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ARTICLES

CORPORATE RESPONSIBILITY AND CLIMATE JUSTICE: A PROPOSAL FOR A POLLUTER-FINANCED RELOCATION FUND FOR FEDERALLY RECOGNIZED TRIBES IMPERILED BY CLIMATE CHANGE

*Randall S. Abate**

INTRODUCTION

Climate change threatens to displace as many as 200 million people internally and across national borders by the middle of the twenty-first century.¹ Unpredictable climate, increased frequency of natural disasters, and rising sea levels are forcing people throughout the world in vulnerable regions to leave their homes in search of safer ground.²

Indigenous peoples are among the most vulnerable to these changes. Climate change poses not only a threat to their property, but also a threat to their way of life.³ Indigenous peoples are tied to their lands religiously and culturally, and for basic necessities.⁴ A loss of their land could result in a loss of their identity and eventual loss of

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1. Holly D. Lange, *Climate Refugees Require Relocation Assistance: Guaranteeing Adequate Land Assets Through Treaties Based on the National Adaptation Programmes of Action*, 19 PAC. RIM L. & POL'Y J. 613, 613 (2010).

2. See Rebecca Tsosie, *Indigenous People and Environmental Justice: The Impact of Climate Change*, 78 U. COLO. L. REV. 1625, 1635–1646 (2007).

3. *Id.* at 1640, 1645–46.

4. *Id.* at 1645–46.

their lives.⁵ Indigenous peoples are also vulnerable because many indigenous communities do not have the funds to protect themselves from the harsh effects of climate change.⁶ Moreover, in the event that their land becomes uninhabitable due to the effects of climate change, they lack the resources to relocate their community.⁷

This struggle is underway in the Native Village of Kivalina. This village of approximately 400 residents is located approximately seventy miles north of the Arctic Circle on a thin strip of land precariously positioned between the Chukchi Sea and a lagoon in Northwest Alaska.⁸ In 2006, the United States Army Corps of Engineers (USACE) projected that Kivalina would be completely lost due to erosion in ten to fifteen years.⁹ With the loss of their village rapidly approaching, the residents of Kivalina are captives in their homeland bracing for disaster because they do not have the millions of dollars¹⁰ needed to relocate and there is no government fund or process in place to provide them with adequate assistance.¹¹

5. *Id.*

6. E. Rania Rampersad, *Indigenous Adaptation to Climate Change: Preserving Sustainable Relationships through an Environmental Stewardship Claim & Trust Fund Remedy*, 21 GEO. INT'L ENVTL. L. REV. 591, 594 (2009). See also GLENN GRAY & ASSOCIATES FOR THE CITY OF KIVALINA, SITUATION ASSESSMENT: KIVALINA CONSENSUS BUILDING PROJECT 6 (July 2010), http://www.relocate-ak.org/wordpress/wp-content/uploads/2012/09/Situation_Assessment_Final_July_20105.pdf [hereinafter SITUATION ASSESSMENT].

7. For a comprehensive discussion of the impacts of climate change on indigenous peoples and the potential legal remedies available to address the challenges that they face, see generally CLIMATE CHANGE AND INDIGENOUS PEOPLES: THE SEARCH FOR LEGAL REMEDIES (Randall S. Abate & Elizabeth Ann Kronk eds., 2013).

8. *Native Village of Kivalina v. ExxonMobil Corp.*, 696 F.3d 849, 853 (9th Cir. 2012).

9. See U.S. ARMY CORPS OF ENG'RS, ALASKA DIST., ALASKA VILLAGE EROSION TECHNICAL ASSISTANCE PROGRAM 21–25 (2006), http://www4.nau.edu/tribalclimatechange/resources/docs/res_USArmyCorpEngAKVillErosionTechAssistProg.pdf [hereinafter ASSISTANCE PROGRAM].

10. The estimated cost of relocating the village has ranged between 100 and 400 million dollars. See U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-04-142, ALASKA NATIVE VILLAGES: MOST ARE AFFECTED BY FLOODING AND EROSION, BUT FEW QUALIFY FOR FEDERAL ASSISTANCE 32 (2003) [hereinafter 2003 GAO REPORT].

11. Christine Shearer, *Relocating Alaskan Natives: The Climate Is Changing Faster than Disaster Management and Adaptation Policies*, THINKPROGRESS (July

There are five potential sources of relief for Kivalina and similarly situated vulnerable indigenous communities: (1) an international community response, likely connected to a post-Kyoto climate change agreement; (2) a U.S. government response; (3) a state government response; (4) climate change litigation in U.S. courts; and (5) a private sector-funded relocation fund.

Although a climate change fund exists at the international level, known as the “Green Climate Fund,”¹² resources in this fund are provided by developed nations and are applied exclusively to enhancing climate change mitigation and adaptation projects in developing nations.¹³ The United States is not a developing nation eligible for such funds. Therefore, the Native Village of Kivalina must rely on the U.S. government or the Alaska state government for relocation assistance because it is not eligible for assistance from the international community.

The U.S. government can and should take a more proactive role in addressing climate change adaptation and the potentially devastating consequences that climate change impacts will have on vulnerable populations in high-risk areas. The highest priority vulnerable population for the government should be federally recognized tribes, like the Native Village of Kivalina. The federal government has a treaty-based trust relationship that requires the federal government to vigorously protect these tribes’ interests and protect them from harm.¹⁴ Unfortunately, as of this writing, Kivalina’s efforts to seek assistance from the federal government and the government of Alaska have failed to provide the funding necessary for relocation.¹⁵

21, 2011, 3:51 PM), <http://thinkprogress.org/climate/2011/07/21/275552/alaska-climate-adaptation>.

12. *See generally* GREEN CLIMATE FUND, <http://gcfund.net/home.html> (last visited Nov. 12, 2013).

13. *See* Rep. of the Conf. of the Parties, 17th Sess., Mar. 15, 2012, U.N. Doc. FCCC/CP/2011/9/Add.1, 63, <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>.

14. *See generally* NELL JESSUP NEWTON ET AL., COHEN’S HANDBOOK OF FEDERAL INDIAN LAW (2006) [hereinafter COHEN’S HANDBOOK].

15. *But see* Press Release, Office of Governor Sean Parnell, Funding Proposed for Kivalina Evacuation Road (Mar. 20, 2013), <http://gov.alaska.gov/parnell/press-room/full-press-release.html?pr=6398> (\$2.5 million capital budget amendment submitted by Alaska governor to legislature that seeks to authorize development of an eight-mile evacuation and access road for the Native Village of Kivalina).

As a last resort, the Native Village of Kivalina attempted to secure funds necessary for relocation by asserting a federal common law public nuisance claim in a lawsuit against several large corporations responsible for emitting significant quantities of greenhouse gases.¹⁶ In 2009, the United States District Court for the Northern District of California held that Kivalina lacked standing to bring its claim and that the court lacked jurisdiction to hear the claim because it was a non-justiciable political question.¹⁷ Three years later, the United States Court of Appeals for the Ninth Circuit upheld the dismissal of Kivalina's claim, holding that public nuisance claims based on federal common law are displaced by the Clean Air Act,¹⁸ leaving the residents of the Native Village of Kivalina with no recovery and little hope for an alternate legal theory to support their claim.¹⁹

In the wake of the Ninth Circuit's decision, Kivalina residents and other similarly situated federally recognized tribes facing the threat of displacement from climate change impacts are at a loss for assistance. A new climate change adaptation remedy is urgently needed in the United States to establish a relocation fund that would provide proactive relocation funding to these communities that are most vulnerable and in need of assistance. The resources for such a fund could be derived at least in part from a carbon tax on private sector entities, comparable to the funding mechanism that generated

16. *Native Village of Kivalina v. ExxonMobil Corp.*, 663 F. Supp.2d 863, 868 (N.D. Cal. 2009).

17. *Id.*

18. Clean Air Act, 42 U.S.C. § 7401 (2006).

19. *Native Village of Kivalina v. ExxonMobil Corp.*, 696 F.3d 849, 868–69 (9th Cir. 2012). Other creative and desperate efforts to use the court system as a possible vehicle for relief for climate change impacts in Alaska continue as of this writing. In 2012, an Alaska teenager sued the state for loss of permafrost in his backyard. The suit is premised on the atmospheric trust doctrine and alleges that the state is not fulfilling its public trust duty to protect atmospheric resources in the state by failing to adequately regulate greenhouse gas emissions in the state. The superior court dismissed the case and the plaintiffs appealed to the Supreme Court of Alaska. See Press Release, *Our Children's Trust et al., Alaska Youth Pursue Climate Case* (Nov. 16, 2012), <http://ourchildrenstrust.org/sites/default/files/12-11-16%20AK%20Press%20Release%20.pdf>; Salvatore Cardoni, *Teen Sues Alaska Because Climate Change Is Melting His Backyard*, TAKE PART (Mar. 18, 2013), <http://www.takepart.com/article/2013/03/18/teenager-sues-alaska-because-climate-change-melting-away-his-hometown>.

the “Superfund” under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).²⁰

Part I of this article describes the factual context of the *Kivalina* litigation and how the disappointing outcome in the Ninth Circuit’s decision in this case sets the stage for the need for a climate change relocation fund. Part II examines existing sources of federal authority for relocation under U.S. law and how they could serve as a conceptual foundation for a climate change relocation fund. Part III considers comparative law perspectives on proactive relocation responses to impending natural disasters and the use of private sector financed climate change adaptation funds. Part IV proposes possible models for a climate change relocation fund in the United States and recommends that the availability of the fund be limited to federally recognized tribes.²¹

I. THE *KIVALINA* LITIGATION: CASE STUDY IN THE NEED FOR A RELOCATION FUND

The Native Village of Kivalina is a self-governing, federally recognized tribe of Inupiat Native Alaskans. The Kivalina coast is composed of sea ice, which acts as a barrier for the small village against coastal storms and waves.²² In the past decade, storms have caused the loss of approximately 100 feet from the Kivalina coastline.²³ Homes and buildings are in imminent danger of falling

20. Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§ 9601–9675 (2006).

21. There are two categories of indigenous nations in the United States. The first group is those that have been federally recognized by Congress. Congress has the ability to recognize certain indigenous nations under the U.S. Constitution’s Indian Commerce Clause. U.S. CONST. art. 1, § 8, cl. 3. By virtue of being federally recognized, these indigenous nations possess certain rights and responsibilities that non-federally recognized nations do not possess. *See generally* COHEN’S HANDBOOK, *supra* note 14. The list of federally recognized tribes is available at 77 Fed. Reg. 47,868 (Aug. 10, 2012). The second group is those that have not been federally recognized and, therefore, do not have access to the same privileges and legal principles applicable to federally recognized tribes.

22. CHRISTINE SHEARER, *KIVALINA: A CLIMATE CHANGE STORY* 15 (2011).

23. *Id.* at 14–15.

into the sea and critical infrastructure is threatened with permanent destruction.²⁴

The progressive reduction of the protective sea ice in Kivalina has rendered the island uninhabitable and has prompted a thorough investigation of prospects for relocation in the immediate future. In 2003, the USACE and the United States Government Accountability Office predicted that a dangerous combination of storm activity “could flood the entire village at any time.”²⁵ A decade later, the inhabitants of Kivalina continue to live in fear of being destroyed by the effects of climate change and remain unable to afford the millions of dollars in relocation costs necessary to reestablish the community in a safer location.

With no available options under federal or state law to ensure the safety of their future, the Native Village of Kivalina and the City of Kivalina (plaintiffs) filed a federal common law public nuisance claim against twenty-two major oil, energy, and utility companies to seek damages for the costs of relocating their community of approximately 400 residents.²⁶ The plaintiffs alleged that these defendants were “substantial contributors to global warming,”²⁷ and that the greenhouse gas emissions from these companies exacerbated sea level rise and ultimately contributed to increased coastal erosion that destroyed part of their village and will require relocation of Kivalina’s residents.²⁸ The plaintiffs also claimed that these

24. Appellant’s Opening Brief at 8, *Native Village of Kivalina v. ExxonMobil Corp.*, 696 F.3d 849 (9th Cir. 2010), No. 09-17490.

25. 2003 GAO REPORT, *supra* note 10, at 32.

26. *Native Village of Kivalina v. ExxonMobil Corp.*, 696 F.3d 849, 853 (9th Cir. 2012). The defendants are: (1) ExxonMobil Corporation; (2) BP P.L.C.; (3) BP America, Inc.; (4) BP Products North America, Inc.; (5) Chevron Corporation; (6) Chevron U.S.A., Inc.; (7) ConocoPhillips Company; (8) Royal Dutch Shell PLC; (9) Shell Oil Company; (10) Peabody Energy Corporation; (11) The AES Corporation; (12) American Electric Power Company, Inc.; (13) American Electric Power Services Corporation; (14) Duke Energy Corporation; (15) DTE Energy Company; (16) Edison International; (17) Midamerican Energy Holdings Company; (18) Pinnacle West Capital Corporation; (19) The Southern Company; (20) Dynegy Holdings, Inc.; (21) Xcel Energy, Inc.; and (22) Genon Energy, Inc.

27. *Id.* at 854.

28. *Id.* at 853–54.

companies were “conspiring to mislead the public about the science of global warming.”²⁹

The United States District Court for the Northern District of California dismissed the case because the plaintiffs lacked standing³⁰ and because the dispute was non-justiciable under the political question doctrine.³¹ In a 3-0 decision, the United States Court of Appeals for the Ninth Circuit relied on federal displacement reasoning to affirm the district court’s dismissal of the plaintiffs’ claims.³² The court concluded that regardless of whether Kivalina could assert a valid public nuisance claim against the defendants, “[i]f Congress has addressed a federal issue by statute, then there is no gap for federal common law to fill.”³³ Relying on the 2011 U.S. Supreme Court decision in *American Electric Power Co. v. Connecticut*,³⁴ the court held that if a statute (in this instance, the Clean Air Act) directly addresses the issue in dispute, federal common law claims are barred.³⁵

Options in the U.S. court system for the *Kivalina* plaintiffs are now extremely limited and unlikely to succeed. They can appeal to the U.S. Supreme Court, which is unlikely to hear the case in the absence of a split in the circuits.³⁶ They can also file a new case in state court

29. *Id.* at 854. A discussion of the civil conspiracy claim is beyond the scope of this article.

30. *Id.*

31. *Id.* The political question doctrine refers to matters that federal courts will not adjudicate because they are inappropriate for judicial review. ERWIN CHEMERINSKY, *CONSTITUTIONAL LAW* 103 (3d ed. 2009). The doctrine is supported by separation of powers principles in that it “minimizes judicial intrusion into the operations of the other branches of government and that it allocates decisions to the branches of government that have superior expertise in particular areas.” *Id.*

32. *Kivalina*, 696 F.3d at 853.

33. *Id.* at 856.

34. *American Elec. Power Co. v. Connecticut*, 131 S. Ct. 2527 (2011).

35. *Kivalina*, 696 F.3d at 857. The plaintiffs subsequently filed a petition for rehearing en banc with the Ninth Circuit. On November 27, 2012, the Ninth Circuit denied the petition in a two-sentence decision: “The panel has voted to deny the petition for rehearing en banc. The full court has been advised of the petition for rehearing en banc, and no judge of the court has requested a vote on the petition for rehearing en banc.” Order on Petition for Rehearing at 1, *Native Village of Kivalina v. ExxonMobil Corp.*, 696 F.3d 849 (9th Cir. 2010), No. 09-17490.

36. J. Wylie Donald, *No En Banc Appeal in Kivalina; So What's Next for Climate Change Litigation?*, CLIMATE LAWYERS (Dec. 8, 2012, 10:18 PM),

alleging a state law-based public nuisance claim. This approach is also unlikely to succeed because the courts will likely conclude that the Clean Air Act preempts such claims.³⁷

In light of these grim realities, the Native Village of Kivalina is in a desperate situation. Federal and state laws in the United States do not currently authorize an outlay of funds to assist a community like Kivalina to relocate proactively before climate change-related disaster strikes. Current federal laws authorize relocation for communities in the United States only after they have been imperiled by a crisis.³⁸ This approach is unworkable in the climate change context. “Imminent peril” needs to be the trigger for relocation because responding to a crisis caused by climate change impacts after it has occurred would involve a significant and unnecessary loss of lives.³⁹ Therefore, a climate change relocation fund is necessary to fill this remedial gap.

II. FEDERAL AUTHORITY FOR RELOCATION UNDER U.S. LAW

The international community now widely recognizes that large-scale population displacement due to climate change is impending and requires international cooperation. Unfortunately, the United States has played a marginal role at best in international climate change negotiations and is reluctant to subject itself to any binding commitments related to climate change adaptation. Therefore, proactive intervention to establish funding for permanent relocation for vulnerable federally recognized tribes in the United States is

<http://www.climatelawyers.com/post/2012/12/08/No-En-Banc-Appeal-in-Kivalina3b-So-Whats-Next.aspx>. On May 20, 2013, the U.S. Supreme Court denied Kivalina’s petition for writ of certiorari. See Jessica M. Karmasek, *U.S. SC Denies Alaskan Village’s Petition for Review of Global Warming Case*, LEGAL NEWSLINE (May 20, 2013, 11:00 AM), <http://legalnewsline.com/issues/global-warming/241681-u-s-sc-denies-alaskan-villages-petition-for-review-of-global-warming-case>.

37. *Id.*

38. See *infra* Part II for a discussion of two such federal laws.

39. The standard for demonstrating the injury-in-fact element of standing provides support for this imminent peril theory. Federal courts have concluded that plaintiffs’ asserted injury to establish standing can be either actual or imminent. See, e.g., *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560–61 (1992).

essential to safeguard the culture and livelihood of these communities.

This section of the paper explores existing federal mechanisms for relocation as possible foundations for this new fund. Federal law addressing permanent relocation as a remedy for climate change displacement does not exist in the United States. A permanent relocation remedy is available in limited circumstances under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA),⁴⁰ where exposure to hazardous waste contamination necessitates the relocation of residents premised on a cost-benefit analysis. Unlike the protections available under CERCLA, there is no mandate that protects the residents of Kivalina and similarly situated federally recognized tribes requiring responsible parties to pay to guard against the citizens' loss of homeland.

A climate change fund to assist in the relocation of federally recognized tribes that require relocation due to climate change impacts could be established in a variety of formats.⁴¹ Two significant federal frameworks that address relocation, CERCLA and The Federal Emergency Management Agency (FEMA), are discussed in this section to illustrate how narrow and rare the remedy of permanent relocation is under federal law.

A. CERCLA

In response to the Love Canal disaster and to protect the public from the dangers of hazardous waste contamination, Congress enacted CERCLA in 1980.⁴² CERCLA was enacted to implement a systematic process for identifying and responding to contaminated sites backed by the largest environmental fund in the history of the United States, the revenues for which were generated by taxpayers

40. Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§ 9601–9675 (2006).

41. There are several funds in place at the federal and state levels that provide a useful framework for determining the characteristics of a climate relocation fund. *See infra* Part IV.

42. Daryl Dworkin, *Love Canal and the Superfund—30 Years Later*, EXAMINER (Apr. 22, 2011), <http://www.examiner.com/article/love-canal-and-the-superfund-30-years-later>.

and the polluters themselves.⁴³ An integral component of this statutory scheme was the Hazardous Substance Superfund [hereinafter Superfund] that Congress created as part of CERCLA to compensate state and federal governments if the responsible parties cannot be identified or are unable to undertake such activities themselves in hazardous waste site cleanups.⁴⁴ Taxes generated from the chemical and petroleum industries that benefit from producing contaminating products supplied the Superfund with approximately \$1.5 billion annually.⁴⁵

When Congress enacted CERCLA, it intended to make the polluters pay for the cost of cleaning up these sites and instituted the tax to achieve this end. Moreover, the Environmental Protection Agency (EPA) seeks to hold those parties who contributed to the contamination responsible for the cost of CERCLA cleanups.⁴⁶ Such parties may be asked to help pay for the cleanup of a site even if they acted in full accordance with the law “at the time they disposed of the waste.”⁴⁷

CERCLA was established to ensure that cleanups would continue despite the tactics that prolong litigation. When Congress enacted CERCLA, it embraced a concept popularized by Western European nations where manufacturers and importers of products bear a significant degree of responsibility for the environmental impacts their products cause throughout the product life cycle.⁴⁸ The Organization for Economic Cooperation and Development (OECD) includes “upstream impacts inherent in the selection of materials for the products, impacts from manufacturers’ production process itself,

43. *Id.*

44. 26 U.S.C. § 9507 (2006).

45. This amount was raised to \$8.5 billion under the Superfund Amendments and Reauthorization Act of 1986. Pub. L. No. 99-499, 100 Stat. 1613 (1986) (codified in scattered sections of 26 U.S.C. and 42 U.S.C.).

46. Potentially responsible parties under CERCLA are: (1) past owners or operators; (2) current owners or operators; (3) arrangers; and (4) transporters. 42 U.S.C. § 9607(a) (2006).

47. OFFICE OF SITE REMEDIATION ENFORCEMENT, EPA, SUPERFUND AND SMALL WASTE CONTRIBUTORS (2008), <http://www.epa.gov/compliance/resources/publications/cleanup/superfund/sm-waste-contrib-rev.pdf>.

48. *See Fact Sheet: Extended Producer Responsibility*, ORG. ECON. CO-OPERATION & DEV., (2006), <http://www.oecd.org/env/resourceproductivityandwaste/factsheetextendedproducerresponsibility.htm>.

and downstream impacts from the use and disposal of the products.”⁴⁹ Similar to CERCLA liability in the United States, European producers accept their responsibility when designing their products to “minimize life-cycle environmental impacts, and when accepting legal, physical or socio-economic responsibility for environmental impacts that cannot be eliminated by design,”⁵⁰ highlighting the “abnormally dangerous activity”⁵¹ context fundamental to CERCLA.

In 1995, Congress allowed the Superfund tax to expire, and the trust balance fell from \$3.8 billion in 1996 to zero in 2003.⁵² “Instead of polluters paying, the U.S. Treasury has since subsidized cleanups, and financial allocation to Superfund has dramatically fallen.”⁵³ A sharp decline in Superfund cleanups has resulted from reduced funding and fewer initiated cleanups, as well as a slower rate of completion. For example, the EPA completed eighty-nine cleanups in 1999, but a mere nineteen in 2009.⁵⁴

CERCLA authorizes the EPA to permanently relocate residences and businesses as a remedy when it would be more cost effective than the process and expense of securing health and safety if such

49. *Id.*

50. *Id.*

51. “Abnormally dangerous activity” is a term of art, and has been defined in the following manner:

In determining whether an activity is abnormally dangerous, the following factors are to be considered: (a) existence of a high degree of risk of some harm to the person, land, or chattels of others; (b) likelihood that the harm that results from it will be great; (c) inability to eliminate the risk by the exercise of reasonable care; (d) extent to which the activity is not a matter of common usage; (e) inappropriateness of the activity to the place where it is carried on; and (f) extent to which its value to the community is outweighed by its dangerous attributes.

RESTATEMENT (SECOND) OF TORTS § 520 (1977).

52. Braunson Virjee, *Stimulating the Future of Superfund: Why the American Recovery and Reinvestment Act Calls for a Reinstatement of the Superfund Tax to Polluted Sites in Urban Environments*, 11 SUSTAINABLE DEV. L. & POL’Y 27, 27 (2010).

53. *Id.*

54. Juliet Eilperin, *Obama, EPA to Push for Restoration of Superfund Tax on Oil, Chemical Companies*, WASH. POST (June 21, 2010), available at <http://www.washingtonpost.com/wp-dyn/content/article/2010/06/20/AR2010062001789.html>.

residences and businesses were to remain located near the hazardous waste disposal site.⁵⁵ EPA's decision to authorize permanent relocation as a remedy under CERCLA was established in response to concerns regarding the need to limit relocation as a remedy to only temporary relocations while cleanup efforts were undertaken near Superfund sites. However, after years of considering the cost of permanent relocation as compared to the cost of remediating the environment so that it is fit for residential life, EPA's "National Superfund Permanent Relocation Interim Policy"⁵⁶ was established in July 1999.

The interim relocation policy applies only to remedial actions at National Priorities List (NPL) sites; it does not apply to removal actions.⁵⁷ All CERCLA cleanups, regardless of who undertakes them, are governed by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP),⁵⁸ which identifies the steps for identifying and investigating sites presumed to contain hazardous material. The NCP also evaluates possible strategies for remediation and determines the actual cleanup encompassing both removal and remediation efforts. In order for a state or the EPA to recover for response actions, their actions must be "not inconsistent" with the NCP, whereas all other parties must show that their actions were "consistent" with the NCP.⁵⁹

55. Comprehensive Environmental Response, Compensation and Liability Act § 101(24), 42 U.S.C. § 9601(24) (2006); 40 C.F.R. § 300.430 (2012); Memorandum on Interim Policy on the Use of Permanent Relocations as Part of Superfund Remedial Actions from Timothy Fields, Jr., Acting Assistant Adm'r, EPA Office of Solid Waste and Emergency Response, to Superfund National Policy Managers, Regions I–X & Regional Counsels, Regions I–X, (June 30, 1999), available at <http://www.epa.gov/superfund/community/relocation/intpol.pdf> [hereinafter Memorandum on Interim Policy].

56. National Superfund Permanent Relocation Interim Policy, 64 Fed. Reg. 37012.

57. *Id.* at 37012. See 42 U.S.C. §§ 9601(23)–(24). (The term "removal" includes and makes recoverable the costs of temporary evacuation and relocation whereas the term "remedial action" includes and makes recoverable the costs of permanent relocations of residents, businesses and community facilities if the President has determined that relocation is cost-effective and environmentally preferable to other options.).

58. 40 C.F.R. § 300 (2013).

59. Comprehensive Environmental Response, Compensation, and Liability Act §§ 107(a)(4)(A)–(B), 42 U.S.C. §§ 9607(a)(4)(A)–(B) (2006).

A landmark case in relocation as a remedy for hazardous waste contamination under CERCLA occurred in Escambia County, Florida. The Escambia Wood Treating Company, a 26-acre facility, is an abandoned wood preserving facility that operated from 1942 until closing in 1982. The company discharged spent creosote and PCB-laden waste into unlined holding ponds at the location during operation before the facility closed in 1982. In October 1991, the EPA began a removal action to excavate contaminated materials. The excavated material is currently stockpiled under a secure cover on-site.⁶⁰

In April 1996, the EPA permanently relocated sixty-six families as part of a remedial action involving the excavation and removal of dioxin-contaminated soil in Pensacola, Florida. Residents near the Escambia Wood Treating Superfund site believed that more than 300 families should have been relocated. After a great deal of controversy, the EPA decided in February 1997 to permanently relocate 358 families and to clean up the contaminated property to levels that would be protective for industrial use.⁶¹

Courts have held that a plaintiff is not required to obtain prior presidential approval under CERCLA to recover costs of temporary relocation.⁶² The Tenth Circuit in *Colorado v. Idarado Mining Co.*⁶³ addressed whether presidential approval is a prerequisite to recovery of costs for all types of permanent relocations.⁶⁴ Given the concern for efficient use of resources expressed in the statute and the overwhelmingly expensive prospect of permanently relocating residents, the Tenth Circuit concluded that the requirement of presidential approval should apply not only to permanent relocations to protect residents from exposure, but also to permanent relocations

60. *Escambia Wood—Pensacola*, EPA REGION 4: SUPERFUND, <http://www.epa.gov/region4/superfund/sites/npl/florida/escwprefl.html> (last updated July 23, 2013). For a discussion of the Escambia scenario, see generally Steve Lerner, *Pensacola, Florida: Living Next Door to Mount Dioxin and a Chemical Fertilizer Superfund Site*, COLLABORATIVE ON HEALTH & THE ENV'T (Nov. 30, 2007), <http://www.healthandenvironment.org/articles/homepage/2628>.

61. See Memorandum on Interim Policy, *supra* note 55, at 2.

62. See, e.g., *Lutz v. Chromatex, Inc.*, 718 F. Supp. 413, 419–20 (M.D. Pa. 1989).

63. *Colorado v. Idarado Min. Co.*, 916 F.2d 1486 (10th Cir. 1990).

64. *Id.* at 1498–99.

necessary to construct remedial facilities.⁶⁵ To date, claims seeking additional living expenses in relocation cases such as post-relocation increased rent, utility expenses, and commuting charges have not been successful.⁶⁶ Therefore, permanent relocation under CERCLA is a rare and limited remedy.⁶⁷

B. FEMA

Government agencies play a critical role in hazard mitigation and disaster relief, from rebuilding destroyed infrastructure to aiding residents displaced from their homes. The process is cumbersome and the relationships between various government actors, from the local to the national levels, can be complex to a degree that residents in need of assistance remain helpless. The primary focus of the U.S. government today is a short-term, reactive approach: wait for disaster and then try to clean it up. This approach is woefully inadequate, however, to protect those citizens who can never return to their homes after disaster strikes, such as the residents of Native Village of Kivalina after coastal erosion makes their current location uninhabitable.

The United States has an existing framework that addresses long-term mitigation and adaptation strategies necessary to confront

65. *Id.* at 1499.

66. *See, e.g.,* *Wehner v. Syntex Corp.*, 681 F. Supp. 651 (N.D. Cal. 1987).

67. A recent consent decree entered under the Clean Water Act offers some hope, however, for the proactive relocation approach that would be necessary to implement the climate change relocation fund proposed in this article. On March 19, 2013, the United States District Court for the Middle District of Louisiana entered a consent decree to resolve a citizen suit brought by the Louisiana Environmental Action Network. Order, *La. Env'tl. Action Network v. City of Baton Rouge*, No. 10-cv-187 (M.D. La. Mar. 19, 2013), *available at* http://www.tulane.edu/~telc/assets/pdfs/3-19-13_ConsntDecree-BR_Sewer.pdf. By the terms of the consent decree, the City of Baton Rouge agreed to (1) create a buffer zone around its North Wastewater Treatment Plant by relocating more than forty households from a predominantly minority, low-income community, (2) pay fair market value for affected homes without regard to the proximity of the sewage treatment plant, and (3) comply with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, including provisions for paying for moving expenses, providing replacement housing expenses when necessary to get residents into “decent, safe, and sanitary” homes, and ensuring that no person be displaced before Baton Rouge makes “comparable replacement dwellings” available. *Id.*

gradually displaced communities. In 2003, the U.S. Government Accountability Office (GAO) determined that flooding and erosion affect 184 indigenous villages and specifically that four of them faced imminent threats of disaster—Kivalina, Koyukuk, Newtok, and Shishmaref.⁶⁸ In 2009, the GAO issued a second report finding that number had tripled and now twelve communities face imminent destruction, and yet no discussion had begun on a strategy to mitigate the ensuing consequences of flooding and coastal erosion.⁶⁹ The report highlighted general governance issues and explained that no government agency at this time has the necessary authority to relocate communities.⁷⁰ This regulatory gap is primarily due to the fact that no governmental organization exists that can address the strategic planning needs of relocation, and no funding is specifically designated for relocation.⁷¹

Only temporary relocation assistance is currently available from FEMA to victims of a limited number of enumerated natural disasters. Federal programs to assist threatened villages to prepare for such disasters and to protect and relocate them are limited and unavailable without certain qualifying elements that the Alaskan villages do not meet.⁷² Although other federal agencies, such as Housing and Urban Development, have limited temporary relocation

68. See 2003 GAO REPORT, *supra* note 10, at 2, 4.

69. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-09-551, LIMITED PROGRESS HAS BEEN MADE ON RELOCATING VILLAGES THREATENED BY FLOODING AND EROSION (2009).

70. *Id.* at 27–28.

71. *Id.* at 20–22.

72. Mitigation planning under FEMA is only available to Indian tribal governments. FEMA regulations define “Indian tribal government” as:

[A]ny Federally recognized governing body of an Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of Interior acknowledges to exist as an Indian tribe under the Federally Recognized Tribe List Act of 1994, 25 U.S.C. 479a. This does not include Alaska Native corporations, the ownership of which is vested in private individuals.” Therefore, many Native Alaskan communities imperiled by climate change impacts are ineligible even for this temporary relocation assistance.

See 44 C.F.R. § 201 (2013).

funding available, there is no comprehensive proactive federal program to assist communities with permanent relocation.⁷³

FEMA is an agency of the United States Department of Homeland Security, initially created by the Presidential Reorganization Plan of 1978⁷⁴ and implemented by Executive Order.⁷⁵ The goal of FEMA was to streamline the process of responding to a disaster so an effective, coordinated effort could be undertaken. FEMA is not equipped to address long-term gradual displacement, however.

Apart from providing a national defense, responding to national catastrophes is arguably the preeminent role of a central government. Before FEMA became an independent agency, the U.S. government's response to disasters was a disjointed process executed by multiple agencies pursuant to various statutes. Prior to FEMA, each individual aspect of recovery had to be implemented by the appropriate agency, which involved more than 100 agencies.⁷⁶ For example, in the event of a crisis, the Bureau of Public Roads⁷⁷ financed the reconstruction of highways and roads; the U.S. Army Corps of Engineers, acting under authority of the Flood Control Act of 1944,⁷⁸ controlled the flooding and irrigation aspects of recovery; and the Housing and Home Finance Agency handled loss of homes and displacement of families. A single comprehensive strategy was necessary to meet the nation's disaster response needs. FEMA is the federal government's attempt to consolidate these several functions.

FEMA's primary purpose is to coordinate the response to a disaster that has occurred in the United States and that overwhelms the resources of local and state authorities.⁷⁹ In addition to response, FEMA provides incentives to states to construct infrastructure that

73. 2003 GAO REPORT, *supra* note 10, at 24.

74. Reorganization Plan No. 3 of 1978, 43 Fed. Reg. 41943 (Sept. 19, 1978) (establishing the Federal Emergency Management Agency, and providing for the transfer of functions and the transfer and abolition of agencies and offices).

75. Exec. Order No. 12127, 44 Fed. Reg. 19367 (Mar. 31, 1979).

76. *About the Agency*, FED. EMERGENCY MGMT. AGENCY, <http://www.fema.gov/about-agency> (last visited Nov. 14, 2013).

77. The Bureau of Public Roads was under the direction of the Department of Transportation and the predecessor to the Federal Highway Administration. *See generally* NATIONAL TRANSPORTATION LIBRARY, <http://ntl.bts.gov>.

78. 33 U.S.C. § 701 (2006); 33 C.F.R. § 222 (2013).

79. FEDERAL EMERGENCY MANAGEMENT AGENCY, <http://www.fema.gov> (last visited Nov. 14, 2013).

will prevent disasters. The governor of the state in which the disaster occurs must complete a report indicating a state of emergency and formally request from the President that FEMA and the federal government respond to the disaster.⁸⁰ Once the report is received, the President then makes a Declaration of an Emergency and is allowed to send emergency funds to state and local organizations to save lives and protect property. Total assistance provided in a given declared emergency may not exceed five million dollars.⁸¹ This amount is a fraction of the costs required to permanently relocate the tiny Native Village of Kivalina.

Three types of federal assistance are made available to the long-term rehabilitation of an area and its citizens after a disaster.⁸² Individual assistance is given, upon application, to individuals, families, farmers, and businesses in the form of loans, grants, emergency housing, tax relief, and unemployment assistance.⁸³ Public assistance funds are granted to states, local communities, and nonprofit groups to restore public systems and facilities.⁸⁴ Finally, matching mitigation funds are set up for states and local communities to initiate projects to eliminate or reduce an area's vulnerability to a hazard.⁸⁵ This federal assistance to state and local governments may include the provision of equipment, supplies, facilities, and personnel; technical assistance; loans; and sometimes grants.⁸⁶

Relocation assistance under the FEMA framework is purely temporary and is limited to victims of certain natural catastrophes enumerated in the Stafford Act, such as hurricanes, tornados, and

80. The only exception to the state's gubernatorial declaration occurs when an emergency takes place on federal property or to a federal asset, for example, the 1995 Oklahoma City bombing. *See generally The Declaration Process*, FED. EMERGENCY MGMT. AGENCY: <http://www.fema.gov/declaration-process> (last visited Nov. 14, 2013).

81. 42 U.S.C. § 5193 (2006).

82. UNIV. OF FLA. INST. OF FOOD & AGRIC. SCIS., *THE ROLE OF GOVERNMENT IN A DISASTER*, *THE DISASTER HANDBOOK* § 3.7, at 4 (National ed. 1998), <http://disaster.ifas.ufl.edu/pdfs/chap03/d03-07.pdf>.

83. *Id.* at 6–8.

84. *Id.*

85. *Id.* at 2.

86. 44 C.F.R. § 206.5 (2013).

earthquakes.⁸⁷ Drought is the only gradual ecological process listed in the statute as a potential catalyst for a presidential disaster declaration. One of the most significant hazards faced by Alaskan coastal communities—erosion—is not included in the list of major disasters in the Stafford Act.⁸⁸

Based on FEMA's written manual, it appears that the United States has developed a comprehensive scheme to handle and prevent domestic crisis. From a practical perspective, however, FEMA has endured periods of harsh criticism, with none greater than that in the wake of Hurricane Katrina. The response to Katrina and the failure to find permanent housing for the displaced residents underscores the reality that the U.S. government's primary disaster relief framework is ineffective and insufficient in scope.⁸⁹

Relocation assistance is also available outside of CERCLA and FEMA in the limited contexts of witness protection and eminent domain. The United States Federal Witness Security program is administered by the U.S. Department of Justice and operated by the U.S. Marshals Service. The program is designed to protect threatened witnesses before, during, and after a trial.⁹⁰ The Witness Security Program was authorized by the Organized Crime Control Act of 1970⁹¹ and amended by the Comprehensive Crime Control Act of 1984.⁹² The U.S. Marshals have protected and relocated almost

87. Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. §§ 5121–5207 (2006). See enabling regulations enacted under FEMA, 44 C.F.R. §§ 206.31–206.48 (2009).

88. Robin Bronen, *Climate-Induced Community Relocations: Creating an Adaptive Governance Framework Based in Human Rights Doctrine*, 35 N.Y.U. REV. L. & SOC. CHANGE 357, 366–67 (2011).

89. Even several months after the storm, FEMA reported that there were “1,297 applicants who still need[ed] temporary housing in FEMA commercial sites” in Harrison County alone, which is merely one of Mississippi's three coastal counties. Memorandum from Bobby Weaver, Operations Chief, Harrison County Incident Mgmt. Team, to the Exec. Comm. Members of the Harrison County Incident Mgmt. Team (Apr. 7, 2006) (on file with author).

90. *Witness Security Program*, U.S. MARSHALS SERVICE, <http://www.usmarshals.gov/witsec/index.html> (last visited Nov. 14, 2013).

91. Organized Crime Control Act of 1970, Pub. L. No. 91–452, 84 Stat. 922 (codified as amended at 18 U.S.C. §§ 1961–1968 (2006)).

92. Comprehensive Crime Control Act of 1984, Pub. L. No. 98–473, 98 Stat. 1976 (codified as amended in scattered sections of 18 U.S.C.).

10,000 individuals and families since the program began in 1971.⁹³ Witnesses and their families typically get new identities with authentic documentation. Housing, subsistence for basic living expenses, and medical care are provided to the witnesses. Job training and employment assistance may also be provided.

In the eminent domain context, the federal or state government will assist an individual or family to vacate and move somewhere else. Under the Uniform Relocation Assistance and Real Property Acquisition Policies Act, the federal government or a state agency will provide moving and related expenses, replacement housing for homeowners including mortgage insurance, replacement housing for tenants, relocation planning, and last resort housing replacement by the federal government.⁹⁴

Therefore, federally recognized tribes imperiled by climate change impacts cannot secure assistance from any of these existing programs to address their plight. A climate change relocation fund would build on the logic of these permanent relocation opportunities under U.S. law to provide meaningful support to communities like the Native Village of Kivalina.

III. COMPARATIVE LAW PERSPECTIVES ON RELOCATION AND CLIMATE ADAPTATION ASSISTANCE

To provide further conceptual support for a polluter-financed climate change relocation fund in the United States, it is useful to consider related initiatives in other nations. While the United States offers little in relocation assistance, other nations have explored funding relocation initiatives to proactively promote important objectives such as public safety and economic efficiency. In addition, other nations have developed climate adaptation funds that are financed by private sector contributions.

Relocation initiatives to proactively safeguard public safety have been undertaken within the past decade in Taiwan, Japan, and Vanuatu. In 2004, communities in Taipei, Taiwan at high risk of

93. *Id.*

94. 42 U.S.C. § 4623 (2006); 49 C.F.R. § 24.1 et seq. (2013).

perilous landslides were relocated to safety.⁹⁵ Taipei Mayor Ma Ying-jeou promised to relocate two communities as soon as the resources became available. The mayor was criticized by his constituents for only relocating two of the thirty hillside communities listed at risk of falling victim to landslides.⁹⁶ The mayor accepted fault and petitioned the central government for funds to aid his constituents and the communities of nearby Sanchong City.

Similarly, in March 2010, a small community in Japan located on the coast of Numazu, Shizuoka Prefecture applied to the government for subsidies to relocate to higher ground after the tsunami in the Tohoku region last year.⁹⁷ Residents of the district applied for subsidies from the central government under a program designed to facilitate mass relocations in areas struck by disasters or under threat of disasters.⁹⁸ While subsidies for permanent relocation are unusual, nothing in the public program expressly denies it. The residents have asked the city to build a coastal levee twelve meters high and 150 meters long, but some community and city leaders believe the cost-benefit analysis would favor relocation.⁹⁹ The topic is open for debate by all sides and, most importantly, the local and national governments support such conversations and seek to offer assistance for the health and safety of their residents.

Finally, in Vanuatu, the Canadian government provided funding to relocate 100 villagers on Tegua Island in 2005. The relocation was necessary because frequent flooding and erosion due to sea level rise had made the original settlement uninhabitable.¹⁰⁰

In Australia, proactive relocation has also been engaged as a means of promoting the economic interests of its residents by balancing labor shortages in some areas and rising populations in other areas.

95. *Ma to Relocate Hillside Homes at Risk of Landslide*, CHINA POST (Taipei City), Sept. 19, 2004, available at <http://www.chinapost.com.tw/news/2004/09/19/52554/Ma-to.htm>.

96. *Id.*

97. *Shizuoka Coastal Hamlet Eyes Higher Ground*, DAILY YOMIURI (Tokyo), Mar. 20, 2012, at 2, available at 2012 WLNR 5844020.

98. *Id.*

99. *Id.*

100. See U.N. Framework Convention on Climate Change, *Vulnerability and Adaption to Climate Change in Small Island Developing States* 17 (background paper, 2007), http://unfccc.int/files/adaptation/adverse_effects_and_response_measures_art_48/application/pdf/200702_sids_adaptation_bg.pdf.

Community management committees have begun discussions within their own networks about the growing frustration of high unemployment in their communities due to population growth.¹⁰¹ The population in these areas has grown rapidly due to the influx of Sudanese and other African refugees. A team of academics and statisticians conducted a study of relocating a number of refugee communities in Melbourne to a less densely populated area of Victoria, another province in the country.¹⁰²

Funded by both public resources and private consortiums, the goal of the relocation initiative was to alleviate high unemployment in the overpopulated province of Melbourne, and bolster the southwestern region of Victoria, which was suffering from a low-skilled worker shortage.¹⁰³ Upon agreement to work in Victoria, families were offered relocation packages, mainly funded by the private entities for which the individuals would work. The relocation package consisted of two months' rent, utilities, transportation costs relevant to the identified needs of the family as assessed by the Migrant Liaison Officer, and support to access education, employment, housing, health, and community services.¹⁰⁴ Families accepting this package also had to make a commitment as part of their agreement for at least one adult member of each family to be employed within one month of arrival, secure private housing, and plan to settle permanently in the area.

The study found that the migrant workers were pleased with the new employment, which afforded them the labor protections that all Australian workers enjoy. The study and analysis concluded by recommending that other cities and provinces engage in similar policies to balance overpopulation and work shortages.

The United States has the resources and the technology to engage in such dialogue and responses, but disjointed governance has ultimately led to only reactive initiatives, evidenced by the FEMA

101. Robyn Broadbent et al., *A Tale of Two Communities: Refugee Relocation in Australia*, 42 AUSTL. J. SOC. ISSUES 581, 582 (2007).

102. *Id.* at 582–83.

103. *Id.* at 583–90 (“The projects were designed for mutual benefit and not as a solution to the myriad of resettlement issues faced by urban and refugee communities.”).

104. *Id.* at 589–90.

framework and the lack of proactive measures and relocation assistance for those permanently affected by natural disturbances.

Climate change adaptation funds in other countries are another dimension of support for a climate change relocation fund in the United States. For example, in Brazil, the National Fund on Climate Change was enacted in 2010, which uses funds from a tax on domestic oil production profits to support a fund to address climate change mitigation and adaptation.¹⁰⁵ Similarly, in the Philippines, the People's Survival Fund was enacted in 2012, which established a special trust fund for financing climate change adaptation programs and projects to help make communities more resilient to climate-induced disasters.¹⁰⁶ These funds—one privately funded and the other government-funded—provide support for the implementation of a climate change relocation fund in the United States.

Therefore, there is ample precedent in other nations for proactive relocation assistance and for the financing of a climate change adaptation fund. These two contexts of support must be properly integrated to propose an effective climate change relocation fund in the United States. Part IV of the article addresses these challenges.

IV. PROPOSAL FOR A CLIMATE CHANGE RELOCATION FUND IN THE UNITED STATES

Establishing a government-administered fund to assist residents in need of climate change relocation assistance is a form of “distributive justice.”¹⁰⁷ Distributive justice addresses how to properly allocate goods, such as taxpayer dollars, within a society. A true distributive justice fund is funded solely by taxpayer dollars, rather than by the wrongdoers who created the compensable harm.¹⁰⁸ Though this

105. Rhett A. Butler, *Brazil to Impose Levy on Oil Profits to Fund Climate Change Adaptation, Mitigation*, MONGABAY.COM (Oct. 26, 2010), http://news.mongabay.com/2010/1025-brazil_oil_levy.html.

106. *Philippines: People's Survival Fund for climate change adaptation available to LGUs*, ASIAN PAC. ADAPTATION NETWORK (July 10, 2013), <http://www.asiapacificadapt.net/news/philippines-peoples-survival-fund-climate-change-adaptation-available-igus>.

107. John G. Culhane, *Tort, Compensation and Two Kinds of Justice*, 55 RUTGERS L. REV. 1027, 1061–68 (2003).

108. *Id.*

distributive justice model represents a departure from the traditional American legal system, which embraces the “polluter pays” objective that parties responsible for harm should pay the costs associated with such harm, the “polluter pays” system of justice is difficult to administer in the context of harms caused by climate change. Proof of causation can be extremely difficult in cases where a victim is attempting to hold a company liable for releasing greenhouse gases that contribute to climate change because there are thousands of companies worldwide emitting the same pollutants into the atmosphere, and these emissions do not recognize territorial boundaries of states. It is difficult, if not impossible, to pinpoint which companies’ pollutants are the cause of the harm that occurred.

Therefore, distributive justice becomes a necessary remedy for the victims of climate change who may be left with little or no potential for compensation. However, like CERCLA, this distributive justice model can be a hybrid of both general taxpayer contributions and enhanced contributions from private sector entities that contribute a substantial amount of greenhouse gas emissions to the global climate change problem. As such, this model represents a hybrid of the “polluter pays” and the distributive justice models of compensation.

Four questions must be addressed in proposing a possible framework for a climate change relocation fund in the United States. First, what source(s) will provide the revenues to establish and sustain the fund? Second, what administrative model should be employed for the fund? Third, how will the revenues for the fund be generated? Fourth, what segment of the population is the intended beneficiary of the fund? This section of the article addresses these questions and proposes a polluter-supported funding mechanism through mandatory and voluntary contributions that draws on a variety of models from related contexts for administering the fund. The article proposes that the sole beneficiaries of the fund should be federally recognized tribes.

The first question is relatively straightforward. Major emitters of greenhouse gases should be the principal source of revenues for the fund. Consistent with the “polluter pays principle,” a formula could be used to determine a minimum threshold of annual emissions of greenhouse gases in the private sector to be eligible for inclusion in

the fund's mandatory contributions.¹⁰⁹ The polluter pays principle is engrained in U.S. and international environmental policy. Principle 16 of the Rio Declaration on Environment and Development conveys the principle as follows: "National authorities should endeavor to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution"¹¹⁰

This principle is also reflected in several provisions of U.S. environmental law. For example, section 120(a) of the Clean Air Act assesses a penalty against polluters who are not in compliance with the statute based on the "economic value of the noncompliance," and CERCLA allows the government and individuals to sue polluters for cleanup costs even if the pollution was caused long before CERCLA was enacted.¹¹¹ Requiring participation in the fund from those substantially contributing to and benefiting from the harm associated with climate change is the fairest approach.¹¹² The more challenging questions are the administrative model to employ, the method of generating the revenue, and the intended beneficiaries of the fund.

A. Possible Models for the Fund

Potential models for the fund at the federal level are the Victim Compensation Fund of 2001 and the BP Oil Spill Fund. One

109. For example, in the *Kivalina* litigation, the industries named in the complaint represented approximately eighty-two percent of national greenhouse gas emissions. See *Envirofacts: Greenhouse Gas*, EPA, <http://www.epa.gov/enviro/facts/ghg> (last updated Dec. 5, 2013).

110. U.N. Conference on the Environment and Development, Rio de Janeiro, Braz., June 3–14, 1992, *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/26 (Vol. I), Annex I (Aug. 12, 1992), available at <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>.

111. See Clean Air Act § 120(a)(2)(A), 42 U.S.C. § 7420(a)(2)(A); Comprehensive Environmental Response, Compensation, and Liability Act § 107, 42 U.S.C. § 9607 (2006).

112. While identifying significant greenhouse gas emitters as the principal contributors to the fund, there are additional questions beyond the scope of this article that need to be addressed regarding who will pay into the fund and to what degree. In addition, the funds for this mechanism could be generated in part by a carbon tax that applies to all U.S. residents, which would replicate the approach in CERCLA that combined a general tax and a tax on generators of hazardous substances to support the Superfund.

dimension of the response to the terrorist attacks of September 11th was the Air Transportation Safety and System Stabilization Act (ATSSSA). One of the key components of ATSSSA is the “September 11th Victim Compensation Fund of 2001” (the Victim Compensation Fund).¹¹³ The Victim Compensation Fund was created after a horrific tragedy occurred. The purpose of the fund is to provide no-fault compensation to the victims and families of the victims of the September 11th terrorist attacks.¹¹⁴ In addition to providing compensation, the fund was established to protect the airline industry from the prospect of an overwhelming number of individual claims in the court system, which could potentially devastate the airline industry’s finances and reputation.

Rather than a board of trustees, a single individual was given the task of managing the Victim Compensation Fund. Kenneth Feinberg was appointed Special Master of the fund. He traveled extensively to meet with families and victims to determine their eligibility and the amount they would receive.¹¹⁵ The fund established a set formula for distributing funds to victims and families of victims to promote equality that included: (1) non-economic loss; (2) economic loss; and (3) collateral sources of income such as insurance, workers compensation, and social security payments to be deducted.¹¹⁶ Non-economic loss was awarded as a flat rate for everyone: \$250,000 for the dead victim and \$100,000 for each spouse or dependent.¹¹⁷ Economic loss was configured based on the deceased’s earnings at the time of death and potential future earnings depending on education and current circumstances.¹¹⁸

Similarly, a climate change relocation fund should include a clear formula for determining compensation to victims. However, the formula used should depend on the type of harm caused. In the

113. 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, 123 (2002).

114. *Id.*

115. Peter T. Elikann, Book Review, 90 MASS. L. REV. 48, 48 (2006) (reviewing KENNETH R. FEINBERG, WHAT IS LIFE WORTH?: THE UNPRECEDENTED EFFORT TO COMPENSATE THE VICTIMS OF 9/11).

116. *Id.* at 49.

117. *Id.*

118. *Id.*

Kivalina scenario, each household should receive an amount for relocation based on the number of family or household members. A flat rate in that situation is the fairest way to approach the extremely difficult task of relocating an entire village of people.

The BP Oil Spill Fund provides another model for a climate relocation fund. The Oil Pollution Act (OPA) gives the United States the ability to designate a “responsible party when an oil spill occurs.”¹¹⁹ British Petroleum (BP) was designated the responsible party for the Deepwater Horizon incident in the Gulf of Mexico in 2010 that resulted in one of the worst oil spills in history.¹²⁰ As the responsible party, BP is required to establish a procedure for the payment or settlement of claims for interim, short-term damages.¹²¹ In an effort to comply with the OPA and avoid massive tort litigation, BP waived the \$75 million limit of liability and created a fund of \$20 billion to pay claims.¹²²

Kenneth Feinberg, the special master of the Victim Compensation Fund, was selected to oversee the distribution of funds and processing of claims for the BP oil spill. Unlike the Victim Compensation Fund, which was authorized by Congress, the authorization for the BP fund is less clear.¹²³ The OPA only states that a responsible party must establish a procedure for payment of claims, but it does not designate any specific procedure. Moreover, the BP Fund was funded exclusively by the party responsible for the harm, and was not supplemented by taxpayer dollars. The fund arguably provided a better way for victims to receive compensation. The conventional tort litigation process is time consuming and expensive with no guarantee of compensation. Moreover, the fund vastly exceeded the inadequate \$75 million liability cap under OPA,

119. 33 U.S.C. § 2714 (2006).

120. Linda S. Mullinex, *Prometheus Unbound: The Gulf Coast Claims Facility as a Means for Resolving Mass Tort Claims—A Fund Too Far*, 71 LA. L. REV. 819, 829–30 (2011).

121. *Id.* at 833–34.

122. *Id.* at 834.

123. *Id.* at 836.

which allowed for more victims to be fully compensated for their injuries.¹²⁴

The BP Fund was created under the auspices of the “Superfund myth” created by CERCLA.¹²⁵ This “Superfund myth” is the idea that a trust fund will compensate victims quickly and efficiently while avoiding or deferring litigation over the liability of potentially responsible parties.¹²⁶ It is referred to as a “myth” because, unfortunately, efficient resolution of claims is not always the outcome. For example, the BP fund has denied more claims than it has paid out. As of March 28, 2013, the fund had paid about \$10 billion of the \$20 billion placed in the fund.¹²⁷ Despite the seemingly large amount paid from the fund to date, many claims were denied due to lack of documentation proving causation.¹²⁸ OPA designates a proximate cause requirement for causation. Many of the denied claims were likely unable to show proximate cause because they could not prove that the damage was caused by the BP oil spill and not the result of Hurricane Katrina, effects from which the region was still experiencing.¹²⁹

The BP fund could provide a framework for a climate change relocation fund. In the climate change context, however, identifying responsible parties will be much more difficult than it is in the oil pollution context. It is much easier to show causation of a spill from a specific source than the causes and contributors of severe changes in climate conditions over time from the emission of greenhouse gases, especially when the greenhouse gases are emitted worldwide by thousands of different sources. Given the causation challenges involved in the BP oil spill context, the chance of a victim adequately proving causation in the climate change context would be virtually

124. Alfred R. Light, *Designing the Gulf Coast Claims Facility in the Shadow of the Law: A Template from the Superfund §301(E) Report*, 40 ENVTL. L. REP. NEWS & ANALYSIS 11121, 11121 (2010).

125. See generally Alfred R. Light, *The Deepwater Horizon Oil Spill Trust and the Gulf Coast Claims Facility: The “Superfund” Myth and the Law of Unintended Consequences*, 5 GOLDEN GATE U. ENVTL. L.J. 87 (2011).

126. *Id.* at 87.

127. *Gulf of Mexico Oil Spill Claims and Other Payments Public Report*, BP (Oct. 31, 2013), <http://www.bp.com/content/dam/bp/pdf/gulf-of-mexico/Public-Report-October-2013.pdf>.

128. See Light, *supra* note 124, at 100.

129. *Id.*

impossible. Even if the plaintiffs in the *Kivalina* case had been able to overcome the procedural hurdles of standing and the political question doctrine, they would face the daunting obstacle of establishing causation at trial and likely ultimately fail in their case.

Nevertheless, the precedent of a fund, like the BP Oil Spill Fund, to compensate for environmental harms can still provide a valuable foundation for a climate change relocation fund. If the regulated community is forced to bear the costs of the fund through carbon taxes or premiums on greenhouse gas emissions, then the issue of who is responsible will be moot. All claims will be paid directly from the fund without the need to investigate which parties should bear the blame, which was part of the challenge in the plaintiffs' theory of the case in selecting the twenty-two largest private emitters of greenhouse gases in the United States. This approach will also alleviate issues of further litigation between potential defendants regarding contribution and indemnification, which has been an issue in the CERCLA and BP oil spill distribution of funds.

Another possible model for a climate change relocation fund is the Alaska Permanent Fund. After construction of the Alaska pipeline began in 1974, Alaska voters approved an amendment to Alaska's Constitution establishing the Alaska Permanent Fund.¹³⁰ The fund was created to "provide a means of conserving a portion of the state's revenue from mineral resources to benefit all generations of Alaskans" with the goal of maintaining "safety of principal while maximizing total return" and to be used "as a savings device managed to allow the maximum use of disposable income from the fund for purposes designated by law."¹³¹

The financial resources for the Alaska Permanent Fund are derived from "at least [twenty-five] percent of all mineral lease rentals, royalties, royalty sale proceeds, and federal mineral revenue sharing payments and bonuses received by the state."¹³² That money is then invested in a diversified portfolio of public and private asset classes

130. *Landmarks in Permanent Fund History*, ALASKA PERMANENT FUND CORP., <http://www.apfc.org/home/Content/aboutFund/fundHistory.cfm> (last visited Nov. 14, 2013).

131. ALASKA STAT. § 37.13.020 (2012).

132. *Id.*, § 37.13.010.

that are expected to produce income with some acceptable level of risk.¹³³

To date, most of the realized earnings have been distributed to Alaska citizens in the form of a dividend, but such earnings could potentially be used to help fund the relocation efforts of Alaska natives facing the loss of their land from climate change impacts. The earnings could also be used on projects that help mitigate or adapt to the effects of climate change. Relocation efforts and mitigation or adaptation projects promote the fund's ultimate goal of preserving the resources to benefit all generations of Alaskans because it will potentially sustain large populations of ancestors and significant tracts of land for future generations to enjoy the diversity of cultures and natural resources that Alaska offers.

The fund also established the Alaska Permanent Fund Corporation (APFC) to manage the fund's investments. The APFC is run by a six-member board of trustees appointed by the governor that meets six times per year.¹³⁴ A climate change fund should be administered in a similar fashion by an agency created by the federal government, perhaps within the Department of Homeland Security. The new climate change relocation agency would be tasked with determining who is eligible to receive funds and the proper amount of compensation.

B. Methods of Generating Revenue for the Fund

Contribution to the fund can be enforced by way of a penalty, tax, levy, or a permit system. Congress should amend the Clean Air Act to include the regulation of carbon dioxide.¹³⁵ By including carbon

133. *Id.*, § 37.13.120.

134. *About the Alaska Permanent Fund Corporation (APFC)*, ALASKA PERMANENT FUND CORP., <http://www.apfc.org/home/Content/aboutAPFC/aboutAPFC.cfm> (last visited Nov. 14, 2013).

135. As of this writing, this highly contentious process of amending the Clean Air Act to address the regulation of carbon dioxide is still being litigated. In its landmark decision in 2007, the U.S. Supreme Court concluded in *Massachusetts v. EPA* that greenhouse gases are covered by the CAA's definition of air pollutant and that the EPA must determine whether emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare. 549 U.S. 497 (2007). In June 2012, the D.C. Circuit upheld EPA's endangerment finding. *Coal. for Responsible*

dioxide as a criteria air pollutant under the Act, carbon dioxide emitters would be subject to the penalties for non-compliance under section 120. All, or a specified percentage, of the penalties assessed against emitters of carbon dioxide could be deposited into the climate change relocation fund.

Another method to secure revenues for the climate change relocation fund is through a carbon tax. According to CNN, “One analysis by the Congressional Budget Office says a moderate, \$20-per-ton tax on carbon emissions could raise \$1.25 trillion over 10 years.”¹³⁶ The tax rate should be based on the marginal cost or the “social cost” of carbon dioxide emissions, and imposed on all oil, coal, and natural gas production in the United States.¹³⁷ Implementation of the tax would occur through existing Internal Revenue Service and Energy Department Programs.¹³⁸

A carbon tax would generate revenue and potentially reduce the amount of carbon dioxide emitted into the atmosphere over time. As long as the tax is slightly higher than the benefits of emitting more carbon, emissions are likely to reduce. If the tax does not produce the desired reduction in emissions, it can be raised. Moreover, a carbon tax credit can be given to those who implement carbon-reducing

Regulation, Inc. v. EPA, 684 F.3d 102 (D.C. Cir. 2012). In March 2013, that decision was appealed to the U.S. Supreme Court. *Pacific Legal Found. v. EPA, petition for cert. filed*, (U.S. Mar. 20, 2013) (No 12-1153). The petition for certiorari was denied, however, on October 15, 2013. See Andrew Childers, *Supreme Court Decision Reaffirms EPA’s Clean Air Act Authority over Greenhouse Gases*, BLOOMBERG (Oct. 15, 2013), <http://www.bna.com/supreme-court-decision-b17179878188>.

136. Van Jones and Phaedra Ellis-Lamkins, *To End the Fiscal Slowdown, Tax Carbon*, CNN, <http://www.cnn.com/2012/11/16/opinion/jones-carbon-tax> (last updated Mar. 7, 2013, 9:30 PM). Carbon tax initiatives have taken center stage in 2013 as the regulatory tool of choice to address climate change in both the United States and China, but many obstacles remain. See Raju Chebium, *Boxer Pushes Carbon Tax to Ease Global Warming*, USA TODAY (Feb. 14, 2013, 5:59 PM), <http://www.usatoday.com/story/news/politics/2013/02/14/global-warming-carbon-tax-barbara-boxer/1920963>; Melissa Zhang, *Chinese Carbon Tax: Hits and Misses*, BERKELEY ENERGY & RESOURCES COLLABORATIVE BLOG (Mar. 13, 2013), <http://berc.berkeley.edu/chinese-carbon-tax-hits-and-misses>.

137. Reuven S. Avi-Yonah & David M. Uhlman, *Combating Global Climate Change: Why a Carbon Tax is a Better Response to Global Warming than Cap and Trade*, 28 STAN. ENVTL. L. J. 3, 32 (2009).

138. *Id.* at 38.

programs. Either all or a portion of the revenue from a carbon tax could be placed in a climate change relocation fund. Even if only a portion of the revenues were set aside for the fund, a carbon tax is still likely to generate a significant amount of funding to be set aside for those in dire need of relocation assistance.

Another way to generate revenue for the fund is through a permit system, or cap and trade model. Once a limit on carbon emissions per year is established, permits can be auctioned off each year to emitters. The permits can then be traded on the private market.¹³⁹ The government will only receive revenue from the permits at their initial auction. A price per carbon ton will have to be established, much like the carbon tax system allowing emitters to purchase carbon emissions at their stated auction value and then trade them for a higher amount in the private market. Companies in violation of their permit will be assessed a fine that could also be placed in the climate change adaptation fund.

Another model to promote corporate responsibility while protecting the populations that are particularly vulnerable to climate change impacts is the Price-Anderson Act. This Act provides no-fault insurance to benefit the public in the event of a nuclear power plant accident that the Nuclear Regulatory Commission deems to be an “extraordinary nuclear occurrence.”¹⁴⁰ The industry bears the cost of the insurance, which is pooled together in a fund to be disbursed in the event of an extraordinary nuclear occurrence. The industry bears the costs by paying an annual premium to cover nuclear reactors. The fund has over \$12 billion in insurance to cover a potential nuclear event.¹⁴¹ This protection consists of two tiers of insurance payouts. The first tier provides \$375 million in liability coverage per incident. If the \$375 million is insufficient to cover the costs, the second tier allows additional coverage of up to \$12.6 billion.¹⁴²

The Act has proven so successful that Congress has used the Act’s insurance fund as a model for legislation to protect the public against

139. Shi-Ling Hsu, *A Prediction Market for Climate Outcomes*, 83 U. COLO. L. REV. 179, 227 (2011).

140. *Insurance: Price-Anderson Act Provides Effective Liability Insurance at No Cost to the Public*, NUCLEAR ENERGY INST. (Sept. 2012), http://www.nei.org/corporatesite/media/filefolder/Price_Anderson_Act_Sept_2012.pdf.

141. *Id.*

142. *Id.*

potential losses or harm from other hazards, including faulty vaccinations, medical malpractice, and toxic waste.¹⁴³ This type of fund could work well in the climate change context. Industries emitting greenhouse gases could bear the costs of funding by having to pay premiums for all emissions. The funds would then be pooled together as insurance protection to benefit the public in the event of an “extraordinary climate change scenario.” It is critical for any climate change relocation fund to prescribe in detail the types of “extraordinary climate change scenario” that would be covered, which could be limited to the need for permanent relocation.

C. Role of Indigenous Sovereignty and the Federal Trust Relationship

The final dimension of the implementation of the proposed climate change relocation fund is to determine to whom it applies. Climate change impacts all of society to varying degrees; therefore, the need to narrow the applicability of the fund is essential to ensure its viability. The fund is meant to provide a complete remedy to communities that face an imminent need for relocation and cannot fund their relocation costs. Kivalina is a case study of this degree of vulnerability and it is on this foundation that the fund should be oriented. Kivalina is among the first of many indigenous communities throughout the United States that will need to be relocated within the next few decades because climate change impacts will render their homeland uninhabitable.

Why should the fund be limited to federally recognized tribes when other indigenous communities that are not federally recognized may be equally deserving, as well as other non-indigenous communities? The answer lies in the federal trustee relationship that exists between the U.S. government and federally recognized tribes. The United States is obligated by treaty to simultaneously protect federally recognized tribes and recognize their inherent sovereignty to manage their own affairs.¹⁴⁴ Recognition of these tribes’

143. *Id.*

144. “[T]he United States has a trust responsibility to each tribal government that includes the protection of the sovereignty of each tribal government” 25 U.S.C. § 3601(2) (2006); *see also* Reid Peyton Chambers, *Compatibility of the Federal Trust Responsibility with Self-Determination of Indian Tribes: Reflections*

sovereignty involves respecting the realities of how climate change can disrupt and destroy a tribe's cultural and spiritual ties to its traditional lands. A need for relocation must therefore be administered on a sensitive government-to-government basis between the United States and these tribes to ensure that they are adequately protected and that their traditions are preserved to the maximum degree possible in finding a suitable new community for relocation.

Federal environmental law embraces this special government-to-government relationship between the federal government and federally recognized tribes. First, Congress recognized the special sovereignty of federally recognized tribes by enabling them to apply for treatment as state status under the Clean Air Act and Clean Water Act to administer permit programs as a state government would on their tribal lands.¹⁴⁵ Second, Congress recognized the federal trust relationship between the federal government and federally recognized tribes in granting authority to the President under CERCLA § 9626(b) to permanently relocate an Indian tribe or Alaska Native village threatened by hazardous waste contamination.¹⁴⁶

The climate change relocation fund in this article would be limited to federally recognized tribes; however, this proposal does not mean that a climate relocation fund cannot eventually be made available to other segments of the U.S. population in need of relocation assistance. Federally recognized tribes like Kivalina certainly are not the only communities in need of relocation assistance and unable to pay for those relocation costs. However, these federally recognized tribes are first in line for this assistance because of the federal government's trust relationship with these tribes, and the climate

on Development of the Federal Trust Responsibility in the Twenty-First Century, ROCKY MTN. MIN. L. FOUND., SPECIAL INST. ON NAT. RESOURCES DEV. IN INDIAN COUNTRY (2005) ("Recognizing that the United States has, under the Constitution, broad power over Indian affairs sufficiently extensive to make the tribes comparatively vulnerable to the exercise of that power, this guardian-ward construct also protects tribes from the peril to which that power potentially subjects them.").

145. See *Treatment in the Same Manner as a State*, EPA AM. INDIAN ENVTL. OFF. TRIBAL PORTAL, <http://www.epa.gov/tp/laws/tas.htm> (last visited Nov. 14, 2013).

146. Comprehensive Environmental Response, Compensation, and Liability Act § 126, 42 U.S.C. § 9626 (2006).

change relocation fund must be administered with that reality in mind. Other forms of assistance, such as grants and loans, may be available to affected communities other than federally recognized tribes. But as a matter of equity, the U.S. government's failure to adequately regulate climate change has betrayed the health, safety, and cultural integrity of federally recognized tribes above all others in this country as these communities now hang precariously at the tip of the spear of devastating climate change impacts.

CONCLUSION

There is ample foundation in U.S. law and in the laws of other nations to develop a climate change relocation assistance fund. Existing models for climate relocation assistance under federal law offer promise, but have severe limitations in their current form. FEMA assistance is only eligible to only those whose pre-disaster primary residences are rendered uninhabitable as the result of a major disaster. The Native Village of Kivalina has not been rendered uninhabitable as of this writing. Therefore, residents would have to wait for disaster to strike before they are eligible for assistance under FEMA. Moreover, the maximum amount of assistance available to individuals and or families is \$25,000. Estimated costs of relocation for Kivalina have ranged between \$100 and \$400 million, which is a potential average cost of at least \$250,000 per individual. FEMA assistance does not even come close to providing sufficient assistance.

The United States' ability to protect its citizens is evidenced by its donation of billions of dollars into international climate investment funds.¹⁴⁷ While these funds are extremely beneficial to the developing nations in need of aid from developed nations, they do nothing to aid federally recognized tribes in the United States facing the devastating loss of their lands as a result of climate change. The United States needs to establish a climate change relocation fund through any or a combination of the strategies addressed in this article. The fund can be supplemented by soliciting donations from

147. Anita M. Halvorssen, *International Law and Sustainable Development—Tools for Addressing Climate Change*, 39 DENV. J. INT'L L. & POL'Y 397, 420 (2011).

multinational corporations and non-governmental organizations by providing them with tax credits or other monetary incentives to do so.

The first step in establishing a possible climate change relocation fund is whether the fund should be managed at the state, federal, or international level. This article has proposed that such a fund would be most effective if administered at the federal level. The structure of the fund could resemble the federally created Victim Compensation Fund or the defendant-created BP Oil Spill Fund. While certain indigenous communities are impacted more severely by climate change than others in the United States, the contributors to the problem can be found in every state. Moreover, greenhouse gases do not respect state territorial boundaries. Greenhouse gas emissions in New York are just as likely to have a severe impact on Alaska as emissions from Alaska-based sources.

Like the CERCLA model, funding for a climate change relocation fund could come in part from taxpayer dollars, but should come primarily from the polluting industries through a carbon tax. A carbon tax is the most streamlined and effective way to secure resources for such a fund. It promotes the “polluter pays” principle by imposing a tax on oil, coal, and natural gas production in the United States. The tax would also promote the reduction of carbon dioxide emissions into the atmosphere by encouraging polluters to achieve lower tax costs with lower emissions and by providing tax credits for any carbon reduction plans implemented.

Relocation as a legal remedy for Kivalina under Alaska law also may be possible, but difficult without federal aid. Alaska has already established a centralized fund of money known as the Alaska Permanent Fund. The Alaska Permanent Fund is a good example of how states can structure and implement a climate change relocation fund. Nevertheless, state funding in Alaska is not nearly adequate to cover all of the federally recognized tribes within its sovereign borders who need relocation assistance in the face of devastating impacts wrought by climate change.¹⁴⁸

148. In addition to the climate change relocation fund for federally recognized tribes, the United States could also establish a low or no interest loan program for those individuals or communities in need of assistance as a result of climate change impacts. International climate investment funds are already implementing this approach. For example, the Copenhagen Green Fund distributes grants and loans to forty-five developing countries out of the funds donated by developed countries

Therefore, a climate change relocation fund should be managed at the federal level. The legislation should specify that those eligible for compensation from the fund are limited to federally recognized tribes. The most severe cases should be given the highest priority, similar to the NPL system under CERCLA. The fund can be managed by a government-created climate relocation agency, with a similar but narrower charge than FEMA's mandate.

into the fund. Halvorsen, *supra* note 147, at 420. Individuals or communities applying for these grants and loans should be required to submit an environmental impact statement to demonstrate their need. Grants and loans should be distributed based on need and the amount of harm that has or is likely to occur. A full discussion of this option is beyond the scope of this article.