedural hurdles in tort-based litigation. For example, Article III of the U.S. Constitution requires that plaintiffs have "standing" to bring their claims in court.[8] To establish standing, plaintiffs must show that they have (1) suffered an "injury in fact" that is (a) concrete and particularized and (b) actual or imminent, (2) that is fairly traceable to the defendant's actions, and (3) is redressable by the court.[9] All three elements of the standing requirement pose challenges for climate plaintiffs.[10] First, the global nature of climate change makes it difficult to show particularized injury; everyone is impacted by climate change.[11] Second, scientific uncertainty regarding specific impacts of climate change and how specific contributions by greenhouse gas emitters influence those impacts could make the "fairly traceable" requirement difficult to establish.[12] Third, because nearly all individuals contribute to climate change at some level – whether by driving a gasoline-powered vehicle or using electricity produced from fossil fuels – victims' injuries might not be redressable through the courts.[13] Despite these procedural difficulties, following *Massachusetts v. EPA*, the momentum of climate change tort litigation appears to have shifted in favor of the plaintiffs (victims). Although this ruling is not directly relevant to the creation of compensation funds, it could signal judicial support of arguments that compensation for climate change impacts is indeed desirable.[14]

In 2009, the Second Circuit Court of Appeals allowed climate plaintiffs' claims to proceed by overturning a lower court's dismissal of the action. In *Connecticut v. American Electric*

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[6] *See* Massachusetts v. EPA, 549 U.S. 497 (2007).
[7] *Id.*
[8] Article III of the U.S. Constitution limits the authority of federal courts to hear only "cases or controversies." The Supreme Court has interpreted the provision as requiring plaintiffs to show genuine interest and stake in a case by meeting standing requirements." CHRIS WOLD, DAVID HUNTER & MELISSA POWERS, CLIMATE CHANGE AND THE LAW 498 (2009). *See also* U.S. CONST. art. III, § 2.
[9] CLIMATE CHANGE AND THE LAW, *supra* note 8, at 498.
[10] *Id.* at 500.
[11] *Id.*
[12] *Id.*
[13] *Id.* at 501.
[14] Farber, *supra* note 4, at 1609.

Power, eight states and the city of New York filed suit against five fossil fuel-burning utilities. The defendants were allegedly the five largest emitters of greenhouse gases in the United States, emitting approximately 10% of all carbon dioxide emissions from humans in the country.[15] The lawsuit was based on the federal common law of nuisance and state nuisance law. The plaintiffs claimed that the utilities had knowingly contributed to a public nuisance and should therefore be held liable for the plaintiffs' injuries.[16] The plaintiffs alleged current injury as a result of the increase in carbon dioxide levels that have already caused the increases in temperature and changes in climate within the eight plaintiff states and the city of New York.[17] The plaintiffs also alleged "devastating future injury to their property from the continuing incremental increases in temperature projected over the next 10 to 100 years."[18]

The District Court for the Southern District of New York had dismissed the case on the grounds that it presented a non-justiciable political question.[19] Under the political question doctrine, courts must refrain from reviewing controversies revolving around national policy choices or developing standards for matters not legal in nature when the power to make such determinations has been delegated to Congress and the executive branch by the Constitution.[20] Such determinations can include domestic controversies implicating constitutional issues and matters of national foreign policy.[21] On appeal, the Second Circuit reversed the dismissal and held that the case did not raise non-justiciable political questions and the plaintiffs had standing to raise their claims in federal court. The Second Circuit found such common law claims were appropriate despite current legislative and executive actions involving the regulation of greenhouse gases under the Clean Air Act.[22]

The Fifth Circuit Court of Appeals addressed similar issues in *Comer v. Murphy Oil.*[23] In February 2006, individuals displaced by Hurricane Katrina brought a private action against nine oil companies, thirty-one coal companies, and four chemical companies. The plaintiffs raised a number of causes of action, including nuisance, negligence, trespass, unjust enrichment, civil conspiracy, and fraudulent misrepresentation. The plaintiffs alleged that the defendants' operations caused emissions of greenhouse gases that contributed to increases in air and water temperatures.[24] This global warming in turn "caused a rise in sea levels and added to the ferocity of Hurricane Katrina, which combined to destroy the plaintiffs' private property, as well as public property useful to them." The U.S. District Court for the Southern District of Mississippi dismissed the case for lack of standing and on political question grounds.[25] In October 2009, the Fifth Circuit reversed, in part, and held that plaintiffs had standing for their claims of nuisance, negligence, and trespass because the alleged injuries were sufficiently traceable to the alleged conduct of

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[15] Connecticut v. Am. Elec. Power Co., 582 F.3d 309, 316 (2d Cir. 2009).
[16] *Id.* at 318.
[17] *Id.* at 341.
[18] *Id.*
[19] *Id.* at 319.
[20] *Id.* at 323.
[21] *Id.*
[22] *Id.* at 332.
[23] Comer v. Murphy Oil, 585 F.3d 855 (5th Cir. 2009).
[24] *Id.* at 859.
[25] *Id.* at 860.

the defendants.[26] The Court also asserted that none of these claims present non-justiciable political questions.[27] Regarding the plaintiffs' unjust enrichment, fraudulent misrepresentation, and civil conspiracy claims, however, the Fifth Circuit held that those claims were properly dismissed for prudential standing reasons.[28]

Despite these recent "victories" for climate change plaintiffs, tort-based litigation may not be the best mechanism for providing compensation. First, from the plaintiff's perspective, the legal landscape for climate change compensation is likely to remain in flux for years. Even if courts are willing to grant standing to climate-injured plaintiffs, proving causation and establishing damages will remain significant obstacles. In addition, cases heard in different courts with different judges and juries may result in very different outcomes. A coastal property owner in New York might receive millions for the loss of her land, while an owner in Texas loses her case and receives nothing. Many plaintiffs may choose not to seek compensation through the courts given the expense and uncertainty. In addition, lengthy and expensive trials mean victims go without compensation for extended periods of time, and low income victims are unjustly disadvantaged.

Second, from the defendant's perspective, tort-based litigation raises significant questions of fairness. How can courts assign responsibility to a particular defendant, or group of defendants, when the anthropogenic inducement of climate change is truly a global phenomenon? Successful tort litigation could also result in multi-million dollar verdicts affecting the profitability and operations of entire sectors of the U.S. economy.

Finally, the scale of the climate change is unprecedented and begs the question of whether the courts are equipped to wrestle with an issue of such magnitude and scientific complexity. As noted recently by a district court judge, "[a] global warming nuisance claim seeks to impose liability and damages on a scale unlike any prior environmental pollution case."[29] With a potentially large pool of climate victims, tort litigation could impose substantial administrative burden on the courts. Furthermore, the traditional canons of tort law, such as contributory and comparative negligence, may be incompatible with such a unique global challenge like climate change. A Climate Compensation Fund, however, could eliminate much of the uncertainty and provide more efficient and effective compensation.

III. History of Tort Compensation Funds

Creation of a fund from which the claims of injured parties can be paid, as an alternative to mass tort litigation, is not a novel idea. In fact, there are many examples of such compensation funds, most created in the face of looming mass tort litigation. This section

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[26] *Id.* at 867.

[27] *Id.* at 860.

[28] *Id.* In dismissing the unjust enrichment, fraudulent misrepresentation, and civil conspiracy claims, the Court reasoned that "[t]he interests at stake involve every purchaser of petrochemicals and the entire American citizenry because the plaintiffs are essentially alleging a massive fraud on the political system resulting in the failure of environmental regulators to impose proper costs on the defendants." *Comer,* 585 F.3d at 869. Consequently, "[s]uch a generalized grievance is better left to the representative branches." *Id.*

[29] Native Village of Kivalina v. ExxonMobil Corp., 2009 U.S. Dist. LEXIS 99563, at *29 (N.D. Cal. Sept. 30, 2009)

summarizes a few such programs to provide a historical basis atop which the compensation fund approach can be expanded into the climate change context.

A. The September 11th Victim Compensation Fund

The most recent example of an effective compensation fund was the fund established in the wake of the September 11th terrorist attacks in 2001. Shortly after the tragedy, Congress passed the Air Transportation Safety and System Stabilization Act (ATSSSA) to serve a dual purpose: (1) to ensure victims of the attacks had an option for a speedy strict liability recovery; and (2) to shield the potential defendants, particularly the airline industry, from crushing liability, possible insolvency, and industry-wide collapse.[30]

A central component of the ATSSSA was the Victim Compensation Fund (VCF). Title IV of the ATSSSA, which established the VCF, stated that the fund's purpose was to "provide compensation to any individual (or relatives of a deceased individual) who was physically injured or killed as a result of the terrorist-related aircraft."[31] Physical harm was "narrowly defined to include only the most serious injuries and only those treated within seven days of the catastrophes, thus ruling out any future latent claims."[32] Furthermore, the VCF only covered personal injury and wrongful death cases; claims for property damage or business loss were not eligible to receive compensation from the fund.[33] As such, the VCF provided limited-scope, no-fault compensation to victims while avoiding the difficult determination of assigning responsibility to a particular defendant.[34]

The structure and administration of the VCF proved to be an effective and speedy solution for many victims of the September 11th attacks. To create the fund, Congress combined money requisitioned from general government revenues with charitable donations.[35] The VCF called for a two-year period under which all claims were to be filed, and claims against the fund were to be determined within 120 days of filing and paid within 20 days of determination.[36] The VCF required the attorney general to appoint a Special Master to make determinations of awards.[37] The lump sum amounts paid to victims or victims' families for lost wages were determined by a calculation of "presumed economic loss" that took into account age, size of family, and recent past earning.[38] No punitive damages were available from the fund.[39] Furthermore, awards from the VCF were reduced by the amount of any collateral source payments received by the victim, including pension funds, death

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[30] Robin J. Effron, *Event Jurisdiction and Protective Coordination: Lesson from the September 11th Litigation*, 81 S. CAL. L. REV. 199, 201 (2008).

[31] Linda S. Mullenix & Kristen B. Stewart, *The September 11th Victim Compensation Fund: Fund Approaches to Resolving Mass Tort Litigation*, 9 CONN. INS. L.J. 121, 127 (2003).

[32] James C. Harris, *Why the September 11th Victim Compensation Fund Proves the Case for a New Zealand-Style Comprehensive Social Insurance Plan in the United States*, 100 NW. U. L. REV. 1367, 1377 (2006).

[33] Effron, *supra* note 30, at 205.

[34] Harris, *supra* note 32, at 1369.

[35] *Id.* at 1369.

[36] *Id.* at 1378.

[37] *Id.* at 1377.

[38] *Id.* at 1378.

[39] *Id.* at 1377.

benefits programs, and payments related to the terrorist attacks by federal, state, or local governments.[40] Collateral sources did not include charitable gifts or donations.[41]

Interestingly, participation in the VCF was not mandatory and Congress retained the right of victims to sue in tort if they were unsatisfied with the VCF payment or if they preferred the litigation route.[42] The ATSSSA tort provision, however, explicitly listed the potential defendants whom victims were permitted to sue, which included the airlines, airplane manufactures, airport security companies, building owners, and others.[43] Moreover, in the case of the airlines, liability under a tort action was limited to the extent of the carrier's insurance coverage.[44]

Despite the availability of a litigation option under the ATSSSA, an overwhelming percentage of claimants chose remediation through the VCF.[45] Professor Linda Mullenix of the University of Texas School of Law asserts that this trend suggests "rational people would select a modified regime – i.e. some aspects of tort reform – if they believed such a regime would fairly and expeditiously compensate them for their injuries, even at the costs of forgoing potentially greater compensatory damages, windfall exemplary damages, and a jury trial."[46] Ultimately, the success of the VCF is demonstrated by the fact that the fund processed over 7,400 cases, awarding a median award of $855,919.50 per living victim and a median award of $1.6 million for deceased victims.[47]

The structure and administration of the VCF created in response to the September 11th tragedy can offer suggestions for how a compensation fund might be effective in the climate change context. For example, the threat of airline bankruptcy after the attacks might be analogous to the potentially substantial economic threat mass climate tort litigation poses to fossil fuel-dependent industries. The current economic downturn in the United States has law and policymakers preoccupied with preserving economic stability. Furthermore, like with the September 11th terrorist attacks, those most responsible for causing harm might not be available to compensate the victims. In the climate change context, this could be true for a variety of reasons, including a lack of jurisdiction over foreign emitters or limitations on the liability of domestic emitters either through preemption by future EPA regulation or by future climate change legislation.

In assessing whether a VCF-like fund would be appropriate to compensate victims of climate change, the differences between climate change and September 11th are also important. In particular, it is significant that the September 11th terrorist attacks constituted a specific group of events, occurring in a relatively short and identifiable timeframe, which more easily limited the number of eligible claims. In addition, the major categories of injuries resulting from September 11th are different from those that will arise

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[40] *Id.*
[41] *Id.* at 1378.
[42] *Id.* at 1370.
[43] *Id.* at 1376.
[44] *Id.*
[45] Linda S. Mullenix, *The Future of Tort Reform: Possible Lessons from the World Trade Center Victim Compensation Fund*, 53 EMORY L.J. 1315, 1347 (2004).
[46] *Id.*
[47] Effron, *supra* note 30, at 205.

from climate change impacts. Remember that the VCF did not compensate victims for property damage or business loss, claims which are likely to be substantial with regards to climate change impacts. Nonetheless, the success of the VCF lays a foundation upon which to structure a potential compensation fund as an alternative to mass climate change tort litigation.

B. The National Childhood Vaccine Injury Act

When it was established, the September 11th VCF was both hailed and criticized as revolutionary.[48] A quick look at recent history, however, shows that compensation funds have been utilized in a variety of other capacities in the past. A prime example is the National Childhood Vaccine Injury Act (NCVIA). In 1986, Congress enacted the NCVIA in response to the threat of litigation in an effort to guarantee the supply of childhood vaccines to the American public.[49] Under the NCVIA, a National Vaccine Injury Compensation Program was established as a "mandatory no-fault, non-tort compensation scheme for individuals injured by routinely administered childhood vaccines."[50] The no-fault compensation program, which resulted in an expeditious and flexible alternative to the tort system, was funded by an excise tax on each dose of vaccine.[51]

In the interest of creating a standardized method for determining eligibility under the compensation fund, NCVIA devised a Vaccine Injury Table to define "exactly which injuries appearing within a given period of time would be compensable."[52] Although a claimant did not have to establish causation, an injured person would need to show by a preponderance of the evidence that he or she actually received a vaccine identified in the Vaccine Injury Table. Unlike the VCF, NCVIA claims were to be administered through the courts. To process a claim, a claimant first had to file a petition with the U.S. District Court either within the jurisdiction where the claimant resided or where the injury occurred.[53] The petition for compensation had to contain an affidavit and supporting documentation showing that the claimant received one of the vaccines included on the Vaccine Injury Table.[54] Upon receipt of the petition, the district court judge was required to issue an opinion regarding whether the claimant was entitled to compensation "as expeditiously as practicable but no later than 240 days."[55]

Following the issuance of the district court's judgment, the claimant could either accept or reject the court's determination.[56] Like the VCF, if the claimant chose to waive an award from the compensation fund, she had the option to pursue a civil action based on a negligence theory.[57] If the claimant accepted the court's determination and received

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[48] *See* Harris, *supra* note 32, at 1375.
[49] Mullenix & Stewart, *supra* note 31, at 133.
[50] *Id.* (quoting Mary Beth Neraas, Comment, *The National Childhood Vaccine Injury Act of 1986: A Solution to the Vaccine Liability Crisis?*, 63 WASH. L. REV. 149, 156 (1988)).
[51] Mullenix & Stewart, *supra* note 31, at 133-34.
[52] *Id.* at 134.
[53] *Id.*
[54] *Id.* at 135.
[55] 42 U.S.C. § 300aa-12(d)(3)(A)(ii).
[56] Mullenix & Stewart, *supra* note 31, at 135.
[57] *Id.*

compensation, she was prohibited from bringing a subsequent civil action.[58] Damages for actual and projected pain and suffering and emotional distress were capped at $250,000, and no damages were awarded for non-economic losses.[59]

The unique circumstances surrounding the issue of vaccine injuries made the use of a compensation fund particularly effective. For example, because the seven most-commonly administered vaccines had been used for decades, "it was possible to fairly predict the number of injuries that would result."[60] At least one commentator has characterized the NCVIA as a superior alternative to compensation through traditional mass tort litigation:

> First, the Act provides a necessary alternative to the tort recovery system which proved unworkable because of courts' inconsistent and unpredictable application of the duty to warn standard to vaccine manufacturers. Second, the Act provides a fair compensation scheme to injured vaccinees because it requires society as a whole to bear the cost of inevitable vaccine injuries. Third, the Act created a more stable litigation climate for vaccine manufacturers and thus decreases significantly the threat of vaccine shortages.[61]

Similar to claims arising from climate change impacts, claims for compensation under the NCVIA are not specifically tied to a single event; rather, injuries are expected to occur on an ongoing basis, as long as vaccines are administered. However, identifying and determining eligibility for compensation would be quite different. Unlike with vaccines, uncertainty is prevalent with respect to climate change. Devising a concrete and specific "Injury Table" for climate change victims would be particularly challenging. In addition, predicting the number of injured parties from climate change impacts would not be as easy as with the NCVIA.

C. The Price-Anderson Act

An even earlier example of an industry-protective, no-fault compensation fund can be found in the Price-Anderson Act of 1957. Like the ATSSSA and NCVIA, Congress enacted the Price-Anderson Act to serve a dual purpose: (1) to encourage the entry of private industry into the field of nuclear energy while (2) ensuring that "funds would be available to compensate injuries and damages sustained by the public in the event of a nuclear accident."[62] As Professor Mullenix highlights, "[t]he Price-Anderson Act was one of the first legislative responses to perceived deficiencies in the traditional tort system dealing with mass tort liability."[63]

Under the Price-Anderson Act, the determination of eligibility focused on whether the nuclear accident giving rise to the claim was an "extraordinary nuclear occurrence," as defined by the Nuclear Regulatory Commission.[64] Plaintiffs had the burden of proving that

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[58] *Id.*
[59] *Id.*
[60] *Id.*
[61] *Id.* at 136.
[62] *Id.* at 138.
[63] *Id.* at 140.
[64] *Id.* at 139.

their "radiation-induced injuries resulted from a nuclear power plant accident,"[65] and the Act shielded individual manufacturers from liability for negligence.[66] Moreover, claimants indemnified by the Price-Anderson Act fund were required to waive all of their legal defenses in the event of a substantial nuclear accident.[67] Compared to the ATSSSA and NCVIA, eligibility was less predictable under the Price-Anderson Act because claims of "nuclear occurrences" were subject to a determination of severity. A similar determination of "severity" would necessarily be part of assessing climate change impacts.

The funds created under ATSSSA, NCVIA, and the Price-Anderson Act do not comprise an exhaustive list of compensation funds that have been utilized as alternatives to mass tort litigation. In fact, the examples of such funds are numerous.[68] Although some compensation funds have been more successful than others, these examples lend support to arguments that an effective fund for compensating climate change victims could be established to supplement remedies available through the U.S. legal system.

IV. Integrating Compensation Funds into Climate Change Discussions: A Proposal for a Climate Compensation Fund

While the judicial, legislative, and executive branches of government struggle with how best to deal with the unique challenges of climate change, significant impacts are already being observed. The magnitude and scientific complexity of climate change suggests that traditional tort litigation might be an imperfect fit for compensating victims. Consequently, law and policymakers should look to viable alternatives. This section offers a suggested starting point for designing an effective Climate Compensation Fund (CCF). The proposal is not intended to be a fully matured blueprint for the fund, but rather highlights some key elements and identifies some important advantages and disadvantages.

A. Suggested Elements of a CCF

As evidenced by the ATSSSA, the NCVIA, and the Price-Anderson Act, compensation funds are not a new concept. A CCF should build upon this historical foundation, in general mirroring the basic structure of the existing funds. A CCF should be designed to provide a no-fault compensation scheme with the dual purpose of (1) ensuring fair compensation to climate change victims and (2) shielding fossil fuel-dependent industries from crushing liability and possible insolvency. It is recommended that the tort option be preserved so victims are not entirely deprived of the ability to have "their day in court." Receiving compensation from the fund, however, should be considered as a waiver of the claimants' right to sue in a civil action.

A CCF should also limit eligibility for compensation to certain kinds of injuries – i.e. those that are "readily identifiable." Such "readily identifiable" injuries should be subject to a determination of severity, similar to the findings required under the Price-Anderson Act. At least initially, a CCF would probably not be capable of handling claims involving extreme catastrophes nor addressing diffuse climate change effects that are not clearly identifiable.

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[65] *Id.*
[66] *Id.* at 140.
[67] *Id.*
[68] *See generally id.*

Rather, a CCF should focus on "mid-range" impacts that are significant and readily identifiable, but not catastrophic. Professor Daniel Farber identifies three major categories of impacts that fit within this "mid-range" of impacts.[69]

The first category of claims would be related to impacts involving natural systems that react particularly strongly to temperature changes, including coral reefs, glaciers, tundra, and permafrost.[70] The second category of eligible claims could be those that involve sea level rise, as it is one of the most predictable consequences of climate change.[71] Finally, a third category of claims could involve impacts associated with water stress, like drought and flooding.[72] As Professor Farber asserts, "[i]n most instances, rather than turning on the nuances of climate change models, these [three] changes seem quite predictable."[73] Compensation for claims within these three major categories is an effective starting point for the compensation fund, but as Professor Farber also acknowledges, "this, in itself, is a large universe and likely to grow as our knowledge of climate change improves."[74]

Funding for the CCF remains a challenging factor. As a starting point, however, the CCF could emphasize a "polluter pays" principle in which fossil fuel-dependent industries contribute to the fund as an incentive to limit liability. Furthermore, should such industries prove not to be in compliance with the EPA's future regulation of greenhouse gases under the Clean Air Act, penalties for violations could be payable into the fund.

The enabling legislation that establishes the CCF should create an administrative body or commission tasked with overseeing the CCF and determining eligibility. This administrative body could include scientists who might be more equipped to deal with the causation realities of climate change than judges and lawyers. Calculation of appropriate compensation is also a daunting task, but Congress can use models from the ATSSSA, the NCVIA, and the Price-Anderson Act to develop a specific calculation capable of standardized assessment. When defining "compensable harm" Congress should settle on a definition that "minimize[s] the problems of proof and proximate cause that plague toxic tort cases."[75] The definition "should also be broad enough to provide significant relief to victims, but not so all encompassing as to create overwhelming financial burdens and thereby distract from climate change mitigation or other desirable social goals."[76] In addition, just as under the September 11th VCF, awards should be adjusted for amounts received from all collateral sources except charities. This would be useful when individuals are harmed by a natural disaster because compensation in those instances might be more appropriate from a disaster relief fund.

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[69] Farber, *supra* note 4, at 1610.
[70] *Id.* at 1610.
[71] *Id.* at 1611.
[72] *Id.* at 1612.
[73] *Id.* at 1613.
[74] *Id.* at 1610.
[75] *Id.* at 1647.
[76] *Id.*

B. Advantages of a CCF

Although the proposed CCF outlined above is by no means a perfect method for tackling climate change compensation, such a proposal does have several advantages. First, a CCF incorporates important environmental justice principles. All eligible injured parties would be entitled to compensation, not just those that have the time and money to afford good lawyers and prolonged litigation. As seen in the September 11th VCF, claims from a compensation fund could be determined and paid expeditiously.

Second, a no-fault compensation scheme might be more compatible with the causation complexities inherent in the climate change debate. The complexity and global scale of climate change make it extremely difficult to pinpoint responsibility. To some degree, all humans, especially those living in a consumer-based society like the United States, are responsible for climate change. Although some actors are undoubtedly more responsible than others, a no-fault scheme minimizes having to draw these fuzzy lines. Similarly, including scientists on a compensation commission would probably yield more accurate determinations than if such decisions are left primarily to the judiciary, because scientists have specialized expertise that is unique to their fields.

Third, offering protection to vulnerable industries is not only consistent with the establishment of past compensation funds, it is also consistent with current national policy. Climate change legislation in the House and Senate has continuously morphed in response to industry interests, indicating Congress's concern regarding impacts to fossil fuel-dependent industries.

Fourth, incorporating a "polluter pays" principle for initial funding of the CCF could provide an effective deterrence function. If payment into the fund is linked to greenhouse gas emissions, fossil fuel-dependent industries have an incentive to minimize emissions. Like with Price-Anderson Act, a CCF could encourage fossil fuel dependent industries to invest in alternative fuels because they would be protected financially from large judgments against them.

Finally, the CCF provides a solid alternative should mass climate tort litigation be deemed unviable, either because claims are dismissed on procedural standing and political question grounds, whether claimants are unable to prove the necessary elements of a tort claim (duty, breach, causation, and damages), or because national legislation or executive decisions preempt mass climate change tort litigation.

C. Addressing the Shortcomings of a CCF

A proper evaluation of a proposed CCF would be incomplete without an analysis of the suggested plan's shortcomings. To begin, some may argue that because heavy greenhouse gas emitters are not being held financially responsible for their substantial contribution to climate change, a no-fault compensation scheme lacks the necessary element of deterrence.[77] In other words, without the threat of substantial liability to victims, fossil

[77] *See* Harris, *supra* note 32, at 1401 (explaining that no-fault compensation plans are criticized for a perceived lack of deterrence).

fuel-dependent industries would lack an incentive to reduce emissions. As noted above, however, the funding structure could be linked to a "polluter pays" principle that could bring a deterrence function into the fund. A similar argument against a no-fault compensation fund is that the theory of corrective justice is not emphasized in such a plan. The preservation of the tort option under the CCF, however, leaves room for addressing corrective justice and deeper moral and ethical principles. Congress should also be wary of an over-inclusive program that detracts from mitigation and adaptation efforts.

Second, those opposing a CCF might argue that the same causation issues that plague climate tort litigation would prove challenging for determinations of eligibility under a compensation fund. This is certainly true, but the types of eligible claims could be narrowly defined, at least initially, to include only "readily identifiable" impacts.

Third, the creation of a CCF is arguably administratively burdensome. Fortunately, compensation funds that were successfully implemented in the past could be used as models for setting up the appropriate infrastructure. Another administrative obstacle to the creation of a CCF is that it would require new legislation to take effect. This is a valid concern because, as evidenced by the recent struggles to pass climate change legislation, passing such legislation may not even be feasible at this time. The Waxman-Markey climate change bill, for example, has stretched well past 1,000 pages in efforts to incorporate compromises for securing votes.[78] The fact that the CCF would limit the liability of greenhouse gas emitters, however, might generate support from influential industry and agriculture groups.

Finally, there are durational issues associated with determining compensation for climate change injuries. In particular, climate change impacts are not limited to a specific event or series of events like the September 11th terrorist attacks. Although it is anticipated that the severity and frequency of significant impacts will increase in the future, it is nearly impossible to predict the number of future claimants and the extent of future damages. These concerns deserve careful consideration, but successful compensation for injury occurrences that are ongoing, like childhood vaccine injuries, offer support for utilizing a fund approach even when injuries are not limited to a short timeframe.

V. Conclusion

While the judicial, legislative, and executive branches of government struggle with how best to deal with the unique challenges of climate change, individuals, groups, and societies across the globe are already being significantly impacted by "unequivocal" climate changes. The magnitude and scientific complexity of climate change suggests that traditional tort litigation might be an imperfect fit for compensating victims; however, because mass climate change jurisprudence is still in flux, dismissing mass tort litigation as effective option for compensation victims of climate change seems premature. Nonetheless, law and policymakers should look to viable alternatives. A CCF may be an effective solution for compensating victims while protecting fossil fuel-dependent industries from crushing

[78] *The House Climate Bill: at 1,428 Pages, Nearly Something for Everyone,* Posting of Amy Boyd to Law and the Environment, http://www.lawandenvironment.com/tags/markey/ (July 2, 2009).

liability. Furthermore, the fact that no-fault compensation funds have been successfully implemented in other contexts supports the proposal's viability.

As climate change victims wait for answers, Professor Daniel Farber summarizes nicely our obligation to develop an effective compensation system:

> In particular, we should support the creation of a system for compensating climate change victims for the costs of adaptation, to the extent that our excessive past emissions and those of other developed countries have created the need for adaptation. It is no excuse that such a system would be expensive or imperfect.[79]

[79] Daniel A. Farber, *The Case for Climate Compensation: Justice for Climate Change Victims in a Complex World*, 2008 UTAH L. REV. 377, 413 (2008).