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Why We Cannot Wait: Transnational Networks as a Viable Solution to Climate Change Policy

Devani G. Adams

Introduction

Scientific consensus tells us that the problem of climate change is unambiguously a global one, and one that intertwines environmental, economic, and social issues on a scale unmet by humanity.¹ What does this mean for policymakers facing such an unprecedented issue? Conventional wisdom and the general consensus dictate that “climate change is a global problem requiring a concerted global response.”² Indeed, many scholars assert that the scale of the solution should match the scale of the problem.³ However, as global greenhouse gas emissions increase at a rapid rate,⁴ climate change policymaking at the international level has failed to keep pace.

Climate change science underscores the argument for international climate change policymaking. To begin with, climate change presents a complicated scenario with no singular bad actor.⁵ Carbon dioxide emissions and other tropospheric aerosols permit solar energy to reach the Earth’s surface but trap heat energy radiating back from the surface, resulting in increased temperatures.⁶ Moreover, today’s increasing temperatures are the result of a previous generation’s emissions, and so today’s emissions mean a commitment to increased warming in the future.⁷

However, if we wait for an international treaty, our climate system is in danger as the effects of climate change intensify. In response to the lack of progress at the international level, many local policymakers and individuals are tackling the issue from the “bottom-up.” On one side of the policy debate, scholars argue that local action is a practicable approach to fight climate change.⁸ On the other side, some scholars argue that “subnational state-level action is not the best way to combat global climate change . . . because local action is not well suited to regulating

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1. See Intergovernmental Panel on Climate Change, *IPCC, 2007: Summary for Policymakers*, in CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS (Solomon et al. eds., 2007) available at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf> [hereinafter IPCC] (explaining the causes of climate change, the current state of the science, and projected impacts).
 2. Daniel A. Farber, *Carbon Leakage versus Policy Diffusion: The Perils and Promise of Subglobal Climate Action*, 13 CHI. J. INT’L L. 359, 360 (2012) (citing, for example, Kirsten H. Engel & Scott R. Saleska, *The Case of Climate Change*, 32 ECOLOGY L.Q. 183, 187 (2005) (“endorsing the need for global action by advocates of state climate regulation”).
 3. *Id.* at 361 (citing Henry N. Butler & Jonathan R. Macey, *Externalities and the Matching Principle: The Case for Reallocating Federal Authority*, 14 YALE J. L. & POLY. REV. 23, 35 (1996)).
 4. IPCC, *supra* note 1, at 2.
 5. See generally *id.* (explaining the human and natural causes of climate change).
 6. *Id.* at 3-4.
 7. *Id.* at 12-15.
 8. See Hari M. Osofsky & Janet Koven Levit, *The Scale of Networks?: Local Climate Change Coalitions*, 8 CHI. J. INT’L L. 409 (2008) (arguing that local actors combating climate change are a viable response to effective policymaking).

mobile global conduct yielding a global externality.”⁹ With both of these scholarly arguments in mind, this paper asserts that transnational networks, comprised of policymakers, organizations, and individuals collaborating to combat climate change, can debunk the critics’ arguments, achieve global scale, and become the successful global solution to this unprecedented global problem.

Section I presents the conventional, “top-down” approach to climate change policy. In this part, I briefly examine the extent to which international and federal policymakers (in the context of the United States) have dealt with the issue and conclude that they have failed. Against this backdrop, Section II addresses the critics. In this part, I briefly describe the arguments in favor of a global regime and the limits of local efforts, and by implication, transnational networks. Section III illustrates how bottom-up policymakers have come to address climate change. In this part, I examine key successes at the state-level and local-level of policymaking. Section IV explores the emergence of transnational networks and illustrates their positive contributions to climate change policy. In order to better understand how transnational networks can debunk the conventional wisdom that a global problem requires a global solution, section V highlights social interaction theory and research in support of transnational networks’ viability. Finally, Section VI identifies the values that transnational networks espouse. Based on these values, this paper concludes that the power of transnational networks cannot be rejected while we wait for a global regime.

I. Waiting for a Treaty: The Failure of Top-Down Climate Change Policies

How did the global issue of climate change become a local problem? To better understand the emergence of local actors combating climate change and the formation of transnational networks, this section provides an overview of the traditional, top-down attempts to address climate change, and concludes that the top-down approach has failed because of the competing priorities of the nation that policymakers represent, lack of momentum, and the law’s rigidity.

A. The Existing International Framework

How have international policymakers failed to act? It is not fair to say that international policymakers have not acted at all. However, the action they have taken has lacked momentum. In 1992, countries joined the United Nations Framework Convention on Climate Change (UNFCCC) in an attempt to address

9. Jonathan B. Wiener, *Think Globally, Act Globally: The Limits of Local Climate Policies*, 155 U. PA. L. REV. 1961, 1962 (2007).

climate change through international treaty law.¹⁰ The UNFCCC's aim is "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."¹¹ The UNFCCC provided for "[f]irst steps to a safer future,"¹² which included recognizing the problem and setting a specific goal to reduce emissions to such a level that ecosystems could naturally adapt to climate change without threatening food systems or hindering sustainable economic development.¹³ Developed countries, which have contributed the most to emissions, were to "lead the way" by reducing their emissions to 1990 levels by the year 2000, and report regularly on their measures.¹⁴ In addition, developed countries agreed to provide financial support to sustainable climate change activities in developing countries and recognize their need for economic development.¹⁵

Although the UNFCCC appeared to be a crucial, positive first step toward combating the effects of climate change, the results have been less than momentous. "By 1995, countries realized that emission reductions provisions in the Convention [UNFCCC] were inadequate. They launched negotiations to strengthen the global response to climate change, and, two years later, adopted the Kyoto Protocol."¹⁶ In 1997, 160 nations convened in Kyoto, Japan to discuss how the world could quickly build momentum on the issue. At the convention, then U.S. Vice-President and environmentalist, Al Gore, highlighted the problems with international policymaking by identifying the "Spirit of Kyoto," through which he intended to "heal the divisions among us" and "bridge our differences."¹⁷ With this spirit, he hoped that momentum would be built, and that binding emissions limits, new markets, new technologies, and new ideas would create new hope, followed by other steps to reach the ultimate goal of a safe concentration level of greenhouse gases in the Earth's atmosphere.¹⁸ Adopted in 1997, the Kyoto Protocol committed

10. *Background on the UNFCCC: The international response to climate change*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/essential_background/items/6031.php (last visited Oct. 18, 2013) [hereinafter *UNFCCC Background: The international response*].

11. *Background on the UNFCCC: First steps to a safer future: Introducing The United Nations Framework Convention on Climate Change*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/essential_background/convention/items/6036.php (last visited Oct. 18, 2013).

12. *Id.*

13. *Id.*

14. *Id.*

15. *Id.*

16. *UNFCCC Background: The international response*, *supra* note 10.

17. Al Gore, *Remarks at the Kyoto Climate Change Conference (1997)*, in *THE GLOBAL WARMING READER: A CENTURY OF WRITING ABOUT CLIMATE CHANGE* 127, 130 (Bill McKibben ed., 2011).

18. *Id.* at 129.

developed nations to meet emission reduction targets based on the UNFCCC.¹⁹

Despite the well-intentioned spirit, the Kyoto Protocol is an emblem of the flaws of a global regime. First, the changing politics of changing world leaders has hindered progress. Despite Mr. Gore's committed statement that "the United States is prepared to act—and will act,"²⁰ the subsequent presidential administration of George W. Bush did not ratify the agreement.²¹ Second, many countries have struggled to meet targets as the first commitment period concluded in 2012, and "some key developed country emitters like Canada, Japan, and Russia—all of which were crucial to the treaty being able to enter into force without U.S. participation—have not agreed to specific commitments for the second period."²²

As the Kyoto Protocol's first commitment period came to a close on December 31, 2012, deep divisions existed between nations over whether to continue the two-track system, where developed countries have binding emissions targets and developing countries do not, or to implement a one-track system where all major emitters have binding targets.²³ Negotiations continued at the 18th meeting of the Conference of the Parties (COP18) to the UNFCCC in Doha, Qatar.²⁴ COP18 resulted in at least three outcomes: (1) a second commitment period under the "Doha Amendment to the Kyoto Protocol," which runs from January 1, 2013 to December 31, 2020 (although without the U.S., Canada, Japan, New Zealand, and Russia); (2) a promise of USD 100 billion from developed countries to developing countries through a finance mechanism from 2020 onward (but nothing between the years 2013-2010); and (3) an agreement to discuss an international mechanism to account for loss and damage, *i.e.*, "compensations to vulnerable communities for the loss and damage caused by climate change" (but only to discuss the possibility of such a mechanism).²⁵

Reactions to these outcomes were at best lukewarm, and at worst scathing. For example, Connie Hedegaard, the E.U. climate chief from 2010 to 2014, stated:

19. *UNFCCC Background: The international response*, *supra* note 10.

20. Gore, *supra* note 17, at 131.

21. Associated Press, *Bush: Kyoto treaty would have hurt economy: President condemns climate change treaty, dependence on Middle East oil*, POLITICS ON NBCNEWS.COM (June 30, 2005, 4:50:11 PM ET), <http://www.msnbc.msn.com/id/8422343/ns/politics/t/bush-kyoto-treaty-would-have-hurt-economy/#.UMJm7XeO7KY>.

22. HARI M. OSOFSKY & LESLEY K. MCALLISTER, CLIMATE CHANGE LAW AND POLICY 67 (2012).

23. *Id.* at 88.

24. *UNFCCC Background: The international response*, *supra* note 10.

25. *COP18: Outcomes of the Doha climate talks*, INT'L INST. FOR ENV'T AND DEV., <http://www.iied.org/cop18-outcomes-doha-climate-talks> (last visited Feb. 9, 2015).

In Doha we crossed the bridge from the old climate regime to the new system It was not an easy and comfortable ride. It was not a very fast ride either Very intense negotiations lie ahead of us. What we need now is more ambition and speed.²⁶

While NGO leaders, such as Kumi Naidoo, executive director of Greenpeace International, warned “The politicians and negotiators have lost touch with climate reality—sadly their failure will be paid for in lives and livelihoods.”²⁷ The 21st session of the Conference of the Parties (COP21) and the 11th session of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol²⁸ (CMP11) is scheduled for November 30 to December 11, 2015 in Paris, France.²⁹ Expectations are high for “negotiators to agree on an ambitious, science-based climate deal.”³⁰

B. The Lack of a National Framework

In the United States, federal policymakers have made minimal attempts at addressing climate change. Notwithstanding this inaction, climate change is one of the nation’s most pressing environmental, economic, and social problems of the century.³¹ President Barack Obama’s administration has identified itself as having taken “unprecedented action to . . . tackle the issue of climate change, and protect our environment”³² and as having “made the largest clean energy investment in American history.”³³ Indeed, these “unprecedented” responses seem appropriate since the United States’ carbon emissions amount to approximately twenty percent of the world’s total emissions.³⁴ China has only recently surpassed

26. Fiona Harvey, *Doha climate gateway: the reaction*, THE GUARDIAN (Dec. 10, 2012, 10:56 AM), <http://www.theguardian.com/environment/2012/dec/10/doha-climate-gateway-reaction>.

27. *Id.*

28. *Conference of the Parties servicing as the meeting of the Parties to the Kyoto Protocol (CMP)*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, <http://unfccc.int/bodies/body/6397.php> (last visited Feb. 9, 2015).

29. *Calendar*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/meetings/unfccc_calendar/items/2655.php (last visited Feb. 9, 2015).

30. Aline Robert, *COP 21 negotiations kick off in Geneva*, EURACTIV.COM (Feb. 2, 2015, 4:59 PM), <http://www.euractiv.com/sections/eu-priorities-2020/cop-21-negotiations-kick-geneva-311948> (quoting Samantha Smith, leader of WWF’s Global Climate and Energy Initiative) (internal quotations omitted).

31. Cinnamon Carlane, *Notes From a Climate Change Pressure-Cooker: Sub-Federal Attempts at Transformation Meet National Resistance in the USA*, 40 CONN. L. REV. 1351, 1352 (2008).

32. *Climate Change*, THE WHITE HOUSE, <http://www.whitehouse.gov/energy/climate-change#energy-menu> (last visited Oct. 18, 2013).

33. *Id.*

34. *Global Greenhouse Gas Emissions Data*, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA), <http://www.epa.gov/climatechange/ghgemissions/global.html#four> (last visited Oct. 18, 2013).

the United States as the world's largest emitter of greenhouse gases.³⁵

Similar to international policymakers, U.S. federal lawmakers face problems of competing priorities, lack of momentum, and the rigidity of the existing legal structure. Despite national attention to the issue, former U.S. president George W. Bush's decision to back out of the Kyoto Protocol reflects the overarching difficulties that top-down policymakers face in addressing this unprecedented global problem. While recognizing that the United States is a major emitter of carbon, Mr. Bush stated that the targets in the Kyoto agreement would "have a negative economic impact, with layoffs of workers and price increases for consumers."³⁶ In addition to this competing economic priority, he further emphasized a "wait and see approach," stating that the United States would adjust "[its] approaches as science advances and technology evolves."³⁷ Additional problems that top-down policymakers face are the uncertainty of science and the disbelief that some in the United States harbor about climate change.

To date, the United States lacks comprehensive climate change legislation, and there is no specific statute that addresses climate change. Federal regulation that does exist has been shaped by slow-moving litigation.³⁸ In the landmark decision *Massachusetts v. E.P.A.*, the U.S. Supreme Court addressed whether the Clean Air Act's broad definition of air pollutant applied to greenhouse gas emissions.³⁹ In holding that it did,⁴⁰ the Court provided the potential for federal policymakers to implement new climate change regulation. However, Congress has not "added substantially to the very limited legislation directly addressing climate change, other than through investing in clean energy through the American Recovery and Reinvestment Act of 2009."⁴¹ This failure to act when given the opportunity to do so is another example of a lack of momentum.

Until recently, President Barack Obama did not move quickly on the issue of climate change. While recognizing that the issue is a real problem and that the United States is obligated to do something about it, he stated that he "think[s] the American people right now have been so focused, and will continue to be focused on our economy and jobs and growth, that if the message is somehow we're going to

35. *Id.*

36. David E. Sanger, *Bush Will Continue to Oppose Kyoto Pact on Global Warming*, N.Y. TIMES (June 12, 2001), <http://www.nytimes.com/2001/06/12/world/bush-will-continue-to-oppose-kyoto-pact-on-global-warming.html?pagewanted=all&src=pm>.

37. *Id.*

38. OSOFSKY & MCALLISTER, *supra* note 22, at 117.

39. *See Massachusetts v. E.P.A.*, 549 U.S. 497 (2007).

40. *Id.* at 532 (stating that "[b]ecause greenhouse gases fit well within the Clean Air Act's capacious definition of 'air pollutant,' we hold that EPA has the statutory authority to regulate the emission of such gases from new motor vehicles").

41. OSOFSKY & MCALLISTER, *supra* note 22, at 117.

ignore jobs and growth simply to address climate change, I don't think anybody is going to go for that. I won't go for that."⁴² These comments are an echo of a previous administration, which exemplify competing priorities, and again, a lack of momentum.

However, on June 25, 2013, President Obama announced the United States' Climate Action Plan, a policy initiative focusing on cutting domestic carbon pollution, preparing the U.S. for the impacts of climate change, and taking an international leadership role.⁴³ And, in a historic move on November 11, 2014, the United States made a joint announcement with China to set targets to reduce carbon pollution.⁴⁴ Although progress appears to be happening, it remains to be seen how these developments will evolve, as some politicians "have already denounced [President Obama's] domestic climate change policies as 'job-killing' regulations."⁴⁵

Comments on competing priorities reflect key reasons why local efforts have emerged from the bottom-up. The fact is that people are focused on climate change despite competing priorities, such as the economy and job-growth. And despite the law's rigidity, state-level and municipal-level actors are enacting legislation in the face of legal hurdles. Moreover, individual actors are building momentum through grassroots campaigns. In the next section, I provide examples of bottom-up policymaking successes as a background to the emergence of transnational networks.

II. While We Have Been Waiting: The Success of Bottom-Up Climate Change Policies

A. *Climate Change Policy at the State-Level: California*

Even though climate change is a global problem, state policymakers have recognized that a safe climate system is a priority within their jurisdiction. In response to the lack of federal regulation, the progressive state of California has

42. John M. Broder, *Obama on Climate Policy: Not Just Now, Thanks*, N.Y. TIMES (Nov. 16, 2012, 11:07 AM), <http://green.blogs.nytimes.com/2012/11/16/obama-on-climate-policy-not-just-now-thanks/>.

43. *Fact Sheet: President Obama's Climate Action Plan*, THE WHITE HOUSE (June 25, 2013), <http://www.whitehouse.gov/the-press-office/2013/06/25/fact-sheet-president-obama-s-climate-action-plan>.

44. *Fact Sheet: U.S.-China Joint Announcement on Climate Change and Clean Energy Cooperation*, THE WHITE HOUSE (Nov. 11, 2014), <http://www.whitehouse.gov/the-press-office/2014/11/11/fact-sheet-us-china-joint-announcement-climate-change-and-clean-energy-c>.

45. Coral Davenport and Mark Landler, *U.S. to Give \$3 Billion to Climate Fund to Help Poor Nations, and Spur Rich Ones*, N.Y. TIMES (Nov. 14, 2014), <http://www.nytimes.com/2014/11/15/us/politics/obama-climate-change-fund-3-billion-announcement.html>.

taken climate change into its own hands. In 2006, the California Legislature passed, and Governor Arnold Schwarzenegger signed, AB 32, the Global Warming Solutions Act of 2006.⁴⁶ This law established a comprehensive program to fight climate change by reducing all greenhouse gas emissions statewide and improving energy efficiency.⁴⁷ Very much like the Kyoto Protocol, the program endeavors to reduce emissions to 1990 levels by 2020.⁴⁸ To this end, the program utilizes a cap-and-trade emissions mechanism.⁴⁹

The fact that California has become a pioneer and a leader in emissions reductions should come as no surprise since the state, if seen as a separate country, is one of the top emitters in the world.⁵⁰ Yet, AB 32 is not without criticism. One scholar stated:

[T]he resort to state-level action is understandable, and perhaps predictable, given the U.S. government's decisions (so far) not to ratify the Kyoto Protocol and not to enact federal legislation regulating GHG [greenhouse gas] emissions. It is nonetheless well understood that these state-level efforts, even those of large states such as California, will have little impact on global emissions and hence little impact on global climate.⁵¹

However, this scholar also recognized the positive contributions that state-level action could yield, including technological innovation, alternative policy experimentation, and motivation for industry to support federal regulation.⁵²

Despite the criticism, California's AB 32 is momentous because it is the first program of its kind in the United States. AB 32 "shows the world that Americans recognize our responsibility to reduce global warming emissions and are finding ways to fight global warming at local and regional levels."⁵³ In addition, by leading the way, state-level policymakers serve to shift the normative trajectory of lawmaking and loosen its rigidity. In this respect, bottom-up policymakers are "a critical part of a larger-scale conversation"⁵⁴ on climate change.

46. *Assembly Bill 32 Overview*, CAL. ENVIRONMENTAL PROTECTION AGENCY AIR RESOURCES BOARD (Oct. 18, 2013), <http://www.arb.ca.gov/cc/ab32/ab32.html>.

47. *Id.*

48. *Id.*

49. *Id.*

50. GREGORY FREEMAN ET AL., *THE AB 32 CHALLENGE: REDUCING CALIFORNIA'S GREENHOUSE GAS EMISSIONS*, LOS ANGELES COUNTY ECONOMIC DEVELOPMENT CORPORATION 2 (Jan. 2008), available at <http://www.laedc.org/reports/TheAB32Challenge.pdf>.

51. Wiener, *supra* note 9, at 1963.

52. *Id.*

53. *California Passes Landmark Global Warming Bill*, UNION OF CONCERNED SCIENTISTS, <http://www.ucsusa.org/action/progress/california-passes-ab32.html> (last visited Oct. 18, 2013) (archived webpage accessed at http://www.archive-org-2012.com/org/u/2012-10-10_406195_35/Scientists-Urge-Senators-to-Restore-Scientific-Integrity-Union-of-Concerned-Scientists/).

54. Osofsky & Levit, *supra* note 8, at 433.

B. Climate Change Policy at the Local Level: Cities

While it may seem appropriate for California to enact climate change legislation given the state's size, it appears less appropriate for cities to take action due to the arguably small effect their actions would have. However, this argument cannot stand if one considers that cities (and towns) are on the frontline of climate change. For example, one scholar stated that “[g]iven the presence of over 89,000 local governments, most of which own and operate buildings, use vehicles, and maintain extensive indoor and outdoor lighting structures, among other things, the potential emissions reductions from increased energy efficiency is at least worth evaluating.”⁵⁵

Local leaders have recognized the importance of cities and have taken action to fight climate change. On the date that the Kyoto Protocol became law, Seattle Mayor Greg Nickels launched the U.S. Mayors Climate Protection Center initiative to advance the goals of the Kyoto Protocol “through [cities] actions ranging from anti-sprawl land-use policies to urban forest restoration projects to public information campaigns.”⁵⁶ To motivate cities, the organization recognizes cities’ climate change programs with “Best Practices” awards.⁵⁷ The following are examples of two cities’ emissions reduction programs, which highlight local policymaking pioneers.

In 2009, the U.S. Mayors Climate Protection Center awarded Denver, Colorado the “First-Place Award for a Large City” for its FasTraks Program.⁵⁸ FasTraks is a transit program aimed at expanding and connecting smart-growth housing choices with light rail, park and rides, transit stations, expanded bus service, and redevelopment.⁵⁹ The program is innovative because it “includes an unprecedented concentration of transit-oriented development [TOD] opportunities [with 51 of the 57 new stations region-wide having TOD potential], making this initiative a national model of regional cooperation.”⁶⁰

In 2009, Wilkes-Barre, Pennsylvania was the “First Place Small City Winner” for its Efficient Energy Service Program.⁶¹ This program, through a city-wide

55. Katherine A. Trisolini, *All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation*, 62 STAN. L. REV. 669, 694 (2010).

56. *U.S. Conference of Mayors Climate Protection Agreement*, U.S. CONFERENCE OF MAYORS CLIMATE PROTECTION CENTER (Oct. 18, 2013), <http://www.usmayors.org/climateprotection/agreement.htm>.

57. U.S. CONFERENCE OF MAYORS CLIMATE PROTECTION CENTER, *TAKING LOCAL ACTION: MAYORS AND CLIMATE PROTECTION BEST PRACTICES* (June 2009), available at http://www.usmayors.org/pressreleases/uploads/Climate_BestPractices061209.pdf [hereinafter *TAKING LOCAL ACTION*]. The data for year 2009 is the most recent data available.

58. *Id.* at 5.

59. *Id.*

60. *Id.* at 6.

61. *Id.* at 7.

review of operating costs, aims to reduce carbon emissions by making energy improvements, including compact fluorescent lamps in city buildings, the replacement of lighting in the city's public square and in all public parking structures, and the replacement of all traffic signalization lamps with LED lamps.⁶² This city's program is unique in that it has improved the quality of life for its residents.⁶³ According to its Mayor, "[t]he City of Wilkes-Barre was a community that was thriving during the early 1900's anthracite period in history. Many residents' great grandparents, grandparents and relatives were coal miners and made a comfortable living during the era when 'coal was king.'"⁶⁴ Now, the city's successes are serving as a model for other municipalities.

How can local policies and programs make any difference on a global scale? "From a policy perspective, ignoring local governments' collective capacity to reduce emissions may cause the state and federal governments to overlook ways to facilitate proven and sometimes quick reductions that can be accomplished with existing technology and established local bureaucracies."⁶⁵ Examples of local policy efforts set the stage for transnational networks to combat climate change. Networks stitch together the efforts of policymakers, organizations, and individual grassroots actors, broadening their reach beyond their jurisdictions to achieve global scale. With a deeper understanding of these strengths in mind, the next section addresses the critics' legitimate skepticism of local efforts on climate change, and by implication, transnational networks.

III. In Defense of a Global Regime: The Limits of Bottom-Up Climate Change Policies

Local efforts to combat climate change face several limitations. Because networks are comprised of local actors, transnational networks must be able to address these limitations as well. The first challenge is the problem of scale—the idea that a global problem requires a global solution. Intermeshed within this first difficulty are economic and political issues, which are mainly summarized as a "normative debate about whether, in the absence of a climate treaty, major sources

62. *Id.*

63. TAKING LOCAL ACTION, *supra* note 57, at 8 (stating that "during the past 10 years there has tremendous community revitalization and economic growth in the City of Wilkes-Barre" and that the "city believes [that] by taking on important public projects, such as [its] efficient energy service program, it can be the catalyst to encourage other businesses and communities to do the same").

64. *Id.*

65. Trisolini, *supra* note 55, at 693.

have a duty to reduce their carbon emissions.”⁶⁶ The second challenge is the existing legal framework within which local actors are situated. This section broadly addresses both sets of challenges.

A. *The Normative Debate: Economic and Political Problems*

“Think globally, act globally”⁶⁷ remains the strongest argument against local efforts to combat climate change. This notion originates in economic theory, rooted in the idea that “local action is not well suited to regulating mobile global conduct yielding a global externality.”⁶⁸ Scholars who pose this concern argue legitimately that “unilateral actions can have little impact on the problem, and so it makes sense to await a treaty rather than put in place expensive but unhelpful regulations.”⁶⁹ Basically, policymakers face the undeniable problem of cost. Moreover, critics argue that local efforts can lead to perverse results. These undesirable results occur in the form of “leakage” of emissions, where carbon “source activities in regulated areas ‘leak’ to unregulated areas over time.”⁷⁰ Leakage operates in three ways: through (1) a price effect; (2) a “slack off” effect; and (3) a capital relocation effect. A brief explanation of these three modes of leakage follows.

In the first leakage scenario—the price effect—one jurisdiction begins to regulate emissions, for example, by implementing forest protection regulation. This action lowers prices in the global market, which in turn, increases the demand for the carbon-emitting product in another jurisdiction that does not regulate emissions.⁷¹ The emissions that would have occurred in the first jurisdiction now occur in the unregulated jurisdiction, leaking from, for example, Country A to Country B.⁷² Thus, the first jurisdiction’s attempt to fight climate change is negated by the leakage of emissions through the price effect.

The second scenario—the “slack off” effect—is conceptualized by the idea of the “free-rider.”⁷³ If one jurisdiction restricts its emissions, contributing to an overall

66. Farber, *supra* note 2, at 361 (citing Joakim Sandberg, “My Emissions Make No Difference”: *Climate Change and the Argument from Inconsequentialism*, 33 ENVTL. ETHICS 229 (2011) (“exploring the ethical arguments in-depth”).

67. See Wiener, *supra* note 9, at 1962-64 (arguing that local actions are undesirable because of normative disadvantages, even assuming that forestalling climate change is of the utmost importance).

68. *Id.* at 1962.

69. Farber, *supra* note 2, at 361 (citing ERIC A. POSNER & DAVID WEISBACH, *CLIMATE CHANGE JUSTICE* (2012)).

70. Wiener, *supra* note 9, at 1967.

71. *Id.* at 1967-68.

72. *Id.*

73. *Id.* at 1969.

safer climate, another jurisdiction will not have to spend to abate its own emissions, since it benefits from the first jurisdiction's abatement.⁷⁴ "Hence, as some states emit less, other states rationally emit more."⁷⁵ As such, the first jurisdiction's attempt at combating climate change is, again, negated by the leakage of emissions through the "slack off" effect.

The third scenario is the capital relocation effect.⁷⁶ Capital relocation occurs when, for example, "restrictions on emissions in Country A induce emissions-intensive industries to uproot and relocate facilities to unregulated Country B in order to produce their products at lower cost and export their products to world markets (including back to the regulated country)."⁷⁷ Thus, the net effect of the local regulation is zero reductions in emissions, or perhaps, which some critics fear, an increase in emissions in a less regulated jurisdiction.

The three concepts of leakage illustrate how lack of uniform regulations frustrates the global market. In addition, lack of uniform regulations imposes significant costs on jurisdictions and on industries.⁷⁸ Once again, the problem of cost arises for policymakers.

The general weakness of state collaboration [or local action] in environmental policy can be understood in economic terms—transaction costs to coordinate at regional levels are high, and the benefits of doing so have seemed low. So part of the inquiry is, "What is different about climate change?" Why are transaction costs surmountable in climate change policy?⁷⁹

In response to critics' arguments, leakage is indeed a legitimate concern, but "the magnitude of leakage is clearly subject to considerable uncertainty."⁸⁰ Studies are unable to show with certainty to what degree leakage will affect climate change.⁸¹ Contrary to the critics' worst fears, leakage could have positive effects, for example, by creating a global consensus to regulate emissions, whereby "a virtuous cycle could emerge in which emission reduction efforts become contagious and mutually reinforcing."⁸² Moreover, other positive effects could happen. First, fearing the costs of operating under multiple regulations, leakage could spur

74. *Id.*

75. *Id.* at 1968.

76. Wiener, *supra* note 9, at 1967.

77. *Id.* at 1968.

78. Farber, *supra* note 2, at 374.

79. Lesley K. McAllister, *Regional Climate Regulation: From State Competition to State Collaboration*, 1 SAN DIEGO J. CLIMATE & ENERGY L. 81, 93 (2009).

80. Farber, *supra* note 2, at 372.

81. *Id.* at 371 ("The IPCC [Intergovernmental Panel on Climate Change] has criticized studies showing high leakage rates for assuming obtuse policy designs.").

82. *Id.* at 373.

industry to support uniform regulation and drive climate change policy.⁸³ Second, “early adopters of climate policies provide tests of policy effectiveness and the opportunity for learning from policy flaws.”⁸⁴ Policymakers can learn from the experiences of climate change pioneers, thereby reducing the costs and risks of the policies they adopt. Third, “leakage probably does not severely undermine the benefits of well-designed mitigation measures, particularly if the effort involves a large economy or group of economies.”⁸⁵ In sum, leakage should not undermine the power of transnational networks.

B. The Legal Challenges: The Plaintiff's Problem and Preemption

In addition to economic and political problems, critics of local efforts to combat climate change argue that the existing legal framework prevents these efforts from being useful, efficient, and effective.⁸⁶ In their view, local efforts to combat climate change are symbolic and not substantive,⁸⁷ meaning local efforts “persuade the public that something is being done without paying the costs of genuine mitigation.”⁸⁸

In the United States, local actors are faced with several obstacles within the legal framework. First, the judicial system thwarts climate change because bringing an action against a carbon emitter is very difficult. A plaintiff who has been harmed by the effects of climate change is up against considerable challenges. The plaintiff must establish standing, “fend off preemption by the Clean Air Act, establish the elements of negligence, deflect the political question doctrine, and find a remedy for future injuries that the court will be willing to award.”⁸⁹ The second challenge the legal framework presents is existing laws. For example, if policymakers at the state-level decide to regulate emissions, they face challenges under the Dormant Commerce Clause, the Dormant Treaty Clause, the Interstate Compacts Clause, as well as under theories of preemption by federal statutes.⁹⁰ In sum, the legal hurdles are significant.

Despite these obstacles, critics acquiesce that they can be overcome to an extent.⁹¹ As previously discussed, California has become a state-level climate change pioneer by regulating carbon emissions through AB 32. Although the state

83. *Id.* at 374.

84. *Id.* at 375.

85. *Id.* at 372.

86. Wiener, *supra* note 9, at 1963.

87. Farber, *supra* note 2, at 360.

88. *Id.* at 360-61.

89. Wiener, *supra* note 9, at 1964-65.

90. *See id.* at 1966-73 (discussing these obstacles in-depth).

91. *Id.*

has faced legal challenges, the cap-and-trade market has begun and will serve as evidence for future policymakers. Moreover, even critics recognize the positive results of bottom-up climate change action, such as technological innovation, experimentation with policy design, and “raising the specter of a patchwork of inconsistent state regulations as a political gambit to motivate industry to support broader federal regulation.”⁹² These positive developments support the viability of transnational networks.

In contemplating the arguments against local efforts, critics should consider what happens if we await a global treaty. In an unregulated environment, the use of fossil fuels will grow, which in turn, will lead to unrestrained carbon emissions.⁹³ At some point, when the harms become too great to ignore, policymakers will be faced with implementing sharper emissions reductions that may not be technologically feasible. Untested mitigation and adaptation efforts become extremely risky at a larger scale, increasing the likelihood that they will fail.⁹⁴ As the climate system becomes increasingly unsafe, people become less confident in their leaders, and political systems become unstable. Thus, waiting for a treaty is counterproductive when the alternative strategy—transnational networks—is available now. Transnational networks can mitigate critics’ anxieties because, through collaboration, networks stitch together local actions so they reach, in scale, the global regime that critics desire. As such, transnational networks *are* a way to “think globally, act globally.”⁹⁵ The next section emphasizes the importance of transnational networks by illustrating the rich contributions that existing networks have made in the fight for a safe climate system.

IV. Reaching Scale: The Emergence of Climate Change Networks at a Transnational Level

Why does climate change need networks? Through a transnational approach, local policymakers and individual actors can surmount the hurdle of scale. In Hari M. Osofsky and Janet Koven Levit’s article, *The Scale of Networks?: Local Climate Change Coalitions*, the scholars make a “preliminary exposition of bottom-up networking.”⁹⁶ They argue that,

Greenhouse gas emissions and their impacts are infused with inequality and the specific dynamics of place. To get at this problem, we not only need efforts at every scale, but we also have

92. *Id.* at 1963.

93. *Id.*

94. *Id.*

95. *See* Wiener, *supra* note 9, at 1961.

96. Osofsky & Levit, *supra* note 8, at 414.

to be able to put them together. By focusing on the “bottom” and its embeddedness in networks simultaneously, a clearer picture of [these] cities as climate regulators emerges.⁹⁷

Transnational climate change networks have formed based on common actors, interests, experiences, demands, and exigencies.⁹⁸ They have appeared as more formal networks, such as the Climate Action Network, C40, the World Mayors’ Council, and the U.S. Conference of Mayors. Networks have also taken the form of grassroots organizations, such as the Internet-based activist group 350.org. Highlighting the details of some of these networks illustrates why they are an important presence in the climate change conversation and solution.

Networks of local policymakers have achieved global scale and considerable heft. For example, the transnational network C40 is a “global network of large cities taking action to address climate change by developing and implementing policies and programs that generate measurable reductions in both greenhouse gas emissions and climate risks.”⁹⁹ C40 was created in 2005 after former Mayor of London Ken Livingstone convened leaders from eighteen megacities “to pursue action and cooperation on reducing greenhouse gas emissions.”¹⁰⁰ C40 is currently comprised of 58 cities making up 18 percent of the global GDP.¹⁰¹ The value of this network is not only its global scale, but also its mission to “empower cities to connect with each other and share technical expertise on best practices.”¹⁰² To this end, the network provides useful services that maximize a city’s emissions reduction efforts, including (1) direct assistance through on-the-ground support staff and expert consultative services; (2) peer-to-peer exchange; and (3) research, data, knowledge, and communication management services that identify problems and successes, and measure the progress of the network.¹⁰³ In addition, this network provides valuable models for smaller cities and localities.

Leaders are not only networking to share information and services, but are coming together to create voluntary agreements to fight climate change. In 2010, more than 138 mayors adopted the Global Cities Covenant on Climate, The Mexico City Pact.¹⁰⁴ The Mexico City Pact acknowledges that half of the world’s

97. *Id.* at 434.

98. *Id.* at 429.

99. *History of C40*, C40 CITIES CLIMATE LEADERSHIP GROUP, www.c40.org/history (last visited Mar. 16, 2015).

100. *Id.*

101. *Id.*

102. *C40 Cities: Make a Difference*, C40 CITIES CLIMATE LEADERSHIP GROUP, www.c40.org/cities (last visited Mar. 16, 2015).

103. *What We Do For Cities*, C40 CITIES CLIMATE LEADERSHIP GROUP, www.c40.org/what_we_do_for_cities (last visited Mar. 16, 2015).

104. World Mayors Summit on Climate, Mexico City, Mex., Nov. 21, 2010, *The Mexico City Pact ‘Global Cities Covenant on Climate’ and the carbonn® Cities Climate Registry: Local climate action the*

population lives in cities, this number is on the rise, and carbon emissions from cities account for more than 70 percent of global emissions.¹⁰⁵ Moreover,

Since our cities are at increased risk of the devastating consequences of global climate change, particularly affecting the urban poor, many cities around the world, despite limited budgets and capacities, are already developing and implementing local adaptation strategies to address problems caused by climate change, even in the absence of a binding global commitment on adaptation.¹⁰⁶

The Mexico City Pact encourages signatories to report commitments, together with greenhouse gas inventories and relevant actions, to an international registry, the carbonn[®] Cities Climate Registry (cCCR).¹⁰⁷ The signatories' commitments were recognized as exemplary voluntary commitments at Rio+20 in June 2012.¹⁰⁸ The Mexico City Pact is an example of a transnational network producing a concrete benefit outside of the traditional international framework. Furthermore, it is valuable because it is committed to "transparency, accountability and comparability of local climate action."¹⁰⁹

Politicians are not the only actors coalescing to achieve global scale. The Climate Action Network International (CAN-International) is "a worldwide network of over 700 non-governmental organizations (NGOs) in more than 90 countries, working to promote government and individual action to limit human-induced climate change to ecologically sustainable levels."¹¹⁰ CAN-International is subdivided into regional networks or "nodes," for example, CAN-Australia and CAN-North Africa, each of which is responsible for its own governance, policy, and advocacy within the region.¹¹¹ The network facilitates flexibility and decision-making appropriate for the relevant region, while encouraging the sharing of information at a global scale. The value of this network is a singular, concerted effort toward the same goal through "coordinated development of NGO strategy"¹¹²

world can count on (2010), available at https://unfccc.int/files/conference_programme/application/pdf/mxcpact_cccr_final.pdf.

105. *Id.* at 1.

106. *Id.*

107. *Id.* at 3.

108. *Rio+20 closes today; Mexico City Pact and cCCR upheld as examples of voluntary commitments*, INT'L COUNCIL FOR LOC. ENVTL INITIATIVES (June 23, 2012), [http://cid215z1180.hd37.hosting.punkt.de/index.php?id=1487&tx_ttnews\[pointer\]=6&tx_ttnews\[pS\]=1299824006&tx_ttnews\[tt_news\]=4880&tx_ttnews\[backPid\]=1556&cHash=6e5f595757](http://cid215z1180.hd37.hosting.punkt.de/index.php?id=1487&tx_ttnews[pointer]=6&tx_ttnews[pS]=1299824006&tx_ttnews[tt_news]=4880&tx_ttnews[backPid]=1556&cHash=6e5f595757).

109. *Id.*

110. *About CAN*, CLIMATE ACTION NETWORK INT'L, www.climatenetwork.org/about/about-can (last visited Mar. 16, 2015) [hereinafter *About CAN*].

111. *CAN Regional and National Networks*, CLIMATE ACTION NETWORK INT'L, www.climatenetwork.org/about/can-regional-networks (last visited Mar. 16, 2015).

112. *About CAN*, *supra* note 110.

and information sharing.

In addition to the more formal organizations discussed above, networks of “people-power” have emerged. The international grassroots movement 350.org is an Internet-based organization that utilizes “online campaigns, grassroots organizing, and mass public actions . . . led from the bottom up by thousands of volunteer organizations in over 188 countries.”¹¹³ The network takes its name from climate scientists’ recommendation for climate safety—the reduction of the amount of carbon dioxide in the atmosphere from the current levels of around 400 parts per million to 350 parts per million.¹¹⁴ To achieve this goal, the network provides resources for individuals to campaign, for example, toward fossil fuel divestment or against the Keystone Pipeline XL.¹¹⁵ In addition, the network provides valuable services, such as hosting Climate Leadership Workshops, highlighting the “human face” of the effects of climate change through access to online videos from around the world, and providing a forum for like-minded individuals to take action.¹¹⁶ The value of this network is its accessibility; through its easily and instantly accessible online tools, it provides global-scale education and collaboration through “people-powered mobilization.”¹¹⁷

Transnational networks have contributed to the fight against climate change in many valuable ways. But can networks form a viable response to the problem of the global common good? In order to better understand how transnational networks can overcome this issue, the next section delves into social interaction theoretical research by respected economic scholars.

V. In Favor of Transnational Networks: Social Interaction Theories

Climate change is a classic “tragedy of the commons” problem.¹¹⁸ In the context of this tragedy, the common good is the global climate system. Over the past

113. *What We Do*, 350.ORG, <http://350.org/about/what-we-do/> (last visited Mar. 16, 2015).

114. *The Science*, 350.ORG, <http://350.org/about/science/> (last visited Mar. 16, 2015).

115. *We’re Building A Global Climate Movement*, 350.ORG, <http://www.350.org/#> (last visited Mar. 16, 2015).

116. *Id.*

117. May Boeve, *2011 Annual Report – Letter*, 350.ORG (Dec. 2011), <http://archive.350.org/2011-annual-report-letter-1>. For an overview of key campaign efforts see also *2011 Annual Report - Campaign Highlights*, 350.ORG, <http://archive.350.org/2011-annual-report-campaign-highlights> (last visited Oct. 18, 2013).

118. See Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (Dec. 13, 1968), available at <http://www.sciencemag.org/content/162/3859/1243.full.pdf?sid=1ce3be91-e149-44b2-a6d5-b9bccd947878>. The tragedy of the commons is a problem where individuals, acting rationally and independently, deplete a shared good. Individuals deplete the shared good despite their knowledge that the depletion of the shared good is against their best interests in the long-term. See generally *id.*

century, we have been polluting the common good at unprecedented levels, despite our knowledge that we are causing great harm to the climate system.¹¹⁹ As previously mentioned, it is difficult to argue that climate change does not require global cooperation because of the difficulty of regulating each individual polluter around the world. Thus, “climate change is a collective action problem par excellence.”¹²⁰ However, international cooperation has been impossible so far. How can transnational networks transcend the tragedy of the commons?

Theories of social interaction are useful for explaining why transnational networks are part of the successful solution to climate change. This section first explains Mancur Olson’s collective action theory, not only to highlight why international governance has failed, but also to explain why it is “equally useful in predicting future cooperation.”¹²¹ Next, this section briefly introduces Peter Haas’s concept of “epistemic communities”¹²² and discusses how these communities mobilize policymakers toward collective action. Finally, the section introduces Elinor Ostrom’s institutional collaboration theory, where group members “in an interdependent situation can organize and govern themselves to obtain continuing joint benefits when all face temptations to free-ride, shirk, or otherwise act opportunistically.”¹²³ These three theoretical frameworks provide strong bases for identifying why transnational networks are a viable response to the global problem of climate change.

A. Collective Action Theory and Epistemic Communities

In essence, social interaction theories describe how groups operate. In his work *The Logic of Collective Action*, Mancur Olson dismisses the optimistic presumption that individuals with common interests would voluntarily act to further those interests.¹²⁴ Olson defines a group as “a number of individuals with a common interest.”¹²⁵ In the context of climate change, our common interest is a safe climate system, or at least one in which humanity can survive.

What problems do large groups face when they act collectively? Three major factors prevent large groups from undertaking collective action.¹²⁶ First, in a large

119. See IPCC, *supra* note 1, at 2.

120. Paul G. Harris, *Collective Action on Climate Change: The Logic of Regime Failure*, 47 NAT. RESOURCES J. 195, 196 (2007).

121. *Id.* at 221.

122. Peter M. Haas, *Introduction: Epistemic Communities and International Policy Coordination*, 46 INT’L ORG. 1 (1992).

123. ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION 29 (1990).

124. MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION 1 (1965).

125. *Id.* at 8.

126. *Id.*

group, each individual receives a very small piece of the benefit.¹²⁷ Second, individuals will be unlikely to pay for the cost of the good because they receive very little of the benefit.¹²⁸ Third, for an international group, even if in perfect consensus on the benefit, it will be difficult and costly to operate because of its size.¹²⁹ In the context of climate change, the benefit is reduced emissions, the cost stems from, *inter alia*, the implementation of regulations, and the fact that the world's nations are numerous and not in perfect consensus on the benefit. In sum, Olson's collective action theory sheds light on the problems inherent in international policymaking.

What are collective action theory's implications for transnational networks? Olson's theory suggests that collective action can occur if an external authority imposes a sanction, incentive, or even "[o]ther moral, psychological, or social incentives."¹³⁰ Moreover, "[g]roups can use negative inducements against those individuals not joining in action and give positive inducements or rewards to those who do."¹³¹ Other incentives like "prestige, respect, and friendship"¹³² or "ostracism . . . may help push a non-participant to join the group and contribute toward achievement of the collective good."¹³³ In addition, Olson suggests that mass media propaganda can also motivate a group to preserve the collective good.¹³⁴ He cautions that these incentives will only work in smaller groups or in a larger group of interconnected smaller groups.¹³⁵

Under Olson's collective action theory, the disadvantages of large groups explain why a top-down international regime likely will not be effective. With respect to international policymaking and incentives, Olson's theory holds true since the Kyoto Protocol's compliance mechanism and enforcement branch arguably have not provided strong enough negative incentives to facilitate collective action.¹³⁶ On the other hand, Olson's research supports the reason why smaller groups transcend boundaries. Networks such as C40 and CAN-International are able to act collectively because of their ability to function as an external authority for their members. These transnational networks share critical information, such as

127. *Id.*

128. *Id.*

129. *Id.*

130. Harris, *supra* note 120, at 203.

131. *Id.*; see also OLSON, *supra* note 124, at 60-65.

132. Harris, *supra* note 120, at 203.

133. *Id.*

134. OLSON, *supra* note 124, at 63 n.18.

135. Harris, *supra* note 120, at 203.

136. *An Introduction to the Kyoto Protocol Compliance Mechanism*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/kyoto_protocol/compliance/items/3024.php (last visited Oct. 18, 2013).

transparent scientific data on climate change and potential solutions to common issues, and create interconnectedness and accountability toward members, which act as incentives to preserve the common good.

Similarly, Peter Haas's concept of "epistemic communities"¹³⁷ provides support for the success and potential of transnational networks. Epistemic communities are transnational professional networks of diverse experts who ally to share their expertise, frame problems for policymakers, and identify potential solutions.¹³⁸ These communities provide policymakers with their technical expertise, authority, and evidence-based knowledge. Haas states that epistemic communities are groups of "scientists who set the international agenda and [have] directed their own states toward support of international efforts and toward the introduction of strong pollution control measures at home."¹³⁹ According to Haas, "the success of epistemic communities . . . can be largely attributed to their ability to increase 'governmental learning,' a process whereby scientists and ecologists informed domestic and foreign policy makers about the extent of the problem."¹⁴⁰ Thus, because of their inherent transnational nature and their ability to bring evidence-based knowledge into the policymaking conversation, epistemic communities hold a powerful tool that transnational networks can use to their great advantage—the tool of information-sharing—one that both Haas and Olson suggest is critical for collective action.

While collective action tools such as incentives and information-sharing work well within smaller groups, what are the implications for groups of policymakers constrained by the appropriate exercise of their authority on a larger scale? The next section examines Elinor Ostrom's social interaction theory on institutional collaborations, and provides a basis for transnational networks to operate in a safe space to avoid the tragedy of the commons.

B. "Governing the Commons"

In her work *Governing the Commons: The Evolution of Institutions for Collective Action*, Elinor Ostrom explores how groups are able to escape the tragedy of the commons.¹⁴¹ Her findings assert that a group of individuals can collaborate around the challenges of the common good to "adopt coordinated strategies to

137. Haas, *supra* note 122, at 3.

138. *Id.* at 2-3.

139. See generally Peter M. Haas, *Do Regimes Matter? Epistemic Communities and Mediterranean Pollution Control*, 43 INT'L ORG. 377, 384 (1989) (discussing epistemic communities and how this type of collective action successfully addressed pollution in the Mediterranean sea).

140. Harris, *supra* note 120, at 206 (internal citation omitted).

141. See OSTROM, *supra* note 123.

obtain higher joint benefits or reduce their joint harm.”¹⁴² Her argument is based on field studies of groups, each of which had either successfully or unsuccessfully dealt with its own tragedy of the commons.¹⁴³

Ostrom stresses that a “one-size-fits-all” approach to avoiding the tragedy of the commons cannot work and advocates for a multi-faceted approach by asserting that:

[Instead of] a single solution to a single problem, I argue that many solutions exist to cope with many different problems. Instead of presuming that optimal institutional solutions can be designed easily and imposed at low cost by external authorities, I argue that “getting the institutions right” is a difficult, time-consuming, conflict-invoking process.¹⁴⁴

Policymakers and transnational networks can learn from Ostrom’s work in order “to govern the commons”¹⁴⁵ at a global scale. Although Ostrom’s research is specific to collaborations formed around specific places, such as irrigation communities in the Philippines and fisheries in Sri Lanka, her theoretical framework is not limited to a specific jurisdiction. Along this line, scholar Jonathan Rosenbloom has applied Ostrom’s work to investigate “collaborations based on commonalities, including similar issues and challenges, as opposed to geographical convenience.”¹⁴⁶ He recognized that local governments are on the frontline of the difficulties that climate change presents, and yet they are constrained by the jurisdictional challenge of not being able to “cause a direct impact beyond their borders.”¹⁴⁷ Despite this impediment, Rosenbloom argues that local governments can “implement efficient and productive strategies to manage multi-jurisdictional challenges . . . without departing from existing legal paradigms”¹⁴⁸ to become part of the successful solution to climate change.

Ostrom’s theoretical framework supports the need for transnational networks, which can experiment with climate change policy, because the “one-size-fits-all” approach will not work. She asserts that effective collaboration requires “reliable information about time and place variables as well as a broad repertoire of culturally acceptable rules.”¹⁴⁹ In addition, Ostrom argues that institutions are an intermeshing of public and private actors “rather than existing in isolated

142. *Id.* at 38-39.

143. *Id.* at 14, 90 (identifying eight design principles common to successful collaborations).

144. *Id.* at 14.

145. *Id.*

146. Jonathan Rosenbloom, *New Day at the Pool: State Preemption, Common Pool Resources, and Non-Place Based Municipal Collaborations*, 36 HARV. ENVTL. L. REV. 445, 448 (2012).

147. *Id.* at 447.

148. *Id.* at 448.

149. OSTROM, *supra* note 123, at 14.

worlds.”¹⁵⁰ To this end, transnational networks contribute to future effective policymaking because the networks provide evidence of policymaking successes and failures.

In sum, social interaction theories from Olson, Haas, and Ostrom illuminate the strengths of transnational networks. From these scholars’ theoretical frameworks, criteria for successful collective action emerge, which include “[i]ncentives, disincentives, information, leadership, small groups, and iterated diplomatic engagement.”¹⁵¹ Indeed, transnational networks have been working because they embody these criteria. Moreover, through these social interaction theories, the powers of transnational networks materialize: (1) the motivation to collaborate around a common good; (2) information-sharing, accuracy, and accountability; (3) laboratories for policy experimentation and risk-taking; and (4) the momentum to create effective policies now. Transnational networks can capitalize on these powers to overcome the legitimate criticisms they face.

VI. Why We Cannot Wait: The Value of Transnational Networks

Why does the fight against climate change need networks? This paper has aimed to set out the reasons why policymakers should support transnational networks as a critical part of the climate change conversation and solution. Climate change will affect every nation, and to a degree, every individual on the planet. A bottom-up networking approach harnesses the powers of all actors, including political leaders, NGOs, and individuals, and builds intense and much-needed momentum. This section identifies the main values and positive contributions that transnational networks embody and create.

First, transnational networks provide an alternative forum for policymakers to discuss issues of concern without the pressures or rigidity of traditional lawmaking. The mayors of Denver, Colorado and Wilkes-Barre, Pennsylvania “have no power to create nation-state consent. But as mayors around the world increasingly communicate and their personal identities become more international, have they become part of the elite decision makers?”¹⁵² One should deem that they have.

Second, crucial to the conversation, transnational networks provide a direct way of sharing information and experiences. For local policymakers, an organization like the U.S. Conference of Mayors provides a forum to share similar experiences. A large city in Colorado has many environmental experiences directly relevant to a

150. *Id.* at 15.

151. Harris, *supra* note 120, at 210.

152. Osofsky & Levit, *supra* note 8, at 434.

small city in Pennsylvania, such as transit, housing, waste, and drinking water issues. Similarly, a town in the United States has many of the same environmental issues that a town in Mexico faces. It is clear that international and national policymakers have a poor appreciation of this fact based on the lack of momentum. Transnational networks are valuable because they eliminate the traditional filter that applies to the top-down approach and they equalize information-sharing between entities not traditionally thought of as equals.

Third, transnational networks create more institutions to deal with climate change. Arguably, if all the planet had was the Kyoto Protocol, the climate system would be facing a much more intense danger than it does now. Transnational networks “recognize the multiple components of international lawmaking, but particularly emphasize the on-the-ground, smaller-scale details as a critical part of a larger-scale conversation and vice versa.”¹⁵³ In this regard, CAN-International is a strong example of NGOs coalescing to build scale and momentum, and is channeling the direction of the climate change conversation by driving international action. For example, the network has made the voice of its 700 participants heard by speaking at the 18th Conference of the Parties to the UNFCCC at Doha.

Fourth, transnational networks function to educate individuals, communities, and nations. Networks educate others not only about their own perspectives on climate change and what they do, but they also provide a forum for science transparency. For example, 350.org’s website includes educational resources, videos, fact sheets, organizing guides, and project packs to get interested individuals on their way to starting a grassroots movement. Moreover, the organization provides an accessible introduction to the science of climate change and equalizes the information for all.

Finally, these values are not the only positive contributions that networks make. Most importantly, transnational networks allow for better climate change policy because they are taking action *right now* and not waiting for a global regime. Through their peer-to-peer interactions, transnational networks provide a clearer picture about what needs to be done to ensure a safer climate system.

Conclusion

We cannot wait for a global climate regime.

In one lifetime our increasingly interconnected and interdependent economic, social, cultural, and political systems have come to place pressures on the environment that may cause fundamental

153. *Id.*

changes in the Earth system and move us beyond safe natural boundaries. But the same interconnectedness provides the potential for solutions: new ideas can form and spread quickly, creating the momentum for the major transformation required for a truly sustainable planet.¹⁵⁴

Climate change mitigation has failed to occur at a measurable level. Adaptation efforts will have to happen much more quickly in areas that have contributed the least to climate change. By allowing a space for transnational networks to thrive and by valuing these networks as an integral part of the solution to climate change, we ensure that climate change policies have, at the very least, a wholehearted chance at addressing the failures of the top-down approach that has been employed so far. What have we got to lose? Transnational networks are a viable solution to climate change policy, and the best shot we have.

154. International Council for Science, Planet Under Pressure Conference, Mar. 26-29, 2012, London, U.K., *State of the Planet Declaration, Planet Under Pressure: New Knowledge Towards Solutions 1* (2012) (declaration by Lidia Brito & Mark Stafford), available at http://www.planetunderpressure2012.net/pdf/state_of_planet_declaration.pdf.