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Colorado Journal of International Environmental Law and Policy

Volume 23, Number 2 Summer 2012

Table of Contents

Articles

Notes & Comments

Errata

The *Colorado Journal of International Environmental Law and Policy* issue Vol. 23, No. 1 (2012) contained a substantive error in *Free Market Environmentalism: Desalination as a Solution to Limited Water Resources in Northern Chile's Mining Industry*. At present, Chile has a Ministry of the Environment, which was created under *Ley* 20.417 and replaced Chile's National Commission of the Environment (identified as "CONAMA" in the note).

Articles

Subnational Climate Mitigation Policy: A Framework for Analysis

Gabriel Weil*

TABLE OF CONTENTS

* Gabriel Weil holds a J.D., *cum laude*, from the Georgetown University Law Center (2011), three Bachelor of Arts in Integrated Science, Physics, and Political Science from Northwestern University (2008), and is an Institute Associate at the Georgetown Climate Center. Remarks and comments can be sent to the author at gaw22@law.georgetown.edu. This Article is a modified version of a paper submitted for credit in Vicki Arroyo's climate change law seminar. Thanks to Professor Arroyo and my colleague Gabe Pacyniak for their input, guidance, and support during the writing process.

I. INTRODUCTION

In the United States ("U.S."), federal policies designed to reduce greenhouse gas ("GHG") emissions have been modest and piecemeal. The recent failure of the 111th Congress to pass comprehensive climate legislation combined with the political fallout of that effort and the subsequent 2010 midterm elections suggest that ambitious federal legislation is unlikely to be enacted in the near future.[1] The Environmental Protection Agency ("EPA") will continue to press forward with regulation under the Clean Air Act pursuant to authority granted in *Massachusetts v. E.P.A*. and the subsequent Endangerment Finding.[2] These regulatory measures, however, will not be sufficient to bring about the scale of GHG emissions reductions that would be required of the U.S. as part of any global effort to stabilize atmospheric GHG concentrations at a tolerable level.[3] Moreover, the EPA's regulatory authority is under threat, with a bevy of proposals to block, limit, or delay the EPA's action gaining some traction in Congress.[4] President Obama has pledged to veto any bill that strips the EPA of its authority to regulate GHGs and a veto-proof congressional coalition is unlikely, but it is possible that such a measure could be attached to a bill that the President feels compelled to sign or that he will be replaced in the 2012 election.[5] In any case, there is little political will for further action at the federal level.

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1. Ryan Lizza, *As the World Burns: How the Senate and the White House Missed their Best Chance to Deal with Climate Change*, THE NEW YORKER, Oct. 11, 2011, *available at* http://www.newyorker.com/reporting/2010/10/11/101011fa_fact_lizza.

2. *Massachusetts v. EPA*, 549 U.S. 497 (2007); Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, Final Rule, 74 Fed. Reg. 66,496 (Dec. 15, 2009) (to be codified at 40 C.F.R. ch. 1).

3. *See* U.N. Climate Change Conference, Dec. 7–18, 2009, Copenhagen Accord, U.N. Doc. FCCC/CP/2009/L.7 (Dec. 18, 2009) [hereinafter Copenhagen Accord]; *see generally* NICHOLAS M. BIANCO & FRANZ T. LITZ, WORLD RESOURCES INSTITUTE, REDUCING GREENHOUSE GAS EMISSIONS IN THE UNITED STATES USING EXISTING FEDERAL AUTHORITIES AND STATE ACTION, *available at* http://pdf.wri.org/reducing_ghgs_using_existing_federal_authorities_and_state_action.pdf.

4. *Congress Pushes to Strip EPA Authority to Regulate Greenhouse Gases,* OMB Watch, Mar. 22, 2011, http://www.ombwatch.org/node/11567; Nicolas Viavant, Marc Levitt, & Kathryn Zyla, *Bill Comparison: EPA Authority Regarding Greenhouse Gases (GHGs)*, Georgetown Climate Center (2011), *available at* http://www.georgetownclimate.org/sites/default/files/GCC_GHG_Reg_Authority_Bill_Comparison_Apr_1_2011%20(1).pdf.

5. *White House: Obama would veto bill stopping EPA*, REUTERS.COM, Apr. 5, 2011, http://af.reuters.com/article/energyOilNews/idAFN0514426120110405?sp=true (last visited Mar. 15, 2012).

Many state governments have stepped in to fill the void left by the lack of aggressive federal climate mitigation policies.[6] California has been a leader in this regard, as have the consortium of states in the northeast and mid-Atlantic participating in the Regional Greenhouse Gas Initiative ("RGGI").[7] Even among supporters of sharp reductions in domestic GHG emissions, however, these state and regional programs are somewhat controversial.[8] While many see them as the best way forward in a political climate that cannot support federal action,[9] others see subnational[10] climate policy as inherently irrational and unlikely to contribute meaningfully to the global project of mitigating climate

6. *See generally* Patrick Parenteau, *Lead, Follow or Get Out of the Way: The States Tackle Climate Change with Little Help from Washington*, 40 CONN. L. REV. 1453 (2008); Irma S. Russell & Jeffery S. Dennis, *State and Local Governments Address the Twin Challenges of Climate Change and Energy Alternatives*, 23 NAT. RESOURCES & ENVTL. 9 (2008); Mekaela Mahoney, *State and Local Governments Take the Reins in Combating Global Warming*, 38 URB. LAW. 585 (2006); Dale Bryk et al., *Panel I: State Initiatives to Reduce Greenhouse Gas Emissions*, 17 FORDHAM ENVTL. L. REV. 111 (2006).

7. *See* Assemb. B. 32, 2006 Leg. (Cal. 2006); *See* Regional Greenhouse Gas Initiative, Memorandum of Understanding (Dec. 20, 2005), *available at* http://www.rggi.org/docs/mou_final_12_20_05.pdf [hereinafter Regional Greenhouse Gas Initiative]; *see* Parenteau, *supra* note 6, at 1454; *see* Mahoney, *supra* note 6.

8. *See* Kevin L. Doran, *U.S. Sub-Federal Climate Change Initiatives: An Irrational Means to a Rational End?*, 26 VA. ENVTL. L.J. 189, 192 (2008); Joseph A. MacDougald, *Why Climate Change Must Be Federal: The Clash Between Commerce Clause Jurisprudence and State Greenhouse Gas Trading Systems*, 40 CONN. L. REV. 1431, 1431 (2008); Cass R. Sunstein, *Of Montreal and Kyoto: A Tale of Two Protocols*, 31 HARV. ENVTL. L. REV. 1, 58–59 (2007); Brian Stempeck, *Climate Change: All Signs Point to Continued Greenhouse Gas Efforts by States,* GREENWIRE, Nov. 12, 2004 (noting that competition in retail electricity generation markets may encourage businesses to use cheaper unregulated electricity generated in a state without greenhouse gas controls); Jonathan B. Wiener, *Think Globally, Act Globally: The Limits of Local Climate Policies*, 155 U. PA. L. REV.1961, 1964–73 (2007); Kirsten H. Engel & Scott R. Saleska, *Subglobal Regulation of the Global Commons: The Case of Climate Change*, 32 ECOLOGY L.Q. 183, 215–23 (2005) (suggesting that "at least for now" much of the current environmental legislation is "symbolic" and "more show than substance"). It should be noted that all these sources were published prior to the failure of federal climate legislation in 2009 and 2010.

9. *See* Vivian E. Thomson & Vicki Arroyo, *Upside-Down Cooperative Federalism*: *Climate Change Policymaking and the States*, 29 VA. ENVTL. L.J. 1 (2011); Katherine Trisolini, *All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation*, 62 STAN. L. Rev. 669, 669 (2010); *see* Judith Resnik et al., *Ratifying Kyoto at the Local Level: Sovereigntism, Federalism, and Translocal Organizations of Government Actors (TOGAs),* 50 ARIZ. L. REV. 709 (2008); *see* Randall S. Abate, *Kyoto or Not, Here We Come: The Promise and Perils of the Piecemeal Approach to Climate Change Regulation in the United States*, 15 CORNELL J.L. & PUB. POL'Y 369 (2006).

10. Subnational is used to refer to regional, state, and local government units.

change.[11] There are two main reasons for this skepticism of state level emissions reduction policies: (1) most states cannot realistically achieve emissions reductions that can make a significant dent in global GHG levels; and (2) states cannot make agreements that are binding under international law.[12] These considerations, while not to be dismissed lightly, should not stand in the way of subnational action on climate mitigation. Instead, this Article will argue that these limitations should guide state policy, so that any political will that exists on the state level can be leveraged for maximum impact on the global effort to reduce GHG emissions. Viewed through this lens, state policymakers must embrace criteria beyond direct emissions reductions in order to craft optimal regulatory strategies.

The remainder of this Aricle will draw out the implications of the inherent limits on subnational climate mitigation, developing a framework for policy analysis. Part II will outline the features of a first-best policy approach on global and national scales, where subnational governments would only contribute complementary policies designed to lower the cost of emissions abatement. Part III will shift to examining the expanded role of state policy in the actual, imperfect policy environment. In this context, states can play additional roles in substituting for, and promoting, federal policy. When tradeoffs arise between these roles, the optimal balance is dependent upon basic assumptions and conclusions regarding how atmospheric GHG stabilization is likely to come about. Part IV will address potential tradeoffs between the functions of state policy, providing an initial overview of the sort of analysis that should be applied to all state policy decisions. Part V will focus on the transportation sector, conducting a more in-depth application of the framework the Article's proposes. Part VI concludes, noting the tentative nature of the particular policy prescriptions advanced in this Article and emphasizing the overriding importance of recognizing the tradeoffs and corresponding assumptions implicit in a wide range of policy choices.

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11. *See* Doran, *supra* note 8, at 213–17 (describing the limits on state policy that prevent it from achieving meaningful emissions reductions); MacDougald, *supra* note 8, at 1441–45 (explaining how the dormant commerce clause precludes state efforts to address emissions leakage); Sunstein, *supra* note 8, at 58–60 (suggesting California's AB 32 was irrational, "In 2006, California enacted a statute that would, by 2020, stabilize the state's emissions at 1990 levels . . . . As a first approximation it will, by itself, contribute nothing to reductions in climate change by 2050, 2100, or any other date . . . . At the same time . . . [it] would almost certainly impose significant costs on the citizens of California."). Again, these views on the irrationality of and inefficacy in state policy were expressed prior to failure to pass federal climate legislation in 2009 and 2010.

12. Related to the second point, they also cannot adopt policies to address international or domestic leakage under the dormant commerce clause. *See* MacDougald, *supra* note 8, at 1441–45.

II. A FIRST-BEST CLIMATE MITIGATION REGIME

The optimal[13] role for subnational governments in climate policy is highly contingent on the nature of the national and international mitigation regime. A first-best[14] approach to climate mitigation would include a harmonized global carbon price[15] set at a level sufficient to generate the emissions reductions required to stabilize atmospheric GHG concentrations at a tolerable level.[16] This would internalize the cost of carbon emissions, providing strong economy—and world-wide incentives to reduce emissions how and where it is most cost-effective.[17] National and subnational governments would be tasked primarily with enforcement and the implementation of complementary policies that lower the average and marginal costs of emissions reductions. Depending on the structure of the global pricing mechanism, the effect would be to lower the cost burden associated with the global mitigation target (fixed target system, e.g., cap-and-trade with no safety valve, banking or borrowing), enable greater reductions at a set price (fixed price system

13. For the purposes of this Article, optimality is defined as maximizing the contribution to global climate mitigation, broadly defined, given political and economic constraints. This contribution is correlated with, but not identical to, the direct emissions reductions generated.

14. In economic jargon, first-best refers to a situation in which all the applicable optimality conditions are satisfied. If one or more these conditions cannot be met, then it is possible that the next-best solution involves violation of other optimality conditions to partially cancel out the original market failure. R.G. Lipsey & Kelvin Lancaster, *The General Theory of Second Best*, 24 REV. OF ECON. STUDIES 11, 11 (1956).

15. Carbon pricing can be implemented either through a carbon tax or a cap-and-trade system. For cap-and-trade, the price would be discovered by the market after the emissions cap is set as a matter of policy. A carbon tax would require an estimate of the price needed to achieve the desired emissions reductions and this number could be calibrated over time to achieve the desired emissions reductions. There is significant dispute regarding the relative merits of these two approaches. *See generally* Nathaniel O. Keohane, *Cap and Trade Is Preferable to a Carbon Tax, in* CLIMATE FINANCE: REGULATORY AND FUNDING STRATEGIES FOR CLIMATE CHANGE AND GLOBAL DEVELOPMENT 57 (Richard B. Stewart, et al., eds., 2009); ReuvenAvi-Yonah & David Uhlmann *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 (2009). This dispute is beyond the scope of this Article, except to note how complementary policies would interact differently with each.

16. *See* NICHOLAS STERN, GREAT BRITAIN TREASURY, THE ECONOMICS OF CLIMATE CHANGE: THE STERN REVIEW, 311–22 (2007).

17. *Id.* at 311–12; *see generally* Jason Furman, Jason Bordoff, Pascal Noel, & Manasi Deshpande, *An Economic Strategy to Address Climate Change and Promote Energy Security,* (Hamilton Project Strategy Paper, 2007), *available at* http://www.brookings.edu/~/media/Files/rc/papers/2007/10climatechange_furman/10_climatechange_furman.pdf [hereinafter Furman et al.].

like a flat carbon tax), or some combination.[18]

Given the limited coercive power of international institutions, carbon pricing is more likely to emerge from coordination of national policies.[19] In that context, there are two basic roles for federal climate policy: to decrease domestic GHG emissions and to promote emissions reductions abroad. The main mechanism through which federal policies aim to reduce foreign emissions is through the multilateral negotiations process, which can be aided by domestic mitigation measures that demonstrate a credible commitment.[20] Federal action can also promote emissions reductions abroad by fostering technological advances, which can be used both within the country as well as outside its borders.[21] Accordingly, federal domestic policies need to be evaluated both on their direct mitigation benefits (domestic emissions reductions) and the extent to which they can be leveraged for emissions reductions outside the country.

If the federal government imposed an economy-wide carbon price at a level sufficient to achieve an ambitious domestic emissions reduction goal, then the optimal state role would still be highly circumscribed,[22] even in the face of insufficient global action.[23] The federal government

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18. *See* Carolyn Fischer & Alan K. Fox, *Comparing Policies to Combat Emissions Leakage: Border Tax Adjustments versus Rebates*, 6–7 (Resources for the Future, Discussion Paper No. 09-02, 2009), *available at* http://www.rff.org/RFF/Documents/RFF-DP-09-02.pdf.

19. Robert Stavins, *Policy Instruments for Climate Change: How can National Governments Address a Global Problem?*, 1997 U. CHI. LEGAL F. 293, 296–98 (1997).

20. *See* Lisa Novins, *A Stop on the Road to Copenhagen: Implications of a U.S. Climate Bill*, 9 SUSTAINABLE DEV. L. & POL'Y 52, 52–53 (2009), *available at* http://digitalcommons.wcl.american.edu/cgi/viewcontent.cgi?article=1137&context=sdlp.

21. *See generally* David E. Adelman & Kirsten H. Engel, *Reorienting State Climate Change Policies to Induce Technological Change*, 50 ARIZ. L. REV. 835 (2008).

22. Whether states retain the legal authority to pursue particular mitigation policies would depend on the relevant preemption provisions of the federal legislation and their judicial interpretation. The argument is that there would be no policy rationale for state efforts to substitute for or promote federal action.

23. It is possible that the United States government or other national government will implement economy-wide carbon pricing at a level that is not sufficient to achieve the requisite emissions reductions. In this case, there would remain a role for subnational policy to substitute and promote more robust national policy, in addition to the complementary role. Any dispute regarding the optimal national emissions reductions target would imply a gray area where federal policy is within the range of plausible targets and there is room for dispute regarding the merits of state policies designed to achieve further emissions reductions. Some have argued that this implies that states should retain authority to enact tighter mitigation policies, even after a robust federal regime is implemented. *See* Thomson & Arroyo, *supra* note 9; Ann Carlson, *Iterative Federalism and Climate Change,* 103 NW. U. L. Rev. 1097, 1101 (2009); Jared Snyder & Jonathan Binder, *The Changing Climate of Cooperative Federalism: The Dynamic Role*

would be filling most of the relevant policy space, leaving states to focus on complementary policies like congestion pricing, land use and building code reform, etc. These complementary policies[24] are a core function of state and local governments, because they involve areas of traditional state responsibility where the federal government lacks the authority and/or the policy tools to take effective action.[25] With a global or national carbon price internalizing the social cost of GHG emissions, state and local governments seeking to maximize economic efficiency would have adequate reasons to take emissions into account in setting policy. In practice, however, local political dynamics may lead to governance failures that justify state or national action or intervention, like the S.B. 375 legislation in California, which is designed to incentivize local governments and metropolitan planning organizations to consider GHG emissions in their land use policy decisions.[26] As the Introduction indicates, federal policy in the U.S. is insufficiently comprehensive and robust, leaving greater scope for subnational action.

III. STATE ACTION IN AN IMPERFECT POLICY ENVIRONMENT

In the absence of a comprehensive or sufficiently ambitious global, or even federal, mitigation program, the role of state policy is much more complicated. In addition to complementing federal policy, subnational policies can serve to spur federal action, and in some instances, substitute federal action. That is, states and regions can encourage the federal government to adopt more ambitious climate mitigation policies by building constituencies and providing models and demonstration.[27] They

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of the States in a National Strategy to Combat Climate Change, 27 UCLA J. ENVTL. L. & POL'Y 231 (2009).

24. Throughout this Article, phrases like *complementary policies* and *complements to federal action* will refer only to these core state fields of regulation, where state and local governments are generally involved anyway and would retain an ongoing role even after the implementation of a robust and comprehensive federal mitigation policy.

25. *See* Alice Kaswan, *A Cooperative Federalism Proposal for Climate Change Legislation: The Value of State Autonomy in a Federal System,* 85 DENV. U. L. REV. 791, 801 (2008); John P. Dwyer, *The Practice of Federalism Under the Clean Air Act*, 54 MD. L. REV. 1183, 1218 (1995).

26. S.B. 375 (Cal. 2008). In the particular case of S.B. 375, it is questionable whether such a local governance failure was occurring, since local governments and MPOs were fairly cooperative. The general point, however, is that public choice dynamics operating at the local level may prevent such governments from adopting complementary policies that promote economic efficiency even after the pricing policies to fully internalize the social costs of GHG emissions.

27. *See generally* Kirsten H. Engel, *State and Local Climate Change Initiatives:*

can also seek to fill the federal government's role by implementing policies that reduce GHG emissions within their borders (domestic substitution) and encourage emissions reductions outside their jurisdictions (international substitution), either through generating and spreading new emissions-reducing technologies or by aiding the multilateral process.[28] It is in this latter substitution role where the twin limits constraining the efficacy of subnational mitigation policy come into play; limited capacity to drive direct emissions reductions hampers domestic substitution, while the inability to make binding commitments under international law complicates international substitution. For complementary policies, by contrast, states, regions, and local governments are not seeking to fill the role of the federal government, but rather to exploit their particular policy niches, where they can lower the cost of compliance with any chosen mitigation target. The inherent limits on effective state substitution for federal action, moreover, actually heighten the importance of the promotion role for state policy. To the extent that a robust and comprehensive federal policy is indispensable, any policy tools with the capacity to spur its establishment are extremely valuable.

The optimal balance between complementary policies, domestic and international substitution, and promotion of federal action is contingent upon several contested propositions. The least controversial aspects of subnational mitigation policy are the complementary and direct substitution benefits of state policies. There are disagreements regarding the cost effectiveness of particular policy proposals, but few doubt the capacity of states and local governments armed with sufficient political will to implement policies that produce substantial direct emissions reductions, at least relative to the scale of their current emissions.[29] Nor is there much dispute that there are effective complementary policies that would lower the costs of achieving a federal mitigation target and reduce emissions at low or negative economic cost in the absence of comprehensive federal regulation.[30] The capacity of subnational policy to

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What is Motivating State and Local Governments to Address a Global Problem and What Does this Say about Federalism and Environmental Law? (Arizona Legal Studies, Discussion Paper No. 06-36, 2006).

28. *See generally* Adelman & Engel, *supra* note 21.

29. Kirsten Engel, *Mitigation Global Climate Change in the United States: a Regional Approach*, 14 N.Y.U. ENVTL. L.J. 54, 63–64 (2005); Engel & Saleska, *supra* note 8, at 228; *but see* MacDougald, *supra* note 8, at 1443 (arguing that the leakage can significantly undermine direct emissions reductions).

30. HOUSE COMMITTEE ON ENERGY AND COMMERCE, CLIMATE CHANGE LEGISLATION DESIGN WHITE PAPER: APPROPRIATE ROLES FOR DIFFERENT LEVELS OF GOVERNMENT, 2 (2008), *available at* http://www.fws.gov/southeast/climate/policy/Climate%20Dingell%20Third%20Paper%2

promote federal action and encourage foreign emissions reductions is far less certain.[31] The more confidence policymakers have in the promotion and international substitution effects of state action, the more resources they should be willing to devote to policies tailored to produce such benefits. The analysis does not end there, however.

One's estimate of the likely structure of a future global solution, or lack thereof, to climate change is also crucial. For those who can only imagine the required scale of emissions reductions ultimately being achieved through a binding global compact, the best that domestic substitution can do is buy time for and lower the costs of federal and multilateral action. If one can imagine voluntary, bottom-up mitigation measures successfully stabilizing atmospheric GHG concentrations, then domestic substitution looks more promising. If robust federal and global action is ultimately indispensable, then subnational policies that even marginally improve the probability of such action make a contribution that is qualitatively distinct from domestic substitution.[32] Buying time, making incremental progress toward stabilizing atmospheric GHG concentrations, and reducing the eventual cost of a global deal are significant contributions that should not be dismissed; these benefits must be weighed against the leveraged contributions that subnational policy can potentially make to the actual adoption of such an agreement. Thus, tradeoffs between alternative strategies for subnational mitigation policy often implicate basic assumptions about the broader project of stabilizing atmospheric GHG concentrations. To clarify their thinking and enable more rigorous analysis, policymakers and advocates should explicitly acknowledge and scrutinize these underlying assumptions.

IV. POLICY TRADEOFFS

Complementary policies, domestic and international substitution, and promotion of federal action are not in as much direct competition as the above analysis might suggest. Many of the same policies that would produce direct emissions reductions could also help build constituencies for federal action, encourage development of technologies that could be used to reduce emissions abroad, and possibly demonstrate a credible

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0Govt%20Roles%20022508.pdf ; Snyder & Binder, *supra* note 23, at 251.

31. Engel & Saleska, *supra* note 8, at 223–29.

32. The author's view is that, absent one or more radical and unforeseen technological breakthroughs, robust global action will be necessary to stabilizing emissions at a tolerable level. *See* Gabriel Weil, *Costs, Contributions, & Climate Change: How Important Are Universal Emissions Caps?*, 23 GEO. INT'L ENVTL. L. REV. 319 (2011).

U.S. commitment to emissions reductions that would facilitate a multilateral mitigation agreement.[33] Complementary policies also can help build political coalitions for, and reduce the eventual cost of, robust federal or global action.[34] Nonetheless, different baskets of policies and framing strategies will tend to advance some objectives more than others. To elucidate these tradeoffs, it will help to discuss the mechanisms through which subnational policies substitute for, promote, and complement federal action.

A. Domestic & International Substitution

As discussed above, substitution for federal action can be broken down into domestic and international components. The domestic component, direct emissions reductions within the regulated jurisdictions, is generally the primary focus of policy discussions and the mechanisms are well known.[35] For instance, domestic policies like carbon pricing and sector-specific variants[36] have empirically proven—or at least theoretically sound—emission reduction benefits on both the national and state/regional level.[37] The international component is more speculative and can be further broken into two distinct mechanisms. First, state level policies may promote the development of technologies that make emissions reductions outside the U.S. more cost-effective; they may also refine and model policies that can be later adopted by foreign national or subnational governments.[38] Second, state and regional action may be able to signal a credible commitment to foreign governments that, despite sluggish federal action, the U.S. is prepared to take serious steps to reduce its GHG emissions.[39] Many consider this sort of credible commitment to be the most important reason to pass comprehensive federal legislation, so it would be a significant policy breakthrough if subnational action could adequately fill this role. Since states lack the capacity to make binding commitments under international law, and they cannot compel their fellow U.S. states to adopt similar policies, any international substitution will be imperfect.

Nonetheless, it is important to consider what features of policy

33. Engel, *supra* note 27, at 15–16.

34. *See id*. at 16.

35. *See generally* Stern, *supra* note 16.

36. Sector specific variants include fuel economy standards, low carbon fuel standards, and clean and renewable electricity standards.

37. Furman et al, *supra* note 17.

38. Adelman & Engel, *supra* note 21, at 835–37, 849; Engel, *supra* note 27, at 14–15.

39. *See* Engel, *supra* note 27, at 15–16.

design impact the international substitution role of subnational policies. Two policies can achieve similar emissions reductions benefits, while sending very different signals. A regional cap-and-trade program like RGGI or the Western Climate Initiative ("WCI") may send a more powerful signal of U.S. commitment than an amalgam of programs in individual states that achieve comparable emissions reductions.[40] It may even be the case that accepting somewhat less ambitious direct emissions reductions is advantageous for the overall mitigation project due to the perceived impact and seriousness of the effort. If California successfully links up with other states and Canadian provinces as part of the WCI, it may end up facing trade-offs on the margin between including more states and pushing for an aggressive emissions target. It is possible that greater universality sends a stronger signal of commitment than greater emissions reductions concentrated in a few clearly committed jurisdictions. This strategy may be particularly effective when the overall region can claim to be meeting globally recognized targets, such as reducing emissions seventeen percent below 2005 levels by 2050.[41] California has already distinguished itself as a leader in climate policy, and few foreign governments see it as a roadblock to a global deal. The international substitution value of including more marginal U.S. states may exceed the direct emissions reductions benefits of insisting on tighter restrictions under some circumstances.

Likewise, a policy framed explicitly in terms of GHG emissions and mitigating climate change will signal credibility more effectively than a similar one based on a rationale of energy independence and economic nationalism. This consideration must be weighed against the international fallout of a failed subnational policy initiative. If the political environment is not amenable to explicit GHG emissions reduction goals, pushing for them may be counterproductive on the local and global levels. Similarly, there are tradeoffs between cost-effectiveness in terms of direct emissions reductions and the international substitution benefit. In particular, any policies that launch states on a durable trajectory of decreasing emissions that is resistant to future political reversal should be highly preferred. It may even be worth paying some policy costs in terms of direct emissions reductions and economic efficiency in order to build an enduring political coalition.[42] Over and above the direct benefits of a stable policy environment, this

40. This is admittedly a speculative claim, based on the premise that a regional program is likely to get more media attention and appear more durable and meaningful than a string of state efforts.

41. Copenhagen Accord, *supra* note 3; H.R. 2454, 111th Cong. (1st Sess. 2009).

42. For instance, by compensating stakeholders more than would be required just to get the policy in place.

would provide a more credible signal of commitment to policymakers and other relevant actors outside the jurisdiction.

B. Promotion

Promotion of federal action via state policy also has two primary mechanisms, refinement and demonstration of policy tools, and constituency building.

The first mechanism is the classic model of the states as laboratories of democracy. States can test out different emissions reductions policies, work to improve their cost effectiveness, and provide models for federal action.[43] In addition to refinement, the mere existence of state and regional action can demonstrate the political and economic viability of particular mitigation strategies, informing and potentially emboldening the activities of federal officials and climate advocates.[44] Policy experimentation and innovation may come at some cost in terms of expected emissions reductions or cost effectiveness, but may still be justified based on even a relatively low probability that an untried policy approach proves especially successful and can be then be widely adopted.[45] As with international substitution, there is a tension between the desirability of demonstrating that explicit climate mitigation policies can be politically viable, and the risk of political failure that potentially sets back the cause of mitigation both within and outside the jurisdiction.[46]

Making an explicit case for action on the basis of the threat posed

43. Snyder & Binder, *supra* note 23, at 249–50.

44. Engel & Saleska, *supra* note 8, at 224–27.

45. The point here is not to say that the probability of states developing effective new policy approaches is generally low. Rather, it may be worth adopting an untried policy that has a lower expected payoff than a proven alternative, so long as the variance is high enough that there is substantial probability of discovering a superior approach that can then be scaled up. This policy experimentation and innovation benefit also militates against preemption of state policy in future federal legislation.

46. *See, e.g.*, Lizza, *supra* note 1. The fallout from federal failure to pass an ambitious piece of legislation has made even modest efforts that might have passed during the 111th Congress non-starters. It is difficult to disentangle the causation, but there is probably also some backlash against climate action at the state level, as the issue has become more partisan. *See e.g.* Amelia Chasse, *NH House moves to Pull Out of RGGI*, NH JOURNAL, Mar. 31, 2011, http://nhjournal.com/2011/03/31/nh-house-moves-to-pull-out-of-rggi/; (last visited Mar. 17, 2012); Amanda Carey, *New Jersey Could Be Next State to Pull Out of Regional Cap-and-Trade System*, THE DAILY CALLER, Mar. 28, 2011, http://dailycaller.com/2011/03/28/new-jersey-could-be-next-state-to-pull-out-of-regional-cap-and-trade-system/ (last visited Mar. 17, 2012). This negative demonstration effect likely applies, at least to some extent, to political failures at the state level, as cautious politicians see significant downsides to pursuing climate mitigation.

by climate change can also raise public awareness and aid the cause of constituency building.[47] In fact, there may be constituency building benefits even if the policy fails to garner sufficient support to be enacted because the push for adopting emission reduction policies would still raise public awareness of the threat posed by climate change. Failed efforts can also serve as learning experiences to guide the future undertakings of policymakers and advocates.[48] Again, these potential benefits must be balanced against the risk of a negative demonstration effect in terms of promotion, international fallout, and frustration of future subnational GHG emissions reductions efforts.

Implementing any sort of emissions reductions policy, even if not explicitly based on a climate mitigation goal, may also have constituency building benefits.[49] Regulated entities, like electric utilities, often prefer to be subject to a single federal regulatory framework that preempts state policies, rather than a patchwork of state regulations.[50] Even if the costs of regulatory diversity are low and outweighed by the greater stringency and breadth of federal standards, the existence of state regulation would still soften resistance from regulated entities, by minimizing the net cost of complying with federal regulation.[51]

Similarly, subnational climate mitigation policies would force consumers within the regulatory jurisdiction to internalize some or all of the costs of their GHG emissions. As a result, these consumers are more likely to support federal policies that would force consumers in other states to bear similar costs, and share the burden of domestic emissions reductions. As with regulated industries, the net cost of federal regulation to consumers in a state that had previously initiated a substantial emissions reduction policy would be much lower than if the state did not already have an emissions reduction policy in place.

V. APPLICATION: TRANSPORTATION EMISSIONS

This Section will apply the analytical framework developed above to specific subnational policies designed to reduce GHG emissions in the transportation sector. It will focus primarily on two policy proposals: a

47. *See* Engel & Saleska, *supra* note 8, at 223.

48. For example, the later cap-and-trade programs learned about the problem of over-allocating emissions credits from the European Union Emission Trading Systems.

49. Engel & Saleska, *supra* note 8, at 223.

50. *Id*.

51. Net compliance cost refers to the gross cost of complying with federal regulation minus the avoided cost of complying with state regulations that are either preempted or have overlapping requirements.

linked-fee on transportation fuels and congestion pricing, and will analyze how they would interact with various federal policy regimes.

The linked-fee can promote federal action and partially substitute for its inadequacy on the domestic and international level. Framing the policy explicitly in terms of climate mitigation could potentially have greater promotion and international substitution benefits, but would be politically risky and thus less likely to generate direct emission reductions. Tradeoffs between political viability and policy efficiency also arise in comparing the linked-fee to less comprehensive pricing approaches.

Congestion pricing, by contrast, is primarily a complementary policy, though it also has promotion and international substitution potential. The policy case for congestion pricing is actually strengthened by robust federal action. The key question for climate policy advocates is whether it is worth diverting political capital from more direct mitigation measures to push for congestion pricing.

A. Linked-Fee

The linked-fee is a charge assessed on fuel before it is loaded onto trucks for retail distribution.[52] This is the same point of regulation as the federal gas tax.[53] The link aspect refers to the amount of the fee, which varies with the price of emissions allowances in a cap-and-trade system that does not include transportation emissions.[54] Accordingly, the emissions produced in the transportation sector are priced at the same level as those in the cap-and-trade system. This proposal is only viable if there is a cap-and-trade system to link with, such as RGGI, which covers utility sector in Northeast and Mid-Atlantic states.[55]

The linked-fee is primarily a policy of domestic substitution in the context of inadequate federal action. The federal gas tax itself performs a similar function, by providing incentives for consumers to drive more fuel efficient cars fewer miles, which results is less fuel consumption and fewer carbon emissions.[56] The federal gas tax, however, is set at a level

52. Robert Puentes, *A Linked Fee for Carbon Reduction?*, The New Republic Blog, Mar. 11, 2010, *available at* http://www.tnr.com/blog/the-avenue/linked-fee-carbon-reduction.

53. *Id*.

54. *Michael Levi*, In Memoriam: The "Linked Fee", *Council on Foreign Relations Blog*, *April 23, 2010, available at* http://blogs.cfr.org/levi/2010/04/23/in-memoriam-the-linked-fee/.

55. Regional Greenhouse Gas Initiative, *supra* note 7.

56. THOMAS L. FRIEDMAN, HOT, FLAT AND CROWDED: WHY WE NEED A GREEN REVOLUTION – AND HOW IT CAN RENEW AMERICA, 350 (2008).

insufficient to adequately fund federal highway expenditures, let alone fully internalize the social cost of the carbon emissions associated with fuel consumption.[57]

If the federal gas tax was both set to fully internalize the social cost of the carbon emissions associated with fuel consumption and scaled proportionate to the carbon content of fuels,[58] the optimal role for states in the transportation sector would be to adopt effective complementary policies. The federal action would then be fully occupying the pricing space within the realm of transportation emissions policy. In this context, state policies that seek to act as substitutes for inadequate federal policy would be distortionary. For simple carbon pricing, this distortion would be fairly innocuous, but would drive emissions reductions in the transportation sector in excess of the economically efficient levels for a given overall mitigation target.[59]

If national action on economy-wide emissions reductions remains inadequate, such policies may be better than nothing, though they are likely inferior to policies focused on achieving emissions reductions in sectors where doing so would be more cost-effective. Moreover, transportation emissions reductions may be less susceptible to interstate leakage than those in other sectors and states may wish to adopt disproportionately aggressive policies across the board to compensate for excess emissions in other states. More problematic would be state policies, like a fee-bate[60] system to encourage sales of fuel-efficient cars, or any form of pricing non-congestion based vehicle miles travelled ("VMT").[61] These efforts would distort the manner in which

57. Josh Mitchell, *Highway Funding Is at Risk*, Wall Street Journal, Apr.14, 2011, *available at* http://online.wsj.com/article/SB10001424052748704116404576262842630672026.html?mod=WSJ_hp_MIDDLENexttoWhatsNewsSecond.

58. If the federal gas tax does not adjust based on the carbon content of fuels, then there will still be a role for a separate state or federal policy regulating that content, such as a low-carbon fuel standard. Should the federal government fail to occupy this policy space, it would be appropriate for states to fill this gap.

59. As is noted in the general case above, a comprehensive federal approach could have a mitigation target that is insufficiently ambitious, leaving room for more aggressive state action. Under these circumstances, subnational carbon pricing would be justified to supplement the inadequate federal action. This is simply a smaller-scale version of the general state role in substituting for inadequate federal policy. Also, there is room for reasonable disagreement regarding how aggressive the mitigation target should be, which implies a gray area in which the appropriateness of state action is open to dispute.

60. A fee-bate program is a self-financing system of fees and rebates that are used to shift the costs of externalities produced by the private expropriation, fraudulent abstraction, or outright destruction of public goods onto the responsible market actors.

61. Fee-bates may also be particularly prone to interstate leakage, since any increase in the average fuel economy within a particular state or region would take pressure off

transportation emissions reductions are achieved by targeting particular elements rather than the overall policy goal.[62] This compartmentalized approach may be necessary when broader pricing policies are not politically viable, but these cruder policy tools should be abandoned once more efficient alternatives become viable at either the federal or state level.

In the current policy environment characterized by weak federal action, the linked-fee is good policy if it can be successfully implemented.[63] If the fee is either adjusted to reflect the carbon content of fuels or paired with a low-carbon fuel standard, it fully and efficiently occupies the pricing space for transportation emissions policy. Linking the price to a cap-and-trade system assures that the emissions reductions incentives are provided evenly across the regulated sectors, so that private actors can alter their activities in accordance with the lowest marginal costs of emissions abatement and their individual preferences.[64]

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the compliance burden for federal Corporate Average Fuel Economy ("CAFÉ") standards. This would allow manufacturers to sell a lower proportion of fuel efficient cars in the rest of the country while complying with the CAFÉ mandate, which is based on a national average.

62. THOMAS STERNER, THE MARKET AND THE ENVIRONMENT: THE EFFECTIVENESS OF MARKET-BASED POLICY INSTRUMENTS FOR ENVIRONMENTAL REFORM, 138 (Edward Elgar Publishing, 1999); *See* William J. Baumol, *On Taxation and the Control of Externalities*, 62 AMER. ECON. REV. 307 (1972) (making the general case that direct externality pricing is optimal). With the social cost of transportation emissions fully internalized through federal taxes, consumers should have adequate incentives to purchase fuel efficient vehicles in order to reduce their fuel consumption. Adding a fee-bate pushes further on the fuel efficiency lever, providing incentives above and beyond those implicit in the gas tax. A VMT tax also pushes further, since fuel consumption is also affected by driving habits (not just the volume of VMT, but also avoiding congested roads and taking steps to maximize operating efficiency). The mix between alternative fuel savings strategies would be distorted by an incentive that affects one and not the others. A broad pricing approach fosters responses that reflect individual preferences and minimizes the marginal cost of abatement. Policies that target a particular strategy distort such responses. On the other hand, one might argue that consumer short-sightedness results in underinvestment in fuel efficiency. Jerry A. Hausman, *Individual Discount Rates and the Purchase and Utilization of Energy-Using Durables*, 10 BELL J. OF ECON. 33 (1979). The question is whether government intervention is capable of reliably producing a more optimal outcome.

63. A potential policy objection is that the linked-fee, like many forms of carbon pricing, is regressive. However, this can be offset by using the revenue generated in progressive ways, such as cutting other regressive taxes (probably general sales taxes at the state level) or funding public services targeted at lower income people. In practice, the revenue may be diverted to other purposes, particularly closing budget gaps on the state level. In any case, the linkage between carbon pricing and the offsetting uses of the revenue may not be clear or salient enough to overcome this objection as a political matter.

64. *See* Joel Bluestein & Jessica Rackley, COVERAGE OF PETROLEUM SECTOR

If this price level does not bring about the desired emissions reductions,[65] the overall cap on emissions within the cap-and-trade system can always be ratcheted down,[66] such that the price of allowances rises and further emissions abatement is incentivized evenly across the board.[67] Moreover, explicit externality pricing for carbon emissions can help build constituencies to promote federal action and send a clear signal to the multilateral process that elements within the U.S. political system are committed to GHG emissions reductions.

Pure policy merits notwithstanding, the linked-fee shares a common problem with other broad emissions pricing proposals: politics. Gas tax increases, which are difficult to viably distinguish from the linked-fee, are politically toxic and poll notoriously badly.[68] Everyone notices the price of gasoline at the pump and the public generally overrates its value as a broader economic indicator.[69] Particularly in a weak economy, a

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GREENHOUSE GAS EMISSIONS UNDER CLIMATE POLICY, (2010), *available at* http://www.c2es.org/docUploads/coverage-petroleum-sector-emissions.pdf.

65. This is likely, since translating a carbon price into the impact on gas prices yields about a penny increase in per gallon gas prices for every dollar of carbon price per ton. In recent years, RGGI allowances have traded between one and four dollars per ton, which translates to a one to four cent increase in per gallon gas prices. RGGI CO2 Auction Yields $83M for Energy, Job Investments, Environmental Protection Online, (Mar. 21, 2011), http://eponline.com/articles/2011/03/21/rggi-co2-auction-yields-83m-for-energy-job-investments.aspx; Nathanial Gronewold, CLIMATE: Carbon price climbs in third RGGI auction, Greenwire, (Mar. 20, 2009), http://www.eenews.net/public/Greenwire/2009/03/20/4.

66. This is true as a matter of policy, but it may be politically problematic.

67. Baumol, *supra* note 61, at 316.

68. *See Americans Strongly Reject Mileage Tax, Gas Tax Hike*, RASMUSSEN REPORTS (Mar. 30, 2011), http://www.rasmussenreports.com/public_content/business/taxes/march_2011/americans_strongly_reject_mileage_tax_gas_tax_hike (74% "oppose raising the gas tax to help meet new transportation needs"); *Public Opinion Survey* (June 17 – June 22, 2010), INSTITUTE FOR ENERGY RESEARCH, *available at* http://www.instituteforenergyresearch.org/wp-content/uploads/2010/07/June-2010-IER-Questionnaire.pdf (over 70% oppose "new energy taxes in order to limit greenhouse gas emissions and address global warming"); *see also*, *The New York Times/CBS News Poll* (February 22–26, 2006), http://www.nytimes.com/packages/pdf/national/20060228_poll_results.pdf (85% opposed increasing federal gas tax, but 55% favored an increase if it "would reduce the United States' dependence on foreign oil" and 59% favored an increase if it "would cut down on energy consumption and reduce global warming").

69. *See As Gas Prices Spike, More See Economic News as Bad,* PEW RESEARCH CENTER FOR THE PEOPLE AND THE PRESS (Mar. 8, 2011), http://people-press.org/2011/03/08/as-gas-prices-spike-more-see-economic-news-as-bad/; *Gas Prices Dominate the Public's Economic News Agenda,* PEW RESEARCH CENTER FOR THE PEOPLE AND THE PRESS (June 19, 2008), http://pewresearch.org/pubs/874/gas-prices-dominate-the-publics-economic-news-agenda; Sotiris Georganas, Paul J. Healy, & Nan Li,

proposal to implement a linked-fee is likely to fail, setting back the cause of climate mitigation significantly. One option in light of this challenge is to frame the policy in terms of a fuel consumption target, justified on the basis of both energy security and reducing the economic impact of oil price shocks, with emissions reductions as a side benefit.[70] This approach would also face significant political obstacles, particularly the risk that it would be successfully portrayed as rationing. It might also require the linked-fee to ignore the carbon content of fuels, although it could be coupled with a low-carbon fuel standard, which is likely to be more politically viable as an explicit climate mitigation policy.

The main drawbacks of this approach, relative to an explicit emissions target, are framed in terms of international substitution and promotion through constituency building. As discussed above, a policy that is not specifically targeted at emissions reductions may fail to demonstrate a credible commitment to mitigation, above and beyond more parochial concerns. Not explicitly addressing climate change may also undermine any potential to build support for broader policies designed to reduce emissions, especially those that would discourage domestic coal consumption.[71] On the other hand, it provides a way of framing transportation sector emissions reductions policies that is scalable to the federal level and applicable to other jurisdictions.

In any case, the current political environment is unlikely to support an explicit push for pricing vehicle emissions in the United States. While it may be that no system-wide transportation pricing policy will be viable in the near future, one framed in terms of fuel consumption and energy security, which are currently more salient public concerns than the effects of global climate change, might have some chance.[72] It may be a good idea to develop a mechanism for varying a component of the fee independent of the utilities cap-and-trade to smooth out the volatility in

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Frequency Bias in Consumers' Perceptions of Inflation, available at http://healy.econ.ohio-state.edu/papers/Georganas_Healy_Li-InflationExperiment.pdf.

70. FRIEDMAN, *supra* note 55, at 338–41.

71. If the public views the problem primarily in terms of energy security, the public is likely focusing on oil. Coal, by contrast, is abundant in the United States and is not subject to supply shocks or high price volatility. Thus, an explicit climate mitigation rationale, or an environmental or public health rationale, is likely necessary to justify policies that discourage coal combustion, which is highly emissions-intensive. A transportation sector strategy that focuses on justifications other than climate mitigation may miss an opportunity to build constituencies for broader efforts to address GHG emissions, particularly from coal-fired power plants.

72. There are other rationales for raising revenue via carbon pricing, including investing in infrastructure, addressing budget shortfalls, and offsetting other taxes. Some combination of these is likely to be part of the policy solution, regardless of whether it is framed primarily in terms of fuel consumption or emissions reduction.

oil prices.[73] The fee could exceed the allowance price during periods of low oil prices, creating a price floor, and reduced during price spikes, to minimize their economic impact.[74] Implementing this is likely to be challenging on both a political and technical level, but it is a concept worth exploring.[75]

Whether to make even this more modest push is a matter of judgment, dependent on local political conditions. A failure to implement the linked-fee, framed as an energy security policy, would certainly be discouraging. On the other hand, it might not be perceived as a direct defeat for climate mitigation advocates, limiting the negative promotion and international substitution fallout. Moreover, even an unsuccessful effort would likely yield some valuable lessons for future climate policy endeavors. Nonetheless, the costs of failure under either approach are high and demand caution, including consideration of less economically efficient emissions reductions policies that might be more politically palatable.

B. Congestion Pricing

Congestion pricing is a complementary policy because it is entirely compatible with robust, economy-wide carbon pricing on the global, national, or state level. Congestion pricing is really just a correction of a basic policy failure that artificially sets the price of scarce and valuable road space at zero.[76] As with any price ceiling placed below the market-clearing price, shortages arise.[77] Road space is an atypical market because the supply of road space is generally a political rather than a market outcome. However, this does not fundamentally alter the basic economics of allocating a scarce resource.[78] At any given point in time,

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73. Henry Blodget, *It's Time for a Gas Tax,* BUSINESS INSIDER (Feb. 24, 2011), http://www.businessinsider.com/its-time-for-a-gas-tax-2011-2.

74. *Id*.

75. Politically, there will always be resistance to raising the fee when prices drop, a phenomenon that might undermine the mitigation benefits of the policy. Technically, it would require a reliable theory regarding the fundamentals of oil prices, in contrast to temporary market fluctuations. Of course, futures markets are supposed to already play this smoothing function, so it is unclear that policymakers would be able to reliably anticipate future price trends better than the market. One might argue that if anyone was capable of doing so, they could make a lot of money trading in oil futures markets.

76. FEDERAL HIGHWAY ADMINISTRATION: OFFICE OF TRANSPORTATION MANAGEMENT, HOTM FHWA-HOP-07-074, CONGESTION PRICING: A PRIMER (2006) [hereinafter FEDERAL HIGHWAY ADMINISTRATION].

77. *Id.* at 1; Anthony Downs, *Stuck in Traffic: Coping with Peak-Hour Traffic Congestion*, (Brookings Institution Press, 1992).

78. FEDERAL HIGHWAY ADMINISTRATION, *supra* note 75, at 1.

the quantity of available road space in an area is essentially fixed. If more people wish to use particular roads than the roads can accommodate at any given time, congestion results.[79]

It is not the case, however, that there is some fixed demand for scarce road space that public policy cannot meaningfully address.[80] Like for any scarce resource, there is some price at which the demand for rush-hour access to particular roads is equal to the non-congested carrying capacity of those roads.[81] Charging that price[82] generates an efficient allocation of the space, as some drivers shift their commuting times, car pool, or choose alternative modes of transportation to avoid paying the charge.[83] The remaining drivers self-identify as individuals

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79. *Id*.

80. *See Congestions Pricing for Highways: Hearings Before the Joint Econ. Comm.*, 108th Cong. (May 6, 2003) [hereinafter Holtz-Eakin] (Statement of Douglas Holtz-Eakin), *available at* http://www.cbo.gov/doc.cfm?index=4197&type=0.

81. *Id.* at 4.

82. Technically, efficient congestion pricing would not entirely eliminate congestion. Drivers consider the level of congestion when deciding whether to travel on a particular road, but they generally fail to take into account their marginal impact on congestion for other drivers, producing an equilibrium with sub-optimally high levels of congestion. Pricing would internalize the congestion externality that each marginal vehicle imposes on others sharing the road. Thus, the resulting level of congestion would be an efficient outcome, reflecting the preferences of those who use the roads. Determining the magnitude of the externality and the corresponding optimal level of congestion is not a trivial task, but that magnitude is substantially greater than zero for many roads. *See Id.*

83. *See id.* at 4; *Reducing Congestion: Congestion Pricing Has Promise for Improving Use of Transportation Infrastructure*: *Testimony Before the Joint Economic Committee*, U.S. Cong. 7 (May 6, 2003,) [hereinafter *Hecker*] (statement of JayEtta Z. Hecker), *available at,* http://www.gao.gov/new.items/d03735t.pdf. There are four basic forms of congestion pricing: variably priced lanes (some parallel lanes are un-priced), variable tolls on entire roadways, cordon charges (charges to enter or drive within a particular geographic area at peak time), and area-wide per-mile charges. All four are improvements over no pricing, but they work in different ways. Variably priced lanes in particular, do not solve the basic policy failure of crowded road space that is entirely un-priced, though they may be more politically palatable than more robust forms of congestion pricing. Variable tolls on entire roadways, particularly if they are dynamically adjusted to prevailing traffic conditions, most directly internalize the congestion externality. Area-wide per-mile charges work well as long as there is not significant variation in congestion levels within a priced area. To the extent that there is such variation, inefficiencies necessarily arise as a single price is applied to the entire area. Cordon charges share the same limitation, and also do not adjust for trip length. Nonetheless, these approaches may be preferable when variation in trip length and in area congestion levels are low enough that the efficiency gains of full variable tolling are outweighed by the implementation costs. *Road Pricing: Congestion Pricing, Value Pricing, Toll Roads and HOT Lanes*, VICTORIA TRANSPORT POLICY INSTITUTE, http://www.vtpi.org/tdm/tdm35.htm (last visited Mar. 15, 2012).

who place a high value on access to the priced roads.[84] These drivers get a much quicker commute in exchange for the fee.[85] The revenue raised can be used to fund further road construction, invest in public transportation services to accommodate those deterred by the congestion charge, and for other, more general public purposes including tax cuts, covering budget shortfalls, and general expenditures.[86]

Congestion pricing is sound economic and transportation policy independent of any concern over energy security or climate change.[87] The failure to implement it to date has been driven by technological limitations and political resistance from those who expect to be harmed by the policy. However, the technology is now available and the success of efforts to implement congestion charges in some metro areas suggests that the political opposition can be overcome.[88] As with almost any policy change, some people will likely to be made worse off,[89] but the overall increase in welfare from efficient road pricing justifies this harm.[90] The emissions reductions benefits are fairly modest compared to the scale of both required emission reductions and other policies, like direct emissions pricing.[91] Cambridge Systematics estimates fuel savings of five percent for each priced VMT, and a twenty percent reduction in VMT for traffic affected by congestion pricing.[92] They also estimate that

84. Holtz-Eakin, *supra* note 79, at 4–5.

85. *Id*.

86. Hecker, *supra* note 82, at 12–13.

87. Olof Johansson-Stenman, *Regulating Road Transport Externalities: Pricing Versus Command and Control*, *in* THE MARKET AND THE ENVIRONMENT: THE EFFECTIVENESS OF MARKET-BASED POLICY INSTRUMENTS FOR ENVIRONMENTAL REFORM 134, 139–40 (Thomas Sterner ed., 1999).

88. *See* FEDERAL HIGHWAY ADMINISTRATION, *supra* note 75, at 7 (discussing congestion pricing in London, Singapore, and Stockholm); Hecker, *supra* note 82, at 11–12 (discussing congestion pricing schemes in Singapore; London, England; and Trondheim, Norway).

89. In particular, marginal drivers who are barely deterred by the congestion charge, and drivers who pay the charge because they strongly prefer driving and must travel at a particular time, but place a relatively low valuation on a faster commute, are likely worse off.

90. *See* FEDERAL HIGHWAY ADMINISTRATION, *supra* note 75, at 9.

91. Reg Evans*, Central London Congestion Charging Scheme: ex-post evaluation of the quantified impacts of the original scheme* 17, TfL Congestion Charging Modeling and Evaluation Team (2007), *available at* http://www.tfl.gov.uk/assets/downloads/Ex-post-evaluation-of-quantified-impacts-of-original-scheme-07-June.pdf.

92. CAMBRIDGE SYSTEMATICS, INC., MOVING COOLER: AN ANALYSIS OF TRANSPORTATION STRATEGIES FOR REDUCING GREENHOUSE GAS EMISSIONS B-13-B-14 (2009), *available at* http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf.

twenty-nine percent of urban VMT and seven percent of rural VMT would be affected by congestion pricing.[93] To be clear, the climate and other externalities associated with fossil fuel consumption only strengthen the case for efficient congestion pricing; they are not a necessary, or even a primary, justification.

The key political question surrounding congestion pricing is whether climate mitigation advocates should devote resources to pushing for congestion pricing. On the one hand, most of the benefits are purely economic and scarce political resources might be able to achieve greater emissions reductions if they were devoted to more direct mitigation policies. It may be a mistake for climate policy advocates to engage in a costly political fight over congestion pricing. In addition, casting the policy in terms of climate mitigation may actually harm its prospects. On the other hand, congestion pricing is sound policy that voters could eventually come to like, and climate advocates may find value in having been on the right side of the fight.[94] Moreover, as a complementary policy, it is unlikely to ever be preempted by federal legislation and would actually reduce the economic cost of any national emissions target.[95] The purely economic case for congestion pricing is even stronger once robust carbon-pricing is in place. In this scenario, drivers would now bear the full social cost of driving, including climate externalities. As such, they would be further incentivized to avoid congestion because it would reduce their fuel consumption.[96] Under an economy-wide or fuels cap-and-trade regime with no safety valve, congestion pricing would only reduce costs. Under a linked-fee or carbon tax, however, congestion pricing would induce modest additional emissions reductions.[97] The tactical question of what groups should

93. *Id*. at B-14.

94. *See* STERNER, *supra* note 61, at 139–40.

95. *See* Holtz-Eakin, *supra* note 79, at 4–5.

96. It is true that those who continue to drive on congested roads at peak times will be double-charged in the sense that they must pay both the congestion price and the carbon component of the fuel price. On the other hand, they will consume less fuel as a result of reduced congestion, a benefit that is magnified by carbon pricing. In addition, drivers generally reap other benefits from congestion pricing, including saving time. In the aggregate, a policy that promotes efficiency, even when emissions externalities are disregarded, produces even greater economic benefits once the avoided emissions are priced.

97. This is because a fixed-cap regime would have a set number of allowances, with the price fluctuating in response to demand. If reduced congestion took some pressure off the demand, the price would fall, marginally reducing the incentive to reduce emissions elsewhere in the transportation sector and, depending on the specific structure of the cap, possibly throughout the economy. Under a fixed-price regime, anything that enables further emissions reductions at a lower cost than the emissions price will result in net emissions reductions. *See* Fischer & Fox, *supra* note 18, at 6–7.

invest resources in advocating for congestion pricing may be an open one, but it is clear that policymakers concerned about global climate change should support efficient road pricing wherever and whenever congestion is a serious problem.

VI. CONCLUSION

The foregoing analysis of potential tradeoffs facing state policymakers is far from definitive; there is plenty of room for debate regarding the effectiveness of particular policies in exploiting the various opportunities for states to contribute to the global project of mitigating climate change. The important point is to acknowledge the existence of these distinct functions for state policy and the assumptions that form the basis for different policies. Policy debates regarding local, state, and regional approaches to climate mitigation should engage explicitly with these questions and make judgments based on a clear-eyed analysis of how to maximize overall mitigation impact, given political and economic constraints. The primary contribution of this Article is to develop a framework for clarifying what is at stake in these policy choices.

Ten Years of the Aarhus Convention: How Procedural Democracy is Paving the Way for Substantive Change in National and International Environmental Law

Marianne Dellinger*

TABLE OF CONTENTS

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* Marianne Dellinger holds a J.D. (Order of the Coif) and a M.A. She is an Assistant Professor of Law at Western State University College of Law. She graduated at the top of her class from the University of Oregon School of Law and subsequently clerked for the late Hon. Francis J. D'Eramo of the Superior Court of the United States Virgin Islands and for the Hon. Procter Hug, Jr., of the United States Court of Appeals for the Ninth Circuit. Before law school, she enjoyed a successful career in international communications. She is grateful to Alec Walker (Whittier Law School 2012) for his research assistance on this Article. Finally, this Article is dedicated to the memory of Dr. Svitlana Kravchenko, who was the longest-serving member of the Aarhus Convention Compliance Committee upon her untimely death in February 2012. Dr. Kravchenko was a true global citizen and tireless advocate for an improved environment for the sake of both people and animals. Her passion for mentoring her law students and new lawyers will be missed by all who knew her.

I. INTRODUCTION

Large population segments around the globe are displeased with how their governments govern. This is no less so on the environmental stage. Calls for sustainable development and a greener economy are intense. At the same time, the speed with which governments address the need for such change often seems glacial at best. Many government solutions seem ineffectual. This Article examines how a bottom-up approach in the form of public participation in environmental decision-making and enforcement at the national and international levels has the potential for bringing about positive procedural and substantive change sooner than would be the case through traditional legal venues. The focal point of the article is the United Nations Economic Committee for Europe's ("UNECE") Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (the "Aarhus Convention" or the "Convention"), which just celebrated its first decade of being in effect. This Article is the first major work to comprehensively examine the first ten years of Aarhus Convention case law, with a view to identifying whether environmental democracy[1] is a mere "toothless" procedural device or whether it also presents an opportunity for increased interaction among civil society and governments. The Article demonstrates that the latter is the case and that such interaction may prove more effective in creating substantively improved environmental laws and policies than traditional government driven solutions.

First, this Article describes the major advantages and disadvantages of public participation in government decision making in general. The article goes on to describe how these, and related considerations, led to the rapid negotiation and ratification of the Aarhus Convention. This Convention has been hailed as groundbreaking and unique, especially when compared to other multilateral environmental agreements ("MEAs"). The Article will thus briefly analyze the Convention framework in order to demonstrate its uniqueness in international and national legal contexts. In this connection, the Convention provisions upon which this article relies will be identified.

Because of the many recognized advantages of public participation, legal requirements calling for such participation are not only creatures of

1. The term "'environmental democracy' reflects the objectives of opening up decision-making processes affecting the environment by widening the range of voices heard and improving the quantity and quality of policy choices available to society." JOSEPH FOTI ET AL., VOICE AND CHOICE: OPENING THE DOOR TO ENVIRONMENTAL DEMOCRACY 3 (Greg Mock et al. eds., 2008), *available at* http://pdf.wri.org/voice_and_choice.pdf.

environmental law. For example, laws in both the United States and the European Union ("EU") feature generalized as well as specific environmental public participation provisions. Further, court decisions in the United States and beyond have emphasized the importance of public participation to environmental justice[2] and democracy. This Article will briefly highlight such law in order to demonstrate the growing importance of public participation in the worldwide forums.

The major goal of this Article is, however, to illuminate the first ten years of case law under the Convention's provisions regarding public participation in decision making. This examination is undertaken to determine whether the Convention's procedural provisions have proved to have any real bite and whether the Convention has, in addition to procedural changes, also led to any positive substantive change in national or international environmental law. Not surprisingly, in an area where an intergovernmental organization hears cases of previously exclusive national sovereignty, some friction has arisen just as a lack of effort by a few nations to observe and follow the Convention principles has become apparent. However, several significant successes have also been achieved. Some of these have arisen in newly democratized nation states that may have been seen as unlikely candidates for the promotion of public participation in government decision making. These success stories will be told with a view to demonstrate that what may be seen as a dichotomy between procedure and substance is more correctly seen as an interface between the two. This interface provides the public with significant potential to effectuate positive bottom-up change instead of having to wait for traditional top-down solutions.

Ten years of the existence of the Aarhus Convention have now passed. This Article concludes with a view to the future of the Convention and its possible geographical and thematic development as well as to the potential expansion of its principles into other national and international legal instruments.

II. WHY PUBLIC PARTICIPATION?

Why is public participation necessary or even desirable when, after all, it is the job of our governments and elected representatives to assess

2. "Environmental justice ("EJ") is a term that captures a civil rights movement, a normative goal of distributional fairness and community empowerment, as well as a broad set of laws, regulations, and initiatives that seek to address disproportionate and adverse environmental conditions in minority and low-income communities." Steve Bonorris & Nicholas Targ, *Environmental Justice in the Laboratories of Democracy*, 25 A.B.A. SEC. NAT. RES. & ENV., 44 (Fall 2010).

and balance competing interests and resources, taking everyone's best interests into account? Do the advantages of public participation outweigh the disadvantages? How might the democratic systems be improved by public participation? And what *is* public participation at its core?

As a threshold matter, public participation in government decision making is based on the belief that those who are affected by a decision have a right to be involved in the decision-making process.[3] The core values and beliefs supporting public participation are:[4]

> (1) Public participation includes the promise that the public's contribution will influence the decision.
>
> (2) Public participation promotes sustainable decisions by recognizing and communicating the needs and interests of all participants, including decision makers.
>
> (3) Public participation seeks out and facilitates the involvement of those potentially affected by or interested in a decision.
>
> (4) Public participation seeks input from participants in designing how they participate.
>
> (5) Public participation provides participants with the information they need to participate in a meaningful way.
>
> (6) Public participation communicates to participants how their input affected the decision.

This Section sets forth some of the most significant advantages and disadvantages of public participation, drawing on lessons learned from environmental law and general democratic processes.

A. Advantages

Perhaps most important when weighing the pros and cons of public participation, is the fact that democratic processes are not perfect. They are "only . . . as representative of popular will as politicians are consistent with their election platforms."[5] But sometimes politicians and lawmakers do not remain loyal to their platforms. "We hope that our elected representatives have adequate time, information, integrity,

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3. Int'l Ass'n for Pub. Participation, *IAP2 Core Values*, http://www.iap2.org/displaycommon.cfm?an=4 (last visited Mar. 26, 2012).

4. *Id.*

5. Bende Toth, *Public Participation and Democracy in Practice—Aarhus Convention Principles as Democratic Institution Building in the Developing World*, 30 J. LAND RESOURCES & ENVTL. L. 295, 296 (2010).

resources, and wherewithal to assess and balance competing interests. . . ."[6] Sometimes, this is not the case. Public participation can help by adding another expert voice to the democratic discourse as well as to lawmaking and law enforcement processes. Although the "public" who is granted access to participate typically consists of nongovernmental organizations ("NGOs") that may be considered "partisan," such voices nonetheless strengthen the dialogue and are crucial to democracy itself.[7]

Other legally and practically significant advantages include the ability for governments to build partnerships with affected stakeholders and to make use of their specialized and often financially valuable knowledge in the design and implementation of legal provisions addressing the needs of affected stakeholders.[8] Such "hidden" knowledge includes legal, environmental, financial, governmental, and other information that is invariably used in governmental planning processes. Public participation thus has the potential for helping governments supplement or save resources. Importantly, an empowered public can help facilitate the creation of substantively better decisions through the submission of valuable input on draft legislation.[9] In return, public participation helps educate and inform the public.[10]

Public participation also helps governments resolve potentially conflicting needs and concerns early in the planning process when legislative, procedural and/or practical changes may be easier to make than later. In other words, public participation may serve as a time-saver before a "crisis point" is reached.[11]

A greater amount of compliance with new legal provisions is ensured through early and improved consensus building. Drawing a parallel to business life, employees have proven to be more cooperative in regards to decisions they personally resist if these decisions were made using principles of transparency and relative democracy. If conflict does arise, public participation helps make conflict management more efficient.[12] Civil society may also play an important role in triggering compliance investigations. This is of particular importance at the international level where nation-states are often unwilling to bring compliance matters before international tribunals out of comity concerns.

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6. *Id*.

7. *Id*. at 321.

8. Biodiversity Conservation Ctr., *Main Benefits of Public Participation*, http://www.biodiversity.ru/coastlearn/pp-eng/benefits.html (last visited Mar. 26, 2012) [hereinafter Biodiversity].

9. Toth, *supra* note 6, at 298.

10. *Id.* at 297.

11. Biodiversity, *supra* note 9; Toth, *supra* note 6, at 297–98.

12. Biodiversity, *supra* note 9.

In the environmental arena, public participation helps ensure that the environment remains on the political and legislative agenda.[13] Public participation in environmental democracy has become especially important in recent times when the intergovernmental drive toward the creation and improvement of international environmental standards has diminished rather than increased.[14] Further, decision makers are often removed from the firsthand effects of their decisions and thus may be unaware of, or unaccountable for, the direct effects of their decisions. [15] Conversely, the general public is often better situated to evaluate on-the-ground effects of laws, policies, and actions affecting the environment.[16] Public participation is thus considered "essential" not only to sustainable development and the greening of the economy, but also to wider social dimensions such as poverty eradication, employment, social inclusion, and gender equality.[17] A widely accepted view is that "if any change is ever to occur, it will depend on the general will of states *and* the good practice of NGOs" rather than solely on legal theory and governmental action.[18]

In short, public participation is widely considered not only a "high mark"[19] for environmental democracy, but also one of the fundamental elements of good governance in general.[20]

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13. *Id.*

14. NGOs IN INTERNATIONAL LAW: EFFICIENCY IN FLEXIBILITY? 152 (Pierre-Marie Dupuy & Luisa Vierucci eds., 2008) [hereinafter Dupuy & Vierucci].

15. Toth, *supra* note 6, at 297.

16. *Id.* at 298.

17. U.N. Econ. Comm'n for Eur., Report of the Second Meeting of the Parties: Decision II/4 on Promoting the Application of the Principles of the Aarhus Convention in International Forums, ¶ 5, U.N. Doc. ECE/MP.PP/2005/2/Add.5 (June 20, 2005), *available at* http://www.unece.org/fileadmin/DAM/env/documents/2005/pp/ece/ece.mp.pp.2005.2.add.5.e.pdf [hereinafter Almaty Guidelines]; U.N. Econ. Comm'n for Eur., *Chisinau Declaration*, ¶ 1, U.N. Doc. ECE/MP.PP/2011/CRP.4/Rev.1 (July 1, 2011), *available at* http://www.unece.org/fileadmin/DAM/env/pp/mop4/Documents/ece_mp_pp_2011_CRP_4_rev_1_Declaration_e.pdf.

18. Dupuy & Vierucci, *supra* note 15, at 152 (emphasis added); *Chisinau Declaration*, *supra* note 18, ¶ 4.

19. THE AARHUS CONVENTION AT TEN: INTERACTIONS AND TENSIONS BETWEEN CONVENTIONAL INTERNATIONAL LAW AND EU ENVIRONMENTAL LAW 41 (Marc Pallemaerts ed., 2011) [hereinafter AARHUS CONVENTION AT TEN].

20. Almaty Guidelines, *supra* note 18, at 5; *Chisinau Declaration*, *supra* note 18, ¶ 1.

B. Disadvantages

Sovereignty and power distribution issues are often at the forefront of the disadvantages frequently mentioned in the public participation discourse. For example, concerns over public participation include hesitation by governments unwilling to cede their traditional lawmaking powers and venture into what they may see as new and untested territory. From a sovereignty point of view, governments are used to getting their guidance from domestic legislation, not international conventions such as the Aarhus Convention. [21] Further, Western ideals of democratic developments such as public participation may not prove effective in cultures with a tradition of weak participation in public affairs such as the former East Bloc of Europe.[22] "Traditional public participation . . . is often structured as an internal/external, us-versus-them, zero-sum conflict relationship."[23] Unless all actors are willing to see public participation as an advantage, the situation could become one of competition rather than fruitful collaboration.

Public participation also presents an issue of exactly who can best represent the "public." In light of the significant increase of various NGOs and interest groups each with their own respective agenda, it is debatable whether any groups can be said to effectively represent the general public. Some experts are hesitant towards a "wholesale acceptance of the notion that NGOs are truly reflective of the broader public opinion" as they may "privilege a narrow elitist pro-environmental orientation over the will of the larger public,"[24] in other words present a "tyranny of the majority" type of situation.

Importantly, one may also wonder if a sufficiently representative slice of the population has the time for, interest in, and/or financial resources to participate in meaningful ways. Public participation may, for example, not be feasible in those parts of the world affected by financial, educational, and technological poverty. "[E]ven governments in developing countries have a hard time participating in important negotiations. It is hardly surprising that impoverished people have a difficult time participating in governmental decisions."[25] In fact, even the Aarhus Convention itself lacks specific commitments to help financially

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21. Ole W. Pedersen, *European Environmental Human Rights and Environmental Rights: A Long Time Coming?*, 21 GEO. INT'L ENVTL. L. REV. 73, 97–99 (2008).

22. Biodiversity Conservation Ctr., *Risks of Public Participation*, http://www.biodiversity.ru/coastlearn/pp-eng/risks.html (last visited Mar. 26, 2012).

23. *Id.*

24. Toth, *supr*a note 6, at 320.

25. Svitlana Kravchenko, *The Myth of Public Participation in a World of Poverty*, 23 TUL. ENVTL. L. J. 33, 38 (2009).

disadvantaged people take advantage of its formal public participation provisions.[26]

Another concern regarding the efficacy of public participation involves the feasibility of providing access and meaningful participation to a potentially large group of diverse stakeholders. At the international level, it would be very difficult, if not impossible, in practice to meet the participation demands from all interested members of the public.[27]

Similarly, public participation poses the risk of overburdening the Aarhus Convention's already busy Compliance Committees with increased submissions.[28] So far, "the NGO Community [has acted] in a responsible and disciplined manner,"[29] submissions have been moderate, and the right of the public to be involved under the Convention has thus "in no way been misused." [30] However, problems may arise in the future given the increasing amount of submissions being made to the Compliance Committee.[31]

On balance, this Article takes the view that the advantages of public participation outweigh the disadvantages. Unless one fully trusts the democratic workings of traditional "top-down" government rulemaking schemes, involving the public in decisions ultimately affecting everyone is preferable to the alternative.

III. THE ROAD TO AARHUS

The principle of public participation in international environmental law can be traced to the 1992 Rio Declaration and its Agenda 21. According to Agenda 21,

> [o]ne of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making. Furthermore, in the more specific context of environment and development, the need for new forms of participation has emerged. This includes the need of individuals, groups and organizations to participate in environmental impact assessment procedures and to know about and participate in decisions,

26. *Id*.

27. Dupuy & Vierucci, *supra* note 15.

28. Almaty Guidelines, *supra* note 18, ¶ 10.

29. Dupuy & Vierucci, *supra* note 15.

30. *Id*.

31. Veit Koester, *The Compliance Mechanisms—Outcomes and Stocktaking*, 41 ENVTL. POL'Y & L. 196, 200–01 (2011).

> particularly those which potentially affect the communities in which they live and work.[32]

In particular, Principle 10 of the Rio Declaration laid the groundwork[33] for what later would become the Aarhus Convention through the wording that,

> [e]nvironmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities . . . and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available.[34]

These principles were adopted by no less than 172 nations and subsequently incorporated in several MEAs. For example, Article 6 of the United Nations Framework Convention for Climate Change ("UNFCCC") provides that "parties shall promote and facilitate . . . public participation in addressing climate change and its effects and [in] developing adequate responses."[35] Similarly, the UNECE Convention on Environmental Impact Assessment in a Transboundary Context ("Espoo Convention") calls for Parties to provide "an opportunity to the public in the areas likely to be affected to participate in relevant environmental impact assessment procedures regarding proposed activities.[36] The Protocol on Water and Health to the Convention on the Protection and Use of the Transboundary Watercourses and International Lakes incorporates public participation as well.[37]

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32. United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3–14, 1992, *Agenda 21*, ¶ 23.2, U.N. Doc. A/CONF.151/26 (Vol. III) (Aug. 14, 1992), *available at* http://www.un.org/esa/dsd/agenda21/res_agenda21_23.shtml.

33. U.N. ECON. COMM'N OF EUR., THE AARHUS CONVENTION: AN IMPLEMENTATION GUIDE, at 3, U.N. Doc. ECE/CEP/72, U.N. Sales No. E.00.II.E.3 (2000).) [hereinafter AARHUS CONVENTION: AN IMPLEMENTATION GUIDE].

34. United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3–14, 1992, *Rio Declaration on Environment and Development*, ¶ 10, U.N. Doc. A/CONF.151/26 (Vol. I) (Aug. 12, 1992) [hereinafter *Rio Declaration*], *available at* http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm.

35. U.N. Framework Convention on Climate Change, art. 6(a), 6(a)(ii)-(iii), *opened for signature*, May 9, 1992, S. Treaty Doc. 102–38, 1771 U.N.T.S. 107.

36. Convention on Environmental Impact Assessment in a Transboundary Context, art. 2(6), Feb. 25, 1991, 1989 U.N.T.S. 309, [hereinafter Espoo Convention], *available at* http://www.unece.org/env/eia/documents/legaltexts/conventiontextenglish.pdf.

37. *See generally* Kyoto Protocol to the U.N. Framework Convention on Climate Change, Dec. 10, 1997, 37 I.L.M. 22; [hereinafter *Kyoto Protocol*]; *see also* Svitlana Kravchenko, *Procedural Rights as a Crucial Tool to Combat Climate Change*, 38 GA. J. INT'L & COMP. L. 613, 646 n.176 (2010) [hereinafter Kravchenko, *Procedural Rights*].

The above instruments, and others like them, are recognized as having helped pave the road to Aarhus.[38] However, one of the main stepping stones of the Convention is the 1995 UNECE Guidelines on Access to Environmental Decision-Making. This identified public participation as "one of seven key elements for the long-term environmental programme for Europe."[39] The same Ministerial Conference that endorsed the Guidelines, decided that a convention dedicated to public participation should be drafted.[40]

The Aarhus Convention negotiations began in 1996 and culminated in the adoption of the treaty just two years later,[41] an impressively short amount of time for the notoriously difficult task of drafting a treaty in a version acceptable to a significant amount of nation-states. The negotiations themselves were an exercise in public participation as they involved an unprecedented level of participation by NGOs.[42] The Convention entered into force in 2001.[43] So far, forty-four Parties have ratified it.[44] The United States has not, even though it is a member of the UNECE.[45]

According to former United Nations Secretary-General Kofi Annan, the Aarhus Convention is,

> "by far the most impressive elaboration of principle 10 of the Rio Declaration, which stresses the need for citizens' participation in environmental issues and for access to information on the environment held by public authorities. As such it is the most ambitious venture in the area of environmental democracy so far undertaken under the auspices of the United Nations."[46]

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38. U.N. ECON. COMM'N OF EUR., THE AARHUS CONVENTION: AN IMPLEMENTATION GUIDE, at 2–4, U.N. Doc. ECE/CEP/72, U.N. Sales No. E.00.II.E.3 (2000).

39. *Id.* at 2.

40. *Id*.

41. *Id*. at 1–2; *see generally* Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, June 25, 1998, 2161 U.N.T.S. 447 (entered into force Oct. 30, 2001), [hereinafter *Aarhus Convention*], *available at* http://live.unece.org/fileadmin/DAM/env/pp/documents/cep43e.pdf.

42. AARHUS CONVENTION: AN IMPLEMENTATION GUIDE, *supra* note 34.

43. *Aarhus Convention*, *supra* note 42.

44. U.N. Econ. Comm'n for Eur., Status of Ratification (Apr. l 5, 2012), http://www.unece.org/env/pp/ratification.html (the United States and Canada have neither signed nor ratified the Convention).

45. *Id*.

46. AARHUS CONVENTION: AN IMPLEMENTATION GUIDE, *supra* note 34.

IV. NUTS AND BOLTS OF THE AARHUS CONVENTION

The following Section will analyze and demonstrate the uniqueness of the Convention and set forth the legal aspects and provisions of the Convention upon which this Article is built.

A. Convention "Pillars" and Provisions Pertinent to this Article

The Convention is founded on three "pillars": access to information, public participation in decision making, and access to justice.[47] The first has been analogized to providing "consumers with adequate product information for informed environmental choices."[48] The third, access to justice, "aims to address common impediments to legal challenges by setting forth provisions designed to assure wide access to justice [by] the public and civil society as a means to ensure enforcement of environmental law, and to reinforce the access to information and public participation pillars of the Convention."[49] However, as the purpose of this Article is to examine the Convention's ultimate potential for substantive change through the public's involvement in government decision-making processes, this Article exclusively focuses on the second pillar. The provisions that form the basis of this pillar are found in Articles 6, 7, and 8 of the Convention.[50]

Article 6 governs public participation in decisions on "specific activities with a possible significant environmental impact." Examples of such activities are listed in Annex I and include decisions on the proposed siting, construction and operation of or changes to many different types of industrial facilities, the licensing of products into the market place, as well as any activity not covered by the specific language of the Annex, but where public participation is governed by environmental impact assessments under national legislation.[51] Article 6 contains by far the most specific public participation requirements of the Convention.

Article 7 covers public participation in the development of "plans, programmes and policies relating to the environment." This Article

47. *Id.* at 49, 85, 125; *Aarhus Convention*, *supra* note 42, art. 4–9.

48. Toth, *supra* note 6, at 298; AARHUS CONVENTION: AN IMPLEMENTATION GUIDE, *supra* note 34, preamble.

49. Toth, *supra* note 6, at 311.

50. *See, e.g.*, AARHUS CONVENTION: AN IMPLEMENTATION GUIDE, *supra* note 34, at iii.

51. *Id.* at 86, Annex I.

governs sectoral and land-use plans, environmental action plans, and environmental policies at all levels.[52] Article 7 requires "[e]ach Party [to] make appropriate practical and/or other provisions for the public to participate during the preparation" of such plans and programs. Further, "[t]o the extent possible, each Party shall endeavour to provide opportunities for public participation in the preparation of policies relating to the environment." Articles 6 and 7 feature some overlap. For example, "activities" under Article 6 have also been interpreted to constitute Article 7 "plans, programmes and policies" and have thus been analyzed for possible violations of both articles.

Article 8 seeks to promote public participation in the public authorities' preparation of normative laws and rules with a potentially significant environmental impact.[53] Most importantly, Article 8 states that "[e]ach Party shall strive to promote effective public participation at an appropriate stage, and while options are still open, during the preparation by public authorities of executive regulations and other generally applicable legally binding rules that may have a significant effect on the environment."[54]

Articles 7 and 8 arguably have the greatest potential for providing the public with the most effective chances of making a true impact on environmental decision making. This is because they address legally binding normative instruments applying to a range of different situations, unlike Article 6, which more narrowly regulates individual activities. Thus, Article 7 and 8 cases will be analyzed in depth. The jurisprudence under these two Articles is relatively scant— the Compliance Committee has decided only six cases under articles 7 and 8 so far.[55] Thus, this Article will also focus on the larger body of jurisprudence under Article 6. Some consider this Article to be the "stronger cousin" of the three because its requirements are much more detailed than those of Articles 7 and 8. Because of this and the overlap between Article 6 and 7 cases mentioned above, some Article 6 jurisprudence is relevant here.[56] It is, however, beyond the scope of this journal Article to analyze all Article 6 cases that have been heard by the Compliance Committee so far; there

52. *Id.*

53. *Id*.

54. *Id.*

55. EUROPEAN ECO FORUM AT AL., CASE LAW OF THE AARHUS CONVENTION COMPLIANCE COMMITTEE (2004-2008) 200-04 (A. Andrusevych et al. eds., 2008).), *available at* http://www.participate.org/downloads/individual_files/CL3_en_web.pdf.

56. Jeremy Wates, *The Future of the Aarhus Convention: Perspectives Arising from the Third Session of the Meeting of the Parties*, *in* THE AARHUS CONVENTION AT TEN: INTERACTIONS AND TENSIONS BETWEEN CONVENTIONAL INTERNATIONAL LAW AND EU ENVIRONMENTAL LAW 383, 406 (Marc Pallemaerts ed., 2011).

are simply too many. Instead, this Article will focus on those Article 6 cases that primarily relate to actual decision-making processes and thus best illustrate the potential for substantive change. In the author's opinion, these are covered by Paragraph 1 (requiring the general scope of Article 6 to be observed), paragraph 3 (setting time frames for public participation procedures), Paragraph 4 (requiring that public participation takes place early in the decision-making process), Paragraph 6 (requiring public authorities to provide the public with access to all information relevant to the decision to be made), Paragraph 7 (setting for specific procedures for public participation where relevant to arguments raised by communicants), and Paragraph 8 (requiring parties to ensure that decisions take due account of the public participation). The focus of the present Article will be on cases where the Compliance Committee found the parties to be in noncompliance in order to be able to examine any further progression of events from procedure (i.e. the finding of noncompliance) to substance (i.e. what, if anything, did the Parties do to rectify the legal problem).

B. Uniqueness of the Aarhus Convention

The Aarhus Convention features several unique mechanisms regarding the role of the general public in environmental decision making and enforcement. First, the Convention is the first MEA that focuses exclusively on the obligations of states towards their *citizens* and not only on Parties' rights and obligations vis-à-vis *each other*.[57] Compliance with the Convention provisions is ensured by the Aarhus Convention Compliance Committee, which currently consists of ten members serving in an individual capacity.[58] The compliance mechanism may be triggered in four ways:

> (1) This a Party may make a submission about compliance by another Party;
>
> (2) a Party may make a submission concerning its own compliance;
>
> (3) the Secretariat may make a referral to the Committee;
>
> (4) *members of the public may make communications concerning a Party's compliance with the convention.*[59]

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57. Pedersen, *supra* note 22, at 93.

58. U.N. Econ. Comm'n for Eur., Committee Members, http://live.unece.org/env/pp/ccmembership.html (last visited Apr. 1, 2012).

59. U.N. ECON. COMM'N FOR EUR., Background, http://live.unece.org/env/pp/ccbackground.html (last visited Apr. 1, 2012).

Accordingly, any member of the public—even individual citizens—can trigger a review of alleged cases of noncompliance.[60] Further, the communicant needs to show no specific interest in the matter when submitting a case for compliance review.[61] However, the Committee cannot consider "anonymous, manifestly ill-founded and abusive communications or those incompatible with the provisions of the Convention . . . moreover, it shall take into account whether available and effective domestic remedies have been exhausted."[62] Up to the Fourth Meeting of the Parties ("MOP 4"), the Compliance Committee had received sixty communications—ten from individual members of the public and the remainder from civil society organizations including NGOs, as well as one local government body.[63] This ratio shows the effectiveness of involving civil society in compliance matters. Allowing private parties to submit questions of implementation is unique in international environmental law as MEAs typically only allow such submissions to be made by the parties themselves, or, in some cases, by expert review teams.[64] Nonetheless, the aspect of the compliance mechanism whereby communications from the public may be brought before the Committee is not an unpopular one among nation-states as shown by the fact that no Party has opted out of it.[65]

The second unique feature of Aarhus is that Compliance Committee members serve in "an individual capacity."[66] Thus, it is accepted practice that Committee members do not belong to the executive branch of any

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60. U.N. Econ. Comm'n for Eur., *Report of the First Meeting of the Parties: Addendum, Decision I/7, Review of Compliance*, Annex ¶ 18, U.N. Doc. ECE/MP.PP/2/Add 8 (Apr. 2, 2004) [hereinafter *Review of Compliance*].

61. Attila Tanzi*, Controversial developments in the field of public participation in the international environmental law process*, *in* NGOS IN INTERNATIONAL LAW: EFFICIENCY IN FLEXIBILITY? 135, 152 (Pierre-Marie Dupuy & Luisa Vierucci eds., 2008).

62. *Id*.

63. Veit Koester, *The Compliance Mechanisms—Outcomes and Stocktaking*, 41 ENVTL. POL'Y & L. 196, 201 (2011).

64. *See, e.g.*, U.N. Framework Convention on Climate Change, *Report of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol on its First Session:, held at Montreal from 28 November to 10 December 2005, Addendum, Part Two: Action taken by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its first session, Decision 27/CMP.1 Procedures and Mechanisms Relating to Compliance Under the Kyoto Protocol*, ¶ 1, U.N. Doc. FCCC/KP/CMP/2005/8/Add.3 (Mar. 30, 2006); *and* U.N. Framework Convention on Climate Change, An Introduction to the Kyoto Protocol Compliance Mechanism (2012), http://unfccc.int/kyoto_protocol/compliance/items/3024.php (last visited April 1, 2012).

65. U.N. Econ. Comm'n for Eur., Report of the Second Meeting of the Parties, Addendum, Decision II/5, General Issues of Compliance, U.N. Doc. ECE/MP.PP/2005/2/Add.6 (June 13, 2005).

66. *Review of Compliance*, *supra* note 61, Annex ¶ 1,1.

government and that they are completely independent from any government, as far as their work with the Committee is concerned.[67] The purpose of this structure is to avoid potential conflict of interest situations that might arise if government representatives serving as Committee members had to hear cases against their government employers. In such situations, the individual capacity of the Committee members makes it more likely they will issue findings of noncompliance against their own nations.

Third, NGOs may nominate candidates for election to the Committee.[68] This is an obvious boon to public participation, especially within environmental affairs, which are well known to be of great interest to a significant number of highly motivated and socio-politically active members of the public.

Fourth, communicants do not need to be represented by legal counsel, and communications to the Compliance Committee need not be prepared with legal assistance.[69] This facilitates participation by stakeholders with limited financial resources, one of the general concerns about public participation discussed previously.

Finally, the Aarhus Convention Compliance Committee has taken the lead among international agreements in opening its meetings to observers, including those from the nongovernmental sector.[70] The purpose of this is to lead by example. A treaty that calls for public participation by governments should also allow insight into its own internal mechanisms. It does

C. Who is "the public?"

It is important to bear in mind exactly *who* the intended "public" is under the Convention framework. The Convention defines "the public" as "one or more natural *or* legal persons, *and*, in accordance with national legislation or practice, their associations, organizations or groups."[71]

The issue of whether a *particular* member of the public is affected or has a specific interest in a particular matter is not significant where

67. Wates, *supra* note 57, at 388.

68. *Review of Compliance*, *supra* note 61, Annex ¶ 4.

69. U.N. Econ. Comm'n for Eur., Guidance Document on the Aarhus Convention Compliance Mechanism 32, *available at* http://www.unece.org/fileadmin/DAM/env/pp/compliance/CC_GuidanceDocument.pdf.

70. NGOs Tanzi, *supra* note 62.

71. *Aarhus Convention*, *supra* note 42.

rights under the Convention apply to "the public" in general.[72] *Each* individual, natural or legal person enjoys all the collective rights covered by the Convention. [73] Thus, public authorities have not met their obligations by, for example, providing information to just one particular representative selected by the government.[74] In contrast to other UNECE conventions, the Aarhus Convention considers associations, groups, or organizations without legal personality to be members of the "public" under the Convention, subject to national legislation or practice.[75]

In contrast, Article 6(5)-(6) uses the narrower phrase "public concerned." The Convention specifies that "[t]he public concerned" means "the public affected or likely to be affected by, or having an interest in, the environmental decision-making; for the purposes of this definition, non-governmental organizations promoting environmental protection and meeting any requirements under national law shall be deemed to have an interest."[76] Article 9(2) also uses the term "public concerned" and clarifies that this may be anyone "having a sufficient interest" or "maintaining impairment of a right" under the Convention. [77] How these thresholds are met "shall be determined in accordance with the requirements of national law and consistently with the objective of giving the public concerned wide access to justice within the scope of [the] Convention."[78]

Thus, "the term 'public concerned' refers to a subset of the public at large with a special relationship to a particular environmental decision-making procedure."[79] But "[w]hile narrower than 'the public,' 'the public concerned' is nevertheless still very broad."[80] "It appears to go well beyond the kind of language that is usually found in legal tests of 'sufficient interest.'"[81] It even seems to apply to a "category of the public that has an unspecified interest in the decision-making procedure."[82] The Convention thus operates with relatively broad standing requirements. Further, the Convention does not require that a person shows a *legal* interest in a given issue; *factual* interests as defined under continental

72. U.N. ECON. AARHUS CONVENTION: AN IMPLEMENTATION GUIDE, *supra* note 34, at 39.

73. *Id*.

74. *Id*.

75. *Id*. at 39–40.

76. *Aarhus Convention*, *supra* note 42, art. 2(5).

77. *Id*. art. 9(2).

78. *Id*.

79. AARHUS CONVENTION: AN IMPLEMENTATION GUIDE *supra* note 34, at 40.

80. *Id.*

81. *Id.*

82. *Id.*

legal systems suffice.[83] This is noteworthy as persons with mere factual interests normally do not enjoy the same procedural and judicial rights as do persons with legal interests.[84]

Second, whereas both public interest nongovernmental organizations ("PINGOs") and business interest nongovernmental organizations ("BINGOs") can claim a right to participate under Articles 7 and 8, Articles 6 and 9 appear to limit such participation to PINGOs. However, whereas the"[t]he Convention treats environmental NGOs advantageously in some places, [it] usually signals that individuals and persons not organized into formal groups can equally participate in environmental decision making. This would apply to businesses as well as to non-environmental NGOs."[85] Parties may set requirements for NGO participation under national law, but these must be consistent with the overall goals of the Convention.[86]

A common concern among legal environmental scholars and environmentalists in general is whether it is expedient to let BINGOs play a role in public participation in environmental work. In this context, it is, however, important to recall that, in former UN Secretary-General Kofi Annan's words:

> Action starts with Governments . . . [b]ut Governments cannot do [this] alone. Civil society groups have a critical role, as partners, advocates and watchdogs. So do commercial enterprises. Without the private sector, sustainable development will remain only a distant dream.[87]

In short, it is important to remember that in participation discourse, the "public" may cover a both broad and narrow range of actors, not all of whom necessarily have the same objectives in mind.

V. PUBLIC PARTICIPATION PROVISIONS IN NON-AARHUS CONTEXTS

Although the Aarhus Convention is unique in several aspects, it is far from the only instrument that calls for public participation in environmental and other law. For example, codified law in both the United States and the EU feature public participation provisions, just as

83. *Id.*
84. *Id.*
85. *Id.*
86. *Id.* at 41.
87. Tanzi, *supra* note 62, at 136.

some courts in the United States and beyond have upheld public participatory rights.

A. United States Federal and State Law

The second pillar of the Aarhus Convention (public participation in decision making) features stipulations resembling several United States acts. For example, the National Environmental Policy Act ("NEPA") requires the President's Council on Environmental Quality to "consult with the Citizens' Advisory Committee on Environmental Quality … [as well as] with such representatives of science, industry, agriculture, labor, conservation organizations, State and local governments and other groups, as it deems advisable."[88] It also mandates that the Council shall "utilize, to the fullest extent possible, the services, facilities, and information … of public and private agencies and organizations, and individuals, in order that duplication of effort and expense may be avoided."[89]

The Clean Water Act ("CWA") calls for cooperation and consultation with, i.a., "private agencies, institutions, and organizations, and individuals, including the general public" as well as "recognized experts in various aspects of pollution and representatives of the public."[90] In fact, public participation is one of the main goals mentioned in the Act's "Congressional Declarations of goals and policy."[91]

The Administrative Procedure Act ("APA") requires "each agency [to] give an interested person the right to petition for the issuance, amendment, or repeal of a rule."[92] The APA also requires agency business to be conducted in accordance with "open meetings" requirements, which include timely advance notice to the public, publicly available transcripts, and that agencies create their own procedures for open meetings.[93]

Other acts such as the Freedom of Information Act, the Federal Advisory Committee Act, and the Endangered Species Act feature provisions governing access to information and justice (equivalent to Aarhus Convention pillars one and three, respectively).[94] It is, however,

88. 42 U.S.C. § 4345(1) (2006).

89. *Id.* § 4345(2).

90. 33 U.S.C. § 1254(a) (2002)(2), (4) (2006).

91. *Id.* § 1251(e); *see also* Toth, *supra* note 6, at 306.

92. 5 U.S.C. § 553(e) (2006). "'Person' includes an individual, partnership, corporation, association, or public or private organization other than an agency." 5 U.S.C. § 551(2).

93. *Id.* § 552b(b), (e),(g)–(h), (f)–(g).

94. *Id.* § 552 (access to information); *Id.* (access to justice).

important to bear in mind that in similarity with Article 9(2) of the Convention, these Acts also present significant hurdles to public participation, for instance, in the form of, for example, standing requirements.[95]

Additionally, some states in the United States have enacted laws embracing principles governing the decision making and access to information aspects of public participation. For example, if a development project in a minority or low-income housing community (an "environmental justice" or "EJ" community) in New York carries the potential for at least one significant, adverse environmental impact, the permit applicant must submit a public participation plan describing how the applicant intends to identify and notify stakeholders. [96] The permit applicant must also produce easily understood project information, schedule meetings for public input, and make documents available.[97] In Connecticut, facilities located in EJ communities must file and obtain approvals for "meaningful" public participation plans before applying for general siting permits.[98] Project proponents are specifically instructed to undertake "reasonable, good faith effort[s]" to provide clear and accurate information about the project and financial resources for the mitigation of environmentally negative project impacts.[99] The California APA requires rulemaking agencies to "consider" public input on regulatory proposals and to "involve" the public through hearings and public comments.[100] The California law does not, however, address environmental issues per se. Perhaps quite the contrary, it requires agencies to assess "whether and to what extent the regulation will create or eliminate jobs or businesses"[101] and thus, in those instances where perceived or real conflicts may exist between promoting business and environmental interests emphasizes the former.

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95. *See generally* Lujan v. Defenders of Wildlife, 504 U.S. 555 (1992).

96. N.Y. ST. DEP'T OF ENVTL. CONSERVATION, COMMISSIONER POLICY 29, ENVIRONMENTAL JUSTICE AND PERMITTING, (2003), *available at* http://www.dec.ny.gov/publicregulations/51.html.

97. *Id.*

98. 2008 Conn. Pub. Acts 08–94.

99. *Id*.

100. CAL. GOV'T CODE § 11340. (West 2011).

101. HOW TO PARTICIPATE IN THE RULEMAKING PROCESS: THE STATUTES, REGULATIONS AND CASE LAW YOU NEED TO MAKE YOUR VOICE HEARD IN THE CALIFORNIA RULEMAKING PROCESS 6 (2006), *available at* http://www.oal.ca.gov/res/docs/pdf/HowToParticipate.pdf.

B. European Union Law

In the EU, several instruments require member nations to allow public participation in decision-making processes at the EU level. For example, the 2001 Directive on the Assessment of the Effects of Certain Plans and Programs on the Environment stipulates that draft plans and programs covered by the Directive must be made available to the public before they are adopted, that the public is given an opportunity to comment on such plans and programs, and, importantly, that the final plan or program "shall take[] into account" the consultations made by the public.[102] Council Directive 2003/35/EC on Public Participation further provides for public participation in the creation of certain plans and programs relating to the environment.[103] This Directive also added PINGOs to the definition of "public" and provides for access to the review of public participation decisions made under specific EU directives.[104] Further, EU Environmental Impact Assessments commonly incorporate public participation requirements.[105]

Other directives cover access to information and justice. For example, the 2003/4 Directive on Freedom of Access to Information on the Environment sets specific time limits for government replies to information requests as well as reasonable fees for obtaining information.[106] It reads exceptions to the right to information narrowly.[107] In contrast, the continued failure to adopt a 2003 draft directive on access to justice in national environmental matters means that this matter is left "firmly in the hands of member states' national law."[108] On the other hand, the EU Directive on Environmental Liability "allows the public and non-governmental environmental organizations to request competent authorities to intervene in cases of environmental damage or imminent threat. Standing requirements are identical to the Aarhus Convention's

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102. Council Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the Assessment of the Effects of Certain Plans and Programmes on the Environment, 2001 O.J. (L 197) 30, 33–34 (EC).

103. Council Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003 on Providing for Public Participation in Respect of the Drawing Up of Certain Plans and Programmes Relating to the Environment and Amending with regard to Public Participation and Access to Justice Council Directives 83/337/EEC and 96/61/EC, 2003 O.J. (L 156) 17 (EC).

104. *Id.* at 19, 20.

105. Toth, *supra* note 6, at 309.

106. Council Directive 2003/4/EC, of the European Parliament and of the Council of 28 January 2003 on Public Access to Environmental Information, 2003 O.J. (L 41) 13 (EUEC) [hereinafter Directive 2003/4].

107. *Id.* art. 4.

108. Pedersen, *supra* note 22, at 105–07.

Article 9(2)." [109] Importantly, every EU citizen also has the right to bring a complaint before the European Ombudsman.[110] This brings the EU in line with the Aarhus Convention.

Certain EU Directives even go beyond the Aarhus Convention requirements. For example, the 2003 Directive on Public Access to Environmental Information adds specific pieces of information to the definition of environmental information that are not included in the Convention[111] and adds specific access to justice provisions that were missing from previous EU directives.[112] On the other hand, it should also be noted that attempts to bring conformity on the member state level with some of the Aarhus Convention's provisions have failed.[113] Nonetheless, "the procedural environmental rights enshrined in EU legislation remain significant and represent a noteworthy indication of the importance attached to such rights in Europe."[114]

C. Court Decisions

In addition to legislative and agency rulemaking enhancing public participation activities, some courts in the United States and beyond have issued holdings clearly supporting public participation.

For example, plaintiffs in an EJ community in Rhode Island challenged the conduct of the Rhode Island Department of Environmental Management ("DEM") in issuing a permit for a school to be built on a former landfill without providing an opportunity for effective public participation as required by Rhode Island statutory law.[115] Specifically, the plaintiffs alleged that the DEM did not provide local residents with sufficient and substantively adequate notice of the adoption of a work plan proposal and the completion of a site investigation and, further, that the DEM did not make all relevant public records adequately available under Rhode Island public participation

109. Toth, *supra* note 6, at 319.

110. Pedersen, *supra* note 22, at 107 n.212 (2008).

111. Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on Public Access to Environmental Information, 2003 O.J. (L 41) 13 (EU); *see also* Toth, *supra* note 6, at 328 n.206; *and* Directive 2003/4, *supra* note 107, at 10.

112. Pedersen, *supra* note 22, at 106.

113. *Id.*

114. *Id.* at 107.

115. Hartford Park Tenants Ass'n v. R.I. Dep't of Envtl. Mgmt., No. 99-3748, 2005 WL 2436227, at *17, *19, *20 (R.I. Sept. 28, 2005) (The Rhode Island Industrial Property Remediation and Reuse Act stipulates that "[t]he department of environmental management will develop and implement a process to ensure community involvement throughout the investigation and remediation of contaminated sites.").

law. The plaintiffs also argued that DEM's failure to adhere to the community involvement mandate resulted in such a lack of information that interested parties were not able to come forward in time and that, furthermore, DEM did nothing to ensure that attendants at public hearings remained informed.[116] The court agreed that the DEM violated public participation law "by failing to develop and implementing [sic] a process that ensured community involvement throughout the investigation and remediation of the contaminated sites where the schools were built."[117] In particular, the court frowned upon DEM's failure to ensure that local residents received adequate notice of the impending actions and failure to provide access to the relevant public records near the site.[118]

Further, four cities and two NGOs have sued the Export-Import Bank and the Overseas Private Investment Corporation in the United States for defendants' failure to evaluate the effects of their financial support of certain energy projects on global climate change. The court ruled that defendants are not completely exempt from the requirements of NEPA, but did not make a decision as to whether defendants had sufficient authority over the specific projects to subject the projects to environmental impact assessment requirements and thus to public participation.[119]

In Thailand, twenty-seven residents living in one of the world's largest petrochemical production areas filed suit against the Thai National Environment Board to stop the construction of sixty-five industrial projects. The Thai Constitution guarantees "[t]he right of a person to participate with the State and communities in the preservation and exploitation of natural resources."[120] Further, no activity which may seriously affect communities with respect to the quality of the environment may be permitted "unless its impacts have been studied and evaluated and "consultation with the public and interested parties have [sic] been organized, and opinions of an independent organization, consisting of representatives from private environmental and health organisations . . . have been obtained."[121] The Supreme Administrative Court declared the proposed projects unconstitutional for lack of public

116. *Id.* at *24.

117. *Id.* at *56.

118. *Id.* at *27–28.

119. Friends of the Earth, Inc. v. Mosbacher, 488 F. Supp. 2d 889, 891–92 (N.D. Cal. 2007).

120. CONST. OF THE KINGDOM OF THAI. § 67, B.E. 2550 (2007), *available at* http://www.asianlii.org/th/legis/const/2007/1.html.

121. *Id.*

participation and granted an injunction to stop the proposed projects.[122] Subsequent decisions based on this case have halted approximately $9 billion worth of industrial projects in Thailand,[123] highlighting the financial and legal importance of observing public participation requirements where they exist.

D. Other International Agreements

Public participation provisions have not only become a feature of national and international environmental law; major trade, financial, and human rights instruments embrace the principle as well. For example, the 1993 North American Free Trade Agreement's Side Agreement on Environmental Cooperation has established recommendatory bodies for public participation in the work performed under the auspices of the agreement.[124] The World Bank's Participation and Civic Engagement Group, the Global Environment Fund, and the Dispute Settlement Mechanism of the World Trade Organization also apply public participation requirements, as do several human rights instruments.[125]

VI. POTENTIAL FOR EFFECT OF PROCEDURAL REQUIREMENTS ON SUBSTANTIVE RIGHTS AT THE NATIONAL AND INTERNATIONAL LEVELS

This Section will examine how public participation in *procedural* aspects of environmental decision-making mechanisms also has a potential for effect on *substantive* rights. The Aarhus Convention is the natural focal point of this Section although comparisons to select aspects of other MEAs will also be made.

A. National Level

Although the objective of the Convention is to protect "the right of every person of present and future generations to live in an environment adequate to his or her health and well-being,"[126] it is important to recall

122. Daniel Ten Kate & Suttinee Yuvejwattana, *Thai Court Upholds Suspension of Industrial Projects (Update 1)*, BLOOMBERG (Dec. 2, 2009), http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aX8Jgyoem28Q.

123. U.N. Framework Convention on Climate Change, National Reports (2012), *available at* http://unfccc.int/national_reports/items/1408.php.

124. AARHUS CONVENTION: AN IMPLEMENTATION GUIDE, *supra* note 34, at 4.

125. *Id.; see, e.g.*, Kravchenko, *Procedural Rights*, *supra* note 38, at 613.

126. *Aarhus Convention*, *supra* note 42, art. 1.

that the Aarhus Compliance Committee does not sit as a court of review on the *substantive* merits of individual environmental lawsuits under national law.[127] "The idea is not to [substantively] impinge upon individual Parties' sovereign environmental laws, but rather to guarantee the procedural preconditions for their enforcement."[128] Substantive change brought about by the Convention must thus come *indirectly* through its procedural provisions. But is it realistic to hope that what are, after all, mere procedural provisions in an MEA will also result in substantive environmental change, whether in the form of legislative and normative changes or ad hoc decisions on specific activities?

First, the Aarhus Convention has been criticized for only referring to a substantive right to live in an adequately healthy environment on an aspirational level. [129] In fact, "[t]he Aarhus Convention's aim is [simply] to *contribute* to the protection of this right."[130] "[A]lthough the Convention recognizes the right to live in an adequate environment, it does so without pointing towards where such a right is to be found in other international or European law."[131] For example, the implementation guide to the Convention claims that "the convention is the clearest statement to date in international law pointing towards a human right to the environment," but does not explicitly state that any such right even exists or where to find it.[132] This appears to make the Convention somewhat ineffectual in leading to substantive changes with the goal of obtaining a healthy environment. It is possible that the right to healthy environment is a generally recognized one in environmental law circles, but to presume that legislators and law enforcement bodies would also find this to be the case requires a leap of faith that, as history shows, is not yet warranted.

Further, compliance mechanisms under MEAs have, in general, been said to be "weak," "toothless,"[133] and unlikely to be the tool upon which to rely for significant environmental progress. For example, the Facilitative Branch of the Kyoto Protocol Compliance Committee uses only "dialogue," "advice," and "facilitation" to reach its goals, [134]

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127. Svitlana Kravchenko, *The Aarhus Convention and Innovations in Compliance with Multilateral Environmental Agreements*, 18 COLO. J. INT'L ENVTL. L. & POL'Y 1, [hereinafter Aarhus Convention and Innovations].

128. Toth, *supra* note 6, at 304.

129. Pedersen, *supra* note 22, at 99–102.

130. *Id.*; *Aarhus Convention*, *supra* note 42, art 1.

131. Pedersen, *supra* note 22, at 99.

132. *Id*. at 99–102.

133. Kravchenko, *Procedural Rights*, *supra* note 38, at 616.

134. *See generally Kyoto Protocol*, *supra* note 38; *see also* Kravchenko, *Procedural Rights*, *supra* note 38, at 616.

arguably mere "carrots" without much real impetus for change. The Kyoto Protocol Enforcement Branch is legally situated to use more "stick," but even so, the most stringent measure that can be undertaken against a noncompliant Party is to deduct excess emissions from its future emission allowances and suspending the Party's eligibility to participate in international emissions trading.[135] Most international legal scholars would agree that the current version of the Kyoto Protocol is not very far-reaching seen from an environmental point of view (which, of course, has not made it uncontroversial seen from a political one).

In comparison, if a dispute arises under the Aarhus Convention, the parties shall "seek a solution by negotiation or by any other means of dispute settlement acceptable to the parties."[136] If this fails, the dispute may be resolved by the International Court of Justice ("ICJ") or by binding arbitration as per each Party's previous stipulations.[137] This step is "compulsory."[138] Thus, the Aarhus Convention has some legal "teeth." The ability to eventually refer disputes to resolution by the ICJ or binding arbitration is arguably a stronger deterrent than if the last recourse had been for the Compliance Committee to resolve the cases with the possible, but not guaranteed, assistance and cooperation of the involved parties.

So far, however, no Aarhus Convention disputes have been resolved by the ICJ or arbitration. One may fear that in order to avoid this, parties might choose to officially accept a "solution by negotiation" only to subsequently *not* undertake a good faith effort to live up to the dispute resolution stipulations after all. Such concerns may cause some to look to legal instruments other than MEAs for substantive change. Nonetheless, the argument that a legal instrument or provision is per se ineffectual simply by being procedural must fail. For example, procedural provisions can function as a guarantee of the right to have an underlying substantive right adjudicated with at least the potential for the expansion upon substantive rights through national adjudication. This is not only evidenced by vast American jurisprudence in the area of procedural and substantive due process in general, but also by substantive/procedural provisions under, for example, the Endangered Species Act, the CWA, NEPA, and the APA (see also below).

Similarly, although the Aarhus Convention does not specify any narrowly defined environmental rights, it does—through the access to justice pillar—guarantee citizens of ratifying nations a right to have

135. *See generally Kyoto Protocol*, *supra* note 38.

136. Convention on Access to Information, *supra* note 42.

137. *Id*.

138. *Id*.

issues of *national* environmental law heard by a court of law or by other independent and impartial review.[139] It is exactly through its procedural provisions that the Aarhus Convention has "the potential to facilitate the same outcome as a substantive right in terms of assisting citizens in enforcing and pursuing environmental norms."[140] Obtaining the targeted healthy living environment would, of course, be more easily reached if governments around the world would pass laws aimed more strictly at sustainable development. Until that happens, the use of procedural rights work as at least a short-term method of enforcing already existing substantive provisions, and as a way of drawing attention to the creation of substantive rights in the longer term.[141] In this way, the procedural rights set forth in the Convention have been recognized to "contribute to the objective of [achieving] an adequate environment for every person which, in itself, adds an extra layer to the status of a substantive . . . right to a healthy environment."[142]

Perhaps most importantly, involving the general public more in actual government decision-making is not and should not be seen as an empty promise. It is an important stepping stone on the way to more informed and thus better substantive decision-making. It is also a method of not passively relying on lawmakers to live up to their democratic promises, and of actively making them aware of the necessity to make environmentally sound decisions and of putting highly visual pressure on them to do so. Of course, public participation also involves the risk that lawmakers may be influenced negatively by interest groups seeking to limit environmental regulations, but such is democracy at its best and its worst. In short, procedural provisions have the potential for assisting in avoiding poorly founded "ivory tower decisions" and ensuring oversight from a bottom-up perspective.

Finally, as many European nations are beginning to recognize procedural environmental rights as part of regional customary law, although not yet binding statutory law, the Aarhus Convention's objective of eventually creating a substantive right to a healthy environment through procedural provisions represents "a significant step in elevating environmental rights to the level of customary norms."[143] A journey of a thousand miles still begins with a single step. The Aarhus Convention and similar public participation provisions represent significant headway having been made toward giving the public an

139. AARHUS CONVENTION: AN IMPLEMENTATION GUIDE, *supra* note 34, at 125.

140. Pedersen, *supra* note 22, at 93, 108.

141. *Id*. at 99–102.

142. *Id*.

143. *Id*. at 92–94.

important say in national environmental decision making. Formal public participation policies are "a useful means for civil society and NGO advocacy efforts to push for further improvement. Therefore, the codification of public participation policies, even if not yet translated into practice, is still an important indicator of success."[144]

B. International Level

The Aarhus Convention also has potential for advancing the concept of public participation in international environmental decision making.

According to Article 3.7, "[e]ach Party shall promote the application of the principles of this Convention in international decision-making processes and within the framework of international organizations in matters relating to the environment."[145] Unfortunately, the Convention contains no specific mandates as to how that should be done. Some direction comes in the form of the Almaty Guidelines on Promoting the Application of the Principles of the Aarhus Convention in International Forums. In pertinent part, this encourages nations to allow the public to participate "effectively" and at an "early stage," including during the "negotiation and application of conventions, the preparation, formulation and implementation of decisions; and substantive preparation of events."[146] It further calls for "due account" to be taken of the outcome of public participation in decisions[147] without, however, pinpointing exactly what this really means. The problem with these Guidelines is that they are "soft law" instruments only. Nation-states thus retain a large amount of discretion in whether to apply them as a form of good practice or not to follow them at all.

Some international bodies have chosen to follow the spirit of Article 3.7. For example, after the Working Group of the Aarhus Convention emphasized the application of the Aarhus principles to the UNFCCC and encouraged participation by civil society in the Sixteenth Conference of the Parties of the UNFCCC ("COP-16"), the UNFCCC secretariat invited submissions on how to enhance the engagement of observer organizations and public participation in the conference itself.[148] Although UNFCCC sessions are, as a general rule, not open to the public, observer organizations—including civil society groups—can

144. Crescencia Maurer et al., *WRI Issue Brief, Aligning Commitments: Public Participation, International Decision-making, and the Environment*, WORLD RESOURCES INST. May 2003 at 3.

145. *Aarhus Convention*, *supra* note 42, preamble, art. 3(7).

146. Almaty Guidelines, *supra* note 18, at § 5, ¶ 32–35.

147. *Id*. § 5, ¶ 37

148. Kravchenko, *Procedural Rights*, *supra* note 38, at 637–39.

apply for admission to the sessions on an ad hoc basis.[149] At COP-16, no less than 594 NGOs represented by 4,560 individuals participated as observers.[150] NGOs have been actively involved in the workings of the UNFCCC since its early days, "attending sessions and exchanging views with other participants, including delegates."[151] It is recognized that this involvement allows "vital experience, expertise, information and perspectives from civil society to be brought into the process to generate new insights and approaches."[152] Still, merely observing a meeting is of course not the same as actually being part of the decision-making processes. On the other hand, and as described above, enabling a potentially very large amount of interested members of civil society to actively participate in such processes may simply be impractical. This line drawing issue needs to be resolved by the parties for future substantive improvements of the Convention.

In short, the Aarhus Convention represents significant opportunities for civil society to become more involved in both national and environmental decision-making processes. However, more work is needed in order to create a legal framework that makes this not only feasible, but also more effective and accepted than is currently the case. So far, the irony of the Convention is that attempts to involve the public in negotiations at the *international* level have been relatively modest,[153] while attempts have been much more successful at the *national* level—as will be shown next.

149. U.N. Framework Convention on Climate Change, Civil Society and the Climate Change Process (2012), http://unfccc.int/parties_and_observers/ngo/items/3667.php. (last visited 6 Apr. 2012).

150. U.N. Framework Convention on Climate Change, *Conference of the Parties: List of Participants*, U.N. Doc. FCCC/CP/2010/INF.1 (Dec. 10, 2010), *available at* http://unfccc.int/resource/docs/2010/cop16/eng/inf01p01.pdf.

151. *Guidelines for the Participation of Representatives of Non-governmental Organizations at Meetings of the Bodies of the United Nations Framework Convention on Climate Change,* U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, (March 2003), http://unfccc.int/files/parties_and_observers/ngo/application/pdf/coc_guide.pdf. [hereinafter Guidelines for Participation].

152. *Id*.

153. Dupuy & Vierucci, *supra* note 15.

VII. CASE LAW OF THE AARHUS CONVENTION COMPLIANCE COMMITTEE: SUCCESSES AND SHORTCOMINGS

This Section analyzes the outcome of cases relating to the public's involvement in decision-making processes under the Convention. It is important to recall that the Compliance Committee does not sit as a substantive tribunal hearing cases on particular issues of national or international environmental law. Accordingly, no case has directly changed, or even suggested changes to, such law. Rather, the forte of the Convention lies in its ability to empower civil society to work with legislators and government officials on both procedural *and* substantive change through existing democratic channels. In this way, the Convention is seen as the "high water mark" for environmental democracy.[154] After describing the successes reached during the first decade of case law as well as highlighting a few select examples of other interesting lessons to be learned, this Section will briefly analyze the cases in which no successes were reached and consider why this may have been so. Finally, the Section will identify cases which are still undergoing developments at the national level and which will thus be interesting to observe in future scholarly work.

A. Successes

1. Landfill in Lithuania

In early 2002, the Vilnius County Council approved a new landfill with a proposed capacity of almost seven million tons of waste over twenty years in a sand quarry already being used as a municipal landfill.[155] The landfill is located in the immediate proximity of a residential area with some of the installations a mere 500 yards from private houses.[156] The communicants living in the affected residential area alleged that the information about the possibilities to participate in the Environmental Impact Assessment ("EIA") and other planning and permitting processes was ineffective. This was in par the case because the participation possibilities were only announced in a government publication *not* normally read by the general public instead of, for

154. AARHUS CONVENTION AT TEN, *supra* note 20.

155. U.N. Econ. Comm'n for Eur., *Report by the Compliance Committee: Compliance by Lithuania with its Obligations Under the Convention*, ¶ 17, U.N. Doc. ECE/MP.PP/2008/5/Add.6 (Apr. 4, 2008).

156. *Id*.

example, in a popular daily local newspaper. Further, the communicants complained that the few working days required for notice and the notice actually given were not reasonable, that the public was only informed when certain options had already been decided upon and only two possible landfill locations were being discussed, that no alternatives were considered, and that no detailed data on the impact on human health was provided.[157] Finally, the communicants also alleged that they did not have public participation opportunities during the preparation of the plan for future waste management.[158]

The Compliance Committee found that the public should be informed in a manner that represents a true and reasonable chance to participate.[159] Publication in a weekly official journal is *not* effective under the Convention.[160] It was also a violation of the Convention that the project proponents (i.e., the actual developers) were made responsible for organizing the public participation.[161] The public authorities must remain in control of this area at all times. In addition, it was inadequate to only notify the public of the possibility of participating in a decision-making process concerning the "development possibilities of waste management in the Vilnius region" rather than specifying that this was a process concerning a major landfill to be established in the specific neighborhood in question.[162]At the time, Lithuanian legislation limited the right to submit comments to the "public concerned," and these comments had to be "motivated proposals," containing reasoned argumentation. As the pertinent Convention provision requires that "public participation procedures shall allow *the public* to submit … *any* comments, information, analyses or opinions," the Lithuanian law failed to guarantee the full scope of the rights envisaged by the Convention.[163] The Committee further noted that whereas Lithuania's current legislation appears to be in line with Article 7, there is no evidence that national public participation requirements cover plans and programs relating to the environment other than strategic environmental assessments ("SEAs").[164] The Committee thus found Lithuania in noncompliance with Articles 6(2), (3), (6), and (7).[165]

Subsequently, Lithuania implemented a number of measures to

157. *Id.* ¶¶ 43–46.
158. *Id.* ¶ 50.
159. *Id.* ¶ 67.
160. *Id.*
161. *Id.* ¶ 90.
162. *Id.* ¶ 37.
163. *Id.* ¶ 80 (emphasis added).
164. *Id.* ¶ 86.
165. *Id.* ¶ 90.

reach compliance with the Convention. The nation took measures to improve the existing legal framework with the aim of informing the public of decision-making processes in an adequate, timely, and effective manner.[166] Similarly, Lithuania introduced legislation to ensure that the responsibility for informing the public about the participation procedures no longer remains solely with the developer, but rests on *both* the developer *and* the public authorities.[167] The public may now submit "any comments and proposals" without a requirement that these be "reasoned."[168] Additionally, Lithuania implemented a number of measures to ensure broader public participation in plans and programs regarding general environmental assessment procedures, and thus not only for SEAs, as before the complaint.[169]

Most importantly, Lithuania has assured the Committee of its revised policy to ensure public participation in "all draft legislation."[170] Accordingly, any draft legislation must now initially be published on a centralized Information System of Draft Legislation.[171] The public will then have the opportunity to submit comments and proposals on such proposed acts.[172] Notably, the next versions of the draft laws will then be published with modifications on the basis of these comments.[173] After these changes in policy, Lithuania was found to have "seriously and actively engaged" in following the decision recommendations and is now in compliance with the Convention in all aspects concerned.[174] This is obviously a positive outcome in and of itself, but more importantly, this shows that Lithuania has enhanced the general public's procedural ability to participate in the preparation of new legislation. The outcome also shows that the Convention's requirements and subsequent compliance efforts have helped convince the Lithuanian government of the importance of taking public comments into account when preparing new legislation. These policy changes allow the general public to help shape new legislation substantively. Thus, this case shows the potential for

166. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee on its Thirty-first Meeting: Compliance by Lithuania with its Obligations Under the Convention, ¶ 15, U.N. Doc. ECE/MP.PP/C.1/2011/2/Add.5 (Aug. 24, 2011), *available at* http://www.unece.org/fileadmin/DAM/env/pp/compliance/CC-31/ece.mp.pp.c.1.2011.2.add.5_as_submitted.pdf.

167. *Id.* ¶ 18.

168. *Id.* ¶ 19.

169. *Id.* ¶ 22.

170. *Id.*

171. *Id.*

172. *Id.*

173. *Id.*

174. *Id.* ¶ 24.

procedural requirements to eventually lead to substantive legal changes as well.

2. Hydropower and Nuclear Power Plant Construction in Belarus

In 2009, two NGOs filed a communication alleging that no public participation had taken place before a decision to construct a power plant was made, that the public was not made properly aware of this decision, and that the public was not allowed to submit views and comments during post-decision public hearings in violation of Articles 6(2), (4), (6), and (7) of the Convention.[175] The communicants further alleged that the government had taken no steps to allow the public to participate in the adoption of generally applicable national rules on public participation regarding nuclear power, which also violated Articles 7 and 8 of the Convention. [176]

The Committee preliminarily found Belarus noncompliant in several regards. First, the Committee found it unacceptable that access to the full version of the EIA report had been limited to the relatively far-away nuclear power plant headquarters in Minsk with no copying allowed.[177] Second, the Committee found it unacceptable that while a hundred-page EIA report was available, the government failed to inform the public about an additional thousand-page report.[178] Third, Belarus was noncompliant in only allowing one hearing at the EIA stage, limiting the public's input to the mitigation of environmental impacts, and precluding the public from having any input on the decision on whether the nuclear plant should be constructed at the selected site in the first place.[179] Finally, the Committee expressed its discontent with the fact that the government entity responsible for making the final decision was given only a summary of the public's comments generated by the project developer.[180] The Committee recommended that Belarus improve its framework for public participation in relation to nuclear activities and make appropriate practical and other provisions allowing the public to

175. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee on its Thirty-third Meeting: Findings and Recommendations of the Compliance Committee with Regard to Communication ACCC/C/2009/44 Concerning Compliance by Belarus, ¶ 1, U.N. Doc. ECE/MP.PP/C.1/2011/6/Add.1 (June 28, 2011), *available at* http://www.unece.org/fileadmin/DAM/env/pp/compliance/C2009-44/Correspondence/C44Findings.20.07.2011.pdf.

176. *Id.* ¶ 3.

177. *Id.* ¶ 68.

178. *Id.* ¶ 74.

179. *Id.* ¶ 78.

180. *Id.* ¶ 88.

actively participate during the preparations of plans and programs relating to the environment.[181]

Belarus subsequently notified the Committee that it has adopted new legislation in order to improve its national environmental legislation with "the aim of achieving the closest compliance with the Aarhus . . . Convention[]."[182] Among other things, this legislation clarifies the enhanced public participation procedures and the time frames of such procedures in relation to EIA reports.[183] Now, local authorities must publish their decisions on proposed activities on the internet.[184] Updated EIA regulations clearly cover nuclear energy projects.[185] Notably, Belarus indicated its "very positive spirit"[186] toward the Aarhus oversight activities and expressed its "gratitude for the constructive and fruitful cooperation to improve Belarusian legislation on environmental impact assessment and public participation in the impact assessment process and decision-making."[187]

Such relatively rapid change of national legislation in ways that appear to facilitate more effective and meaningful public participation must be characterized as a success, especially given Belarus' status as a newly democratized country. Furthermore, expanding public participation requirements to cover nuclear activities is significant in a part of the world where the public has traditionally not had insight into nuclear energy activities. Perhaps most importantly, given some nations' apparent laissez-faire attitudes toward the findings of the Committee, Belarus' positive attitude towards the Aarhus Convention sets an important example to others and shows that some nations take their requirements under international law seriously.

A separate case against Belarus concerned the construction of a hydropower plant on the Neman River.[188] This river constitutes the

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181. *Id.* ¶ 90.

182. Letter from V.V. Kulik, First Deputy Minister of the Ministry of Natural Res. and
Envtl. Prot. Environmental Protection of the Republic of Belarus, to the Compliance Comm. for the Convention on Access to Info., Pub. Information, Public Participation in Decision-making and Access to Justice in Envtl. Matters (June 20, 2011) (on file with the U.N. Econ. Comm'n for Eur.).

183. *Id.*

184. *Id.*

185. *Id.*

186. *Id.*

187. *Id.*

188. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee: Findings and Recommendations with Regard to Communication ACCC/C/2009/37 Concerning Compliance by Belarus, ¶ 2, U.N. Doc. ECE/MP.PP//2011/11/Add.2 (May 12, 2011), *available at*

natural border between Lithuania and the Russian Federation's Kaliningrad Oblast.[189] It is a habitat for 250 bird species, including 156 breeding species and up to 50 species of special conservation status.[190] In the Spring of 2008, locals noticed that construction work had begun on the first phase of the project, provoking a number of local initiatives against the construction as well as requests for information related both to the activity itself and its approval procedures.[191] The communication alleged that by failing to make information about the proposed hydropower plant available to the public, Belarus had failed to comply with Article 6(6) of the Convention.[192] Furthermore, by failing to notify and consult adequately with the public in the decision-making process for the project, Belarus had failed to comply with the requirements of Articles 6(2), (3), (7), (8), and (9).[193] Belarus countered that the general public had been informed of the project in both the written press and on television a few years before project start-up, and that national legislation does not require any *specific* type of public notice of a final decision on planned activities.[194] Moreover, Belarus stated that under the *expertiza* conducted, the developer—not the government—was to carry out public consultations at a later stage of the project.[195] According to Belarus, the developer had issued sufficiently reasoned arguments as to why the public comments had been accepted or rejected.[196] Belarus also cited the fact that the developer had previously conducted an *OVOS* (directly translated, an "assessment of impact upon the environment") signifying compliance with the Convention.[197]

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http://www.unece.org/fileadmin/DAM/env/pp/mop4/Documents/ece_mp.pp_2011_11_eng_add2.pdf.

189. *Id*. ¶ 34.

190. *Id*.

191. *Id*. ¶ 40. Belarusian environmental law requires that planned activities that have a potential impact on the environment be evaluated by the competent environmental authorities or by external experts nominated by the relevant environmental authorities prior to their approval. This is known as *expertiza*. The proposed activity can be implemented only if the conclusion is positive. *Id*. ¶ 19–20.

192. *Id*. ¶ 72.

193. *Id*. ¶ 103.

194. *Id*. ¶ 58. In accordance with the Laws of the Republic of Belarus "On the media" and "On the legislation of the Republic of Belarus", in each specific case, the final decision may be notified to the public through: publication in official newspapers of record, posting on the website of the National Centre for Legal Information of the Republic of Belarus, posting on the official websites of Republic-level State administrative bodies and local executive and administrative bodies, and general notification through the print media, television and radio.

195. *Id*. ¶ 56.

196. *Id*.

197. *Id*.

The Compliance Committee found Belarus in noncompliance with the above paragraphs of the Convention.[198] The Committee noted that Belarusian legislation improperly provides that the main means of public consultation are public discussions at meetings with the developer, the *OVOS* consultant, and the interested authorities.[199] Under national law, the developer is responsible for the organization of the meetings.[200] Comments by the public can only be submitted during these hearings and not directly to the authorities responsible for issuing the conclusions of the *expertiza*.[201] The Committee found that making developers rather than the relevant public authorities responsible for informing the public, organizing public participation, and collecting comments does not comply with the requirements of the Convention.[202] Furthermore, sporadic journalistic comments on a project in the printed press or on television do not constitute public notice under the Convention.[203] Importantly, Belarus was found to be in noncompliance for not establishing mandatory requirements for the public authorities that issue the *expertiza* conclusion to take the public comments into actual account when making their decision.[204] The Committee instructed the government to develop an action plan by 2012 to address these recommendations.[205]

Although this case is not currently finalized, it still shows that governments cannot simply delegate the responsibility for public participation to developers; such activities must remain in the public realm. Stakeholders concerned about the possible on-the-ground effects of not only developers and other commercial parties, including BINGOs supported by financially motivated local developers, will applaud this outcome, although undoubtedly also maintaining some healthy skepticism about the influence of such parties in future cases. Furthermore, this case makes it clear that public participation requirements are not to be taken lightly. Authorities must make sure that the public is informed about proposed activities at a sufficiently early point and by truly effective methods.

The recommendation to "take into account" the comments made by the general public is aimed at giving the general public a venue for effecting substantive change through procedural channels. This interface

198. [198] *Id*. ¶¶ 83–99.
199. *Id*. ¶ 94.
200. *Id*.
201. *Id*.
202. *Id*. ¶ 104.
203. *Id*. ¶ 86.
204. *Id*. ¶ 104.
205. *Id*. ¶ 106.

between procedural and substantive requirements again shows how procedures are not mere formalities, but rather carry a potential for "real," on-the-ground change as well.

It should be noted that this latter case is still too new to classify as a definite success until 2012 hearings have shown whether the results just mentioned have actually cemented nationally. Nonetheless, the case is at least a temporary success because of the potential for effectuating substantive change through procedures and because of the Committee's clear indications that it will not "rubber stamp" meager attempts by governments to follow the Convention requirements. Because Belarus has previously indicated its willingness to follow the recommendations of the Compliance Committee, there is reason to be cautiously optimistic that Belarus will also bring the concerns of the latter case into final compliance with the Convention.

3. Industrial and Energy Parks in Albania

In this case, an Albanian NGO submitted a communication alleging violation by Albania in connection with the planning and construction of an industrial park inside a national park on the Adriatic coast.[206] The park is located near a lagoon immediately north of the city of Vlora and is comprised of oil and gas pipelines, installations for the storage of petroleum, three thermal power plants, and a refinery.[207] The communicant alleged that the government conducted no public participation whatsoever regarding the site of the park but instead notified its ministries that the "decision comes to force immediately."[208] Whereas the communicant acknowledged that the public had been able to participate in three subsequent meetings regarding certain activities within the national park, it alleged that the government lacked the willingness to "listen and to take into consideration the opinion and will of the people" and that the decision-making process was thus "a mere rubber stamp" of a decision previously made.[209] Furthermore, the communicant alleged that meetings regarding the power plant part of the development project were not publicly announced, and therefore members of the public opposing the construction could not take active part in the decision-making process.[210] Finally, the government allegedly

206. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee on its Sixteenth Meeting: Findings and Recommendations with Regard to Compliance by Albania, ¶ 6, U.N. Doc. ECE/MP.PP/C.1/2007/4/Add.1 (July 31, 2007).

207. *Id.* ¶ 4.

208. *Id.* ¶ 31.

209. *Id.* ¶ 34.

210. *Id.* ¶ 81.

did not explain why the strong local opposition to the project, indicated by no less than 14,000 people calling for a referendum, was not heard at any of the meetings. [211] In short, the communicant claimed that the invitation process had been "selective" and insufficient under the Convention.[212]

The Committee found Albania in noncompliance with Articles 6(3), (4), (8), and Article 7.[213] It pointed out that even if public participation opportunities had eventually been provided with respect to decisions on specific activities within the park, the requirement that the public be given the opportunity to participate at an *early* stage when all options are open was not met in this case.[214] No reasonable explanation had been provided as to why the many people calling for the referendum were not represented or heard at any relevant meeting.[215] The Committee recommended that Albania take legislative, regulatory, administrative and other measures to ensure, inter alia, that national legislation regarding public participation is improved, that the public is identified properly and invited to participate at an early stage, that public opinions are heard and taken into account by the public authority making the relevant decision, and that Albania invites relevant international and regional organizations and financial institutions to provide advice and assistance regarding the implementation of the measures recommended.[216] The Committee also noted with appreciation the constructive contribution of relevant international financial institutions, in particular the World Bank and the European Bank for Reconstruction and Development.[217]

After some initial unwillingness to correct these concerns,[218] Albania prepared an action plan addressing the recommendations of the Committee with two main areas of emphasis: (1) to improve the existing legal public participation framework and (2) to undertake training, capacity-building and awareness raising activities in relation to the national implementation of the Convention.[219] In improving the existing

211. *Id.*

212. *Id.*

213. *Id.* ¶ 92.

214. *Id.* ¶ 71.

215. *Id.* ¶ 73.

216. *Id.* ¶ 101.

217. *Id.* ¶ 90.

218. *See generally* U.N. Econ. Comm'n for Eur., Report of the Compliance Committee: Compliance by Albania with its Obligations Under the Convention, U.N. Doc. ECE/MP.PP/2008/5/Add.1 (Apr. 2, 2008); CASE LAW OF THE AARHUS CONVENTION COMPLIANCE COMMITTEE (2004–2011) 139–40 (A. Andrusevych et al. eds., 2d ed. 2011).

219. Letter from Gavrosh Zela, Albanian National Focal Point of Aarhus

legal framework, Albania undertook a "deep participatory process" involving both NGOs and the Organization for Security and Co-operation in Europe in the discussions.[220] It also took their suggestions into consideration when drafting its decision on public participation.[221] The ensuing regulations took effect in 2008.[222] Similarly, Albania cooperated with both PINGOs and BINGOs, as well as local government units, in planning and implementing various training and awareness raising activities for an improved national implementation of the Convention.[223] The Committee subsequently found that Albania has fully implemented the recommendations.[224]

This case is arguably a multifaceted success. First, it again shows the willingness of a democratizing nation to incorporate public participation in its national framework as well as the interest in such participation by the general public, even in newly democratizing nations without a strong tradition for public participation in government affairs. Second, it shows how the procedures of the Aarhus Convention can help put pressure on nations to allow for timely and effective publication more quickly than what would likely have been the case without Compliance Committee intervention. Third, the case shows how Albania has realized the value of involving the local community in its lawmaking efforts. Granted, in this case, the involvement only pertained to procedural rules, but public participation requirements are easily transferable to the preparation of substantive laws as well. In combination with Albania's awareness raising, capacity-building, and training activities aimed at government officials, the positive effect reached so far in this area has the potential to cross over into the substantive arena. So far, opportunities for public participation in Albania went from clearly insufficient to what hopefully will turn out to be significant and permanent improvements, a clear indicator of how procedural requirements can relatively quickly lead to legislative improvements that few may have foreseen just years ago.

Convention, to Jeremy Wates, Secretary of Aarhus Convention (Jan. 30, 2009) (on file with the U.N. Econ. Comm'n for Eur.).

220. *Id.*

221. *Id.*

222. *Id.*

223. *Id.*

224. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee on its Thirty-first Meeting: Compliance by Albania with its Obligations Under the Convention, ¶ 22, U.N. Doc. ECE/MP.PP/C.1/2011/2/Add.1 (Aug. 24, 2011).

4. Gold Mining and Intellectual Property Rights in Romania

This case concerns requests for information during the early stages of a decision-making procedure regarding gold mining activities.[225] The Romanian Copyright Office had informed the Romanian National Environmental Protection Agency that environmental impact studies were scientific studies protected by copyright law and therefore could only be made publicly available with the express agreement of the author, who could request the payment of copyright fees.[226] During the compliance process, Romania took the position that in order to "balance interests protected by the copyright and the need of the relevant authorities and the public to be aware of the potential environmental effects of a certain activity, only the outcome of the EIA study, and not the complete study, is provided."[227] The Committee found this to be a violation of, inter alia, Article 6(6) of the Convention.[228] EIA studies are to be prepared for the use of the general public and public authorities. "Therefore, the author or developer should not be entitled to keep the information from public disclosure on the grounds of intellectual property law."[229] They must be released in their entirety, especially when they form part of information relevant to the decision making.[230] Requests for specific information may only be refused in narrow circumstances where the competent authority believes that disclosure adversely affects intellectual property rights.[231] The Committee doubted "very much that this exemption could ever be applicable in . . . connection with EIA documentation."[232]

The Romanian National Environmental Protection Agency remedied this situation by introducing new official instructions making EIA documentation publicly available, exempting certain data only in few circumstances.[233] The Party is now in compliance with the Convention.[234]

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225. U.N. Econ. Comm'n for Eur., Report by the Compliance Committee: Compliance by Romania with its Obligations Under the Convention, ¶ 17, U.N. Doc. ECE/MP.PP/2008/5/Add.7 (Apr. 16, 2008).

226. *Id.* ¶ 21.

227. *Id.* ¶ 22.

228. *Id.* ¶ 33.

229. *Id.* ¶ 28.

230. *Id.* ¶ 27.

231. *Id.* ¶ 30.

232. *Id.*

233. *Id.* ¶ 23.

234. *Id.* ¶ 33.

This case illustrates how environmental concerns can and do win over economic ones, a point of concern for many environmentalists. Granted, this case only related to procedural aspects and not substantive environmental law, but the adage that a journey of a million miles starts with a single step still holds true. If, as this Article argues, substantive change can be reached through procedural means, it is significant that the relevant procedures here were improved, thus allowing for further public input on environmental activities.

B. Shortcomings

Whereas the last decade of compliance hearings under the Convention resulted in several successes and is thus grounds for optimism, it should be noted that in some instances, the results were much less productive. This Section will look at some compliance shortcomings from which lessons, hopefully, can be learned.

In one case, the Compliance Committee found Kazakhstan in violation of Article 6(1) of the Convention by failing to provide for adequate public participation procedures in connection with the permitting procedures for the construction of high-voltage overhead electric power lines.[235] Upon Compliance Committee recommendation that the government adopt regulations setting out more precise public participation procedures, Kazakhstan actually adopted a new Environmental Code.[236] However, this features a number of rather severe shortcomings. First, the Code differs little from the previous Environmental Protection Act and may actually lead to a *worsening* of the possibilities for the public to participate in decision-making processes. For example, the environmental review that can be initiated and conducted independently by the members of the public appears to have been weakened.[237] Second, the Committee notes with "particular concern" that some of the procedural options for the public to participate can be narrowly interpreted as being limited to public hearings.[238] Further, the public has alleged continued government failures to ensure

235. U.N. Econ. Comm'n for Eur., Report on the Seventh Meeting: Findings and Recommendations with Regard to Compliance by Kazakhstan with the Obligations Under the Aarhus Convention, ¶ 2, U.N. Doc. ECE/MP.PP/C.1/2005/2/Add.2 (Mar. 14, 2005).

236. U.N. Econ. Comm'n for Eur., Report by the Compliance Committee: Compliance by Kazakhstan with its Obligations under the Convention and its Implementation of Decision II/5a of the Meeting of the Parties, ¶¶ 10, 27, U.N. Doc. ECE/MP.PP/C.1/2008/5/Add.5 (Apr. 2, 2008).

237. *Id.* ¶ 11.

238. *Id.* ¶ 13.

that activities are not initiated until authorization and permitting have been carried out with proper public involvement.[239] Such failures undermine public confidence in decision-making processes and in the effectiveness of the public's own involvement[240] and thus run counter to the objectives of the Convention. Kazakhstan has been issued a caution that will take effect on May 1, 2012 unless Kazakhstan has, by then, fully satisfied a condition related to implementation of the recommendations previously given to it.[241] The notion of a "caution" has never been defined in the Aarhus Convention's compliance contexts, but may be perceived as either a signal that a Party's rights and privileges may be imminently suspended or that a Party is in noncompliance with the final decision to be taken by a MOP.[242] In MEA contexts, the issuance of a caution is rare and thus, along with noncompliance declarations, functions as a "naming and shaming" measure.[243]

Although this case must be said to demonstrate a legislative and practical failure at the national level thus far, it at least shows the positive role of the Compliance Committee as an alternative legal venue in instances where domestic measures have proven unsuccessful. Although the communicant disagrees with the final Committee assessment, the case demonstrates the Committee's willingness to listen to and, at least in part, base its findings and recommendations on NGO input.[244] This presents at least some procedural value.

Perhaps the incurable "bad boy" in Aarhus compliance contexts, Ukraine stands out as an example of just how difficult it can be to implement effective public participation procedures lacking a nation's genuine interest. In a case concerning a navigation canal in the Danube Delta passing through internationally recognized wetlands, Ukraine was found in noncompliance with Article 6(1) and (2)–(9) for, among other things, its failure to properly inform national, foreign and international governmental and nongovernmental organizations interested in the project, for having time frames that failed to allow the public to effectively study the information on the project and submit its comments, for not allowing public officials sufficient time to take any public

239. *Id*. ¶ 15.

240. *Id*.

241. U.N. Econ. Comm'n for Eur., *Draft Decision IV/9 on General Issues of Compliance*, ¶¶ 4–5, U.N. Doc. ECE/MP.PP/2011/L.11 (Apr. 13, 2011).

242. KOESTER, *supra* note 32, at 199–200.

243. *Id.* at 200.

244. U.N. Econ. Comm'n for Eur., Report by the Compliance Committee: Compliance by Kazakhstan with its Obligations under the Convention and its Implementation of Decision II/5a of the Meeting of the Parties, ¶¶ 9–13, U.N. Doc. ECE/MP.PP/C.1/2008/5/Add.5 (Apr. 2, 2008).

comments into account in a meaningful way, for providing only a two-page summary of conclusions of the environmental expertise because of "technical reasons," and, in general, for having a lack of clear domestic regulation of the time frames and procedures for commenting.[245] The latter seemed to be "at the heart of this problem."[246] In 2008, four years after the initial communication, Ukraine was issued a caution—one of the strongest measures under the compliance mechanism—conditioned on the country satisfying four specific requirements related to an action plan previously submitted by Ukraine on its implementation and observance of the Convention.[247] Although this caution did not become effective because Ukraine implemented the key requirements, the nation is still not in compliance with the Convention itself.[248] An updated action plan submitted to the Committee in early 2011 demonstrates that to date, most of the laws called for are still only at the drafting stage and, with the exception of a few training activity related laws and activities, none have actually been implemented.[249] Worse, members of the public who commented on a draft decree on the approval of public participation within environmental protection were never told how their comments were processed.[250] Another national law does not provide for public participation either at the *expertiza* stage or during the procedure for issuing building permits.[251] The Committee has thus noted "with regret the very slow progress" by Ukraine in implementing its decisions.[252] Indeed, Ukraine recognizes that it is currently only "studying programs" devoted to Aarhus implementation issues, conducting a "seminar" on the access to environmental information, drafting a budget for the preparation and publishing of a "handbook" regarding the Convention as well as a "brochure" on the environment and the law. [253] It excuses itself

245. U.N. Econ. Comm'n for Eur., Report on the Seventh Meeting: Findings and Recommendations with Regard to Compliance by Ukraine with the Obligations Under the Aarhus Convention, ¶¶ 15, 19, 29, 30, 38, U.N. Doc. ECE/MP.PP/C.1/2005/2/Add. 3 (Mar. 14, 2005).

246. *Id*. ¶ 30.

247. U.N. Econ. Comm'n for Eur., Report of the Third Meeting of the Parties: Decision III/6f on Compliance by Ukraine with the Obligations Under the Convention, ¶ 5, U.N. Doc. ECE/MP.PP/2008/2/Add.14 (Sept. 26, 2008).

248. CASE LAW OF THE AARHUS CONVENTION COMPLIANCE COMMITTEE (2004–2011), *supra* note 220, at 126–27.

249. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee on its Thirty-first Meeting: Compliance by Ukraine with its Obligations Under the Convention, ¶ 26, U.N. Doc. ECE/MP.PP/C.1/2011/2/Add.8 (Aug. 24, 2011).

250. *Id.* ¶ 29.

251. *Id.*

252. *Id.* ¶ 31.

253. Letter from M. Romanov, First Deputy Minister of Ukraine, to the Compliance Committee of the Aarhus Convention (2011) (on file with author).

with its Ministry of Ecology and Natural Resources still being in the process of "reorganization."[254] In effect, Ukraine appears to be stalling its own public participation improvement process whether deliberately so or not. The Committee recommended that Ukraine either be issued a caution or that the rights and privileges accorded to it thus far be removed (the latter is the strongest measure provided by the compliance mechanism).[255] Accordingly, the Fourth Meeting of the Parties ("MOP4 ") cautioned Ukraine, with the caution to be lifted on June 1, 2012 if Ukraine fully implements certain requested measures.[256]

In two interrelated cases,[257] the Committee found Spain in noncompliance with Article 6(3), (4), and (6) for setting inhibitive conditions on public participation. Among other things, Spain required the public to travel between 20 and 125 miles (30–200 km) to obtain access to the desired information. [258] Access to thousands of pages of documentation was only available on two computers without the public being able to make electronic copies.[259] Only one month was given to inspect the documents over Christmas, a recognized holiday in many UNECE region countries.[260] Spain is still not in compliance.[261] The Spanish government did take the arguably insignificant step of simply creating a website to, among other things, allow for public participation and create awareness of global climate change issues. In other respects, Spain appears to be paying only lip service to the requirements of the Convention. The author personally observed hearings against one of the

254. *Id.*

255. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee on its Thirty-first Meeting: Compliance by Ukraine with its Obligations Under the Convention, ¶ 34, U.N. Doc. ECE/MP.PP/C.1/2011/2/Add.8 (Aug. 24, 2011).

256. U.N. Econ. Comm'n for Eur., *Draft Decision IV/9h on Compliance by Ukraine with its Obligations Under the Convention*, ¶ 7, U.N. Doc. ECE/MP.PP/2011/CRP.9 (June 28, 2011).

257. *See generally,* U.N. Econ. Comm'n for Eur., Report of the Compliance Committee on its Twenty-eighth Meeting: Findings and Recommendations with Regard to Communication ACCC/C/2009/36 Concerning Compliance by Spain, U.N. Doc. ECE/MP.PP/C.1/2010/4/Add.2 (Feb. 8, 2011).

258. *Id.* ¶ 62.

259. *Id.*

260. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee on its Twenty-sixth Meeting: Findings and Recommendations with Regard to Communication ACCC/C/2008/24 Concerning Compliance by Spain, ¶ 90, U.N. Doc. ECE/MP.PP/C.1/2009/8/Add.1 (Feb. 8, 2011).

261. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee on its Twenty-eighth Meeting: Findings and Recommendations with Regard to Communication ACCC/C/2009/36 Concerning Compliance by Spain, ¶ 70, U.N. Doc. ECE/MP.PP/C.1/2010/4/Add.2 (Feb. 8, 2011); CASE LAW OF THE AARHUS CONVENTION COMPLIANCE COMMITTEE (2004-2011), 175.

cases against Spain and noted Spain's absence during the hearings. This provides yet another indication that Spain is not taking its national public participation processes and Convention requirements as seriously as could have been hoped for.

The more difficult question is *why* these cases led to the shortcomings just outlined. An exact answer to this question is beyond the scope of this Article. It is arguably impossible to produce such an answer at all as noncompliant Parties, for obvious reasons, do not state on any record *why* they may choose action (or inaction) that eventually leads to findings of noncompliance with the mandates of a Convention that they themselves have ratified. Rather, such Parties will likely either argue that they *are* in compliance or are seeking to become so, without, however, taking effective steps in the right direction. This may be so for a combination of image and practical reasons: nations may consider it to look better to the surrounding world to ratify treaties such as the Aarhus Convention, but have a difficult time implementing the requirements in reality. In some cases such as the former Soviet satellite states, one simple, yet of course inexcusable, explanation may in the author's opinion be that these nations are not used to and thus may resist what they see as the public "intermeddling" in "government affairs." The lack of public participation in such countries is certainly not for want of interest by the general public, as shown. Another reason for noncompliance in some countries is arguably the slowness with which democracies develop and improve their national legislation, including public participation legislation. Yet another reason may, in some cases, be a government disinterest in environmental affairs given the perhaps greater interest in economic development and the erroneous belief that the two cannot go hand in hand. Regardless, as with any legal proceedings and potential intervention, not all cases will be successful at first. That, however, is not reason to give up long-term positive procedural *and* substantive change through various channels, including Aarhus Convention mechanisms and ideals.

C. Other Lessons Learned

The past decade of case law sheds light on a few further noteworthy aspects of Aarhus Convention compliance. For example, the Committee has emphasized that the Parties should observe both the letter *and* the spirit of the Convention. Thus, in a case where France was found to have complied de jure with the procedures of the Convention, the Committee still pointed out that several other types of decisions and acts in the case may de facto have affected the scope of options to be considered in a

permitting decision under Article 6 of the Convention.[262] The same concern was pointed out in a case against Austria.[263]

Further, it is important to bear in mind that the Committee takes a deferential view regarding the application of the Convention. If it is possible that the provisions *could be* applied in compliance with Convention, the Committee will not interpret the case as one of noncompliance.[264]

What should be obvious, but what has nonetheless still been pointed out to both litigants and the nations concerned, are that the procedural aspects of the Convention are also important to the Committee itself and may affect the outcome of cases brought before it. In one case against Poland, the parties were thus told that because the communicant had failed to provide the additional information sought by the Committee and because neither the party concerned nor the communicant were present at the compliance hearing, the Committee was not able to consider whether the allegations were regulated by the Convention.[265] In another, Spain did not show up to represent itself during the hearings.[266] Needless to say, if either the communicant or the nation involved consider their case to carry any weight, they should, out of respect for their treaty obligations, play an active role throughout the hearing phase and present sufficient documentation to the Committee. As noted previously in this Article, the Committee is one of limited, yet precious resources. These resources should not be wasted by meaningless and counterproductive displays of ignorance of the Convention requirements.

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262. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee on its Twenty-fourth Meeting: Findings with Regard to Communication ACCC/C/2007/22 Concerning Compliance by France, ¶¶ 39–40, U.N. Doc. ECE/MP.PP/C.1/2009/4/Add.1 (Feb. 8, 2011).

263. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee on its Twenty-fifth Meeting: Findings with Regard to Communication ACCC/C/2008/26 Concerning Compliance by Austria, ¶ 57, U.N. Doc. ECE/MP.PP/C.1/2009/6/Add.1 (Feb. 8, 2011).

264. *See generally* U.N. Econ. Comm'n for Eur., Report on the Eleventh Meeting, U.N. Doc. ECE/MP.PP/C.1/2006/2 (May 10, 2006); CASE LAW OF THE AARHUS CONVENTION COMPLIANCE COMMITTEE (2004–2011), *supra* note 219, at 141.

265. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee on its Twenty-fifth Meeting: Findings Adopted by the Compliance Committee on 25 September 2009 with Regard to Compliance by Poland with its Obligations Under the Convention, ¶ 19, U.N. Doc. ECE/MP.PP/C.1/2009/6/Add.2 (Dec. 11, 2009).

266. Author observing hearings against Spain. *See generally,* U.N. Econ. Comm'n for Eur., Report of the Compliance Committee on its Twenty-sixth Meeting: Findings and Recommendations with Regard to Communication ACCC/C/2008/24 Concerning Compliance by Spain, U.N. Doc. ECE/MP.PP/C.1/2009/8/Add.1 (Feb. 8, 2011).

After years in the pipeline, some cases have still not been ultimately resolved, but are worth future scholarly observance. For example, in a relatively new case against Slovakia, the Committee pointed out that the mere formal de jure possibility for the government to turn down an *operational* permit when the *installation* of nuclear power plant reactor blocks had already been completed is not sufficient to meet the Convention requirement if, de facto, denying the operational permit would never or hardly ever happen.[267] In a 2004 case against Armenia, the nation was found in noncompliance with Article 7 and with certain provisions of Article 6 for failure to provide for practical public participation in contravention of both the Convention and national Armenian legislation.[268] The Compliance Committee noted Armenia's "cooperative spirit . . . in its correspondence with the Committee" and that the Party has "seriously and actively engaged to follow the recommendations" of a prior decision.[269] Nonetheless, the Committee expressed concern at the slow process for finalizing and enacting a new law providing for public participation and requested Armenia to present a draft version of the law to the Committee as soon as possible.[270] So far, Armenia has not yet fully implemented the recommendations given to it.[271] After almost a decade with few results other than a training program for the judiciary and other public officials,[272] one would be warranted in seriously questioning Armenia's true interest in providing for public participation in its environmental decision making and enforcement. In this and similar cases, it appears that the Parties sometimes merely pay

267. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee: Findings and Recommendations with Regard to Communication ACCC/C/2009/41 Concerning Compliance by Slovakia, ¶ 63, U.N. Doc. ECE/MP.PP/2011/11/Add.3 (May 12, 2011). Incidentally, Slovakia was the first country to challenge the Committee's competence and expertise, but this did not change the final decision of the Committee. CASE LAW OF THE AARHUS CONVENTION COMPLIANCE COMMITTEE (2004–2011), *supra* note 219, at 183–84.

268. U.N. Econ. Comm'n for Eur., Report on the Eleventh Meeting: Findings and Recommendations, ¶¶ 1–2, U.N. Doc. ECE/MP.PP/C.1/2006/2/Add.1 (May 10, 2006); *see also* U.N. Econ. Comm'n for Eur., Report of the Compliance Committee: Findings and Recommendations with Regard to Communication ACCC/C/2009/43 Concerning Compliance by Armenia, ¶ 83, U.N. Doc. ECE/MP.PP/2011/11/Add.1 (May 12, 2011).

269. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee on its Thirty-first Meeting, ¶¶ 16, 24, U.N. Doc. ECE/MP.PP/C.1/2011/2/Add. 2 (Aug. 24,Apr.__, 2011).

270. *Id.* ¶ 25.

271. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee: Findings and Recommendations with Regard to Communication ACCC/C/2009/43 Concerning Compliance by Armenia, ¶ 83, U.N. Doc. ECE/MP.PP/2011/11/Add.1 (May 12, 2011).

272. U.N. Econ. Comm'n for Eur., Report of the Compliance Committee on its Thirty-first Meeting, ¶¶ 19, 20, U.N. Doc. ECE/MP.PP/C.1/2011/2/Add.2 (Aug. 24, 2011).

lip service to the requirements of the Convention. The full explanation for this is outside the scope of this Article but may lie in national image and comity considerations whereby it may be preferable for nation states to ratify treaties to be among the "in" group of comparable nations having done so in the hope that they can comply. Once cases of noncompliance are brought against them, the true test of whether or not they sincerely wish to follow public participation requirements arises. As shown, some truly do, whereas others stall at best or effectively refuse to follow their *pacta sunt servanda* obligations at worst. It is first and foremost a problem for civil society when parties do not implement the recommendations issued to them, but it is also a problem for the Convention system as a whole, which is forced to keep track of such implementation for years, at times when the Compliance Committee is seeing an increased caseload.[273]

VIII. FUTURE OF THE AARHUS CONVENTION

After a little over a decade of existence, the Convention has proved to be a success within environmental procedural law, especially at the national level. Looking to the future, does this mean that the Convention has potential to grow and have an expanded impact on environmental decisions, or is it more likely that its relevance, both as perceived by the public and to substantive matters, will be limited? In other words, what may lie ahead for the Aarhus Convention?

A. Geographical Expansion

The Convention itself contemplates three-fold development in the areas of implementation, geographical scope, and thematic innovation.[274] As for potential geographical expansion, the 2009–2014 Strategic Plan stipulates that the long-term vision of the Parties is "to secure the enjoyment of the rights [of public participation in environmental matters] . . . throughout the pan-European region *and beyond*."[275] Similarly, one of the missions listed in the Strategic Plan is "[t]o increase the impact of the Convention and the [PRTR] Protocol by *increasing the number of parties within the UNECE Region and by encouraging States outside the region to accede* to the Convention and the Protocol or implement their

273. KOESTER, *supra* note 32, at 201–02.

274. Pallemaerts, *supra* note 20, at 391.

275. U.N. Econ. Comm'n for Eur., Report of the Third Meeting of the Parties: Decision III/8 on Strategic Plan 2009–2014, Annex ¶ 6, U.N. Doc. ECE/MP.PP/2008/2/Add.16 (Sept. 26, 2008) (emphasis added).

principles."[276]

Two UNECE Region members that have not ratified the Aarhus Convention stand out: the United States and Canada. Both announced early in the Convention negotiation process that they did not intend to participate because their existing legal systems already adequately provided for public participation.[277] Further, the United States has indicated its concerns with the workings of the Compliance Committee, especially the "variety of unusual procedural roles that may be performed by non-state, non-Party actors, including the nomination of members of the Committee and the ability to trigger certain communication requirements by Parties under these provisions."[278] The United States has clearly stated to the MOP that it "will not recognize this regime as precedent."[279] Because of their role as highly visual players in the global environmental arena, it would be preferable if the United States and Canada would accede to the Convention, but to date, neither has shown any interest in doing so.[280] The two nations have, however, provided significant contributions to the establishment and operation of the so-called Aarhus Centres. These centers provide a forum for government officials from Ministries of the Environment to meet with members of environmental NGOs to build cooperative approaches in order to tackle environmental issues.[281]

In contrast, the Russian Federation played an active role in the negotiation of the Convention.[282] In fact, many parts of the Convention text were drafted specifically to meet the needs of the Russian negotiators, but at the end of the process, the Russian Federation pulled out and did not sign the Convention.[283] Since then, Russia has also shown "little serious interest" in acceding to it.[284] At the risk of sounding trite, it goes without saying that international legal regimes such as the Aarhus Convention would benefit from major nations such as Russia, the United States, and Canada acceding. This would benefit local law development

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276. *Id.* Annex ¶ 7 (emphasis added).

277. Pallemaerts, *supra* note 20, at 400.

278. Dupuy & Vierucci, NGOs IN INTERNATIONAL LAW, *supra* note 15, at 197.

279. *Id.*

280. Pallemaerts, *supra* note 20, at 400; *see also* U.N. Econ. Comm'n for Eur., Status of Ratification (Nov. 23, 2011), *available at* http://www.unece.org/env/pp/ratification.html (the United States and Canada have neither signed nor ratified the Convention).

281. U.N. Econ. Comm'n for Eur., Aarhus Centres (2012), *available at* http://www.unece.org/env/pp/acintro.html.

282. Pallemaerts, *supra* note 20, at 399.

283. *Id.*

284. *Id.* at 400.

in those nations with a significant "spillover" effect to other nations as well. At the same time, the decision to accede is obviously a political one which the global community can only hope for currently.

In Western Europe, only Ireland, Iceland, and Switzerland have not yet ratified the Convention.[285] EU nations and the United States enjoy relatively good financial and democratic positions, and could thus serve as champions for better public participation and, through this and other venues, environmental and intergenerational justice. These considerations are important in both the developing and the developed worlds, as well as in already established democracies and democratizing nations. Nonetheless, they were often forgotten in historic top-down developments of legal regimes. The time has come to put civil society at the forefront of, or at least further up the hierarchy in, environmental democratic developments both nationally and internationally.

Currently, the Convention is open to ratification only by UNECE members. Giving the Convention a global reach would be advantageous for the global public, especially—with proper financial and other support systems—in democratizing and developing nations. Currently, environmental discourse relating to these nations centers heavily around two notions that are often perceived to conflict, but which may actually not, namely the right to develop at all costs versus the necessity to develop sustainably. It would be natural to involve civil society more in the development of future substantive and procedural environmental laws decisive to the economic *and* sustainable development of these nations.

Attempts have already been made to expand the Convention at a global scale. As mentioned, the 2009–2014 Strategic Plan set the goal of having non-UNECE members accede to the Convention.[286] This has not happened yet. Why not?

First, the general perception is that the Convention is a European or, at best, a "European-plus" creation.[287] This stems in part from the fact that non-UNECE members may only accede "upon approval by the Meeting of the Parties."[288] To avoid sovereignty concerns, it is necessary to clarify that this "approval" does not include a substantive, but rather a procedural, review of the potentially acceding state's national legal

285. WORLD INTELL. PROP. ORG., *Treaties Database*, http://www.wipo.int/wipolex/en/other_treaties/parties.jsp?treaty_id=261&group_id=22 (last visited Apr. 3, 2012).

286. U.N. Econ. Comm'n for Eur., Report of the Third Meeting of the Parties: Decision III/8 on Strategic Plan 2009–2014, Annex ¶ 10(d), U.N. Doc. ECE/MP.PP/2008/2/Add.16 (Sept. 26, 2008).

287. Pallemaerts, *supra* note 20, at 401.

288. *Aarhus Convention*, *supra* note 42.

system and administrative practices.[289]

More work is needed in order to obtain accession by non-UNECE members. Interest in accession could be promoted by, initially, inviting representatives (including NGOs) of interested non-UNECE states to participate in some Convention activities.[290] Advice and support could also be given to interested nations regarding the Convention requirements and measures that such parties would need to take to accede. [291] Finally, bilateral cooperation ("twinning") projects between the Aarhus Convention Parties and interested non-UNECE parties could be undertaken to stimulate interest levels and knowledge of the Convention.[292]

Further, states that have not been involved in negotiating a treaty are less likely to accede to it. Accordingly, some have suggested the development of a new, potentially global treaty that could implement Principle 10 of the Rio Declaration in even better ways than Aarhus.[293] However, little, if any, progress has been made in that respect.[294] Thus, it remains more realistic to focus on improvement and geographical expansion of the Convention rather than starting over.

For now, one of the most significant steps toward imparting a more global scope to the Aarhus Convention has been the 2010 adoption of the United Nations Environment Programme guidelines for the development of national legislation on public participation.[295]

B. Thematic Scope of the Convention

One of the stated visions of the Parties is to "consider further development of the Convention to ensure that it continues to provide an adequate instrument to achieve its objectives."[296] What should such thematic development encompass?

First, the Convention instruments should specify what is meant by such loose terms as a "healthy" environment, "significant impact on the environment," and taking "due account" of the public participation

289. Pallemaerts, *supra* note 20, at 401.

290. *Id*. at 403.

291. *Id.*

292. *Id.*

293. *Id*. at 402.

294. *Id.*

295. *Id.*

296. U.N. Econ. Comm'n for Eur., Report of the Third Meeting of the Parties: Decision III/8 on Strategic Plan 2009–2014, Annex ¶ 7(c), U.N. Doc. ECE/MP.PP/2008/2/Add.16 (Sept. 26, 2008).

efforts.[297] Second, the number of activities mentioned in Annex I could be expanded. Currently, the threshold for triggering public participation requirements is quite high. Some activities that arguably should be subject to such requirements thus escape review by the Compliance Committee. A graduated framework could be implemented so that smaller scale activities carry less stringent public participation requirements than more encompassing ones.[298] The flip side of proposing these two steps may be that existing Parties may be reluctant to adopt these, just as new Parties may not accede to a Convention with stricter requirements than those currently in place. It is well known that in treaty negotiations and adoption stages, language is often deliberately left vague in order to reach compromises between reluctant Parties. Something is better than nothing. It may be more pragmatic to let the wording of the Convention be as it is instead of hoping for specifications that will not be politically acceptable at the international level but instead just stir up the virtual hornet's nest. This, of course, is a decision to be made at treaty negotiation level by the parties involved.

Further, the requirements of Articles 7 and 8 are recognized to be less specific than those of Article 6.[299] Again, Articles 7 and 8 address generally applicable legally binding instruments and policies whereas Article 6 more narrowly addresses on-the-ground activities. Although Article 7 incorporates certain Article 6 provisions by reference, both Articles 7 and 8 could be strengthened by, for example, being more specific as to what exactly is meant by "appropriate provisions" (Article 7), "relating to the environment" (Article 7), "fair framework" (Article 7), and that "[t]he result of the public participation shall be taken into account *as far as possible*" (Article 8) (emphasis added). Because public participation is recognized to improve the quality of environmental decisions and the enforcement thereof, it is important—seen from an environmental point of view—to be as specific and far-reaching as possible in framing public participation provisions. This goes for the Convention and its future versions as well, although it is also important to remember that in international contexts, experience has shown that nations may be more likely to ratify more loosely worded treaties that they perceive to allow them some flexibility in implementation rather than more stringent ones, as discussed above.

Perhaps most importantly, the Convention currently has a predominantly "environmental" scope. This could be broadened to encompass "sustainable development" without a specific link to

297. *Aarhus Convention*, *supra* note 42.

298. Pallemaerts, *supra* note 20, at 406.

299. *Id.*

environmental issues.[300] The Meeting of the Parties has indicated some interest in this expansion: the 2009–2014 Strategic Plan contains the goal of "explor[ing] the possibilities for the development of measures under the Convention to ensure greater opportunities for public participation in policy formulation and implementation contributing to sustainable development."[301] Environmental laws and sustainable development naturally go hand-in-hand. It follows that the Convention scope could be expanded upon and/or clarified to cover better opportunities for public participation in sustainable development measures in general. On the other hand, the phrase "under the Convention" also appears to signal that the parties do not currently envision a wholesale expansion of the scope of the Convention."[302]

C. Role of NGOs in Public Participation Frameworks

Should NGOs play an expanded role in future Aarhus contexts or is their role already too expansive? That depends on whom one asks. Obviously, the NGOs advocate for a greater say. However, states' stances towards NGOs in at least compliance procedure contexts remain predominantly negative.[303] This applies not only to developing countries whose traditional opposition to NGOs may be founded on their perceived reliance on "Western" values, but also to countries with a more liberal democratic structure.[304] For example, the United States ensured that a statement be annexed to the first decision of the MOP expressing the nation's concerns with the compliance mechanism.[305] Among other things, the United States, indicated concerns with "the variety of unusual procedural roles that may be performed by non-state, non-Party actors, including . . . the ability to trigger certain communication requirements by Parties."[306]

European nations also seem to take a cautious approach towards this issue, with only some arguing in favor of an expanded role for NGOs in compliance contexts.[307] Similarly, the decision not to incorporate Aarhus noncompliance procedures into the Kiev Protocol on Pollutant Release

300. *Id.* at 411.

301. U.N. Econ. Comm'n for Eur., Report of the Third Meeting of the Parties: Decision III/8 on Strategic Plan 2009–2014, Annex ¶ 11(g), U.N. Doc. ECE/MP.PP/2008/2/Add.16 (Sept. 26, 2008).

302. Pallemaerts, *supra* note 20, at 412.

303. Dupuy & Vierucci, *supra* note 15, at 152.

304. *Id.*

305. *Id.*

306. *Id.*

307. *Id.*

and Transfer Registers ("PRTR Protocol")[308] but, rather, to create separate compliance procedures was in large part based on the desire to avoid an automatic extension of NGO rights from the Aarhus Convention to the PRTR Protocol.[309]

Thus, it appears that fears prevail among nation states as to possible overreaching by NGOs in compliance contexts, and beyond. However, it is important to recall that so far, NGOs have, in fact, exercise very good self-restraint in this regard and have thus *not* overburdened the Compliance Committee with submissions. If NGOs could be trusted to exercise similar good self-governance in other aspects as well, their role could arguably be expanded. It is imperative that NGOs realize the importance of this issue. However, the status quo seems to prevail. Not many nation-states or other stakeholders have suggested that an expanded role be given to NGOs. Reform may be more easily reached if NGOs were willing to, for example, implement ethical codes of conduct calling for not only self-restraint, but also transparency as to their origins, true objectives, and sources of financing, as these have been contentious areas of concern in the past.[310]

Further, an improved framework for public participation may be needed for use in international contexts in particular. Such a framework could, for example, better address practical concerns such as the maximum number of compliance submissions available to NGOs, govern the minimum and potentially maximum size of participating NGOs, stipulate how NGOs could exercise co-decision-making powers in international negotiations, and call for external review of the actual observance by NGOs of their possible codes of conduct.

Non-state actors could be even more involved in future developments of the Convention and similar treaties. For example, Article 3 of the Economic, Social, and Cultural Council of the African Union fully integrates civil society in the institutional machinery of an intergovernmental organization.[311] Although NGOs did, as mentioned

308. The PRTR is an initiative developed by the parties to the Aarhus Convention. However, the Protocol is open to accession by non-parties to the Convention and nation states from outside the UNECE region. "Thus, despite its important link to the Aarhus Convention, the Protocol has some of the characteristics of an independent treaty with a potentially global scope." Press Release, U. N. Econ. Comm'n for Eur., U.N. Doc. ECE/ENV/10/P15, *available at* http://www.unece.org/press/pr2010/10env_p15e.html.

309. Dupuy & Vierucci, *supra* note 15, at 152.

310. *Id.*

311. *Id.*; *see also* AFR. UNION, *Statutes of the Economic, Social and Cultural, Council of the African Union*, art. 3, *available at* http://www.africa-union.org/ECOSOC/STATUTES-En.pdf ("ECOSOCC shall be an advisory organ of the African Union composed of different social and professional groups of the Member States of the African Union. These [groups] include . . . social groups, professional

above, play an unprecedentedly large role in the negotiations preceding the Aarhus Convention, there is room for improvement regarding how NGOs may contribute to the workings and further development of the Convention.

Strengthening the role of civil society will likely require the allocation of more financial and other resources to NGOs and relevant segments of civil society, especially in developing countries. Article 3(4) of the Convention currently requires each Party to "provide for . . . support to associations, organizations or groups promoting environmental protection and ensure that its national legal system is consistent with this obligation." Those requirements have been met in many cases, yet "far more could and should be done to strengthen NGO capacity in order to facilitate the more effective implementation of the Convention.[312] Needless to say, this is not only a controversial issue, but also one of difficult line drawing. For example, *which* NGOs should be supported? PINGOs only, or arguably better heeled BINGOs as well? And how? With money only, or also technical and/or legal support? Who should provide such support? These and similar issues remain to be resolved before an expansion of the roles played by NGOs becomes likely.

D. General Nature of Public Participation under the Convention and Similar Treaties

Whereas discourse regarding the scope of the Convention itself mainly relates to procedural *participation* improvements, steps allowing for civil society to have more actual *co-decision* powers have also been contemplated by external experts.[313] For example, some countries "not only afford their citizens the right to be *consulted* over environmentally significant proposals and to have their views taken into account by public authorities who will make the final decision[,]… they also give their citizens the right to [actually] *decide* on certain environmentally significant matters through referenda[.]"[314] Similar measures could be incorporated into future versions of the Convention or similar agreements to further empower civil society and give the agreements more "bite." Additionally, the concerned public could help generate the set of options that would be considered in environmental decision-

groups, NGOs, community-based organizations, voluntary organizations and cultural organizations.").

312. Dupuy & Vierucci, *supra* note 15, at 152.

313. Pallemaerts, *supra* note 20, at 408.

314. *Id.* (emphasis added).

making processes, instead of governments merely presenting top-down, predetermined menus.[315] These steps would obviously be controversial, especially in nation-states that do not have long histories of democratic processes. However, they would help bring the Convention and similar agreements from their current solely procedural stage to a future with more potential for substantive environmental change brought about directly through such instruments by civil actors.

The Convention could also be developed to more clearly address public participation within specific fields such as climate change, GMOs, overpopulation, and species extinction for better public governance of and involvement in the particular problems that arise in those areas. Last, but not least, the Convention is relatively unknown in national and international law. It would benefit from further publicity.

IX. CONCLUSION

This Article has demonstrated the theoretical and practical advantages of public participation in government decision-making and enforcement at the national and international levels. Public participation is widely considered a fundamental aspect of good governance. Drawing on the public's specialized knowledge and insight helps ensure procedurally and substantively improved lawmaking. Public participation is a useful tool in holding governments accountable for their promises, especially because traditional top-down solutions have frequently proved ineffective. Conversely, a greater amount of citizen compliance with new legal provisions is ensured through better and earlier consensus building with a well-informed public.

At the international level, public participation has proved highly effective in allowing citizen groups to trigger compliance review procedures where national governments often refrain from doing so out of comity and other concerns. It is an effective method of putting pressure on internal actors through external channels. In particular, citizen empowerment through public participation is of internationally recognized importance to environmental democracy and sustainable development. This has never been more important than currently with a demonstrated urgent need for *both* economic development *and* environmental protection. Public participation can help coax law- and policymakers towards greening and innovating the global economy. Both business interest and public interest NGOs have a crucial role to play in this aspect, and allowing input by public interest NGOs helps balance concerns that powerful business interest groups have too much influence

315. *Id.*

over government policy-making.

Public participation is, however, not only of theoretical importance. This Article has demonstrated that procedural public participation provisions also create a significant potential for the improvement of substantive laws and decision making. In doing so, this Article analyzed the first ten years of case law under the UNECE Aarhus Convention Compliance Committee. This Article demonstrated how nation states that have been found in noncompliance of the Convention have demonstrated their willingness to take its provisions into consideration in improving national public participation frameworks. And although these are, strictly seen, procedural in nature, they do, as demonstrated, have the clear potential for positive *substantive* change as well. For example, such change can be accomplished by allowing the general public to comment on draft legislation *and* requiring the competent authority to take these comments into serious consideration at an early point in time before finalizing the legislation in question. The Lithuanian case illustrated this point. Cases against Belarus and Albania further illustrated how public participation requirements help put pressure on competent authorities to update national legislation in order to facilitate more effective and meaningful public participation faster than would have been the case without the Convention. Thus, even newly democratized or democratizing nations are realizing the value of public participation in policy and lawmaking efforts.

At the enforcement level, public participation provisions and instruments such as the Aarhus Convention help give citizens access to an international venue where national options have been exhausted. This is important from a national perspective as well, since nations may not bring otherwise well-founded compliance cases against each other out of comity concerns, where civil society groups have no such hesitations. Compliance cases have also shown that NGOs have not submitted an unduly large amount of cases as had been the fear. Further, this Article has shown that under the Convention, business interests do not necessarily win over what may be seen as traditional environmental interests in spite of the former arguably being better funded, and in spite of heavy emphasis on economic development in most nations. Thus, economic and environmental concerns can coexist.

This Article also identified a few public participation and compliance weaknesses. Typically, these have taken the form of nation states unduly stalling public participation improvement efforts for extended periods of time. This is not surprising given the fact that many Aarhus Convention Parties do not have strong histories of civil society participation in what has traditionally been seen as a sphere reserved for the government only. Further, it is not unusual that some nations may at least initially resist intergovernmental oversight of national governmental

activities. With increased awareness of the advantages of public participation at both the national and international levels and the sanctions available under the Convention, this situation will hopefully improve.

This Article also looked to the future of the Aarhus Convention and demonstrated room for growth in the geographical and thematic scope of the Convention. For example, major nation states such as the United States, Canada, and Russia have not yet ratified the Convention, despite being members of the UNECE region. Doing so would lend more credence to public participation in general and the Convention in specific. A more global reach would be desirable not only from a treaty legitimization point of view, but also to citizens in non-ratifying nations who could benefit from public participation provisions at national levels. Thematically, the Convention provisions could be broadened to cover nonenvironmental aspects of sustainable development. Some provisions should, at a minimum, be clarified for a better understanding of such vague terms as "taking due account of" public participation in relation to "a healthy environment." Public participation could perhaps be redefined to cover not only insight into government affairs and the triggering of compliance mechanisms, but also governmental and intergovernmental advisory functions, and even allow citizen groups to play a role in actual decision making. However, the actual role and nature of involved groups should be carefully considered. So far, NGOs have demonstrated laudable self-restrain in Aarhus compliance contexts, but if they were to be given broader powers up to, and perhaps even including, appropriate co-decision-making authority, it would become necessary to carefully consider whether any framework could sufficiently address both legal and practical concerns in relation to such greatly enhanced empowerment of civil society. In doing so, the many advantages of involving civil society in government decision making should be counterbalanced against current resistance by some nations towards giving NGOs an expanded role.

Public participation poses some challenges, but an even greater amount of advantages. It is a concept that should be applied in more contexts, both nationally and internationally. After all, governments govern for the people. It is both rational and fair to involve citizens more in decisions that significantly affect both current and future generations.

Pacific Rim and Beyond: Global Mining, Global Resistance and International Law

Kari Lydersen*

TABLE OF CONTENTS

* Kari Lydersen is a Ted Scripps Environmental Journalism Fellow, 2011–2012.

I. INTRODUCTION

Under the lush hillsides and small farms of El Salvador's Cabanas region run rich, potentially very lucrative veins of silver and gold, according to exploration done over the past decade by a Nevada subsidiary of the Canadian mining company Pacific Rim.[1]

Pacific Rim was drawn to El Salvador because of the possibility of lucrative metallic deposits and also new Salvadoran Mining and Investment laws passed in 1996 and 1999, respectively, meant to court foreign investment.[2] Pacific Rim president and CEO Tom Shrake has worked in Latin America for twenty-three years and considers himself "an environmentalist" and personally devoted to helping the people of economically struggling countries like El Salvador.[3] According to Shrake and filings now in front of the International Centre for the Settlement of Investment Disputes ("ICSID"), the Salvadoran government and local residents initially welcomed Pacific Rim. The good relationship was key to Pacific Rim's 2002 merger with the Dayton Mining Company,[4] which owned[5] mining operations in El Salvador, Chile, and the United States. But several years later, relations soured. In December 2006, the Salvadoran government, then led by conservative president Antonio Saca, stopped communicating with the company as it sought permits to continue its exploration. At first Shrake thought it was a matter of bureaucracy and backlog, but he soon began to suspect more "political"

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1. Kari Lydersen & Jason Wallach, *Is Free Trade a Gold Mine?*, THE PROGRESSIVE MAGAZINE (July 2010) *available at* http://progressive.org/lydersen0710.html; *CAFTA Investor Rights Undermining Democracy and the Environment: Pacific Rim Mining Case*, PUBLIC CITIZEN, *available at* http://www.citizen.org/documents/CAFTA-investor-rights-undermining-democracy.pdf.; *El Dorado Overview and Resource Estimate*, PACIFIC RIM MINING CORP., *available at* http://www.pacrim-mining.com/s/Eldorado.asp (last visited 15 April 2012).

2. Pac Rim Cayman LLC vs. The Republic of El Salvador, ICSID Case No. ARB/09/12,Decision on the Respondent's Preliminary Objections Under CAFTA Articles 10.20.4 and 10.20.5, p. 34–35, (Aug. 2, 2010), http://icsid.worldbank.org/ICSID/FrontServlet?requestType=CasesRH&actionVal=viewCase&reqFrom=Home&caseId=C661.

3. Interview with Tom Shrake, CEO, Pacific Rim Mining Corp., (Feb. 10, 2012, & Jan.–Feb. 2010).

4. Rim Cayman LLC vs. The Republic of El Salvador, *supra* note 2, at 31–32.

5. Pacific Rim's 2002 annual report focuses on the Dayton Mining Company including on p. 4: "The merger of Pacific Rim and Dayton has created a company whose position is stronger than the sum of its parts. Pacific Rim's current market capitalization of approximately $38 million is more than 3 times that of the combined Dayton ($5.8 million) and old Pacific Rim ($4.5 million) market capitalization of $10.3 million when the merger proposal was announced." (Report on file with author).

motives, as noted in the ICSID filing.[6]

Opposition to mining by foreign companies was growing across Latin America, with increasing international attention to the complaints of poor farmers and indigenous communities,[7] who often live atop the mineral deposits and report social upheaval, intimidation, violence, and environmental harm related to mining while they reap little economic benefit from the extraction. In El Salvador, opposition was led in part by the Catholic Church, including San Salvador Archbishop Fernando Saenz.[8] Residents were extremely concerned about contamination and depletion of their water, which is a particular risk with gold and silver mining since such metals are often locked in sulfide ore which when exposed to oxygen through the mining process releases sulfuric acid that can contaminate groundwater, potentially for decades or even centuries into the future.[9] Though El Salvador is a rainy country, long-standing infrastructure and land use problems and the privatization of water delivery means many Salvadorans don't have access to clean fresh water on a regular basis, as many as sixty percent of rural residents by some estimates.[10]

In March 2008, amidst growing public opposition, President Saca announced the government would not grant any more mining licenses.[11] He later added that he would not grant new exploration or mining permits until two conditions were met: passage of a new more protective mining law and an environmental study of the effects of mining on the country.[12]

Shrake was furious because he suspected El Salvador was unfairly

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6. Pac Rim Cayman LLC vs. The Republic of El Salvador, *supra* note 2.

7. *See, e.g.*, *Mining on Indigenous Lands*, INDIGENOUS ENVIRONMENTAL NETWORK, http://www.ienearth.org/mining.html (last visited 15 Apr. 2012); *Who We Are*, TAMATSIMA WA HAA WIRIKUTA DEFENSE FRONT, http://frenteendefensadewirikuta.org/wirikuta-en-bk/?page_id=366 (last visited 15 Apr. 2012); PASTORAL COMMISSION PEACE AND ECOLOGY WEBSITE, www.resistance-mining.org (last visited 15 Apr. 2012) (detailing opposition to chemical and metal mining in Guatemala).

8. Pac Rim Cayman LLC vs. The Republic of El Salvador, *supra* note 2, at 45.

9. *Watershed Contamination from Hard Rock Mining,* USGS, http://www.earthworksaction.org/issues/detail/acid_mine_drainage (last visited 15 Apr. 2012).

10. CHRONIC NEGLECT: THE WATER CRISIS IN EL SALVADOR (CDC/Witness Oct. 2011).

11. Brendan Fischer, *Death Threats in El Salvador as Mining Company Asserts Corporate "Rights,"* PRWATCH (May 14, 2011) *available at* http://www.prwatch.org/news/2011/05/10748/death-threats-el-salvador-mining-company-asserts-corporate-rights.

12. Pac Rim Cayman LLC vs. The Republic of El Salvador, *supra* note 2, at 42–43.

and illegally depriving Pacific Rim of its right to mine while also sabotaging the country's own well-being. "We invested a lot of money with their support and under the legal system," he said. "To pull the plug on that is fine but at that point in time we'd made an investment and that investment has some value. If they decide not to move forward, they have the obligation under the law to provide our investors the damage we've realized because of that about-face."[13]

In 2009, Pacific Rim took legal action against the country, both under El Salvador's Investment Law and also under provisions in Chapter 10 of the Dominican Republic-Central America-United States Free Trade Agreement ("CAFTA"), between the United States and Costa Rica, Nicaragua, Honduras, the Dominican Republic, Guatemala and El Salvador. Among other things Chapter 10 says foreign investors must be compensated if their property is effectively expropriated or nationalized by a state.[14]

This is an example of an investor-state provision, which are common components of free trade agreements or other international agreements that allow companies operating in foreign countries to bring cases before an arbitration body if they feel they have been discriminated against compared to domestic companies or otherwise have seen their rights violated by the country where they are investing.[15]

Pacific Rim is seeking the $77 million it says it invested in exploration in El Salvador, plus interest, and a much greater amount of compensation for things including "reasonable lost profits, and indirect losses.[16] The ICSID filing says that "while this sum has not yet been quantified, it is far in excess of the amount of expenditures" already invested.[17]

The Pacific Rim claim was the first case filed under the investor-state provision of CAFTA, signed in 2004 against the opposition of anti-globalization activists, labor unions, and indigenous groups in Latin

13. Interview with Tom Shrake, CEO Pacific Rim Mining Corp., (Feb. 10, 2012); Email Interview with Todd Tucker, Res. Dir. Public Citizen Global Trade Watch (March 2012) (mentioning that it appears Salvadoran law does grant foreign investors to seek recourse for alleged violations of domestic Salvadoran law in front of the ICSID).

14. *CAFTA-DR (Dominican Republic-Central America FTA)*, OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE, at chp. 10, art. 10.7 *available at* http://www.ustr.gov/trade-agreements/free-trade-agreements/cafta-dr-dominican-republic-central-america-fta.

15. *STRONG INVESTOR-STATE DISPUTE SETTLEMENT = INCREASED US EXPORTS*, NATIONAL ASSOCIATION OF MANUFACTURERS, (Feb. 4, 2011); *see also, NAFTA Investor-State Arbitrations*, U.S. DEPARTMENT OF STATE, *available at* http://www.state.gov/s/l/c3439.htm.

16. Pac Rim Cayman LLC vs. The Republic of El Salvador, *supra* note 2, at 13.

17. *Id*.

America and the United States.[18] CAFTA allows for such cases to be heard by a three-person tribunal convened by the ICSID, which also hears cases under other free trade agreements and treaties.[19] A tribunal in 2010 ruled against preliminary objections[20] raised by El Salvador—allowing Pacific Rim's case to move forward.[21] As of March 2012, the tribunal was considering whether Pacific Rim has jurisdiction under CAFTA, given the parent company is based in Canada, which is not a party to the free trade agreement.[22] Shrake notes that the Pacific Rim subsidiary is based in Nevada, and he said most of the investment capital that went into El Salvador and the company's "intellectual property" is American.[23]

Last spring, the ICSID dropped a similar case brought against El Salvador under CAFTA Chapter 10 by a Wisconsin-based company called the Commerce Group Corporation ("Commerce Group"), which similarly sought $100 million or more from El Salvador for blocking its attempts to mine gold.[24] ICSID turned down the Salvadoran government's attempt to recoup about $800,000 in legal costs from the Commerce Group, essentially saying the company's claim was not frivolous even though it was not sustained, in part because investment occurred before CAFTA was signed, according to analysis by the watchdog non-governmental organization ("NGO") Public Citizen.[25] The

18. Regarding widespread opposition to CAFTA, *see* Kathy Schalch, *CAFTA Encounters Opposition from Labor*, NPR (May 12, 2005); *Q and A: The CAFTA Debate,* NY TIMES (July 18, 2005); *Doing Business in Central America,* CAFTALAW.NET, www.caftalaw.net (last visited 15 Apr. 2012); STOP CAFTA, www.stopcafta.org (last visited 15 Apr. 2012).

19. *ICSID Convention, Regulations and Rules*, INT'L CENTRE FOR SETTLEMENT OF INVESTMENT DISPUTES, (Apr. 2006) *available at* http://icsid.worldbank.org/ICSID/StaticFiles/basicdoc/CRR_English-final.pdf.

20. Pac Rim Cayman LLC vs. The Republic of El Salvador, *supra* note 2, at 16 (noting that the government of El Salvador basically argued that Pacific Rim was wrong in claiming that Salvadoran law offered the company an "automatic right" to mine, and also that the company had not fulfilled procedural requirements for mineral exploration to go forward).

21. *Procedural Details: Pac Rim Cayman LLC vs. The Republic of El Salvador*, ICSID*, available at* http://icsid.worldbank.org/ICSID/FrontServlet?requestType=CasesRH&reqFrom=ListCases&caseId=C661&actionVal=viewCase.

22. *See id.*; *see also,* Interview Tom Shrake, *supra* note 13.

23. Interview with Tom Shrake, *supra* note 13.

24. Commerce Group Corp. and San Sebastian Gold Mines Inc. vs. Republic of El Salvador, ICSID Case No. ARB/09/17, Award, ¶ 140(1)–(2) (Mar. 14, 2011) http://icsid.worldbank.org/ICSID/FrontServlet.

25. Press Release, Public Citizen, "Commerce Group CAFTA Ruling Highlights Threat of Foreign Investor Rules Also Included in Korea FTA: Even as Mining Firm's Frivolous Challenge of Environmental Policy Is Dismissed on Technicality, El Salvador

Commerce Group is seeking to revive the claim through an annulment appeal, heard by a different ICSID tribunal, which could result in the original tribunal's decision being overturned (or annulled) and a new hearing on the claim.[26]

II. INVESTORS RIGHTS PROVISIONS PROVOKE IRE

Investor-state claims under CAFTA and the North American Free Trade Agreement ("NAFTA") Chapter 11[27] have been lightning rods for opponents of free trade agreements and economic neo-liberalism who argue that the provisions give corporations undue power to challenge state and federal laws in a process that lacks transparency.[28] So far there have been no major victories for mining companies bringing cases under these provisions.[29] Even if they don't result in settlements, both mining proponents and opponents say the free trade agreement investor-state provisions are a powerful way for companies to persuade foreign governments to allow mining, either to avoid such arbitrations or as part of settlements after claims have been filed.[30]

"I'm not of the opinion this arbitration will proceed to the end," said Shrake. "In my opinion we will settle with El Salvador. I think settling

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Must Pay $800,000" (Mar. 15, 2011); Interview with Todd Tucker, Res. Dir. Public Citizen Global Trade Watch (Feb. 21, 2012).

26. Commerce Group Corp. and San Sebastian Gold Mines Inc. vs. Republic of El Salvador, ICSID Case No. ARB/09/17, Procedural Details, (filed Aug. 21, 2009), http://icsid.worldbank.org/ICSID/FrontServlet.

27. *Chapter 11: Investment*, NAFTA, *available at* http://www.nafta-sec-alena.org/en/view.aspx?conID=590&mtpiID=142.

28. The summary of a report by the watchdog NGO Public Citizen describes NAFTA's Chapter 11 thus: "NAFTA's investment chapter (Chapter 11) contains a variety of new rights and protections for investors and investments in NAFTA countries. If a company believes that a NAFTA government has violated these new investor rights and protections, it can initiate a binding dispute resolution process for monetary damages before a trade tribunal, offering none of the basic due process or openness guarantees afforded in national courts. These so-called "investor-to-state" cases are litigated in the special international arbitration bodies of the World Bank and the United Nations, which are closed to public participation, observation and input." *NAFTA Chapter 11: Corporate Cases*, PUBLIC CITIZEN, *available at* http://www.citizen.org/Page.aspx?pid=1218.

29. Email Interview with Travis McArthur, Trade and Finance Researcher, Global Trade Watch (Mar. 2012) (An analysis by Public Citizen shows that 31 mining cases have been filed before the ICSID, with 19 of them resolved and 12 pending.); Interview with Todd Tucker, *supra* note 13.

30. Phone Interview Tom Shrake, *supra* note 13; Interview with Todd Tucker, *supra* note 13; Interview with Jamie Kneen, spokesman MiningWatch Canada (Feb. 2012).

will be moving the industry and the gold mine forward."[31]

Tucker said that according to Public Citizen's analysis, investor-state provisions have existed in some form since at least the 1950s and are enshrined in about 3,000 bilateral trade agreements nationwide.[32] He said claims under these provisions accelerated greatly starting in the 1990s, because "developing nations have been breaking from several decades of neoliberal policies, and now investors are launching investor-state attacks as a form of political insurance against the costs of socioeconomic change."[33]

"Unfortunately I think this kind of case will become more common," Tucker said, adding that corporations have increasing motivation for such suits "in the last few years as countries break with the 'Washington consensus'—the pro-deregulation mentality. Countries are beginning to chart a new path for themselves, and investors are increasingly turning to investment treaties and trade agreements as a way to limit their ability to do so."[34]

Critics including NGOs focused on global trade, indigenous rights and the environment see the ability of companies to challenge the laws of sovereign nations and seek to force them to pay for not only a lost investment but also for foregone potential profit as an unnecessary and unethical advantage for multinational corporations doing business in developing countries, whose GNPs are often dwarfed by the would-be investors' corporate coffers.[35] The fact that tribunals hearing investors' rights cases have binding power under free trade agreements is also seen by these critics as an injustice and an insult to communities fighting foreign mining companies, since international law offers few concrete, binding options for mining opponents, as discussed later in this article.

III. HUMAN RIGHTS AND ENVIRONMENTAL VIOLATIONS ALLEGED WORLDWIDE

In many developing countries, opponents of multinational mining operations often suffer violence, intimidation, displacement, and assassinations. The most famous case may be in Papua New Guinea, where residents of the island of Bougainville are suing the mining giant

31. Interview with Tom Shrake, *supra* note 13.

32. Interview with Todd Tucker, *supra* note 13.

33. *Id*.

34. *Id.*

35. *See* Citizens Trade Campaign, http://www.citizenstrade.org/ctc/ (last visited Apr. 15, 2012); Mark Weisbrot, *CAFTA not likely to do better than NAFTA*, CHICAGO TRIBUNE (Dec. 19, 2003).

Rio Tinto in U.S. federal court for genocide and war crimes under the Alien Tort Statute.[36] The lawsuit alleges that Rio Tinto essentially ordered the Papuan government to do whatever necessary to quash indigenous opposition to its massive copper mine, and provided the government helicopters and other equipment to use against locals even after reports of war crimes by the military.[37] Violence, displacement, and a devastating economic blockade of the island reportedly killed about 10,000 residents.[38]

In El Salvador, several prominent anti-mining activists have been murdered and others receive death threats on a regular basis, including members of the grassroots radio station Radio Victoria.[39] Locals say the mining controversy has inflamed local political divisions left simmering since the country's brutal civil war in the 1980s.[40] Shrake said that he frequently receives death threats and that the violence in the area of Pacific Rim's explorations is, if anything, perpetrated by mining opponents.[41] He points to family conflicts and other factors potentially driving the violence, and notes that the company has invested in buildings, education and other social welfare projects for the surrounding communities.[42] Shrake also said locals' fears of water contamination are unfounded.[43] He said an independent analysis of the ore in the Cabanas region commissioned by Pacific Rim found that mining would not release significant amounts of sulfuric acid:

> The El Dorado ores had no acid potential based on numerous chemical results done by third party labs. There is absolutely no scientific evidence that has ever been conducted that suggests otherwise, only the commonly repeated misinformation provided by rogue NGOs. When asked for the science behind their claims by the consultants, they have never provided a shred of such evidence because they don't have it.[44]

These claims have not convinced local opponents, however,[45] who point to the experience of peasant farmers in the Valle de Siria region of neighboring Honduras. The Honduran peasants blame the Canadian

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36. *Sarei v. Rio Tinto, PLC and Rio Tinto Limited*, 671 F.3d 736 (9th Cir. 2011).

37. *Id*. at 744.

38. *Id*. at 774.

39. *See, e.g.*, Lydersen & Wallach, *supra* note 1.

40. *Id.*

41. Interviews with Tom Shrake, *supra* note 3.

42. *Id.*

43. *Id*.

44. Email Interview with Tom Shrake, CEO Pacific Rim Mining Corp. (March 2012).

45. Lydersen & Wallach, *supra* note 1.

company Goldcorp's mining, and resultant water contamination, for a rash of mysterious health problems and for destroying local agriculture.[46] Salvadoran mining opponents and international doctors have visited Valle de Siria to see the mining impacts and interview affected villagers.[47] Opponents of the Honduran government of President Porfirio "Pepe" Lobo Sosa (elected in Nov. 2009)[48] frequently say that the June 2009 coup, which deposed popular then-President Manuel Zelaya and brought right-wing forces to power, was driven in part by Zelaya's antipathy toward foreign mining companies.[49]

Similarly in Guatemala, the Marlin mine run by Glamis Gold, another Canadian company with a Nevada-based subsidiary, was accused of causing massive environmental contamination and sparking violence and murders.[50] (Canada is home to "over 75 percent of the world's exploration and mining companies" as of 2008.)[51]

After a complaint from the Guatemalan environmental group MadreSelva, the World Bank's Compliance Advisor Ombudsman launched an investigation into Glamis's Marlin mine.[52] The resulting report published in September 2005 found violations of required community involvement procedures and environmental safeguards, among other things.[53] Local Mayan residents vehemently opposed the project, blocking a truck carrying mining equipment on the Pan American Highway for forty days in 2004.[54] The stand-off ultimately

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46. *Id*.

47. *Id*.

48. *Nations divided on recognizing Honduran president-elect*, CNN WORLD (Nov. 30, 2009) *available at* http://articles.cnn.com/2009-11-30/world/honduras.elections_1_president-roberto-micheletti-zelaya-supporters-zelaya-and-micheletti?_s=PM:WORLD.

49. Press release from MiningWatch, Affected Communities from the Americas Demand that Canadian Mining Industry Respect Their Rights, (May 17, 2011); Interviews with Honduran residents of Comayagua and surrounding small communities in Honduras, affiliated with the Centro Nacional del Trabajadores del Campo (CNTC)(July 2010).

50. Press release from MiningWatch, Two killed so far protesting Glamis Gold in Guatemala (Aug. 12, 2005).

51. *Building the Canadian Advantage: A Corporate Social Responsibility (CSR) Strategy for the Canadian International Extractive Sector*, FOREIGN AFAIRS AND INTERNATIONAL TRADE CANADA (March 2009) *available at* http://www.international.gc.ca/trade-agreements-accords-commerciaux/ds/csr-strategy-rse-stategie.aspx?view=d.

52. Press release from the Halifax Initiative, Glamis Gold and the IFC: Gross Mismanagement in Guatemala (Dec. 2005).

53. *Id*.

54. Press releases from MiningWatch, *supra* note 51.

ended in violence that left at least one dead and more injured.[55] The mine was eventually launched thanks in part to a $45 million loan guarantee from the World Bank. In 2006, Glamis merged with the company Goldcorp.[56]

In Mexico, critics including U.S.- and European-based solidarity groups allege that the relatively strong labor and environmental laws on the books are regularly flaunted by mining companies with the tacit or explicit support of local and federal government authorities.[57] The town of Cananea, about 25 miles south of the Arizona border, has been bitterly divided with ongoing violent attacks and vandalism related to a years-long strike by the Mexican miner's union at the town's massive open pit copper mine,[58] where a strike a century ago helped spark the Mexican Revolution.[59] Mexican law prohibits companies from hiring replacement workers during a strike, but in 2010 the government declared the strike at the mine, owned by Grupo Mexico, illegal and allowed the company to resume production.[60] Federal police descended on Cananea with weaponry and tear gas to disperse picketing miners.[61]

In another example of government compliance with mining companies in the face of local opposition, Julio Calderon, the mayor of Chicomuselo, a town in Chiapas, Mexico, allegedly accepted bribes from the Canadian mining company Blackfire Exploration Ltd. in exchange for suppressing local opposition to barite mining.[62] The bribery scheme

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55. *Id*.

56. Press releases from MiningWatch, *supra* note 51; Press releases from other groups including The Halifax Initiative; Robert Moran PhD., *New Country, Same Story: Review of the Glamis Gold Marlin Project EIA, Guatemala*, MININGWATCH CANADA (Feb. 2004) *available at* http://www.miningwatch.ca/sites/miningwatch.ca/files/Moran_Marlin_rpt_Feb_2005.pdf.

57. *See* MAQUILA SOLIDARITY NETWORK, http://en.maquilasolidarity.org/actions/urgentaction (last visited 15 Apr. 2012); *see also*, *Social and Political Analysis*, MEXICO SOLIDARITY NETWORK, *available at* http://mexicosolidarity.org/about/analysis/en.

58. Press Release United Steelworkers, Steelworkers Condemn Mexican Government Attack on Cananea Miners (June 7, 2010); Kari Lydersen and Jessica Pupovac, *Striking on the Shoulders of Giants: Injustice Persists at Copper Mine that Sparked Mexican Revolution*, IN THESE TIMES MAGAZINE (July 27, 2008) *available at* http://www.inthesetimes.com/article/3861/striking_on_the_shoulders_of_giants.

59. David Bacon, *Mexican Miners Fight Privatization in Revolutionary Cananea* (Jun. 15 1999) *available at* http://dbacon.igc.org/Mexico/24MinersFight.htm.

60. *New Clashes Erupt at Cananea's Copper Mine*, REUTERS (Sept. 8, 2010) *available at* http://www.reuters.com/article/2010/09/09/us-grupomexico-clashes-idUSTRE68808P20100909.

61. Lydersen & Pupovac, *supra* note 59; Bacon, *supra* note 60.

62. *Blackfire adding threats to injury in Mexico: Canadian mining firm looks to pocket $800 million via NAFTA Ch. 11*, MININGWATCH CANADA MINES ALERT (Feb. 22,

reportedly collapsed[63] when Calderon demanded that the money be augmented with a sexual encounter with a specific Playboy model, which apparently never happened.[64] The barite mine was closed by government orders in 2009 and that same year three Blackfire employees were reportedly arrested in relation to the death of an anti-mining activist.[65] Despite the scandal, in 2010 Blackfire reportedly threatened to file an investor-state case under NAFTA Chapter 11 seeking $800 million in compensation for the government's closing the barite mine.[66] The company never followed through on the threat, and in August 2011, the Royal Canadian Mounted Police launched an investigation of the alleged bribery.[67]

Canada's government encourages the more than 1,000 mining companies headquartered there to act responsibly abroad, through a governmental Corporate Responsibility Strategy for extractive industries that includes training and incentives to push Canadian companies to forge good relationships with foreign governments and local populations.[68] But MiningWatch Canada's Jamie Kneen said NGOs are skeptical of how much good that policy does. He and other Canadian activists complain that aside from Canadian corporations' conduct abroad, the current conservative Canadian government supports environmentally destructive extraction projects—like mining of the Albertan tar sands[69]—that harm indigenous people in Canada.[70] "What we'd like to see is either that just stop or be balanced by some set of criteria or some additional emphasis on indigenous rights and labor rights

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2010) *available at* http://www.miningwatch.ca/blackfire-adding-threats-injury-mexico-canadian-mining-firm-looks-pocket-800-million-nafta-ch-11.

63. *Id*.

64. *Id*.

65. *Id*.; *see* REMA, www.rema.codigosur.net (last visited 15 Apr. 2012).

66. *Id*.; *see also,* Interview with Jamie Kneen, *supra* note 31.

67. *Blackfire*, *supra* note 63; REMA, *supra* note 67.

68. *Building the Canadian Advantag*e, *supra* note 53.

69. *Indigenous Activists from Canada Protest Tar Sands Development at Durban Climate Change Summit*, DEMOCRACY NOW (Dec. 6, 2011) *available at* http://www.democracynow.org/2011/12/6/indigenous_activists_from_canada_protest_tar .

70. Peter O'Neil, '*An Aboriginal Uprising is Inevitable if Harper Doesn't Listen,' Chief Threatens*, NATIONAL POST (Jan. 23, 2012) *available at http://news.nationalpost.com/2012/01/23/canada-could-face-aboriginal-uprising-if-harper-doesnt-listen-chief*-threatens/?__lsa=e24a3f0a; Ari Peskoe, *Will Canada Choose Mining over Indigenous Rights?* CHANGE.ORG (Oct. 26, 2010) *available at* http://news.change.org/stories/will-canada-choose-mining-over-indigenous-rights.

and everything else that Canada is supposed to be standing for," Kneen said.[71]

IV. INTERNATIONAL INSTRUMENTS AND THE 1872 MINING LAW IN THE UNITED STATES

While advocacy groups complain that the governments of Canada, Mexico, Papua New Guinea, and many other developed and developing countries do not do enough to regulate mining companies or protect their citizens from the effects of mining, the U.S.'s law governing hard rock mining gives companies—including foreign companies—much leeway to mine on public land, as described below.

In fact, the Hardrock Mining Law of 1872 law, which hard rock mining on public land in the United States, could be considered more subservient to mining companies than the laws of many developing countries.[72] The 1872 law was passed to stimulate settlement of the American West and encourage the extraction of natural resources needed to power a growing country[73] by offering any U.S. citizen the right to mine on public land without paying royalties to the federal government. Furthermore, this right to mine explicitly trumps most other claims to, or uses of, public land under the law.[74]

The label of "U.S. citizens" soon came to include small companies, and then larger ones, and ultimately multinational, largely foreign-based corporations, that got around the "U.S. citizen" stipulation by forming U.S. subsidiaries.[75] In one prominent mining controversy in California, the Canadian company Glamis Gold sought to present itself simultaneously as both a foreign company with standing under NAFTA and a U.S. company—through a Nevada subsidiary—necessary to give it mining rights under the 1872 Mining Law.[76]

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71. Interview Jamie Kneen, *supra* note 31.

72. *See* 30 U.S.C. §§ 22–42.

73. *See, e.g.*, Roger Flynn, *The Right to Say No: Federal Authority Over Hardrock Mining on Public Lands,* 16 J. ENVTL. L. & LTG. 249, 14–15 & 36–37 (2001); Scott Harn, *Legislative and Regulatory Update*, 75 ICMJ PROSPECTING AND MINING JOURNAL 6 (2006), *available at* http://www.icmj.com/article.php?id=613&keywords=Legislative_and_Regulatory_Update.

74. Flynn, *surpa* note 74.

75. Alison Ochs, *Glamis Gold Ltd. —A Foreign United States Citizen?: NAFTA and Its Potential Effect On Environmental Regulations and the Mining Law of 1872*, 16.2 COLO. J. INT'L ENVTL. L. & POL'Y 495, 497 (Spring 2005).

76. Jordan C. Khan, *A Golden Opportunity for NAFTA*, N.Y.U. ENVTL. L. J. 380, 390 (2008); Ochs, *supra* note 76.

Mining opponents in the United States say the 1872 law allows foreign companies to run roughshod over local residents and environmental protections.[77] Another complaint is that local, state and federal government agencies don't do enough to meaningfully regulate mining by foreign companies on public and private land.[78]

Colorado attorney Roger Flynn has spent his career opposing mines on behalf of local residents, Native American tribes, and environmental groups across the American west.[79] Flynn notes that[80] because the 1872 law severely restricts the U.S. government's "right to say no" to mining on public land, opponents are often relegated to trying to delay the approval process in hopes foreign mining companies will eventually decide that mining is uneconomical.[81] Flynn also stated:

> You have these big Canadian companies that set up a shell company with essentially no assets and one employee, then if anything goes wrong, if there's extensive pollution, poof! This shell company disappears, that one employee is fired and we get screwed.[82]

Many of Flynn's cases involve public land that tribes consider sacred, but gaining any legal protections on those grounds is an uphill battle.[83] His Native American clients sometimes reference international law in their briefs, since they are sovereign entities themselves and also since they are looking for any possible tools to plead their cases. But, he said, "then the judge just ignores" the international law claims.[84]

One example of a foreign company facing strong opposition from tribes and local residents in the United States is the London-based multinational company Rio Tinto, which is in the process of opening huge new nickel and copper mines in Michigan's Upper Peninsula[85] and central Arizona,[86] respectively. In Michigan, a Rio Tinto subsidiary

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77. Flynn, *supra* note 74.

78. Editorial, *The Case for Mining Law Reform*, NY TIMES (June 23, 2008). *available at* http://www.nytimes.com/2008/06/23/opinion/23mon2.html; MINING LAW REFORM http://www.mining-law-reform.info/; *General Mining Law of 1872*, EARTHWORKS, http://www.earthworksaction.org/issues/detail/general_mining_law_of_1872 (last visited Apr. 15, 2012).

79. Interview with Roger Flynn (Feb. 23, 2012).

80. *Id.*

81. *Id*.

82. *Id*.

83. *Id*.

84. *Id*.

85. *Kennecott Eagle Minerals*, RIO TINTO, www.kennecotteagleminerals.com (last visited Apr. 15, 2012).

86. RESOLUTION COPPER MINING, www.resolutioncopper.com (last visited Apr. 15,

(Kennecott Eagle Minerals) has broken ground on its nickel mine[87] after more than a decade of legal battles over possible environmental effects.[88] In order to start its proposed copper mine in Arizona, Rio Tinto subsidiary Resolution Copper needs Congress to pass a "land swap" bill—proposed in Congress several times since 2005 and most recently passed by the House of Representatives in October 2011—that would void President Dwight D. Eisenhower's executive order (and a continuation by President Richard M. Nixon) withdrawing the area in question from mining.[89] In both Michigan and Arizona, as in many areas around the country, the lands targeted for mining are held sacred by Native American tribes—the Ojibwe Keweenaw Bay Indian Community ("KBIC") in Michigan[90] and the San Carlos Apache in Arizona.[91] This raises legal, social, and ethical parallels and questions in common with multinational companies mining in developing countries—also often in areas inhabited by indigenous people. Are the indigenous groups' rights being violated by mining on ground they hold sacred? Are indigenous groups being given meaningful input into the process? Are indigenous groups and other local residents going to profit fairly from the mining operations that disrupt their lives and pollute their environment? And will the mining interfere with other local economic and cultural practices, from subsistence fishing to tourism? Wendsler Nosie Sr., former chairman of the San Carlos Apache, described the disconnect between how his tribe and the foreign mining company Rio Tinto see the same Arizona land:

> When we talk about preservation, they talk about ownership. When we talk about feeding the people, they talk about profits. These are the last sacred places left. When these places are gone the world will

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87. John Pepin, "Blasting Begins," The Mining Journal (Oct. 1, 2011).

88. Kari Lydersen, *MineField,* EARTH ISLAND JOURNAL (June 3, 2010) *available at* http://www.earthisland.org/journal/index.php/eij/article/minefield/.

89. Kari Lydersen, *Arizona plan for largest U.S. copper mine spurs economic, environmental debate*, THE WASHINGTON POST (Jan. 2, 2011) *available at* http://www.washingtonpost.com/wp-dyn/content/article/2011/01/02/AR2011010203276.html; Interviews with local citizens in Superior, AZ (Dec. 2011).

90. *Stand for the Land*, www.standfortheland.com (last visited 15 Apr. 2012).

91. The National Congress of American Indians resolution, "Opposition to Legislation Proposing a Land Exchange in Southeastern Arizona for the Purpose of Mining Operations" (2011); Wendsler Nosie Sr., *Why Oak Flat is Sacred to the San Carlos Apache Tribe*, YOUTUBE.COM (Sept. 2010), *available at* http://www.youtube.com/watch?v=sGw9dNT9Orc.

> take another turn. That's why it's so important this land exchange doesn't take place—it's really the final chapter.[92]

At Rio Tinto's Michigan nickel mine, KBIC tribal members risked arrest in 2010 to occupy Eagle Rock, site of the mine portal, which they consider sacred.[93] The members of the tribe were ultimately unsuccessful in gaining any governmental protections and in 2011 the company cleared forest and began blasting below the rock.[94]

In Arizona, leaders of the San Carlos Apache tribe fear that the beautiful and delicate high desert land sacred to them will be destroyed if Congress passes the land swap legislation.[95] That legislation would allow Rio Tinto to begin "block cave" underground copper mining, wherein blasting is done underground to loosen huge amounts of ore, which then falls into a tunnel with a conveyor system below.[96] While the method avoids the surface disruption that occurs with open pit mining, significant subsidence, when the surface collapses like a big sink hole, is a common result.[97]

Sue Montgomery, an attorney representing the San Carlos Apache, said that in the future they might invoke the U.N. Declaration on the Rights of Indigenous Peoples ("UNDRIP") in the future to try to block the Rio Tinto mine.[98]

The UNDRIP[99] and the International Labour Organization ("ILO") Convention 169[100] have been invoked by indigenous people fighting

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92. Interview with Wendsler Nosie Sr., Frmr Chairman San Carlos Apache Tribe (Dec. 2011).

93. *See, e.g.,* Kari Lydersen, *Kennecott Loses Road Decision; Worries Intensify Over U.P. Mine*, GREAT LAKES ECHO (MICH.) (21 Feb. 2011); Interviews with KBIC tribal members (May 2010); *See also*, John Pepin, *Judge denies stay of mining operation*, THE MINING JOURNAL (Sept. 14, 2011); Michelle Bourdieu, *Updated: Protect the Earth 2011, Part 2: Jessica Koski speaks on mining exploration on KBIC reservation* (Sept. 12, 2011) http://keweenawnow.blogspot.com/2011/09/protect-earth-2011-part-2-jessica-koski.html.

94. *Kennecott Eagle Minerals*, *supra* note 86; *Stand for the Land, supra* note 91; *Eagle Rock Occupation Day* 15, STAND FOR THE LAND (May 8, 2010) *available at* http://standfortheland.com/2010/05/08/eagle-rock-occupation-day-15.

95. Interviews with Wendsler Nosie Sr., *supra* note 93.

96. *Block Caving*, GLOBALINFO MINE, http://technology.infomine.com/reviews/Blockcaving/welcome.asp?view=full (last visited 15 Apr. 2012); Interview with Jon Cherry, CEO, Resolution Copper (Dec 2011).

97. *Id*.

98. Interview with Sue Montgomery, Attorney, (Dec. 2011).

99. U.N. Declaration on the Rights of Indigenous Peoples, G.A. Res. 61/295, U.N. Doc A/RES/61/295 (13 Sep. 2007) [hereinafter UNDRIP].

100. International Labour Organization [ILO], *Indigenous and Tribal Peoples Convention*, *C169*, 27 Jun. 1989, C169, *available at* http://www.ilo.org/indigenous/Conventions/no169/lang--en/index.htm.

mining on their land in the United States and abroad, both as legal instruments and for symbolic appeal.

The ILO convention requirements include that indigenous groups be consulted and have a role in determining priorities in the case of natural resource extraction on their historic land.[101] The ILO convention has been ratified by most Latin American countries, though not by the United States.[102] AnILO casebook lists numerous examples where Latin American governments and courts have used the convention to inform policies and decisions on mining.[103] However, there is no official international adjudication body responsible for enforcing ILO conventions, and Convention 169 has binding power only in those individual countries that ratify it and also pass legislation implementing it.[104]

The UNDRIP was adopted by the U.N. General Assembly in 2007 and endorsed by the United States in 2010.[105] Among other things, the Declaration officially acknowledges the right of indigenous people to exist, and outlines indigenous rights regarding land, traditions, and natural resources. Especially relevant to mining is Article 32, which calls for "free, prior and informed consent" before allowing developments that would impact indigenous peoples' traditional lands.[106] The UNDRIP has binding power only in those individual countries that ratify it and implement it in their domestic laws.[107] During the annual State of Indian Nations Address in January 2012, the National Congress of American Indians president, Jefferson Keel, called on the federal government to examine and revise federal laws so that they are in keeping with the Declaration.[108]

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101. *Id*.

102. *Application of Convention No. 169 by Domestic and International Courts in Latin America*, ILO, (Nov. 2009) *available at* http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---normes/documents/publication/wcms_123946.pdf.

103. *Id*.

104. Interview with Robert Coulter, Founder, Indian Law Resource Center (Feb. 25, 2012); Interview Charles Wilkinson, Professor, University of Colorado Law School (Feb. 2012).

105. *President Obama endorses the UN Declaration on the Rights of Indigenous Peoples,* AMNESTY INTERNATIONAL, (Dec. 18, 2010) *available at* http://blog.amnestyusa.org/women/president-obama-endorses-the-un-declaration-on-the-rights-of-indigenous-peoples/.

106. UNDRIP, *supra* note 103.

107. *Id*.; *see also Frequently Asked Questions: Canada's Endorsement of the United Nations Declaration on the Rights of Indigenous Peoples*, ABORIGINAL AFFAIRS AND NORTHERN DEVELOPMENT CANADA, http://www.aadnc-aandc.gc.ca/eng/1309374807748 (last visited Apr. 15, 2012).

108. *The Native American SOTU: A Call on Obama to Advance Indigenous Rights*,

Robert Coulter, founder and executive director of the Indian Law Resource Center, said the UNDRIP had considerable symbolic power, even before the United States endorsed it.[109] Coulter noted that the UNDRIP has already figured into various cases where tribes are fighting to preserve sacred areas, and he expects to see it become more prominent in mining cases in the future.[110] Despite the lack of a binding international enforcement mechanism, Coulter sees[111] the UNDRIP as a powerful tool. Specifically, Coulter said:

> The Declaration is an instrument now that enjoys worldwide consensus. . . . We know there are hideous regimes in certain parts of the world that voted for the Declaration and then violated it. . . . Guatemala voted for the Declaration then turns around and approves mines that result in the dislocation of Indian communities. . . . But it still means the world has come to agreement that these really are the legal rules and values that they are prepared to live with and that they agree should govern their conduct. Murder is illegal; people violate that law all the time but we still know the law criminalizing murder is a good thing. The same is true in international law.[112]

Even though there are not international adjudication bodies dedicated to enforcing the ILO conventions or U.N. declarations like UNDRIP, alleged violations of these and other international treaties and declarations can be part of claims in U.S. courts under the Alien Tort Statute and other laws.[113] For example, in the Papua New Guinea Rio Tinto case, the plaintiffs used the Alien Tort Statute to bring a lawsuit in U.S. federal court alleging violations of international law, including war crimes and genocide.[114] The plaintiffs also alleged Rio Tinto violated other international agreements, including the U.N. Convention on the Law of the Sea.[115]

NEW AMERICA MEDIA (Jan. 2012), *available at* www.newamericamedia.org.

109. Interview with Robert Coulter, *supra* note 105.

110. *Id*.

111. *Id*.

112. *Id*.

113. Amy K. Lehr, *Looking Ahead: Indigenous Peoples and Free, Prior, and Informed Consent,* FOLEY HAUG LLP., (Jan. 17, 2011) *available at* http://www.csrandthelaw.com/tags/informed-consent.

114. Sarei v. Rio Tinto, PLC and Rio Tinto Limited, 671 F.3d 736 (9th Cir. 2011).

115. Declaration of Professor Lakshman D. Guruswamy, U.S. District Court Central District of California Western Division, in the case of *Alexis Holyweek Sarei, et al., v Rio Tinto PLC,* 650 F.Supp.2d 1004 (C.D. Cal. 2009).

115. (C.D. Cal., 2001) (University of Colorado law professor Dr. Lakshman D. Guruswamy served as an expert witness, testifying that Rio Tinto had violated the Law of the Sea by creating extensive contamination of rivers that killed much marine life.); United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397.

Though indigenous people face an uphill battle in U.S. courts and international tribunals to protect their sacred areas from mining, there have been some notable victories. In one landmark case, for example, tribal interests won out over the company Glamis Gold (now Goldcorp) in Imperial County, Calif., when the U.S. government supported the Quechan tribe's demands that public land they held sacred be off-limits to mining, specifically to an open pit gold mine proposed by Glamis Gold.[116] In 2001, then-Interior Secretary Bruce Babbitt refused to grant permission for the mine on public land because of its potential impacts on an historical "Trail of Dreams" and other areas sacred to the tribe.[117] Further, the State of California passed mine reclamation requirements that would have made the project economically infeasible.[118] Glamis brought suit under Chapter 11 of NAFTA, seeking $49 million in lost investments plus interest and other damages.[119] Glamis ultimately lost before a three-member ICSID arbitration panel in June 2009, with commentators considering the tribe's testimony as key to the outcome.[120] "I wouldn't expect to see many more challenges like that because the gold company got nowhere," said Robert Coulter, who also praised the U.S. government's "vigor" in fighting Glamis's claim. "The company must have spent so much money (on the claim) and it got them nothing."[121]

In a 2008 article in New York University's *International Environmental Law Journal* before the decision in the Glamis case, Jordan C. Khan urged the ICSID tribunal hearing the case to help make NAFTA a tool for protecting the environment, by among other things, "stating that investors in heavily regulated industries must expect subsequent lawful restrictions."[122]

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116. Khan, *supra* note 77; Press Release, Indian Law Resource Center, NAFTA Tribunal recognizes sacred place of Quechan Tribe – denies Glamis Gold's claim in full (June 9, 2009), *available at* http://www.indianlaw.org/Quechan_Glamis_NAFTA_Tribunal.

117. Khan, *supra* note 77, at 397–398.

118. Khan, *supra* note 77; Press Release Indian Law Resource Center, *supra* note 119.

119. ICSID, "Reply Memorial of Claimant Glamis Gold Ltd.," filing in Glamis Gold Ltd. v. The United States of America (Dec. 15, 2006).

120. ICSID, "Award" filing in Glamis Gold Ltd. v. The United States of America, IIC 380 (2009) (Mentioning tribal issue on pages including 7, 25, 44, 48 and 63); *see also*, Press Release Indian Law Resource Center, *supra* note 119.

121. Press Release Indian Law Resource Center, *supra* note 119; Interview with Robert Coulter, *supra* note 105.

122. Khan, *supra* note 77.

IV. GROWING GLOBAL OPPOSITION

Though national laws, national governments and free trade agreements are often stacked against them, communities that oppose mining or want to gain more say in how mining operations are carried out near their land have increasingly developed global networks and used public relations, shareholder activism, lawsuits, and other tools with increasing effectiveness. Indigenous groups, NGOs, labor unions, and human rights organizations are increasingly networked worldwide, spreading information about their struggles and drawing the connections between the records of multinational mining companies—and their subsidiaries—in different countries.

Opponents of multinational mining projects have made it a practice to buy stock in the companies and attend shareholder meetings, where they speak out about alleged injustices perpetrated by the companies.[123] The hope is that such activity will draw the attention of the media, company executives, and other shareholders.[124] Michigan priest Jon Magnuson described his experience at the 2011 Rio Tinto shareholders meeting in London:

> The big news for Rio Tinto is the large purchase option being negotiated with China. Reporters appear eager to interview members of our group, looking for inside information. When we mention we're here to address issues of environmental damage and human rights, they turn away. We pass through security screenings and enter a large, attractive meeting room with upbeat music. There are no photos of human rights victims on the wall, no images of children or village leaders from Third World countries . . . . Allegations received by the chair are responded to briefly, then deftly referred to the executive officer or other board members. An air of impatience fills the room. The three hundred stockholders are clearly here to monitor personal investments. There's little interest in other matters.[125]

In keeping with Magnuson's experience, MiningWatch Canada spokesman Jamie Kneen has little faith in shareholder activism's ability to effect real change.[126] "Effective shareholder activism can produce minor adjustments and reports—lots of reports," he said.[127] "It's not

123. *Shareholder Activism: The New Smoking Gun?* THE MINING JOURNAL (Oct. 2009), *available at* http://www.mining-journal.com/reports/shareholder-activism-the-new-smoking-gun.

124. *Id*.

125. Jon Magnuson, *Witness: A personal account of local efforts to stop the Kennecott Eagle Project mine*, MARQUETTE MONTHLY (Mich.) (Dec. 2011).

126. Interview with Jamie Kneen, *supra* note 31.

127. *Id*.

really produced major change. Even where there has been divestment, it hasn't produced lasting impact on the company's finances."[128]

But public pressure is clearly having an effect on mining companies' stated policies and commitments. Major mining companies, including Rio Tinto and Anglo American, belong to the International Council on Metals & Mining, a "CEO-led industry group" founded in 2001 "to improve sustainable development performance in the mining and metals industries."[129] The Council has partnered with global conservation organizations and human rights leaders to publish detailed reports on how to respectfully deal with indigenous communities and protect biodiversity, among other things.[130]

Pacific Rim CEO Tom Shrake said his company similarly professes to be guided by social conscious and corporate responsibility in the company's dealings in El Salvador. He argues that only foreign investment can save El Salvador, which is currently plagued by high levels of unemployment, poverty, and gang crime.[131] He said foreign investors are now avoiding El Salvador, and he hopes Pacific Rim's claims against the government and an eventual settlement will help change that:

> The idea that this is corporate overrunning of El Salvador is nonsense. We don't even have any money—how could we overrun them? The opposition groups are twenty times better funded than we are. This David versus Goliath image is perfect but the only problem is we're David.[132]

Public Citizen's Todd Tucker said he didn't buy Shrake's claim to be outgunned by mining opponents, and noted that while there is no binding precedent under the ICSID, public opinion around Pacific Rim or other cases could sway future decisions by the tribunal, and more broadly governmental and corporate decisions.[133]

"This isn't impartial justice; these are very political actions," Tucker said. "When the spotlight is put on some of these cases, the smart tribunalists say, 'Okay we'll give the government a pass on this one

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128. *Id*.

129. INTERNATIONAL COUNCIL ON MINING & METALS, www.iccm.org (last visited Apr. 15, 2012).

130. *Good Practice Guidance for Mining and Biodiversity*, INT'L COUNCIL ON MINING & METALS, *available at* http://www.icmm.com/page/1182/good-practice-guidance-for-mining-and-biodiversity; *Good Practice Guide: Indigenous Peoples and Mining*, INT'L COUNCIL ON MINING & METALS, *available at* http://www.icmm.com/library/indigenouspeoplesguide.

131. Interview Tom Shrake, *supra* note 13.

132. *Id*.

133. Interview Todd Tucker, *supra* note 13.

because it's just attracting too much scrutiny—if we push it too far governments may be less willing to sign up for these agreements."[134]

Ultimately, only time will tell how much mining companies adopt more environmentally-friendly practices, involve indigenous people and other local residents in a meaningful way, respect the laws of local and national governments, and comply with the spirit and word of non-binding international agreements like the UNDRIP and ILO Convention 169. In the face of growing international public pressure, mining companies are already making significant efforts to develop best practices, adopt environmentally superior technology and do outreach to local communities and indigenous peoples. The true test will be whether they are ultimately willing to leave valuable ore bodies untapped if that is what community opinions, national laws and environmental concerns dictate; if they are truly willing to consider concerns other than profit in determining where, when, why, and how to mine, and for whom.

134. *Id*.

Notes & Comments

Impressions from Durban: COP-17 and Current Climate Change Policies

Jason Obold, Matthew Burns, and Caroline Baker

TABLE OF CONTENTS

I. A CRITIQUE OF THE DURBAN PLATFORM

One adjective best describes the United Nations Climate Change Secretariat's press release that followed the conclusion of the Seventeenth Conference of the Parties ("COP-17") to the United Nations Framework Convention on Climate Change ("UNFCCC") in Durban, South Africa: gilded.[1] "Countries meeting in Durban, South Africa, have delivered a breakthrough on the future of the international community's response to climate change."[2] Ms. Maite Nkoana-Mashabane, President of COP-17, stated that the agreement signed in Durban ("Durban Platform") took "crucial steps forward" in the fight to stave off climate change and complimented the Parties for sacrificing some personal policy prerogatives in the interest of "a long-term solution to climate change."[3] She then stated that the Parties "have all laid aside some cherished objectives of their own to meet a common purpose."[4] The UNFCCC Executive Secretary added that, "Durban has lit up a broader highway to a low-emission, climate resilient future" leading into the next major UNFCCC Conference in Qatar in late 2012.[5]

Whether or not these comments hailing the Durban Platform as a "breakthrough" were accurate can only be judged by the test of time. But what can be said today is that the prospect of the Durban Platform as a "crucial step" is off to a very uncertain beginning. The Durban Platform states that the Conference of the Parties in Durban decided to create a new working group, which will produce a document "as early as possible but no later than 2015 in order to adopt this protocol, legal instrument or agreed outcome with legal force at the twenty-first session of the Conference of the Parties."[6] The product of the working group will

1. "Since the UNFCCC entered into force in 1995, the Conference of the Parties (COP) to the UNFCCC have been meeting annually to assess progress in dealing with climate change." *See generally*, U.N. Climate Change Conf. 2011, Durban, S. Afr., COP17/CMP7, What is COP17/CMP7?, http://www.cop17-cmp7durban.com/en/about-cop17-cmp7/what-is-cop17-cmp7.html (last visited Apr. 5, 2012).

2. Press Release, U.N. Climate Change Secretariat, Durban Conference Delivers Breakthrough in International Community's Response to Climate Change (Dec. 11, 2011), *available at* http://unfccc.int/files/press/press_releases_advisories/application/pdf/pr20111112cop17final.pdf.

3. *Id.*

4. *Id.*

5. *Id.*

6. Conf. of the Parties Dec. 1/CP.17 ¶ 4, Rep. of the Conf. of the Parties, 17th Sess., Nov. 28–Dec. 11 2011, Part Two, at 2, U.N. Doc. FCCC/CP/2011/9/Add.1 (March 15, 2012), *available at* http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf#page=2.

"come into effect and be implemented from 2020."[7] While this agreement sounds promising on its face, it is a paper tiger without any guarantee that a productive solution will be adopted or that the solution will be legally binding. The giant linguistic loophole in the promise to develop "a protocol, another legal instrument or an agreed outcome with legal force" allows the adoption of a non-binding instrument that may be ignored by any signatory nation that deems the instrument against its cherished objectives.[8] Further, the Durban Platform's goal of implementation by 2020 is past the date by which the International Energy Agency has determined that global emissions need to peak in order to keep global warming below the 2°C target outlined by the UNFCCC.[9] For another year, the Conference of the Parties ("COP") managed to produce little more than an agreement to continue talking and delay action, this time for the better part of a decade.

Comparing statements by the Parties made before the start of COP-17 with the Durban Platform leaves one wondering which, if any, "cherished objectives" the President of COP-17 feels were sacrificed to support a comprehensive solution to climate change. Many nations walked away with much less than they had hoped for going into Durban. After a devastating year of record temperatures, drought, bush fires, floods, and hurricanes,[10] Australia, a country known for its climate change skepticism,[11] entered COP-17 touting a new domestic emissions trading scheme. The Australian statement showed the country's willingness to cut domestic emissions. But the statement also revealed a lack of willingness to recommit to the Kyoto Protocol to the UNFCCC

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7. *Id.*

8. *See* Louise Gray, *Durban Climate Change: The Agreement Explained*, TELEGRAPH, Dec. 11, 2011, *available at* http://www.telegraph.co.uk/earth/environment/climatechange/8949099/Durban-climate-change-the-agreement-explained.html.

9. Brad Plumer, *Why Small Delays on Climate Change Can be Costly*, EZRA KLEIN'S WONKBLOG, WASH. POST (Dec. 14, 2011, 10:23 AM), http://www.washingtonpost.com/blogs/ezra-klein/post/why-does-it-matter-when-we-cut-co2-emissions/2011/12/14/gIQAumxwtO_blog.html.

10. *See* Jeff Goodell, *Climate Change and the End of Australia*, Rolling Stone, Oct. 13, 2011, at 54, *available at* http://www.rollingstone.com/politics/news/climate-change-and-the-end-of-australia-20111003.

11. *See* Stuart Rintoul, *Town of Beaufort Changed Tony Abbott's View on Climate Change*, AUSTRALIAN, Dec. 12, 2009, *available at* http://www.theaustralian.com.au/politics/the-town-that-turned-up-the-temperature/story-e6frgczf-1225809567009 (Tony Abbott, leader of the Opposition in the Australian House of Representatives, "dismissed the science underpinning climate change as 'crap.' "); *see also* Rodney Tiffen, *Australia in Denial over Greenhouse*, SYDNEY MORNING HERALD, July 12, 2010, *available at* http://www.smh.com.au/opinion/society-and-culture/australia-in-denial-over-greenhouse-20100711-105ha.html.

("Kyoto Protocol") unless the major emitting countries were included in the next round of emissions targets. "Australia's position remains unchanged—we will be part of a second commitment period only if it is a part of a wider agreement covering all major emitters."[12]

Canada went a step further by declining to continue to be a part of the Kyoto Protocol. "Kyoto . . . is an agreement that covers fewer than [thirty] percent of global emissions. . . . By (sic) some estimates down to [fifteen percent]."[13] Russia declined to commit to a second period of Kyoto obligations for similar reasons. "[D]ata from the International Energy Agency suggests that [forty-one percent] of global emissions in 2009 originated from two countries, who are not bound by the Kyoto Protocol."[14] Australia, Canada, and Russia all expressed a willingness to continue reducing their emissions and working toward a solution to global climate change. However, these countries also made clear that they will not be a part of any solution that does not include participation by the largest emitters. Because COP-17 ended without commitments from the largest emitters, Australia, Canada, and Russia declined to take part in a second round of Kyoto reduction commitments and, in signing the paper tiger Durban produced, gave up their pursuit of accountability from the world's largest emitters.[15]

Statements made by the Micronesian delegation represent another group of nations that sacrificed objectives at the conference—the small island nations that contribute little to the problem of climate change but are experiencing its wrath exponentially. Andrew Yatilman, head of the Delegation for Micronesia, gave this warning to the parties:

> We are approaching twenty years since the UNFCCC was established. Yet emissions are still increasing. 2010 saw not only the highest emissions ever, but also the largest growth in carbon dioxide emissions on a year-to-year basis. Meanwhile, we are continuing to

12. Australia, Statement at COP-17: High Level Session (Dec. 7, 2011), http://unfccc.int/files/meetings/durban_nov_2011/statements/application/pdf/111207_cop17_hls_australia.pdf.

13. Canada, Statement at COP-17/CMP 7: High Level Segment (Dec. 7, 2011), http://unfccc.int/files/meetings/durban_nov_2011/statements/application/pdf/111207_cop17_hls_canada.pdf.

14. Alexander Bedritskiy, Special Representative of the President of the Russian Fed'n on Climate Change, Statement to COP-17/CMP 7 (Dec. 8, 2011), http://unfccc.int/files/meetings/durban_nov_2011/statements/application/pdf/111208_cop17_hls_russia.pdf.

15. *See* Julian Drape, *Australia Defends Canada's Kyoto Exit*, SYDNEY MORNING HERALD, Dec. 13, 2011, *available at* http://news.smh.com.au/breaking-news-national/australia-defends-canadas-kyoto-exit-20111213-1osyd.html.

> witness increasingly damaging impacts from climate change, including the loss of land, homes and lives.[16]

For island nations to survive, "we will not only need to bring emissions to zero, but will actually have to achieve net negative emissions on an annual basis in the second half of this century and cannot wait until 2020 for action."[17] With 2020 as the Durban Platform implementation year, the lack of any substantial, concrete action for another eight years is eroding the hope that many island nations had of saving their land from disappearing beneath the encroaching waves.

Although these statements did not provide specific names, their targets were clear and the tension was as palpable as the humidity that hung over the conference. The bulk of the Parties were singling out China, India, and the United States for their lack of participation in Kyoto and perceived lack of interest in being part of a global solution to climate change going forward from Durban.[18] The recalcitrant nations offered strong statements in support of a new climate change regime, but were reserved about committing to participating in any binding instrument. China urged the participants at COP-17 to work toward a "comprehensive, fair and balanced outcome" with practical objectives, but stressed the principle of common but differentiated responsibilities. Further, China called upon developed nations to take the lead in "drastic emission reduction" without agreeing to bind itself to Kyoto or any future plan.[19] Stressing the principle of common but differentiated responsibilities highlights a problem with the UNFCCC that has plagued the discussions since the beginning. China is the world's largest emitter of carbon dioxide, releasing just under 7 billion tons of carbon in 2009, an increase of 206 percent since 1990.[20] However, China is considered a developing country and not bound to any emissions reductions under

16. Andrew R. Yatilman, Head of Delegation for Micr. (Federated States of), Statement at the Seventeenth Conference of the Parties to the UNFCC/Seventh Meeting of the Parties to the Kyoto Protocol: High Level Segment (Dec. 8, 2011), http://unfccc.int/files/meetings/durban_nov_2011/statements/application/pdf/111208_cop17_hls_micronesia.pdf.

17. *Id.*

18. *See O Canada*, ECONOMIST, Dec. 15, 2011, *available at* http://www.economist.com/blogs/graphicdetail/2011/12/daily-chart-6; *see also* A Look to the East at the Durban Talks, WASH. POST, Dec. 11, 2011, *available at* http://www.washingtonpost.com/national/health-science/a-look-to-the-east-at-the-durban-talks/2011/12/11/gIQAIErBoO_graphic.html.

19. Xie Zhenhua, Minister of China, Statement Made in Connection with COP-17/CMP 7, *available at* http://unfccc.int/files/meetings/durban_nov_2011/statements/application/pdf/111207_cop17_hls_china.pdf.

20. *O Canada*, *supra* note 18.

Kyoto; nor does it want to be bound under any future scheme.[21] After two weeks and thirty-six additional hours, COP-17 ended with no concrete agreement to any reductions now or in the future, which is exactly what the Chinese were hoping for going into COP-17.[22]

India also preached common but differentiated responsibilities in its approach to a long-term agreement. India noted that while it is a large country, its per capita emissions are only 1.7 tons per person per year.[23] Like China, India noted its progress toward reducing its national emissions.[24] India called for a second round of Kyoto commitments, but did not commit itself to any Kyoto goals, stating that developing nations "cannot be expected to be legally bound to reduce their emissions when they have practically no emissions."[25] In the end, India received exactly what it had been proposing from day one. The Durban Platform provides no requirement for a legally binding document, and India did not make any Kyoto commitments. Delaying action until 2020 was exactly what India wanted, and it is exactly what India received.[26]

President Obama's special envoy for climate change and chief American negotiator at COP-17, Todd Stern, promised that the United States was not actively blocking pre-2020 action on climate change, while at the same time he stated his support for a "road map" proposed by the European Union ("EU") that included a formal treaty by 2015 to take effect in 2020.[27] While supporting the EU roadmap, Mr. Stern refused to agree to any solution that did not include the world's largest emitters, including China and India.[28] Mr. Stern stated his support for a document that delayed action until 2020 immediately after denying that

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21. *See A Deal in Durban*, ECONOMIST, Dec. 17, 2011, *available at* http://www.economist.com/node/21541806.

22. *See* John Broder, *Signs of New Life as U.N. Searches for a Climate Accord*, N.Y. TIMES, Jan. 24, 2012, *available at* http://www.nytimes.com/2012/01/25/business/global/signs-of-new-life-as-un-searches-for-a-climate-accord.html?scp=6&sq=durban%20climate%20change&st=cse.

23. Jayanthi Natarajan, Minister of Environment & Forests Government of India, Statement at COP-17/CMP 7: High Level Segment (Dec. 7, 2011), http://unfccc.int/files/meetings/durban_nov_2011/statements/application/pdf/111207_cop17_hls_china.pdf.

24. *Id.*

25. *Id.*

26. Nitin Sethi, *Durban Climate Talks End, New Global Climate Change Regime From 2020*, TIMES OF INDIA, Dec. 11, 2011, *available at* http://articles.timesofindia.indiatimes.com/2011-12-11/developmental-issues/30504463_1_eu-roadmap-climate-talks-climate-change.

27. Editorial, *Climate Talks Keep Issue in Focus*, WASH. POST, Dec. 14, 2011, *available at* http://www.washingtonpost.com/opinions/climate-talks-keep-issue-in-focus/2011/12/13/gIQAPtkluO_story.html.

28. *Id.*

the United States proposed to delay action until 2020. In the realm of international posturing, it seems that supporting, while having the same practical effect as proposing, is less politically risky. Less than ninety-six hours after Mr. Stern's statements, COP-17 resulted in a delay of implementation until 2020, a plan Mr. Stern vehemently denied the United States was proposing.[29] From Mr. Stern's statements, it is unclear what "cherished objectives" the United States set aside in agreeing to a delay in action until 2020. It could be argued that the United States set aside its desire to have China and India included in an emissions reduction regime. But, similar to China and India, the United States left Durban without any firm commitment to emissions reductions now or in the future.

There are perilous times ahead for anyone who hopes for an effective, long-term solution to anthropogenic climate change, but agreeing to continue discussing the matter is certainly better than walking away from the table altogether. Perhaps the cautious optimism of the UNFCCC Secretariat and the COP-17 President is the only way to assess the future of a global climate change regime, especially given the disparate national perspectives and prerogatives that were represented at COP-17. The international community will never come to an agreement unless it continues to talk out the very complex problems that plague efforts to confront climate change. Ultimately, all that seems likely to be accomplished is talk. Yet talk is important. There can be no international agreement by unilateral action. However, no one should be surprised if talking produces no substantive agreements or, more importantly, no actual reductions in greenhouse gas emissions. This is the diagnosis of a realist given the factors at play and the history of the discussions.

II. A REASON FOR HOPE? BUSINESS DRIVING CLEAN DEVELOPMENT

Climate change is an issue broader in both impact and cause than any environmental issue we have faced in the past. Previous environmental issues requiring significant changes on an international scale, such as the threat to the ozone layer addressed in the Montreal Protocol, have been more limited in scope.[30] The sources of global

29. *See id.*

30. The Montreal Protocol on Substances that Deplete the Ozone Layer targets a very specific set of substances that are not, unlike some of the greenhouse gases addressed in the Kyoto Protocol, significant by-products of widespread human (and even natural) activity. *See* Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16 1987; *see also* Kyoto Protocol to the United Nations Framework Convention on

climate change implicate so many sectors, from heavy industry to agriculture, transportation, and deforestation, that the causes of the problem cannot be neatly selected and forced (or paid) to change. A significant part of the shift towards more climate friendly human behavior will have to be driven by finding ways to make "being green" refer to not just the color associated with things that are environmentally friendly, but also the color associated with money and profit. To achieve de-carbonization of the global economy, change has to be driven from within the particular markets themselves. In that spirit, I went to Durban looking for industry groups, trade associations, and development organizations that were stepping up with ideas on how they can be part of the solution.

I will focus on a few particular organizations: the United Nations Industrial Development Organization ("UNIDO"), the International Chamber of Commerce ("ICC"), and the World Business Council for Sustainable Development ("WBCSD"). Other similar organizations were present at COP-17, including the European Investment Bank, the International Civil Aviation Organization, and a group representing several significant Japanese industries.[31]

UNIDO is focused on developing countries and economies in transition.[32] It is estimated that developing countries will surpass the developed countries in greenhouse gas emissions in 2015.[33] Access to energy is important to both industrial and social development, and to best serve this need, UNIDO has developed an "Energy Programme."[34] The Energy Programme aims to serve developing countries and countries with economies in transition by helping them "reduc[e] industrial energy intensity," "promot[e] renewable energy technologies for industrial applications," and "[i]ncrease the viability of their enterprises. . . by increasing the availability of modern energy. . . ."[35] UNIDO has recognized the threat to the climate posed by the rise of the developing world and has chosen to address this threat in a mutually beneficial

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Climate Change, Dec. 10, 1997, 37 I.L.M. 32.

31. COP-17 consisted of two major parts: the negotiations and the side events. The side events are an opportunity for various groups to make presentations and set up booths to disseminate their messages. A full side event schedule is available here: http://regserver.unfccc.int/seors/reports/archive.html?session_id=COP17/CMP7.

32. U.N. INDUSTRIAL DEV. ORG., ENERGY AND CLIMATE CHANGE: GREENING THE INDUSTRIAL AGENDA 1 (2011) [hereinafter ENERGY AND CLIMATE CHANGE].

33. U.S. Envtl. Prot. Agency, *Global Greenhouse Gas Data*, http://www.epa.gov/climatechange/emissions/globalghg.html (last updated Apr. 15, 2011).

34. ENERGY AND CLIMATE CHANGE, *supra* note 32, at 1–3.

35. *Id*. at 3.

way—by assisting developing countries with energy development in a manner that encourages such development to occur with minimal carbon intensity.[36] UNIDO is focused not only on making developing industries more efficient, but doing so "without compromising economic growth."[37]

UNIDO has developed a two-pronged approach to achieving its goal of encouraging low-carbon development: improving energy efficiency and promoting renewable energy. In addition to being "one of the most cost-effective measures to loosen the link between economic growth and environmental degradation," the benefit of low-carbon development is magnified in developing countries that experience energy supply constraints.[38] Where a nation is developing both its industries and its power grid, helping to build more efficient industries promotes cost saving in industry and infrastructure by reducing the total energy capacity that must be developed.

The second prong of UNIDO's approach is promoting renewable energy production, both on and off the grid.[39] The on-grid renewable energy push has a goal similar to that of renewable energy expansion in developed countries: diversify energy sources and minimize impacts on the environment.[40] The decentralized nature of renewable energy is a benefit to developing countries in particular because renewable energy technologies can be deployed on a micro-scale, providing access to electricity in rural areas without the cost of expanding the main electricity grid.[41] UNIDO's projects include wind, small hydropower, biofuels, and solar projects,[42] all of which can be deployed in small scales in rural areas with the aim of creating positive impacts in rural communities in a clean and sustainable manner.[43] UNIDO works to achieve these goals by using a project based approach,[44] as well as by establishing and collaborating with a number of energy technology centers aimed not only at transferring technology and educating potential users, but also at understanding local needs so proper technologies are employed.[45]

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36. *Id*. at 3.

37. U.N. INDUSTRIAL DEV. ORG., UNIDO AND ENERGY EFFICIENCY: A LOW-CARBON PATH TO ENHANCED INDUSTRIAL COMPETITIVENESS 4 (2011).

38. ENERGY AND CLIMATE CHANGE, *supra* note 32, at 4.

39. U.N. INDUSTRIAL DEV. ORG., UNIDO AND RENEWABLE ENERGY: GREENING THE INDUSTRIAL AGENDA 6 (2011).

40. *See id*.

41. *Id*. at 3.

42. *Id*. at 10.

43. *See id*. at 19.

44. For examples, *see id*. at 11–19.

45. *Id*. at 23.

UNIDO is really a first step away from the model of altruistic donors and helpless recipients in that it is aimed at creating environmentally friendly economic prosperity that will one day become self-sustaining.

A second group, the ICC, approaches the issue from the standpoint of existing businesses and advocating ways that business can be "Part of the Solution."[46] The ICC argues that business is the main driver of change, and government's role in the process is to provide the legal and policy infrastructures that allow business to progress towards a green economy.[47]

The ICC takes the approach that any movement must balance environmental responsibility and social development with commercial viability.[48] To achieve this goal, the ICC promotes two policies aimed at spreading environmentally friendly technologies: reducing or eliminating trade barriers, specifically for environmentally friendly goods and services, and "ensur[ing] strong protection of intellectual property rights."[49] The ICC recognizes that one significant mechanism of creating a broad adoption of environmentally friendly products is through commerce. Such commerce, the ICC argues, requires policies that reduce or eliminate trade barriers. Even without trade barriers, companies that develop environmentally friendly technologies and products are more likely to export them to countries where the intellectual property ("IP") embodied in those products is protected.

The ICC recognizes that government, academic, and nonprofit research organizations contribute to clean technology, but also argues that "[b]usiness is the primary source of innovation and a critical actor in the development, demonstration, commercialization and dissemination of technology."[50] The ICC advocates policies that provide business with the fuel to drive the engine of innovation, specifically policies that facilitate the transfer of technologies developed through public and academic research to the private sector where it can be commercialized, and policies aimed at creating strong IP rights in countries where products

46. INT'L CHAMBER OF COMMERCE COMM'N ON ENV'T AND ENERGY, TRADE AND CLIMATE CHANGE (2011) [hereinafter ICC TRADE AND CLIMATE CHANGE].

47. INT'L CHAMBER OF COMMERCE COMM'N ON ENV'T AND ENERGY, THE ICC TASK FORCE ON GREEN ECONOMY, *available at* http://www.iccwbo.org/uploadedFiles/ICC-Green%20Economy-task-force-factsheet-july2011.pdf.

48. *Id*.

49. ICC TRADE AND CLIMATE CHANGE, *supra* note 46.

50. INT'L CHAMBER OF COMMERCE COMM'N ON ENV'T AND ENERGY, TECHNOLOGY DEVELOPMENT AND DEPLOYMENT TO ADDRESS CLIMATE CHANGE, *available at* http://www.iccwbo.org/uploadedFiles/ICC/policy/environment/COP15/Technology_development.pdf.

and technologies will be disseminated.[51] The ICC believes that strong IP protection encourages investment in innovation and the dissemination of clean technologies that otherwise would not be developed or would be developed but not spread to countries with weak IP protection.[52] Other organizations are also advocating for policies that will encourage more environmentally friendly practices. One such organization is the WBCSD, an organization whose membership consists of approximately 200 businesses around the world, including BMW Group, Deutsche Bank, Siemens, Tokyo Electric Power Company, Honda Motor Company, Toyota Motor Corp., 3M, Accenture, Alcoa, Duke Energy, IBM, Caterpillar, PepsiCo, the Coca-Cola Company, and the New York Times.[53] The WBCSD argues for market mechanisms to change the way companies do business.[54] The WBCSD advocates for increased energy and resource use efficiency,[55] with the primary policy driver being the internalization of externalities.[56] By putting a price tag on environmental externalities, such as carbon emissions, the WBCSD believes there will be a consumer driven push towards more sustainable products and services.[57] The WBCSD supports a carbon tax,[58] but the mechanisms that the WBCSD proposes are not particularly critical here. What is noteworthy is that an organization with the WBCSD's membership profile is proposing, rather than fighting, a plan that would likely increase the cost of doing business in many industries.

The reason I sought out organizations like the WBCSD was because I felt that their presence at a conference like COP-17 would be a bellwether for a shift in the approach of the business world toward climate change policy. The rhetoric has often been that environmental

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51. *Id.*

52. INT'L CHAMBER OF COMMERCE COMM'N ON ENV'T AND ENERGY, INTELLECTUAL PROPERTY AND CLIMATE CHANGE, *available at* http://www.iccwbo.org/uploadedFiles/ICC/policy/environment/COP15/IP_and_climate_change.pdf.

53. World Bus. Council on Sustainable Dev., *Membership*, http://www.wbcsd.org/about/members.aspx (last visited Apr. 5, 2012).

54. WORLD BUS. COUNCIL ON SUSTAINABLE DEV., CARBON PRICING: THE ROLE OF A CARBON PRICE AS A CLIMATE CHANGE POLICY INSTRUMENT (2011) [hereinafter CARBON PRICING].

55. *See* WORLD BUS. COUNCIL ON SUSTAINABLE DEV., INTEGRATING ENERGY EFFICIENCY ACROSS THE POWER SECTOR VALUE CHAIN (2011); *see also* WORLD BUS. COUNCIL ON SUSTAINABLE DEV., THE SUSTAINABLE FOREST PRODUCTS INDUSTRY, CARBON AND CLIMATE CHANGE, (3d ed. 2011).

56. *See* CARBON PRICING, *supra* note 54, at 1.

57. *Id*.

58. *Id*.

policies are anti-business,[59] and as a result of this rhetoric, some businesses have fought against environmental policies.[60] The shift in thinking by the business community, or at least some important players in it, from fighting environmentally friendly policies to helping to shape them is an important and positive sign.

Why are all of these companies and organizations doing this? The reality is that while there are people in the world motivated by good intentions and altruism, the significant changes in the world have often been driven by business interests. The organizations that stay ahead of the curve by setting the curve are the ones that will be successful in the future. Some organizations may believe that it is more effective to obstruct change from the inside rather than fight from the outside. Others may get involved just to stay informed. Still others may believe that a green revolution is coming and that they are more likely to survive the revolution if they are leading it. Cynical and self-serving or not, the participation of for-profit enterprises and the organizations that represent and lobby for them is necessary to achieve the lofty ideals set out by academics and altruists.

III. AN ON-THE-GROUND VIEW: CARBON OFFSETS AND WOMEN IN REDD

The Seventeenth Conference of the Parties to the United Nations Framework Convention on Climate Change was intended to provide an opportunity for the Parties to come together and map out a future for global carbon reduction efforts post-Kyoto Protocol. COP-17 also presented an occasion for experts in various fields related to climate change reduction efforts to discuss what progress had been made and what issues still need to be—or ought to be—addressed. One issue that took a prominent place in the discussions was the role of women, and the promotion of women's rights, in the development of Reduced Emissions from Avoided Deforestation and Forest Degradation ("REDD") projects.

The idea behind the inclusion of women in REDD projects is to

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59. This has become a popular refrain in the current race for the 2012 Republican presidential nomination in the United States. *See* John M. Broder & Kate Galbraith, *E.P.A. is Longtime Favorite Target for Perry*, N.Y. TIMES, Sept. 29, 2011, *available at* http://www.nytimes.com/2011/09/30/us/politics/epa-is-perrys-favorite-target.html.

60. For one example, see the American Petroleum Institute's response to proposed environmental regulation: Suzanne Goldenberg, *Oil Lobby to Fund Campaign Against Obama's Climate Change Strategy,* THE GUARDIAN, Aug. 14, 2009, http://www.guardian.co.uk/environment/2009/aug/14/us-lobbying (last visited Apr. 5, 2012).

further the dual goals of reducing global carbon emissions and promoting gender equality through a single incentivizing scheme, namely the financing and development of local REDD projects. However, aligning theory with reality has proved challenging, and the myriad of issues involved in achieving these two goals may be beyond the scope of REDD as it currently exists.

REDD projects are appealing because they place a value on standing forests, thereby incentivizing their protection and sustainable management. Currently about eighteen percent of the world's anthropogenic carbon emissions are caused by deforestation and forest degradation.[61] This accounts for more carbon emissions than the entire global transportation sector, and is second only to those emitted by the global energy sector.[62] Thus, changing the perception of the value of standing forests is crucial to the effort to curtail the impacts of global climate change.[63] By placing a monetary value on the carbon stored in trees, and thereby providing a financial incentive for the protection of the forests, developing nations are encouraged to pursue "low-carbon paths" toward sustainable development.[64]

These projects, however, face challenges.[65] Concerns related to the implementation of these projects range from fear of government land grabs to the disenfranchisement of indigenous and marginalized groups.[66] The worry is that by placing a monetary value on trees, governments will displace these populations from their homes in order to protect the trees.[67] Furthermore, in countries where the decentralization of land ownership has only recently begun to be achieved, there are concerns that the government will attempt to re-centralize land ownership by sharply restricting property rights and land usage.[68]

There has also been debate over how best to measure and monitor forest carbon in order to accurately assess the reductions achieved

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61. VIVIENNE HOLLOWAY & ESTEBAN GIANDOMENICO, CARBON PLANET, THE HISTORY OF REDD POLICY 3 (2009), *available at* http://unfccc.int/files/methods_science/redd/application/pdf/the_history_of_redd_carbon_planet.pdf.

62. U.N. Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries ("UN-REDD Programme"), *About REDD+*, http://www.un-redd.org/AboutREDD/tabid/582/Default.aspx (last visited Apr. 21, 2012).

63. *Id*.

64. *Id*.

65. *See* U. N. Univ. Inst. of Advanced Studies, *REDD Bulletin*, http://www.unutki.org/default.php?doc_id=163 (last visited Apr. 5, 2012).

66. *Id*.

67. *Id*.

68. *Id*.

through these projects.[69] The question of whether the reductions ought to be measured on a national or sub-national level has been subject to debate, leaving the issues of accounting and monitoring unresolved.[70] Further concerns relate to the possible infringement on national sovereignty by nongovernmental entities working at a sub-national level to develop REDD projects in local communities.[71] Other areas of concern include certain governments' lack of sovereign control over the forests within their borders.[72] This phenomena poses problems for the adoption and inclusion of REDD in a global climate change agreement.[73]

Women's rights come into play in the REDD discussions with the proposition that safeguards ought to be created to ensure that women are included in all levels of the REDD decision-making and implementation process.[74] Women account for about seventy percent of the world's population living in poverty and provide close to ninety percent of the food supply within forest dependent communities.[75] These women depend on the forests for fuel, food, and medicines, and in many communities, they are the ones in possession of the traditional knowledge related to the forest resources. Despite this, many of these women do not possess any ownership rights over the land they use.[76] Rather, the men in these communities are the landowners; women only have the right to access and utilize the land for food, fuel, and other forest resources.[77] Thus, women are generally excluded from the decision-making processes related to forest management and dispensation, even though women rely heavily on, and more frequently

69. Arild Angelsen, et al., *What is the* right *scale for REDD? The Implications of National, Subnational, and Nested Approaches*, CIFOR INFOBRIEFS, Nov. 2008, *available at* http://unfccc.int/files/methods_science/redd/application/pdf/what_is_the_right_scale_for_redd.pdf.

70. *Id*.

71. Luca Tacconi, et. al., *Anti-Corruption Policies in the Forest Sector and REDD+, in* REALISING REDD+, NATIONAL STRATEGY AND POLICY OPTIONS 163, 166, *available at* http://www.cifor.org/publications/pdf_files/Books/BAngelsen0902.pdf.

72. CRYSTAL DAVIS, WORLD RES. INST., GOVERNANCE IN REDD+: TAKING STOCK OF GOVERNANCE ISSUES RAISED IN READINESS PROPOSALS SUBMITTED TO THE FCPF AND THE UN-REDD PROGRAMME 5 (2010), *available at* http://www.fao.org/climatechange/21145-091981d43d2eb7409b8a710e700c6571.pdf.

73. *Id*.

74. Int'l Union for Conservation of Nature, Statement: Women in REDD Critical for Climate Action (Dec. 2, 2010), http://www.iucn.org/?6573/Women-in-REDD-critical-for-climate-action.

75. *Id*.

76. *Id*.

77. *Id*.

use, the forest's resources.[78]

By involving women in the decision-making process, and by vesting women with control over parts of the forests involved, the role of women in rural communities could be changed and improved.[79] By granting some form of property rights over the forests to the women who rely upon the forest resources, the dual goals of the sustainable management of the forests and the enfranchising of women would likely be more feasible.[80] Taking a page from the success of micro-finance schemes, where women were given access to farm animals, capital, and/or land—and were able to utilize those materials to turn a profit and provide for their families—those promoting the inclusion of women in REDD projects hope to see a similar positive and productive result from the inclusion of women in the forestry sector.[81]

In order to further this goal of involving more women, forestry courses have been established in countries such as Nepal and Indonesia, which are intended to educate women about sustainable forest management practices.[82] These women, in turn, are able to return to their communities and share what they have learned in order to further promote sustainable agricultural and forestry practices.[83] This knowledge will hopefully empower these women within their communities and improve gender equality.[84]

The inclusion of women in REDD is most certainly an admirable goal, and it would serve to make a large difference socially as well as environmentally. However, the challenges facing this inclusion remain significant. One area where issues arise is in oversight: how can measures providing for the inclusion of women in REDD projects be enforced in a meaningful way? As of now, there is no overarching international legal framework dictating how REDD projects ought to be implemented or providing guidelines for the inclusion of marginalized groups.[85] Nor is there an overarching international oversight system in place to ensure that any safeguards that might be built into a specific

78. *Id.*

79. *See* Kathleen Rutherford, *The Business Case for Mainstreaming Gender in REDD+*, UN-REDD PROGRAMME (Dec. 2011), *available at* http://www.un-redd.org/Newsletter25/Mainstreaming_Gender_in_REDD/tabid/78573/Default.aspx.

80. *Id.* at 27–28.

81. *See id.* at 29.

82. *Gender and REDD+*, REDD-NET BULLETIN ASIA-PACIFIC 6 (May 2011), *available at* http://www.recoftc.org/site/uploads/content/pdf/REDDNet04_141.pdf.

83. *Id*.

84. *Id*.

85. *See* UN-REDD PROGRAMME, BACKGROUND ANALYSIS OF REDD REGULATORY FRAMEWORKS, 1.

REDD project would be enforced.[86] For example, one project might require that a specific number of women be present at all decision-making meetings, but without some sort of effective oversight system, it would be impossible to ensure that those women actually played an active role in the process and were not simply present for the purposes of meeting that specific requirement. Moreover, the nature of REDD projects, controlling large tracts of forests, makes the inclusion of women more challenging than in the micro-finance scenario. The transfer of property ownership to women would require a major shift in perspective and tradition for many of these rural communities, a shift that some might oppose.

The potential that REDD projects provide for changing the relationship between forest dependent communities and their natural resources, is heartening. By incentivizing the conservation of standing forests, carbon emissions from deforestation and forest degradation could be drastically cut, and the process of desertification and land degradation could be slowed, or even halted.[87] REDD projects are not without their flaws, however, and the resolution of concerns relating to the effective implementation of REDD projects will be vital to their inclusion in a comprehensive international agreement. Moreover, the opportunity to utilize REDD projects in order to further improve gender equality in developing nations is great, but determining how to do so effectively will be crucial to the success of REDD on both an environmental and social level.

86. *See id.*

87. *See About REDD+*, *supra* note 62.

A Sustainable Framework for International Green Technology Transfer

Matthew Burns*

TABLE OF CONTENTS

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* Matthew Burns holds a J.D. from the University of Colorado Law School and a B.S. in Mechanical Engineering from the University of Virginia. He would like to thank the dedicated staff of the *Colorado Journal of International Environmental Law and Policy*, with special thanks to Elise Aiken and Robert Donald for their valuable guidance and thorough editing.

"He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me."[1] ~Thomas Jefferson

I. INTRODUCTION

The planet is almost certainly on a path towards devastating climate change driven by anthropogenic greenhouse gases ("GHGs").[2] From 1850–2000, the United States, the European Union ("EU"), Russia, and Japan created sixty-nine percent of all carbon dioxide ("CO_2") emissions.[3] Using cleaner technologies, many of those countries have begun slowing their growth rate of GHG emissions.[4] While the problem of GHGs from developed countries has in no way disappeared, another major problem is rapidly taking center stage: 5.7 billion of the world's 7 billion people live in "developing countries."[5] As those countries develop industrial economies, the potential for increased GHG production is devastating. It is estimated that developing countries will surpass the developed countries in GHG emissions in 2015.[6]

A key part of the effort to mitigate GHG emissions from developing countries is the transfer of low-carbon or "green" technology that can be used in place of the dirtier technologies that these countries already possess. Three significant challenges impede large-scale implementation of green technology transfer. First, concerns with recipient countries' intellectual property rights ("IPRs") systems can make companies or countries hesitant to transfer technologies. Second, there is no

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1. Letter from Thomas Jefferson to Isaac McPherson (Aug. 13, 1813), *available at* http://etext.virginia.edu/etcbin/toccernew2?id=JefLett.sgm&images=images/modeng&data=/texts/english/modeng/parsed&tag=public&part=218&division=div1.

2. HARRO VAN ASSELT ET AL., NATIONALLY APPROPRIATE MITIGATION ACTIONS (NAMAS) IN DEVELOPING COUNTRIES: CHALLENGES AND OPPORTUNITIES 21 (2010). ("In February 2007, the Intergovernmental Panel on Climate Change concluded with 90% certainty that human activities contribute to the increase in the global average temperature.").

3. Pew Center of Global Climate Change, *Cumulative CO_2 Emissions*, http://dev-pewclimateteam.p2technology.com/facts-and-figures/international/cumulative (last visited March 14, 2011).

4. *See An Atlas of Pollution: The World in Carbon Dioxide Emissions*, THE GUARDIAN, (Jan. 31, 2011), http://www.guardian.co.uk/environment/2011/jan/31/pollution-carbon-emissions (showing a visual representation of worldwide emissions and trends).

5. POPULATION REFERENCE BUREAU, 2011 WORLD POPULATION DATA SHEET 2, *available at* http://www.prb.org/pdf11/2011population-data-sheet_eng.pdf.

6. Environmental Protection Agency, *Global Greenhouse Gas Data*, http://www.epa.gov/climatechange/emissions/globalghg.html (last visited Feb. 27, 2012).

established system of accountability that takes the capacities and needs of each individual country into consideration. A system that categorizes each country as either developed or developing lacks the nuance to assess each country's technology transfer needs and obligations. Finally, a viable funding mechanism does not exist to address many of the costs inherent in creating and maintaining a system that addresses the challenges of green technology transfer.

With the above in mind, any system that transfers technology to developing countries must not create a disincentive for innovation, as continued innovation will be critical to solving the climate change problem.[7] If a company fears that the government of a country to which it is sending goods will allow the company's intellectual property ("IP") to be used (without appropriate compensation) to undercut the company's potential market—as is a fear in China[8] —it will be unlikely to transfer any of its best technologies to that country.[9] Conversely, if a country has a strong IPR system, it is more likely that there will be a flow of technology to that country.[10] While there are ways to paper over the cracks left by questionable IPRs in recipient countries through incentives or obligations, a lack of reliable IPRs will continue to hinder technology transfer.

The reasons why a two-category developed/developing country framework is problematic are most apparent when considering the situation in China. China is now the world's largest GHG emitter,[11] so transferring as much green technology as possible to China could have the greatest net result. While China is a "developing country" under the United Nations Framework Convention on Climate Change ("UNFCCC"),[12] it is far more advanced than many of the other developing countries, both in terms of economic and technological

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7. Keith E. Maskus & Ruth L. Okediji, *Intellectual Property Rights and International Technology Transfer to Address Climate Change: Risks, Opportunities, and Policy Options*, at 5 (Int'l Centre for Trade and Sustainable Dev. Intell. Prop. & Sustainable Dev. Series, Issue Paper No. 32, 2010).

8. *See* Norihiko Shirouzu, *Train Makers Rail Against China's High Speed Designs*, WALL ST. J. (Nov. 17, 2010), http://online.wsj.com/article/SB10001424052748704814204575507353221141616.html.

9. Maskus & Okediji, *supra* note 7.

10. *Id*. at 6–7.

11. *See* John Vidal & David Adam, *China overtakes US as world's biggest CO_2 emitter*, THE GUARDIAN (June 19, 2007), http://www.guardian.co.uk/environment/2007/jun/19/china.usnews (China has been the largest GHG emitter since 2007).

12. U.N. Framework Convention on Climate Change, Annex 1, May 9, 1992, 31 I.L.M.849 [hereinafter "UNFCCC"]. China is not part of the Annex I list of countries and for the purposes of the UNFCCC is considered to be a Developing Country Party.

capacity. China has the technological capacity to take IP developed and owned by a third party and use it to undercut the original IP owner by producing and selling (within China or in other countries) that same technology at a lower cost.[13] China is also a producer of new green IP.[14] Other developing countries lack the technological and industrial capacity to produce an end product after the transfer of green IP alone, instead requiring a transfer of an end product, and likely the personnel to install and operate the product until the proper knowledge can be transferred.[15] Because of this difference, treating China the same way as other developing countries in regards to green technology transfer policies is problematic because of China's capacity to use these transfers to produce products that compete with the original developers of the technologies. A potential model for the developed/developing framework is the structure created at the 7th Conference of the Parties ("COP-7") to the UNFCCC in Marrakesh in 2001. This structure has provided a solid framework for addressing particular countries' needs that has been refined in years since.

Any policy solution that addresses the above noted challenges, whether it develops from the UNFCCC or from another source, will have monetary costs. Finding this funding is a challenge in itself, one that I will touch on only briefly in this Note. A funding mechanism must be developed alongside the policy solution because without it, even the most brilliant system will fail.

This Note begins in Section II by discussing the development of international green technology transfer policies, touching on some economic, political, and environmental factors that have contributed to policy development over the last forty years. Section III addresses the current models of obligations and technology assessments that provide a potential foundation for a viable international technology transfer system. Recent changes to these models are also addressed. Section IV touches on one of the largest challenges to technology transfer, IPR, with a specific focus on the United States and China. Section V proposes steps for developing future technology transfer policy. Section VI concludes this Note by proposing future steps.

13. *See* Shirouzu, *supra* note 8.

14. Maskus & Okediji, *supra* note 7, at 9.

15. UNFCCC, Enabling Environments for Technology Transfer, 16, U.N. Doc. FCCC/TP/2003/2 (June 4, 2003) [hereinafter "Enabling Environments"].

II. BACKGROUND: IMPORTANCE OF AND EFFORTS TOWARDS GREEN TECHNOLOGY TRANSFER

The environmental movement and the development of the science and computing power necessary to understand the potential impacts of GHG emissions[16] has spurred international environmental policy efforts to create an agreement to stabilize the climate system. Over the past forty years, our understanding of the impacts of anthropogenic GHG emissions has developed considerably, as has the international policy effort to control them. One facet of this policy effort is the transfer of environmentally-friendly or "green" technology to developing countries.

The bulk of GHG emissions have come in the last hundred years, mainly from sources in Europe, the former Soviet Union, and the United States.[17] Initially, concerns over emissions from "dirty energy" were focused on the immediate effects of soot and toxins.[18] Later, concerns over energy efficiency and eventually GHGs led to the production of more efficient industrial processes and energy production.[19] Developing countries cannot repeat this history. To minimize adverse impacts on the global climate system, developing countries need to implement industrial and energy production processes based on these cleaner technologies rather than follow the path taken by the United States and Europe. Because developing countries are focusing their efforts on developing

16. *See* PAUL N. EDWARDS, *Representing the Global Atmosphere: Computer Models, Data, and Knowledge About Climate Change*, *in* CHANGING THE ATMOSPHERE: EXPERT KNOWLEDGE AND ENVIRONMENTAL GOVERNANCE 31 (Miller & Edwards, eds. 2001).

17. *Global Greenhouse Gas Data*, *supra* note 6.

18. For a particularly devastating example, *see* Laura De Angelo, Encyclopedia of Earth, *The London smog disaster of 1952: London Smog Disaster, England*, http://www.eoearth.org/article/London_smog_disaster,_England (last visited Feb. 27, 2012). While it was not widely recognized for quite some time, the idea that anthropogenic GHGs can cause climate change has been around for over 100 years. *See* EDWARDS, *supra* note 16, at 41.

19. For example, average fuel economy for passenger cars in the United States rose from 13.5 miles per gallon ("MPG") in 1975 to 25.8 MPG in 2010. The bulk of that shift, however, came between 1975 and 1981, a response to the Arab oil embargos in the 1970s. Even the relatively modest rise in the late 2000s coincided with a spike in fuel prices. *See* UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, EPA-420-R-10-023, LIGHT-DUTY AUTOMOTIVE TECHNOLOGY, CARBON DIOXIDE EMISSIONS, AND FUEL ECONOMY TRENDS: 1975 THROUGH 2010 6 (2010), *available at* http://www.epa.gov/oms/cert/mpg/fetrends/420r10023.pdf.

their economies and not on developing clean technologies,[20] much of the clean technology will have to come from external sources.

A. What is Technology Transfer and Why is it Important?

Technology transfer is necessarily a broad term. Even with simple technologies, but especially with the often complex technologies involved in GHG reduction, a simple handoff of the technology will generally be ineffective at maximizing its implementation and effectiveness. For that reason, "[t]echnology transfer cannot be hardware transfer alone; it must necessarily involves [sic] building human and institutional capacity to handle the technology and the raising of awareness among users and other stakeholders, including civil society."[21] The United Nations Conference on Trade and Development ("UNCTAD") draft International Code on the Transfer of Technology, ("ICTT") supports this view by defining technology transfer holistically.[22] For these reasons, a view of technology transfer as only the transfer or licensing of specific IPRs is incomplete. Nevertheless, issues surrounding the transfer of specific IPR are critical and of major concern, especially for the most developed nations like the United States,[23] and will be the primary aspect of IPR addressed in this Note.

Two forces drive technology transfer. One pulls technology into markets, while the other pushes technology from them. Market-based forces tend to "pull" technology into markets where there is sufficient demand for the technology and sufficient economic means to entice technology owners to meet the demand.[24] This is the force that most developed countries rely on to transfer technology across borders.[25] The lack of resources to create sufficient financial incentive in developing countries impacts both their ability to purchase outside technologies and

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20. *See generally* Declaration on the Right to Development, G.A.UNGA Res. No. 41/128, Annex, U.N. Doc. A/RES/41/128 (Dec. 4, 1986), *available at* http://www.un.org/documents/ga/res/41/a41r128.htm.

21. MORGAN BAZILIAN ET AL., ENERGY RESEARCH CENTRE OF THE NETHERLANDS, CONSIDERING TECHNOLOGY WITHIN THE UN CLIMATE NEGOTIATIONS 24 (2008).

22. Gary Cox, *The Clean Development Mechanism as a Vehicle for Technology Transfer and Sustainable Development—Myth or Reality?*, 6/2 L. ENV'T. & Dev. J. 179, 182 (2010).

23. The U.S. House of Representatives voted 432-0 to oppose concessions at Copenhagen that would weaken American IP rights. CENTER FOR ENVIRONMENTAL PUBLIC POLICY, UNIVERSITY OF CALIFORNIA AT BERKELEY, WHO OWNS THE CLEAN TECH REVOLUTION? INTELLECTUAL PROPERTY RIGHTS AND INTERNATIONAL COOPERATION IN THE U.N. CLIMATE NEGOTIATIONS 11 (2009) [hereinafter "Berkeley"].

24. Enabling Environments, *supra* note 15, at 4.

25. *Id*.

the likelihood that technologies will be developed domestically to meet their specific needs.[26] Due to their lack of financial power, developing countries look to the developed countries to "push" the technology to them.[27]

Because most developed countries have free market rather than nationalized economies, they lack the ability or political will to apply sufficient leverage on private-sector technology owners to push their technologies to developing countries.[28] Developed country government actions that stimulate public and private sector transfers or enhance domestic capacity for technology development are commonly seen as creating a "push" force that many developing countries want to rely on.[29] In the end, a combination of both push and pull will likely be necessary for developing countries to receive significant green technology.

In addition, there are barriers to transfer. These include economic barriers, such as tariffs and other trade blocks, as well as social barriers to the uptake of technologies.[30] Economic barriers prevent the import of a superior technology while social barriers prevent technology from being widely adopted because it is foreign or against societal norms.[31] These barriers are beyond the scope of this paper, but are an important consideration in the design and execution of a functional technology transfer system.

Technology transfer is important because developing countries are rapidly growing and modernizing.[32] These shifts are driving up energy consumption and driving the staggering production of new power plants in China.[33] In the mid-2000s, China was bringing a new coal-fired power

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26. Maskus & Okediji, *supra* note 7, at 1.

27. Enabling Environments, *supra* note 15, at 4.

28. *Id*.

29. *Id*.

30. *Id.* at 4, 6–11; U. N. Dev. Programme, Handbook for Conducting Technology Needs Assessment for Climate Change, Advance Document, 6 (Sept. 2009) [hereinafter "TNA Handbook"].

31. *See* Enabling Environments, *supra* note 15, at 7–8; for an example of the social barriers to adoption of even simple technologies, *see* Karin Troncoso et al., *Social Perceptions about a Technological Innovation for Fuelwood Cooking: Case Study in Rural Mexico*, 35 Energy Policy 2799 (2007).

32. Projections of population growth in developing countries from 2008-50 are nearly ten times higher than in developed countries. *See* POPULATION REFERENCE BUREAU, *supra* note 5; China's Gross Domestic Product ("GDP") has grown at a rate between 9% and 10.3% over the past three years. *See* Cent. Intelligence Agency, *The World Factbook: China* https://www.cia.gov/library/publications/the-world-factbook/geos/ch.html.

33. Keith Bradsher, *China Outpaces U.S. in Cleaner Coal-Fired Plants*, N. Y. TIMES (May 10, 2009), http://www.nytimes.com/2009/05/11/world/asia/11coal.html.

plant, large enough to provide electricity to a major urban area, online every week to ten days on average.[34] Measured in terms of CO_2 per dollar of GDP, China is roughly five times dirtier than the United States.[35] Managing per-capita energy consumption in rapidly developing countries like China through the use of green technology instead of conventional technology will be essential for mitigating GHG emissions.

For a technology transfer regime to be viable, it must continually incentivize clean technology development. While a great deal of clean technology has been developed recently,[36] we are far from where we need to be. To meet global climate change goals,[37] we must innovate in the field of green technology at a rate two- to ten-times higher than current rates.[38] Any system that spreads green technology at the cost of reducing development of new green technologies may appear successful in the short term, but will fail to achieve necessary GHG mitigation in the long term.

B. Green Technology Transfer in International Climate Negotiations

The history of green technology transfer tells the story both of our growing understanding of climate change and international environmental policy. The story has its roots in the history of the environmental movement. Around 1970, the environmental movement in the United States scored a series of successes and was building steam on

34. Keith Bradsher and David Barboza, *Pollution From Chinese Coal Casts a Global Shadow*, N. Y. TIMES (June 11, 2006), http://www.nytimes.com/2006/06/11/business/worldbusiness/11chinacoal.html.

35. In 2005, the United States' GDP was roughly five times that of China's while emitting slightly less CO_2. Jane A. Legget et al., *China's Greenhouse Gas Emissions and Mitigation Policies*, CONG. RESEARCH SERV., (Sept. 10, 2008), http://www.fas.org/sgp/crs/row/RL34659.pdf.

36. *See generally* U.N. ENV. PROGRAMME ET. AL., PATENTS AND CLEAN ENERGY: BRIDGING THE GAP BETWEEN EVIDENCE AND POLICY, (Konstantinos Karachalios et al. eds., Sept. 30 2010), *available at* http://documents.epo.org/projects/babylon/eponet.nsf/0/cc5da4b168363477c12577ad00547289/$FILE/patents_clean_energy_study_en.pdf.

37. It is worth noting that the global climate change goals in terms of CO_2 concentrations in the atmosphere are continuing to develop. While the stated goal is limiting global temperature rise to 2°C, it is not clear what the cap on CO_2 concentrations must be to hit this mark. The original estimates appear to have been too high. *See* JAMES HANSEN ET AL., TARGET ATMOSPHERIC CO_2: WHERE SHOULD HUMANITY AIM?, *available at* http://arxiv.org/ftp/arxiv/papers/0804/0804.1126.pdf.

38. Maskus & Okediji, *supra* note 7, at 5.

an international level.[39] At the 1972 United Nations Conference on the Human Environment in Stockholm, Sweden, technology transfer for the benefit of the environment became a major issue for the first time.[40] Principle 9 of the resulting Stockholm Declaration stated that technology transfer was part of the environmental solution:

> Environmental deficiencies generated by the conditions of underdevelopment and natural disasters pose grave problems and can best be remedied by accelerated development through the transfer of substantial quantities of financial and technological assistance as a supplement to the domestic effort of the developing countries and such timely assistance as may be required.[41]

By the early 1990s, the international environmental movement had recognized climate change as a serious environmental threat, and in 1992, the United Nations produced the UNFCCC.[42] One of the major themes of the UNFCCC is "common but differentiated responsibilities."[43] This theme underlies the responsibility of developed countries to transfer green technology to developing countries. Article 4.1(c) addresses technology transfer specifically, calling on Annex I countries for the "transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases. . . ."[44] The UNFCCC also contains language in Article 4.3 on financial resources to encourage this: "[the developed country Parties] shall also provide such financial resources, including for the transfer of technology, needed by the developing country Parties to meet the . . . costs of implementing measures covered by [Article 4.1]."[45]

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39. Often seen as starting with Rachel Carson's Silent Spring, the environmental movement in the United States gained momentum throughout the 1960s, receiving significant recognition with the creation of the Environmental Protection Agency in 1970. *See generally* RACHEL CARSON, SILENT SPRING (1962); Natural Resources Defense Council, *The Story of Silent Spring*, , http://www.nrdc.org/health/pesticides/hcarson.asp; Jack Lewis, U.S. Env. Prot. Agency, *The Birth of the EPA*, http://www.epa.gov/history/topics/epa/15c.html.

40. Cox. *supra* note 22, at 182.

41. U. N. Conference on the Human Environment, Stockholm, Swed., June 5–16, 1972, *Declaration of the United Nations Conference on the Human Environment*, Principle 9, U.N. Doc. A/CONF.48/14 (1972).

42. UNFCCC, *supra* note 12.

43. *Id.* preamble, art. 3, art. 4.

44. *Id.* art. 4.1(c).

45. *Id.* art 4.3.

Technology transfer was also an element of the 1998 Kyoto Protocol,[46] which is perhaps the most well-known international environmental agreement. Article 10(c) of the Kyoto Protocol reiterates the commitment to the "development, application and diffusion . . . and … transfer of . . . environmentally sound technologies, know-how, practices and processes pertinent to climate change, in particular to developing countries."[47] It is worth noting that the language chosen is "in particular to developing countries," rather than a more direct statement with an exclusive focus on developing countries. This leaves open the idea that the developmental status of the receiving country is important, but not determinative, in the assessment of whether and what technologies should be transferred.

For the purposes of this Note, the most significant international agreement is the *Framework for meaningful and effective actions to enhance the implementation of Article 4.5 of the Convention* (hereafter "Marrakesh Agreement"), as laid out in Decision 4 produced at COP-7 in Marrakesh in 2001.[48] This agreement fully embraces the idea that the needs and strengths of each nation are different and thus the transfer of technologies requires an approach that recognizes these differences.[49] Decision 4, among other things, calls for supporting technology needs assessments and "enabling environments for technology transfer."[50] The Marrakesh Agreement also established the Expert Group on Technology Transfer[51] and charged it with monitoring the technology needs assessments.[52]

Later COP decisions, including the Bali Action Plan and Copenhagen Accord, expressed a deeper sense of urgency[53] and a stronger commitment, at least financially, to addressing climate change through technology transfer.[54] As the issue of technology transfer became more prominent, expectations of an international framework started to grow, and Copenhagen began to be the focal point for this

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46. Cox, *supra* note 22, at 185.

47. *Id*. at 186.

48. UNFCCC, Marrakesh, Morocco, Oct. 29–Nov. 1, 2001, *The Marrakesh Ministerial Declaration*, U.N. Doc. FCCC/CP/2001/13/Add.1, Decision 2/CP.7 (Jan. 21, 2002) [hereinafter *The Marrakesh Declaration*].

49. Cox, *supra* note 22, at 186.

50. *The Marrakesh Declaration*, *supra* note 48, at Dec. -/CP.7, ¶ 14.

51. Cox, *supra* note 22, at 186.

52. *The Marrakesh Declaration*, *supra* note 48, at Dec. -/CP.7, ¶ 2.

53. Cox, *supra* note 22, at 186 (The Bali Action Plan recognized the need for "deep cuts in global emissions.").

54. *Id*. (The Copenhagen Green Climate Fund was established with a commitment reaching $100 billion per year).

potential new framework. However, as the Copenhagen conference approached, expectations were lowered and in the end, the document produced was toothless.[55]

III. FOUNDATIONAL MODELS FOR A VIABLE GREEN TECHNOLOGY TRANSFER SYSTEM

The value of technology transfer to developing countries is clear; the challenge is maximizing the transfer of green technology through more effective international agreements. To make these agreements more effective, a set of tailored national obligations is critical. While there is no mechanism for creating a set of tailored obligations in the current technology transfer regime, such mechanisms exist in other areas of international climate change policy. Specifically, the Bali Action Plan's Nationally Appropriate Mitigation Actions ("NAMAs") provide a guide.[56] NAMAs provide a framework that moves beyond the too-simple developed/developing classification, which fails to address the broad spectrum of technology needs and capacities.[57] The Bali Action Plan's NAMA framework was further refined with some notable changes in the Cancun Agreements.[58] This section describes these foundational models to lay the groundwork for a proposed technology transfer system.

A. Assessment of Technological Capacities and Needs

Technology transfer is complex, requiring discrete considerations for each country, including the state of green technology development, industrial and production capacity, available natural resources, cultural considerations,[59] and the state of and respect for IP law.[60] Because of these individualized considerations, it is inappropriate to generalize

55. *See* Daniel Bodansky, *The Copenhagen Climate Conference: A Post-Mortem*, 104 Am. J. of Int'l L. 230 (2010).

56. *See* UNFCCC, Bali, Dec. 3–15, 2007, *Decisions adopted by the Conference of the Parties,* U.N. Doc. FCCC/CP/2007/6/Add.1, Decision 1/CP13, (March 14, 2008) [hereinafter *Bali Action Plan*].

57. *See The Marrakesh Declaration*, *supra* note 48 (using a developed/developing classification for technology transfers).

58. *See* UNFCCC, Cancun, Mex., Nov. 29–Dec. 10, 2010, *Decisions adopted by the Conference of the Parties*, Addendum, Part Two: Action taken by the Conference of the Parties at its sixteenth session, U.N. Doc. FCCC/CP/2010/7/Add.1 (Addendum 2), Decision 1/CP.16, (Mar. 15, 2011). [hereinafter *The Cancun Agreements*].

59. TNA Handbook, *supra* note 30, at 6.

60. Maskus & Okediji, *supra* note 7, at 6–7.

countries as either developed or developing with regard to technology transfer. Although initially complex, it is more effective to view the starting point for technology transfer as a large number of bilateral interactions between unique countries. An effective framework would be one where the unique qualities of each country and each interaction are accounted for rather than set aside in favor of existing labels. When the international community uses these individualized considerations as a starting point, it can build a more effective set of agreements for international technology transfer.

Fortunately, we do not have to start from scratch. There are already two complementary conceptual frameworks for this individualized approach in global climate change policy. The technology transfer plan in the Marrakesh Agreement provides a model for establishing the needs and capacities of individual countries in regards to green technology transfer[61] and the concept of NAMAs laid out in the Bali Action Plan provides an example for how to set mitigation obligations for each individual country.[62] We will first look at what exactly a NAMA is to better understand how it applies to this Note's proposed modifications to current technology transfer policy.

1. Establishing Obligations

While NAMAs seems like a concrete term, there is some disagreement over what it actually means.[63] Generally, it is useful to start with Article 3.1 of the UNFCCC, which states: "[t]he Parties should protect the climate system . . . on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof."[64] This statement sets the stage for an individually tailored framework that assigns obligations to countries commensurate with their capacities to contribute. An individually tailored framework is key when the players span the spectrum from the least developed countries to the most. While NAMAs are not directed towards technology transfer, the tailoring of obligations for countries based on their capacities to meet the obligations can be applied to technology transfer.

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61. *See The Marrakesh Declaration*, *supra* note 48.

62. *See* Chia-Chin Cheng, *A new NAMA framework for dispersed energy end-use sectors*, 38 ENERGY POLICY 5614, 5620 (2010).

63. MARTINA JUNG ET AL., NATIONALLY APPROPRIATE MITIGATION ACTIONS, INSIGHTS FROM EXAMPLE DEVELOPMENT 1 (2010), *available at* http://www.ecofys.com/files/files/report_ecofys_nama_overview_eng_04_2010.pdf.

64. UNFCCC, *supra* note 12, art. 3.1.

The Bali Action Plan presents two types of NAMAs: NAMAs under 1(b)(i) ("1(b)(i) NAMAs"), which are intended for developed countries and are "[m]easurable, reportable, and verifiable nationally appropriate mitigation commitments or actions;"[65] and NAMAs under 1(b)(ii) ("1(b)(ii) NAMAs"), which are intended for developing countries.[66] The 1(b)(ii) NAMAs serve as a flexible way for developing countries to contribute to global reductions in GHG emissions.[67] These are generally not seen as legally binding instruments, while the 1(b)(i) NAMAs, on the other hand, are generally seen as legally binding.[68]

The difference in obligations between developed and developing countries is also reflected in UNFCCC Article 4.7, which recognizes that mitigation actions in developing countries depend on financial and technological support from Annex I countries.[69] Article 4.7 also recognizes that while climate change may be seen as a first-level crisis in developed countries, many developing countries have more immediate crises on their hands and are completely justified in focusing their energies there.[70] As Chinese Premier Wen Jiabao stated at Copenhagen, "action on climate change must be taken within the framework of sustainable development and should in no way compromise the efforts of developing countries to get rid of poverty."[71]

The Bali Action Plan and the UNFCCC provide a basis for creating binding obligations to mitigate climate change. The Marrakesh Agreement provides a system for establishing what those specific obligations should be and a plan that examines the technology capacity and needs of each country and encourages the adoption of new greener technologies.[72] The key part in a new technology transfer agreement needs to be a system for creating a country-specific plan for each country, an important departure from the simple developed/developing approach.

2. Establishing Needs

In addition to establishing obligations, there must be mechanisms at several levels to encourage the fulfillment of these obligations. First,

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65. *Bali Action Plan*, *supra* note 56, Decision 1/CP.13 art. 1(b)(i).

66. *Id*. art. 1(b)(ii).

67. VAN ASSELT, ET AL., *supra* note 2, at 26–27.

68. *Id*. at 28.

69. UNFCCC, *supra* note 12, art. 4.7.

70. *Id*. art. 4.7.

71. Peter Christoff, *Cold Climate in Copenhagen: China and the United States at COP15*, 19/4 ENV. POLITICS 637, 646 (2010).

72. *See The Marrakesh Declaration*, *supra* note 48.

there must be a way for stakeholders to coordinate and communicate to develop a robust market for low-carbon technologies.[73] Second, there must be mechanisms to develop partnerships between the various stakeholders in different countries and regions.[74] Third, there must be mechanisms to facilitate the development of projects involving the various stakeholders.[75] These mechanisms vary; some are financial tools, some are institutions, and others are methods of development.[76] The first step to selecting and creating the proper mechanism is establishing the needs and capacities of each country.

The United Nations Development Programme created the Technology Needs Assessment ("TNA") in order to establish individual country's needs.[77] TNAs are intended to "identify, evaluate, and prioritize technological means . . . to achieve sustainable development in developing countries"[78] and are executed by in-country, multi-disciplinary National TNA teams.[79] The process occurs in three main steps. First, each nation creates a National TNA team that identifies the stakeholders in the process.[80] Second, the TNA team and stakeholder groups identify a set of prioritized mitigation technologies and prioritized technologies for adaptation.[81] Third, the TNA team and stakeholder groups create a strategy for accelerating the adoption of the prioritized technologies.[82]

TNA teams are part of the assessed nation's government, not part of the United Nations or an outside group.[83] Each team is led by a project coordinator who is familiar with the way the TNA will tie back to the overall international plan, but each team focuses on its specific country.[84] The team must be broad enough to solicit input from a large number of stakeholders in the country, including the public and private sectors.[85]

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73. UNFCCC, *Mechanisms for Technology Transfer*, http://unfccc.int/ttclear/jsp/Mechanisms.jsp (last visited Fed. 25, 2012) [hereinafter *Mechanisms for TT*].

74. *Id*.

75. *Id*.

76. *Id*.

77. TNA Handbook, *supra* note 30, at 5.

78. *Id*.

79. *Id*. at 13.

80. *Id*. at 10.

81. *Id*.

82. *Id*. at 10, 68.

83. *Id*. at 13.

84. *Id*.

85. *Id*. at 8.

The team must also understand and coordinate with the finance sector.[86]

The team must be carefully chosen to "prevent . . . the prioritization of technologies [from being influenced] by stakeholders' views and perceptions on technology implementation."[87] That is to say, the group should be a low-carbon friendly group outside of the influence of the inertia of existing technologies (and perhaps "existing" political practices). In addition, the National TNA team personnel should be separate from the stakeholders in the process to avoid bias.[88]

To accurately evaluate its needs, the TNA team must work closely with the country's overall development plan.[89] Each nation has stakeholders that stand to benefit from (or be burdened by) the arrival of new low-carbon technologies. These range from the government, large industries, and utilities—all the way down to labor unions, farmers, and individual households.[90] It is important that the National TNA Team carefully identify relevant stakeholders to increase the likelihood of local acceptance of the resulting TNA.[91]

While the TNA teams look at individual countries, the Expert Group on Technology Transfer ("EGTT") was created to look at green technology transfer more broadly.[92] The EGTT was a nineteen-member panel of experts, representing both the most developed countries and less developed countries.[93] The EGTT was tasked with "enhancing the implementation of Article 4, paragraph 5, of the Convention and advancing the development and transfer of technology activities under the Convention," as well as "enhancing the implementation of the Convention provisions relevant to advancing the development, deployment, adoption, diffusion, and transfer of environmentally sound technologies to developing countries, taking into consideration differences in accessing and applying technologies for mitigation and

86. *Id*.

87. *Id*. at 9.

88. *Id*. at 13.

89. *Id*. at 8.

90. *Id*. at 15.

91. *Id*.

92. *See id*.; UNFCCC, EXPERT GROUP ON TECHNOLOGY TRANSFER: FIVE YEARS OF WORK (2007) [hereinafter EGTT FIVE YEARS]. At COP-16, the EGTT was terminated and the Technology Executive Committee was created, which has a very similar mandate. *The Cancun Agreements*, *supra* note 58, art. 121, 124.

93. The EGTT's membership consists of eight members from Annex I countries; three members each from Africa, Asia and the Pacific, and Latin America, and the Caribbean; one from the small island States; and one from "other non-Annex I Parties." UNFCCC, *Membership of the Expert Group on Technology Transfer*, http://unfccc.int/ttclear/jsp/EGTTMember.jsp (last visited March 17, 2011).

adaptation."[94] In essence, the EGTT was charged with developing the technology transfer system under the UNFCCC.[95]

The EGTT reported to the Subsidiary Bodies for Scientific and Technological Advice ("SBSTA"), which is the supervising body for the progress on development and transfer of technologies under the Bali Action Plan.[96] The SBSTA was created by Article 9 of the UNFCCC for the purpose of advising the Conference of the Parties on "scientific and technological matters relating to the Convention."[97] As the science and technology advising body for the Conference of the Parties, the SBSTA examines technology transfer mechanisms as well as the science, technologies, and methodologies surrounding climate change generally.[98]

B. Modifications Made at COP-16 in Cancun

In December 2010, the 16th Conference of the Parties ("COP-16") was held in Cancun, Mexico. The conference resulted in two important developments for green technology transfer.[99] Part IV of the COP-16 decision includes sections on "Technology development and transfer" (Section IV-B) and the Green Climate Fund (Section IV-A).[100] Section IV-B establishes a new Technology Mechanism aimed at improving the deployment and implementation of new clean technologies.[101] Section IV-A lays out the management of the Green Climate Fund, but leaves some substantive questions unanswered, namely the question of where the fund will be spent.[102]

Section IV-B begins by reaffirming the importance of nationally differentiated needs and obligations.[103] This section also lays out the Parties' priorities for technology development and transfer, which include (1) developing endogenous technologies in developing countries as well as transferring new technologies to them, (2) increasing investment in technology development, and (3) developing systems to monitor climate change and plans to mitigate it and adapt to it.[104] To

94. UNFCCC, *Expert Group on Technology Transfer*, http://unfccc.int/ttclear/jsp/EGTTTOR.jsp (last visited March 17, 2011).

95. EGTT FIVE YEARS, *supra* note 92, at 2.

96. TNA Handbook, *supra* note 30, at 4.

97. UNFCCC, *supra* note 12, art. 9, ¶ 1.

98. *Id*. art. 9.

99. *See The Cancun Agreements*, *supra* note 58.

100. *Id*.

101. *See id*. art. 117; Mechanisms for TT, *supra* note 73.

102. *See The Cancun Agreements*, *supra* note 58.

103. *Id*. art. 113–16.

104. *Id*. art. 120.

execute this mandate, Section IV-B establishes a two-part Technology Mechanism, consisting of a Technology Executive Committee ("TEC") and a Climate Technology Centre and Network ("CTC").[105]

The UNFCCC tasked the TEC with leading the technology transfer efforts and appears to be an updated version of the EGTT.[106] Despite the use of "Executive" in the title, the TEC is essentially a recommending body rather than an executive one, with directive language in its seven specified tasks consisting mostly of "[p]rovide an overview," "[c]onsider," "[r]ecommend," "facilitate," and "[s]eek cooperation."[107] The TEC's mandate is to gather information and provide recommendations to the Conference of the Parties, which retains executive power.

The CTC has a more concrete mandate.[108] The CTC has two main roles: to provide technology-related assistance to developing countries in the form of information and advice, and to provide a channel for communication and collaboration between "the private sector, public institutions, academia and research institutions" to facilitate the transfer of technology and know-how.[109] While the implementation of the CTC will require a great deal of effort from many qualified people, its output goals are clearly stated. The output goals of the Green Climate Fund ("Fund") are less well defined.

The language establishing the Green Climate Fund carefully lays out the governance of the Fund, the size of the board, who the trustee should be, and who should be involved in the further design of the Fund.[110] However, it leaves out two significant parts: where the money should come from and where it should go. Presumably, the forty parties of the Transitional Committee, tasked with designing the Fund, will provide this information, but it is a bit shocking that such critical elements were not incorporated in the original charter.[111] Article 102 provides the only direction for the Fund, stating that the Fund exists "to support projects, programmes, policies and other activities in developing country Parties using thematic funding windows."[112]

The Green Climate Fund presents an interesting opportunity from the standpoint of IPRs and clean technology. One way to use the Green

105. *Id*. art. 117–18.

106. *Id*. art. 121, 124; *see also The Marrakesh Declaration*, *supra* note 48, § C, art. 2.

107. *Id*. art. 121.

108. *See id*. art. 123.

109. *Id*.

110. *Id*. art. 102–11.

111. *Id*. art. 109.

112. *Id*. art. 102.

Climate Fund could be to provide royalty payments to the owner of IP that becomes subject to a compulsory license.[113] While it can potentially assist with legitimate compulsory licensing issues, the Green Climate Fund can do little to address the piracy problem with IPRs. IP owners have little recourse if their IP is simply stolen in a country with weak, or weakly enforced, IP laws. The black market does not give refunds and the Green Climate Fund does not have the capacity to be the financial backstop for international IPR enforcement failures.

IV. INTELLECTUAL PROPERTY RIGHTS

The creators of IP systems throughout history have understood an important truth about IP: the private market for IP will fail because, at its most basic level, it is non-rivalrous and non-excludable.[114] IPRs address this particular market failure by giving IP creators a government-backed right to exclude others from using their IP for a set period.[115] In exchange for this right, the IP creator must sufficiently and publicly disclose the details of their invention so that the public can learn from it and use it freely at the end of the period of exclusive right.[116] This exchange is intended to create the incentive to innovate and provide the tools for further innovation.[117]

One of the initial obstacles to the transfer of low-carbon technologies is the problem presented by IPR. On the one hand, many developing countries that need low-carbon technologies lack the strong IPR systems that would facilitate the transfer of low-carbon technologies.[118] On the other hand, many developed countries, like the United States, believe that strong IPRs equate to strong incentives to develop and transfer low-carbon technologies.[119] However, many

113. Compulsory licensing typically occurs when the proprietary technology meets a critical need but a license agreement cannot be reached, often for financial reasons. For more on compulsory licensing, *see* Section IV(c) *infra*.

114. Keith E. Maskus, *Encouraging International Technology Transfer*, at 5, (Int'l Centre for Trade and Sustainable Dev. Intell. Prop. & Sustainable Dev. Series, Issue Paper No. 7 2004).

115. Maskus & Okediji, *supra* note 7, at 12.

116. *Id*.

117. *Id*. This intention is explicit in the Constitutional language in which the United States patent system is rooted, calling for a system that "promote[s] the Progress of Science and useful Arts." U. S. CONST. art 1, § 8, cl. 8.

118. BAZILIAN, ET AL., *supra* note 21, at 27.

119. *Id*. It appears that in most cases, the developed country perspective is correct: "a comprehensive review of literature indicates that patent protection has a positive impact on technology transfer and rarely presents a barrier." CHARLES EBINGER & GOVINDA AVASARALA, THE BROOKINGS INSTITUTION, TRANSFERRING ENVIRONMENTALLY

developing and least developed nations argue the contrary, that strong IPRs are a barrier and promote "high costs and unjust protectionism."[120] As a general rule,

> individual countries prefer stronger patent protection when their capacity to innovate is greater, their domestic market is larger and the domestic demand for new goods is stronger. Poorer countries with weaker innovation capabilities rationally opt for weaker patent rights or other limitations on exclusive rights in order to gain cheaper access to new global goods and encourage reverse engineering and imitation by domestic firms.[121]

This situation is the root of the international IPR challenge and disincentivizes innovation.[122] Strong and predictable IPRs are therefore necessary to incentivize both the creation and the transfer of green technology internationally.

A. The United States

U.S. President Barack Obama has emphasized that the "transition to clean energy has the potential to grow our economy and create millions of jobs."[123] In his 2011 State of the Union Address, President Obama stated that the United States would "invest in biomedical research, information technology, and especially clean energy technology, an investment that will . . . create countless new jobs for our people."[124] Prior actions by the United States provide additional backup for President Obama's remarks.

The U.S. Chamber of Commerce lobbied hard against IPR concessions at the Copenhagen conference, leading the U.S. House of Representatives to vote 432-0 to oppose any such concessions.[125] In early December of 2009, immediately before the Copenhagen conference, the U.S. Patent and Trademark Office instituted an expedited review program for patent applications on environmentally friendly technologies.[126] While the program exists ostensibly to bring green

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SOUND TECHNOLOGIES IN AN INTELLECTUAL PROPERTY-FRIENDLY FRAMEWORK 9 (2009).

120. *Id*.

121. Maskus & Okediji, *supra* note 7, at 13.

122. *Id*.

123. The White House, *Energy & Environment*, http://www.whitehouse.gov/issues/energy-and-environment (last visited March 17, 2011).

124. President Barack Obama, State of the Union Address (Jan. 25, 2011).

125. Berkeley, *supra* note 23, at 11.

126. *The U.S. Commerce Department's Patent and Trademark Office (USPTO) will pilot a program to accelerate the examination of certain green technology patent*

technology to the market more quickly, the announcement's timing, immediately before Copenhagen, seemed to make a statement that the United States intended to retain strong IP rights with regard to green IP.[127]

B. China

China in some senses is playing an ecological game of chicken with the developed countries and China is driving a very big truck. China is barreling forward with development at a rate and scale that has led it to increase its GHG emissions eighty percent in the past twenty years.[128] This rapid expansion has China

> [c]aught in a Faustian policy trap. It needs ongoing domestic economic growth of around 8 per cent per annum to sustain social and political stability. Yet such growth will deliver massive ecological and associated social crises and undermine the prosperity growth is intended to provide, especially if based on fossil fuels including China's bountiful and cheap coal. Although China's trade revenue and national reserves are perhaps sufficient for it to ecomodernize rapidly, they are insufficient to manage the impacts of growth pursued by conventional means.[129]

Chinese President Hu Jintao has stated that China intends to continue on its course of rapid economic and social development, while "integrat[ing its] actions [to address] climate change . . . ."[130] At Copenhagen, Chinese President Hu Jintao stated that, "[d]eveloped countries should support developing countries in tackling climate change. This is not only their responsibility, but also serves their long-term interests."[131] China is essentially saying: "we are not going to slow down, so either help us reduce GHG emissions or don't complain when it gets hot in here."

The problem of transferring technology to China is China's bad reputation regarding IPRs. China has the capacity to reverse engineer technologies and produce a competing product quickly and cheaply.[132]

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applications, U.S. PATENT & TRADEMARK OFFICE, (Dec. 7, 2009), http://www.uspto.gov/news/pr/2009/09_33.jsp.

127. *Id*.

128. Christoff, *supra* note 71, at 645.

129. *Id*.

130. *Hu Jintao's speech on climate change*, N. Y. TIMES (Sept. 23, 2009), http://www.nytimes.com/2009/09/23/world/asia/23hu.text.html.

131. *Id*.

132. *See* Stephen Evans, *German firms fear China technology theft*, BBC.COM (Feb. 7 2011), http://www.bbc.co.uk/news/12382747.

Companies are concerned about sending products containing protected IP to China because they are afraid of being undercut by Chinese versions of their own products.[133] A recent example of this is new high-speed railways. Foreign companies, including Siemens and Kawasaki Heavy Industries, started building high-speed rail systems in China only to find that Chinese companies rapidly developed their own high-speed rail technologies by "learning and systematically compiling and re-innovating foreign high-speed train technology."[134] China is not the first country to accelerate technological development through loose protection of IPRs,[135] but its current approach has left some companies unwilling to transfer *products*, not just IPRs, to China.[136] Companies are left a Hobson's choice: they can enter the vast Chinese market and risk the theft of their IP or stay on the sidelines, foregoing potential profits.[137]

China is by no means wholly dependent on infusions of outside technology; it is developing some of its own low-carbon technologies.[138] The United States recognized this situation, although not directly naming China, when it suggested an "implementing agreement . . . [for] developing country Parties whose national circumstances reflect greater responsibility or capability."[139] This statement, contrasted with China's statements regarding responsibilities, reflects the serious divide between the viewpoints of the two countries. The United States would give much stronger support to a system based on the Marrakesh Agreement that treated each country differently, where China would prefer to see a simpler system that placed more responsibility on the developed countries and transferred more benefits to the developing country parties.[140] Ultimately, both countries are looking to act in their own economic self-interests.

C. Proposed IPR Policy Mechanisms

One technology transfer policy mechanism that has been proposed to sidestep the IPR problem is to treat green IP like pharmaceuticals, analogizing climate change to a health emergency.[141] Article 31 of the

133. *Id*.

134. Shirouzu, *supra* note 8.

135. Maskus & Okediji, *supra* note 7, at 7.

136. Shirouzu, *supra* note 8.

137. *Id*.

138. *See* Maskus, *supra* note 114.

139. VAN ASSELT, ET AL., *supra* note 2, at 28.

140. *See* Maskus & Okediji, *supra* note 7, at 5–6; *see* VAN ASSELT, ET AL., *supra* note 2, at 41.

141. EBINGER & AVASARALA, *supra* note 119, at 7.

Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS Agreement") provides for the use of patented technologies without the permission of the patent holder in cases of national emergency.[142] The pharmaceuticals approach, however, is a poor fit for green technology, both because of the traits of the technologies themselves and the problems they are designed to solve. Economically speaking, the nature of pharmaceuticals, with only one or a few patents on a particular drug and often a lack of market substitutes, allows the monopoly power granted by the patents to command a higher price.[143] One complete green technology, by contrast, involves a much larger number of separate patents, potentially owned by different companies, many of which may have already expired.[144] Further, there are several technology options to mitigate climate change, where there may be only one drug that is effective in treating a particular disease.[145] Finally, it is hard to deny that the emotional impact of a national health crisis is much greater than the creeping, barely perceptible, impacts of climate change, especially in developing nations.

Pharmaceuticals are not the only technologies subject to compulsory licensing. Certain agricultural technologies are sometimes transferred without licensing fees. "[T]here are examples of humanitarian-use licensing contracts . . . [that] transfer [their] proprietary technology to poor farmers without requesting royalty payments."[146] Like the pharmaceutical issue, these tend to focus on short-term humanitarian crises rather than long-term climate change goals.

One of the problems with compulsory licensing approaches is that there is far more to the successful adoption of low-carbon technologies than simply possessing a license to the patent; the associated skills and know-how do not come pre-packed with IPRs.[147] Granting a compulsory license alone would be like giving someone the design for a fishing rod, but teaching them neither how to build it nor how to fish. With this in mind, it is clear that compulsory transfers, accomplished without the cooperation of the IP provider, will likely be minimally effective.[148] Rather, a cooperative framework is required.

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142. Agreement on Trade Related Aspects of Intellectual Property Rights, art. 31, Apr. 14, 1994, 1869 U.N.T.S 299.

143. Berkeley, *supra* note 23, at 10–11; Maskus & Okediji, *supra* note 7, at 10.

144. Berkeley, *supra* note 23, at 10–11; EBINGER & AVASARALA, *supra* note 119, at 7.

145. EBINGER & AVASARALA, *supra* note 119, at 7.

146. Enabling Environments, *supra* note 15, at 5.

147. Maskus, *supra* note 114, at 10.

148. *Id*.

V. PROPOSED MODIFICATIONS TO CURRENT TECHNOLOGY TRANSFER POLICY

A robust cooperative framework will require three things. First, participant countries must ensure that they have sufficient IP laws and that they are enforced. Second, there must be an adequate funding mechanism for the transfer of IPRs. Third, there must be a system of accountability to push developed countries to encourage the transfer of domestic IPRs. Absent any one of these parts, an international framework is destined to fail.

The problem of weakly enforced IPRs in many countries is certainly not a simple one, but a system could be structured to create a "carrot" to encourage countries to strengthen their IPR systems. Participation in the technology transfer program and access to funding should be conditioned on the satisfactory enforcement of acceptably stringent IP laws. In some cases, of course, the concern over a weak IPR system is small. Countries that lack the capacity to undercut the market for a transferred technology in any meaningful way are of less concern than more advanced developing countries, like China. Because of this, specific tailoring of each country's obligations will be necessary, as facilitated by the TNA system discussed above.

This specific tailoring will help establish what are called "Enabling Environments" in all countries to maximize the opportunity and capacity for green technology transfer.[149] In technology-creating countries, the Enabling Environments must be ones that contribute to pushing the technologies outward to the countries that need them.[150] In less developed countries, an Enabling Environment is one that, among other things, creates at least some market pull that draws the technology in.[151] This means, "transparent and consistently applied administrative procedures, investment liberalization, competitive markets for cleaner technologies, adequate intellectual property protection, and sound environmental regulations."[152]

Enabling Environments are the result of "governmental actions, such as fair trade policies, removal of technical, legal, and administrative barriers to technology transfer, sound economic policy, regulatory frameworks and transparency, all of which create an environment conducive to private sector and public sector technology transfer."[153] The

149. Enabling Environments, *supra* note 15, at 3–4.

150. *Id*. at 4.

151. *Id*.

152. *Id*.

153. EGTT FIVE YEARS, *supra* note 92, at 7.

term Enabling Environments, rather than Enabling Policies or Enabling Agreements, is apt because "[n]o single instrument can overcome the barriers prevalent in both developing and develop[ed] countries for [Environmentally Sound Technology] diffusion."[154]

In the UNFCCC, the Annex II parties agreed to provide funding for the transfer of technology and other projects meant to mitigate climate change in developing countries.[155] There is potential for the funding mechanism to be the Green Climate Fund. Provided that there is little risk of IP theft, the transfer or licensing of technologies to developing countries could be facilitated by paying for the licenses as normal with the Green Climate Fund. Today, however, nearly twenty years after the creation of the UNFCCC, the global landscape has changed. The gap between the developed countries and the most advanced developing countries is much smaller.[156] A successful system will require some ownership on the part of the developing countries, or the developed countries will simply be subsidizing the demise of the green sector of their economies. For some countries, it may be more appropriate for the Green Climate Fund to contribute a portion of the licensing fees for a technology, rather than covering the fee in its entirety. For other countries, the funding could be covered partly through the sales of emissions offsets.[157] In the end, some level of *quid pro quo* seems appropriate.

The third concern is a lack of accountability. Even with a carbon tax or cap among developed countries that would incent innovation in low carbon technologies, the market would not lead to the transfer of green technologies to developing countries without an obligation or additional incentive.[158] Both the push of government pressure and the pull forces of the market remain weak.

This market failure can be remedied by overlaying a regulatory structure, which creates an artificial market. I propose a structure that begins with technology transfer obligations, contains mechanisms for quantifying and tracking transfers, and provides accountability through an enforcement mechanism. One model for such a market is the Renewable Energy Credit ("REC") market created by Renewable

154. Enabling Environments, *supra* note 15, at 10.

155. UNFCCC, *supra* note 12, art. 4, ¶ 7.

156. China has made a significant push recently in terms of both Chinese patents and U.S. Patents. *See Battle of ideas, Chinese companies are enforcing patents against foreign firms*, THE ECONOMIST (Apr. 23, 2009), http://www.economist.com/node/13528318.

157. Provided a framework for such sales continues after the expiry of Kyoto.

158. Maskus & Okediji, *supra* note 7, at 20.

Portfolio Standards ("RPS") in the United States.[159]

This system begins with hard goals for renewable energy generation, requiring that a certain percentage of power generation come from renewable sources.[160] In the proposed U.S. federal RPS system, compliance is shown by submitting RECs to the accounting body.[161] RECs are effectively a paper document that represents a certain amount of renewable energy generation.[162] They are typically transferrable and in some instances, they can be held for up to three years.[163]

A Technology Transfer Credit ("TTC") system would have some similarities. Participating countries would be given a TTC for transferring a low-carbon technology to a recipient country. The TNA from the Marrakesh system would need to be modified slightly to become a Technology Capacity Assessment ("TCA") that could be applied to both developed and developing countries. Each country, based on this assessment, would be charged with transferring out a certain amount of technology based on the portfolio of technologies available. If a country has little or no available green technology to transfer, it would have no obligation.

Quantifying TTCs is clearly a more difficult issue than it is with RECs because of the problems with measuring, reporting, and verifying technology transfer, in comparison to simply measuring the power output of a wind turbine. I propose an approach that would mirror a carbon credit system. Credit would be given by showing the difference between the emissions of the Business as Usual ("BAU") technology and the transferred green technology. For example, if a coal-fired power plant, operating under BAU conditions, emitted 500,000 tons of CO_2 annually and a donor country provided a more efficient boiler that allowed the plant to produce the same amount of energy, while emitting only 400,000 tons of CO_2, the donor country would be credited with transferring a technology valued at 100,000 tons of CO_2. Under this system, more effective technologies would be rewarded with larger TTCs and the system would incent technology transfers that would result in the most economically efficient reduction of CO_2.

Under this system, any country can be a technology transfer recipient. All that matters is that the transferred technology is not available in the recipient country and that the technology results in a net decrease of GHG emissions. This will tend to favor countries with low

159. Renewable Electricity Promotion Act of 2010, S. 3813, 111th Cong. (2010).

160. *Id*. at 12.

161. *Id*. at 12-13.

162. *Id*. at 15.

163. *Id*. at 16.

transaction costs, incenting countries to create the Enabling Environments, including favorable IPR environments, discussed above. This will also create an incentive to seek out the countries with technologies that can be updated with the lowest marginal cost per unit of GHG reduction, more likely to be developing countries rather than developed ones. Countries like China, that straddle the line between technology-producing and technology-receiving, will end up with transfer obligations, but China will also benefit because China's large size may allow a single technology transfer to result in a very large CO_2 reduction.

Much like the REC system in the United States, a TTC system must be built with flexibility. The TTCs should be transferrable, allowing countries that produce and transfer large amounts of low-carbon technology to sell their excess credits and conversely to allow countries that fall below their mark to purchase those credits. An additional flexibility mechanism would be an alternative credit system that allows nations to pay a set cost per TTC to cover the gap between their obligation and the amount of TTCs they earn or purchase.[164] This provides a cost control and predictability measure, while contributing to a fund to purchase licenses for further spreading technologies and perhaps to contribute to covering the cost of the system.

Accountability is the key in any of these systems and as such, there must be penalties for failure to comply. Similar to the proposed federal RPS in the United States, the simplest financial penalty would be some multiplier of the alternative credit cost.[165] Under this system, a penalty is only a mechanism of applying pressure and would only be used if a nation fails to purchase alternative credits. In a sense, it is simply a method for making the purchase of alternative credits involuntary and slightly more painful.

While the approaches I have proposed are just a few of many potentially viable options, I believe that any successful system will require stronger IPR regimes in recipient countries, a strong funding mechanism, and a system of accountability. These three elements are necessary to create a robust market that will maximize both the quantity and the quality of green technology transfer.

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164. The U.S. Federal RPS contains an alternative compliance payment with a set price. *Id*. at 19.

165. *Id*. at 17.

VI. CONCLUSION

The understanding of climate change is growing; so too is the human contribution to it. As these two things grow, the need and demand for technologies to combat climate change will grow as well. The framework for a system to spread these technologies and thus broaden their positive impact, has been developing for years. Solid foundations have been laid, recognizing the varying needs, capacities, and obligations of each nation. Nonetheless, further steps are required to maximize the quality and quantity of green technology transfer.

A basic framework and a reliance on altruism is not enough to create the kind of technology transfer necessary to have a meaningful impact on climate change. A functional, robust market must be created to drive green technology transfer. Creating this market will require the international community to successfully address three main challenges: strengthening IPRs in recipient countries, establishing viable funding mechanisms, and creating a system of accountability.

This Note has addressed some of the basic issues with international IPRs and has highlighted a recent funding mechanism. It has proposed a system of accountability modeled on the proposed U.S. Renewable Portfolio Standard. The proposed system is intended to allow flexibility and choice among nations on the means by which the goals are reached, but institutes accountability in reaching the goals.

The real challenge, of course, is not designing a system. The real challenge is getting so many different nations to agree to hold each other accountable (and to be held accountable) for achieving climate change goals. Because climate change is so much less tangible than other international crises, few nations, especially the most powerful ones, feel the pain that is sometimes necessary to spur dramatic action. In the end, it may be less important what the details of the system of accountability are, but rather that such a system exists at all.

Civil Justice in the Mountains: The Bolivian Andes as Grounds for Climate Reform

Jena Akin*

TABLE OF CONTENTS

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* Jena Akin recently received a J.D. from the University of Colorado Law (2012). She also holds a B.A. from Dartmouth College (2007), *cum laude*, with a focus on English and Spanish Literature. The author would like to thank University of Colorado Law Associate Professor Justin Desautels-Stein for his helpful comments and guidance. Thanks are also due to the staff of the *Colorado Journal of International Environmental Law and Policy* and 2011 Notes Editor Ryan Gilman, for the editorial suggestions and comments. This Note won the *Colorado Journal of International Environmental Law and Policy* "Best 2L Note" Award in April 2011.

I. INTRODUCTION

Scientists expect the impacts of climate change to manifest in various regions of the world in drastically different ways.[1] The Intergovernmental Panel on Climate Change ("IPCC") estimates a predicted temperature rise of anywhere from 1.8 to 4.0 degrees Celsius beyond pre-industrial levels by 2100.[2] Some of the major expected and observed impacts include warmer temperatures, changes in extreme temperatures, increased and decreased precipitation, drought, glacier melt, and sea level rise.[3] Two of the region's most vulnerable to the impacts of climate change are coastal zones, especially small island states, and the fragile ecosystems of the high-altitude mountains.[4] In addition, the inhabitants of these vulnerable regions tend to be indigenous peoples who are more dependent on the land than urbanized communities,[5] making them especially vulnerable to the effects of climate change on their land.[6] Inaction regarding climate change will force indigenous communities to migrate to less vulnerable climate zones,[7] and their unique way of life will be lost permanently; these cultures will become another avoidable casualty of anthropogenic climate change.[8] The uneven distribution of harm to isolated and unique cultures—that, for the most part, have not contributed to the

1. *See* Richard B. Alley et al., *Technical Summary*, *in* CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERNATIONAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS 19, 71–74 (Susan Solomon et al. eds., 2007).

2. Susan Solomon et al., *Summary for Policymakers*, *in* CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS, at 1, 13 [hereinafter IPCC POLICYMAKERS].

3. *See id.* at 445–49, 12–17.

4. Human Rights Council Res. 7/23, Rep. of the Human Rights Council, 7th Sess., Mar. 3–Apr. 1, 2008, U.N. Doc. A/HRC/7/78, at 66 (March 28, 2008), *available at* http://daccess-dds-ny.un.org/doc/UNDOC/GEN/G08/146/62/PDF/G0814662.pdf?OpenElement.

5. *See* J. Mijin Cha, *Environmental Justice in Rural South Asia: Applying Lessons Learned from the United States in Fighting for Indigenous Communities' Rights and Access to Common Resources*, 19 GEO. INT'L ENVTL. L. REV. 185, 187 (2007).

6. Human Rights Council Res. 10/4, Rep. of the Human Rights Council, 10th Sess., Mar. 2–27 2009, U.N. Doc. A/64/53, at 28 (March 25, 2009), *available at* http://daccess-dds-ny.un.org/doc/UNDOC/GEN/G09/149/83/PDF/G0914983.pdf?OpenElement [hereinafter Human Rights Res. 10/4].

7. *See* Bonnie Docherty & Tyler Giannini, *Confronting a Rising Tide: A Proposal for a Convention on Climate Change Refugees*, 33 HARV. ENVTL. L. REV. 349, 349 (2009).

8. *See* Elisabeth Rosenthal, *An Amazon Culture Withers as Food Dries Up*, N.Y. TIMES, July 24, 2009, *available at* http://www.nytimes.com/2009/07/25/science/earth/25tribe.html ("Cultures threatened by climate change span the globe").

accumulation of greenhouse gases in the atmosphere—is an example of a broader trend of a lack of environmental justice.[9]

This Note addresses the risk climate change poses to vulnerable mountain communities. The tangible threats posed by climate change to mountainous ecosystems directly threaten the livelihoods of the indigenous peoples living there and subsisting on the land.[10] Section II of this Note describes the vulnerabilities of mountain ecosystems and indigenous communities to climate change. Section III explains how the protection of fundamental human rights in both international agreements and domestic law can be used as a foundation for a movement toward increased access to justice for climate victims.

Section IV frames human rights violations from climate change as examples of the lack of environmental justice because poor and marginalized communities are forced to bear a disproportionate environmental burden.[11] It then addresses the challenge of creating accountability for harms arising out of the collective and anonymous nature of the climate change problem without a comprehensive international framework capable of holding entities liable for specific harms.

Section V proposes a solution to the problem. Environmental justice must be re-categorized as a civil rights issue. Domestic lawmakers must endeavor to capture environmental rights in national legislation; citizens must demand avenues to justice in domestic judicial systems; and judiciaries must be willing to recognize rights to a healthy environment and remedies in the interest of preserving indigenous peoples' way of life. International lawyers and activists must demand a change in rhetoric that will include environmental justice as part of civil rights in international negotiations, treaties, and other agreements. By recasting the climate change problem as a direct civil rights violation, advocates can bypass historically troubling technical obstacles such as standing law,[12] undeveloped articulation of environmental rights,[13] and lack of

9. U.N. Econ. & Soc. Council, Permanent Forum on Indigenous Issues, Indigenous Peoples Must be Included in Global Negotiations Aimed at Combating Climate Change, Say Speakers in Permanent Forum (April 22, 2008), http://www.un.org/News/Press/docs/2008/hr4946.doc.htm [hereinafter *Indigenous Peoples Must be Included*] (statement of Isabel Ortega Ventura).

10. *See generally id*.

11. Cha, *supra* note 5, at 186.

12. *See generally* CHRISTOPHER D. STONE, SHOULD TREES HAVE STANDING?: LAW, MORALITY, AND THE ENVIRONMENT (3d ed. 2010) (discussing standing issues facing environmental claims).

13. MARK A. DRUMBL, INT'L CTR. FOR TRANSITIONAL JUSTICE, ACCOUNTABILITY FOR PROPERTY CRIMES AND ENVIRONMENTAL WAR CRIMES: PROSECUTION, LITIGATION, AND DEVELOPMENT 20 (2009).

accountability on behalf of specific parties,[14] in order to achieve real, specific judicial remedies to climate harm.[15]

The necessary re-categorization will require a popular movement, such as the Civil Rights Movement in the United States, in order to gather the will to introduce environmental justice into the broader realm of civil justice. This Note uses the example of the Bolivian Andes, including the Bolivian *Altiplano* (a high plateau in the Andes where many Bolivians live), to demonstrate the climate change problem and its impacts on high-altitude indigenous communities. Finally, this Note suggests that Bolivia is the ideal ground for forming a popular global environmental movement because indigenous peoples in the Andes have international,[16] constitutional,[17] and statutory[18] rights pertaining to these issues; they are uniquely vulnerable to climate change; and it is in Bolivia's best sovereign interest to act domestically on the climate change ideas it has advocated internationally. Once the Bolivian government and judiciary begin to recognize climate change as a civil rights violation and remedy it accordingly, other nations and entities will be more willing to recognize Bolivia's perspective on climate change[19]

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14. *See* DAVID SCHLOSBERG, DEFINING ENVIRONMENTAL JUSTICE: THEORIES, MOVEMENTS, AND NATURE (2007).

15. While greater access to specific judicial remedies is a goal of climate justice, it is not the only benefit that may come out of reframing indigenous climate problems as civil rights problems. Greater awareness and a new definition of environmental justice will be progress in its own right, and that move itself will likely get judiciaries closer to specific remedies than attempting to bring claims on behalf of the environment alone.

16. *See* Universal Declaration of Human Rights, G.A. Res. 217 (III) A, U.N. Doc. A/RES/217(III) (Dec. 10, 1948), *available at* http://daccess-dds-ny.un.org/doc/RESOLUTION/GEN/NR0/043/88/IMG/NR004388.pdf?; Declaration on the Rights of Indigenous Peoples, G.A. Res. 61/295, arts. 8, 25–26, U.N. Doc. A/RES/61/295, (Sept. 13, 2007), *available at* http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N06/512/07/PDF/N0651207.pdf?OpenElement; U. N. Conference on the Human Environment, June 5–16, 1972, *Stockholm Declaration on the Human Environment*, princ. 1, U.N. Doc. A/CONF.48/14/Rev.1 (1973), [hereinafter *Stockholm Declaration*]; U.N. Conference on Environment and Development, June 3–14, 1992, *Rio Declaration on Environment and Development*, princ. 1 U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I) (1992) [hereinafter *Rio Declaration*].

17. NUEVA CONSTITUCIÓN POLÍTICA DEL ESTADO 2009 (Bol.).

18. *Ley* No. 1333, Apr. 27, 1992, *Ley del Medio Ambiente* [hereinafter *Ley* 1333].

19. Bolivia has struggled to gain recognition in international climate change negotiations. At the 2010 United Nations Conference on Climate Change ("UNFCCC"), Bolivia objected to the decisions in the Cancún Agreements, yet they were passed, and no other country joined Bolivia in its objections. *See, e.g.*, Adalid Cabrera Lemuz, *ABI: Morales: Bolivia was not Alone in Cancun, It Stood with the People in Defense of Life*, WORLD PEOPLE'S CONFERENCE ON CLIMATE CHANGE AND THE RIGHTS OF MOTHER EARTH BLOG, (Dec 20, 2010), http://pwccc.wordpress.com/2010/12/20/abi-morales-bolivia-was-not-alone-in-cancun-it-stood-with-the-people-in-defense-of-life/ (last visited Mar. 21,

and to incorporate the concept of rights into the greater legal context addressing climate change problems.

II. CLIMATE CHANGE IMPACTS TO MOUNTAIN ECOSYSTEMS AND HUMAN COMMUNITIES

Mountain climates provide a unique and important perspective from which to approach the climate change problem for many reasons. First, mountains are crucial elements of natural ecosystems.[20] Second, mountains and their human communities are particularly vulnerable to the impacts of climate change.[21] Finally, mountains are largely overlooked and their indigenous inhabitants unrepresented in climate change discussions.[22]

A. The Importance of Mountains to the Study of Climate Change Impacts

Mountains deliver fresh water to the rest of the world and provide the variability in temperature, moisture, and soil that countless forms of natural life require to survive.[23] Because they are "the water towers of the world," they "are vital to all life on earth and to the well-being of people everywhere . . . ."[24] Mountains cover almost twenty-five percent of the Earth's surface,[25] while approximately ten percent of the world's population relies directly on mountain resources, and an even greater percentage utilizes those resources, especially water. [26] In addition to

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2012).

20. U.N. Conference on Environment and Development, June 3–14, 1992, *Agenda 21*, ¶ 13.1, U.N. Doc. A/CONF.151/26/Rev.l (Vol. I) (1992).

21. *Id.*¶ 13.4.

22. *See, e.g.*, UNFCCC, Dec. 1/CP.16, U.N. Doc. FCCC/CP/2010/7/Add.1, ¶ 95, (Mar. 15, 2011), http://daccess-dds-ny.un.org/doc/UNDOC/GEN/G11/605/50/PDF/G1160550.pdf?OpenElement [hereinafter *Cancún Agreements*] (noting a commitment to provide funding for those countries most vulnerable to climate change, including small island developing states, least developed countries, and Africa, but making no mention of fragile mountainous communities).

23. *Agenda 21*, *supra* note 20, ¶¶ 13.1, 13.4.

24. Klaus Toepfer, United Nations Environment Programme, Information Notes, UNEP and the International Year of the Mountains (Feb. 27, 2002), http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=239&ArticleID=3019&l=en (last visited Mar. 21, 2012).

25. Martin Beniston, *Climate Change in Mountain Regions: A Review of Possible Impacts*, 59 CLIMATIC CHANGE 5, 6 (2003).

26. *Agenda 21*, *supra* note 20, ¶ 13.2.

providing water, mountains are important sources of energy and biological diversity, including many endangered species.[27] Due to the widespread reliance on mountain water and other resources, "[w]hat happens on the highest mountain peak affects life in the lowlands, in freshwaters and even in the seas,"[28] and it is this interconnectivity that makes the integrity of mountain climates so important to climate change discussions.[29] In fact, the United Nations Environment Program ("UNEP") recognizes that "[a]s a major ecosystem representing the complex and interrelated ecology of our planet, mountain environments are *essential to the survival of the global ecosystem*."[30]

Beyond their importance to the global ecosystem and human cultural identities, mountains are good subjects for studying climate change impacts because their unique shape, biological diversity, and ecology of mountains make them particularly susceptible to climate change.[31] Mountains are early indicators of climate change because vegetation, hydrology, and climate vary rapidly with elevation over relatively short horizontal distances, creating high biodiversity and rapid changes in plant and animal life.[32]

B. Mountain Ecosystems are Vulnerable to Climate Change

Because mountains are highly susceptible to climate change impacts,[33] mountain ecosystems and their human inhabitants are vulnerable to the effects of global warming like drought, increased amount and intensity of natural disasters, diminished biodiversity, heavy rains, and desertification.[34] However, mountainous areas will likely see more drastic impacts because of their extreme altitudes, natural temperature swings, and fragile ecosystems, which make mountains unusually vulnerable to any climate changes.[35] Additionally, impacts less

27. *Id.* ¶¶ 13.1, 13.2.

28. UNEP and the International Year of the Mountains, *supra* note 24.

29. *Agenda 21*, *supra* note 20.

30. *Id.* at ¶ 13.1 (emphasis added).

31. Beniston, *supra* note 25.

32. *Id.*

33. *Climate Change*, MOUNTAIN PARTNERSHIP, http://www.mountainpartnership.org/././issues/climate.html (last visited Mar. 15, 2012).

34. *See, e.g.*, Gov't of Viet Nam, Preparing for Disasters in Vietnam's Mountain Regions, RELIEFWEB (Oct. 12, 2010), http://www.reliefweb.int/rw/rwb.nsf/db900sid/EGUA-8A6NHX?OpenDocument (last visited Mar. 21, 2012); *Agenda 21*, *supra* note 20; Beniston, *supra* note 25, at 7–8.

35. Beniston, *supra* note 25.

likely to affect other climate zones could destroy mountainous ecosystems, including landslides,[36] species isolation by loss of habitat, [37] species extinction by loss of genetic diversity,[38] accelerated soil erosion, [39] and increased glacier melt.[40]

Scientists, policymakers, and courts have already noted significant environmental degradation in many mountain areas; indeed, UNEP has explicitly warned that mountain systems are rapidly changing.[41] Even the United States Supreme Court has acknowledged negative climate change effects on mountains.[42]

C. Mountain Communities are Vulnerable to Climate Change

As climate change causes increasing physical impacts on mountains, the people living there suffer from the negative effects on their homes and livelihoods.[43] Mountain inhabitants, mainly indigenous peoples, are highly vulnerable to the various impacts of increased rainfall, drought, and natural disasters.[44] Indigenous communities often rely directly on the land for subsistence. In an already fragile ecosystem, changes are more likely to affect vegetation and agriculture. Thus those changes are more likely to seriously harm indigenous communities.[45] While "[n]early half of the world's population is affected in various ways by mountain ecology and the degradation of watershed areas,"[46] the people who live immediately in those ecosystems and rely directly upon the land affected are the most injured by environmental deterioration because they are "far more severely affected by any restriction on their

36. *See Agenda 21*, *supra* note 20.

37. *See id*.

38. *See id*.

39. *See id*.

40. NICHOLAS STERN, STERN REVIEW: THE ECONOMICS OF CLIMATE CHANGE 56 (2006), *available at* http://webarchive.nationalarchives.gov.uk/+/http:/www.hm-treasury.gov.uk/sternreview_index.htm.

41. *Agenda 21*, *supra* note 20.

42. *See Massachusetts v. EPA*, 549 U.S. 497, 521-22, (2007) ("qualified scientific experts involved in climate change research have reached a strong consensus that global warming threatens . . . severe and irreversible changes to natural ecosystems and a significant reduction in water storage in winter snowpack in mountainous regions with direct and important economic consequences") (internal quotations omitted).

43. *See* David Preston et al., *Grazing and Environmental Change on the Tarija Altiplano, Bolivia*, 23 MOUNTAIN RES. & DEV. 141, 147 (2003) (studying the effects of climate change on livestock practices on the Bolivian *Altiplano*).

44. SCHLOSBERG, *supra* note 14, at 84–85.

45. *See* Cha, *supra* note 5, at 187.

46. *Agenda 21*, *supra* note 20, ¶ 13.13.

ability to access and use natural resources."[47]

Additionally, in a more global context, the negative impacts of climate change in mountainous areas disproportionately harm developing nations.[48] For example, in the United Nations Framework Convention on Climate Change ("UNFCCC"), policymakers recognized that "developing countries with fragile mountainous ecosystems are particularly vulnerable to the adverse effects of climate change."[49] For this reason, those indigenous peoples living in developing nations and affected by climate change are also more likely to suffer from, inter alia, poverty, hunger, unemployment, and health problems.[50] Additionally, dying crops, loss of grazing lands, and other climate change impacts exacerbate all of these problems even further.[51]

Already challenging circumstances have compounded to make it very difficult for indigenous mountain peoples to continue their traditional ways of life when they suffer from basic problems of survival and additionally must find ways to accommodate the increasing problems of climate change.[52] For example, in Vietnam, the indigenous people who subsist on agriculture in the mountains have a poverty rate that is three to five times the national average, and at the same time they are most at risk for death or injury by landslides and other disasters.[53] Furthermore, people in impoverished regions cannot afford to stop or slow the depletion of natural resources, which leads to further impoverishment as natural resources dwindle.[54] For mountain communities, poverty is a serious problem, especially for farmers due to the low profitability of agricultural practices.[55]

Directly related to the problem of poverty, hunger plagues indigenous mountain communities, especially in areas where climate change impedes local farmers' abilities to produce needed sustenance.[56] In fact, approximately 270 million indigenous mountain peoples in

47. Cha, *supra* note 5, at 187.

48. UNFCCC, United Nations Convention on Climate Change, June 28, 2002, Preamble (1992), *available at* http://unfccc.int/essential_background/convention/background/items/2853.php.

49. *Id*.

50. Beniston, *supra* note 25.

51. *See* Preston et al., *supra* note 43.

52. SCHLOSBERG, *supra* note 14, at 84–85.

53. *See* Mtnforum.org, http://www.reliefweb.int/rw/rwb.nsf/db900sid/EGUA-8A6NHX?OpenDocument.

54. Strategy of the Regional Mountain Centre of Central Asia, 31 (2009) [hereinafter RMCAA].

55. *Id.* at 27.

56. Mountain Partnership, *supra* note 33.

developing countries experience hunger or are at risk of experiencing hunger.[57] Rising population levels all over the world, and especially in developing countries, exacerbate the problems of poverty and hunger as the competition over limited resources becomes fiercer, and the resources diminish under unsustainable practices.[58] For example, early in 2011 food shortages in Bolivia led to massive protests because Bolivian people could not afford the rising prices of food and high inflation rates.[59]

Besides exacerbating existing struggles with poverty, hunger, and limited resources, other climate change impacts will worsen the suffering of indigenous peoples in developing nations due to the direct consequences of changing weather.[60] Sudden shifts in weather patterns due to warming could severely affect water availability.[61] This is particularly true in areas with existing water concerns such as tropical regions and mountainous areas that depend on glaciers that are highly vulnerable to melting.[62] Important infrastructure will be vulnerable as more frequent and violent storms will likely cause serious direct damage, and changing soil conditions in response to drought and permafrost melting will threaten buildings' stability.[63] For many isolated mountainous communities, poor infrastructure is already a problem, and any further damage due to climate change will be difficult to reverse.[64]

These problems threatening basic needs will force many people to migrate in order to survive.[65] In 1995, a conservative estimate approximated that about 25 million people—environmental refugees—had migrated from their homes due to environmental problems along with the associated problems of population pressure and poverty.[66] There were also 135 million people threatened by severe desertification, and 550 million people suffering from chronic water shortages. [67] Predictions suggest that 200 million more people will be permanently displaced due

57. *Id.*

58. Beniston, *supra* note 25.

59. *Thousands Protest in Bolivia over Food Prices*, AFP, Feb. 18, 2011, http://www.google.com/hostednews/afp/article/ALeqM5hXtSC12CZ8YIcoKhqCIBtMO8YrsA.

60. *See, e.g.*, *Indigenous Peoples Must be Included*, *supra* note 9.

61. STERN REVIEW, *supra* note 40, at 82.

62. Beniston, *supra* note 25, at 11–15.

63. STERN REVIEW, *supra* note 40, at 78–79.

64. RMCAA, *supra* note 54.

65. Robert L. Glicksman, *Climate Change Adaptation: A Collective Action Perspective on Federalism Considerations*, 40 ENVTL. L. 1159, 1190 (2010).

66. Norman Myers, *Environmental Refugees: A Growing Phenomenon of the 21st Century*, 357 PHIL. TRANS. R. SOC. B. BIOL. SCI. 609, 609 (2002).

67. *Id.* at 610.

to climate change by 2050,[68] likely outnumbering the total number of traditional refugees migrating for reasons other than climate change.[69] While impacts likely to cause widespread migration like rising sea levels and natural disasters are not as threatening to mountain communities, impacts like desertification and drought will likely be direct causes of migration, especially for the indigenous peoples relying on subsistence farming.[70]

Migration stresses host populations and can negatively affect the culture of migrating populations. Climate change migrants face many dangers; in addition to the migratory journey itself, entire communities will be displaced, and new host countries may suffer from overpopulation and a lack of resources.[71] Assuming environmental refugees and their new host countries could respond to these challenges safely, forced migration from the mountains to urban centers due to climate change is a fundamental injustice to these communities.[72] The indigenous mountain peoples that must leave their homes have not contributed to global warming in any meaningful way, and yet, because their lands are the most vulnerable to climate change, their cultures will disappear.[73]

D. Mountain Ecosystems and Human Communities Need a Voice to Protest the Impacts of Climate Change

The international climate regime has recognized the risks of glaciers melting and failing to provide adequate water to the rest of the world, but the climate regime has failed to focus on the more extreme and immediate impacts on the peoples living directly next to the glacier.[74] To avoid this injustice, indigenous people, like those living in the Bolivian Andes, must find a voice to speak out against becoming the first major wave of victims to climate change. With proper representation in the political and legal realm of their individual countries, indigenous peoples can seek legal remedies for climate change harm, and perhaps they can propel domestic authorities and even international bodies to take real steps to mitigate climate impacts.

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68. STERN REVIEW, *supra* note 40.

69. Bonnie Docherty & Tyler Giannini, *Confronting a Rising Tide: A Proposal for a Convention on Climate Change Refugees*, 33 HARV. ENVTL. L. REV. 349, 349 (2009).

70. *Id.*

71. Myers, *supra* note 66, at 611.

72. *See* Ethan Goffman, *Environmental Refugees: How Many, How Bad?*, CSA DISCOVERY GUIDES, June 2006, at 12.

73. *See id*.

74. *See, e.g.*, *Cancún Agreements*, *supra* note 22.

III. ENVIRONMENTAL RIGHTS AS FUNDAMENTAL HUMAN RIGHTS

Harm from climate change deprives indigenous people of their environmental rights.[75] This Note identifies some of the strongest sources articulating rights that may apply to climate change impacts on indigenous lands. This section highlights existing articulations of environmental rights in international agreements and domestic laws, and then it describes the relevant domestic laws that pertain to Bolivia in formulating rights for climate victims.

Unfortunately, the best articulations of environmental rights often exist in agreements, treaties, convention documents, and other types of "soft law," with the effect that the agreed-upon rights may not be actual rights at all due to their lack of enforceability.[76] Instead, the rights articulated in these documents are perhaps better understood as the possible foundation for agreements creating stronger rights in the future or suggestions of the kinds of rights that *should* be respected yet employ no real punishments for violations.[77]

Creating "hard law" that will protect environmental rights is one crucial step in the path toward environmental justice;[78] however, that step cannot effectively take place until there is a change in rhetoric regarding what those rights represent. Therefore, it is in fact better that the environmental rights listed are not binding commitments yet because the reformulation of rhetoric should take place first.

International agreements create legally recognized human rights even though they are most often expressed in nonbinding terms. In general, the narrower the scope of the law—for example, national legislation has a narrower scope than an international treaty—the more binding the law is, but the less widespread the application of the law.[79] For the purposes of the reformulation of the rhetoric of climate justice, every type of law along the scale is useful and important because it

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75. *See, e.g.*, Universal Declaration on Human Rights, *supra* note 16; *see also* R.S. Pathak, *The Human Rights System as a Conceptual Framework for Environmental Law*, *in* ENVIRONMENTAL CHANGE AND INTERNATIONAL LAW 205 (Edith Brown Weiss, ed., United Nations University Press 1992).

76. *See* Alexandre Kiss, *An Introductory Note on a Human Right to Environment*, *in* ENVIRONMENTAL CHANGE AND INTERNATIONAL LAW 199 (Edith Brown Weiss, ed., United Nations University Press 1992).

77. *Id.*

78. *Id.*

79. *See* Paul C. Szasz, *International Norm-Making*, *in* ENVIRONMENTAL CHANGE AND INTERNATIONAL LAW 41–43 (Edith Brown Weiss, ed., United Nations University Press 1992).

supports the legitimacy behind the idea of environmental justice as civil justice. In terms of making "soft law" into "hard law," this Note suggests that the process should begin from the narrow, domestic, binding level, and then that law should disseminate into the international domain. However, even if the law does not fully realize uniform recognition in the international domain, the change in rhetoric at an international level, along with the "hard law" spread unevenly across domestic domains, could be enough to effect significant change on behalf of climate victims. This Note argues that the change in rhetoric is the first and most important step in this process in order to encourage widespread affirmative action in the face of climate change, regardless of the form of the action or the identity of the actors behind it.

A. Fundamental Human Rights in International Agreements

Some of the strongest articulations of fundamental rights to a healthy environment for indigenous peoples appear in international agreements on human rights and indigenous rights;[80] additional sources include constitutions recognizing rights, judge made law, and statutory provisions for environmental rights.[81] Many international agreements grant basic human rights, more specific rights of indigenous peoples, and other forms of rights that help frame the relationship between humans and the environment.[82]

The Universal Declaration on Human Rights has multiple articles that provide for humans' rights to life, equality, and healthy standards of living, as well as legal remedies for violations of fundamental rights.[83] Article 28 provides that "[e]veryone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully realized."[84] At least in theory, the basic rights to a healthy life and equal treatment under the law, combined with the right

80. *See* Janelle P. Eurick, *The Constitutional Right to a Healthy Environment: Enforcing Environmental Protection Through State and Federal Constitutions*, 11 INT'L LEGAL PERSP. 185, 186 (2001) [hereinafter *The Constitutional Right*].

81. *See* JOHN E. BONINE, STANDING TO SUE: THE FIRST STEP IN ACCESS TO JUSTICE (1999), *available at* http://familylaw.uoregon.edu/assets/facultydocs/jbonine/boninelecture.pdf (summarizing the multiple ways that domestic courts have recognized citizen standing to sue on behalf of environmental interests).

82. Eurick, *supra* note 79.

83. Universal Declaration on Human Rights, *supra* note 16.

84. *Id.* at art. 28.

to "a social and international order" aimed at enforcing those rights,[85] create a strong legal framework for addressing climate change harms that threaten indigenous cultural practices. In the Bolivian context, President Evo Morales has told the United Nations that he believes that access to water should be a human right and that any policies allowing water to be privatized should be illegal.[86]

Other international agreements more explicitly create rights to a healthful environment.[87] The Stockholm Declaration of 1972, for example, states in its Principle 1 that "[m]an has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being . . . ."[88] In parallel fashion, the Rio Declaration of 1992 affirms Stockholm and recognizes in its Principle 1 that "[h]uman beings . . . are entitled to a healthy and productive life in harmony with nature."[89] Indigenous people living already "in harmony with nature"[90] and "in an environment of a quality that permits a life of dignity and well-being"[91] should be able to make strong arguments that they should not lose this relationship with their lands because of the polluting actions of other, more politically powerful, entities. Mountainous communities that lose their ability to graze or grow their crops because of climate change should be able to use these international principles of law to demonstrate that they have a right to compensation or some other remedy for their loss of a healthy environment.

The United Nations Declaration on the Rights of Indigenous Peoples ("Declaration") is perhaps the strongest iteration of specific rights to indigenous peoples. Because of indigenous peoples' close relationship with the land where they have traditionally lived, many of the Declaration's provisions protect that relationship explicitly.[92] Several of the Declaration's articles address indigenous peoples' rights to maintain their culture, practice, and beliefs, including the ways in which these values pertain to their lands.[93] Article 25 provides that indigenous peoples should be able to protect spiritual relationships with their lands

85. *Id.*

86. U.N. Econ. & Soc. Council, Bolivia's President Urges Development of Economic System Based on 'How to Live Well' (April 21, 2008) [hereinafter *Bolivia's President Urges Development*].

87. Eurick, *supra* note 79.

88. *Stockholm Declaration*, *supra* note 16.

89. *Rio Declaration*, *supra* note 16.

90. *Id.*

91. *Stockholm Declaration*, *supra* note 16.

92. *See* U.N. Declaration on the Rights of Indigenous Peoples, *supra* note 16.

93. *Id.*

and resources and to continue these important traditions for their future generations.[94] The clause addressing future generations in this article suggests an interesting argument that indigenous peoples might make for keeping their lands environmentally healthy in order for future generations to enjoy the same spiritual relationship with the same lands as their predecessors.

Article 26 establishes rights over the lands and resources indigenous peoples have traditionally occupied, along with rights to use, control, and develop these lands.[95] It additionally requires states to legally recognize and protect these lands on behalf of their indigenous inhabitants and in accord with the peoples' "customs, traditions, and land tenure systems."[96]

As far as applying these rights to state and private activities affecting lands, Article 5 creates rights for indigenous peoples to maintain their own institutions and to participate fully in the "political, economic, social and cultural life of the State."[97] This provision supports the inclusion of indigenous peoples in political and social endeavors to combat climate change. Alternatively, this right may give states a duty to provide a meaningful forum for indigenous peoples to raise problems, ideas, and plans for the healthy management of their land. Article 8 emphasizes this need for states to protect indigenous peoples' rights to control their land, their cultural values, and their ethnic identities.[98] It also requires that states provide support for preventing and remedying any actions depriving indigenous peoples of their cultural values, ethnic identities, integrity as distinct peoples, or any actions dispossessing them of their lands.[99]

The Declaration is one of the strongest articulations of rights for indigenous peoples dealing with climate change because it speaks directly to issues facing indigenous peoples and their customs and traditions, while recognizing some of their most common threats like dispossession of lands and lack of state support.[100] Bolivia ratified the Declaration[101] and then became the first nation to adopt it in its entirety

94. *Id*.

95. *Id.* at art. 26.

96. *Id.*

97. *Id.* at art. 5.

98. *Id.* at art. 8.

99. *Id.*

100. *Id.*

101. UNITED NATIONS PERMANENT FORUM ON INDIGENOUS ISSUES, MISSION TO BOLIVIA; REPORT AND RECOMMENDATIONS 9 tbl.1, *available at* http://tebtebba.org/index.php/content/151-unpfii-mission-to-bolivia-report-and-recommendations.

as national legislation by passing National Law 3760.[102] Enforcing the provisions in practice and attempting to remedy marginalizing actions on the ground present much more difficult questions that lead to the discussion of a lack of environmental justice, addressed in the next Section of this paper. Although UN Declarations are not legally binding,[103] the Declaration is a powerful expression of explicit and widely agreed-upon rights belonging to indigenous peoples. In Bolivia, the Declaration even served as an "international boost" for President Evo Morales's vision for Bolivia becoming a "plurinational" state "with territorial and administrative autonomy for indigenous peoples."[104]

B. Protection of Fundamental Human Rights in Domestic Law

In the domestic environmental realm and without resorting to principles embodied in international agreements, governments and courts have found multiple methods of recognizing rights corresponding to the environment.[105] Many countries, including India, have explicitly recognized the right to a healthful environment via constitutional provisions granting rights to the people or establishing government duties to protect the environment.[106] Pakistan, Bangladesh, Columbia, Tanzania, and the Philippines do not have precise environmental protections in their constitutions but have been willing to recognize a right to a healthy environment as part of the basic right to life due process provisions of their respective constitutions because the environment is inextricably linked to the right to life.[107] Furthermore, courts in some countries have been lenient in accepting citizen suits on behalf of environmental harms, whether they were brought under specific environmental statutes or argued to be essential as a matter of basic constitutional rights.[108]

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102. Rick Kearns, *U.N. Declaration Becomes Law of the Land in Bolivia*, BOLIVIA RISING (Dec. 10, 2007), http://boliviarising.blogspot.com/2007/12/un-declaration-becomes-law-of-land-in.html.

103. UN Permanent Forum on Indigenous Issues, *United Nations Declaration on the Rights of Indigenous Peoples; Adopted by the General Assembly 13 September 2007*, A Historical Overview, http://www.un.org/esa/socdev/unpfii/en/declaration.html (last visited Jan. 9, 2012).

104. Franz Chávez, *Morales Gets Boost from UN Declaration on Indigenous Rights*, IPS NEWS, Sept. 19, 2007, http://ipsnews.net/news.asp?idnews=39320 [hereinafter Chávez, *Morales Gets Boost*].

105. Eurick, *supra* note 79.

106. *Id.* at 189–90.

107. *Id.* at 189–200.

108. *See* BONINE, *supra* note 80.

The new Bolivian National Constitution, approved in 2009, expressly recognizes many rights of Bolivian citizens, including equal rights for men and women, rights to basic facilities, and various rights to indigenous peoples.[109] The constitution also creates a right to autonomous, indigenous self-government and grants exclusive property rights to indigenous communities over forest resources on their lands.[110] Furthermore, the constitution adds a new indigenous judicial system that is equal in stature to the ordinary judiciary and creates a Plurinational Constitutional Court to uphold the many principles embodied in the new document.[111] Bolivian citizens now have a strong source of rights granting individuals' claims that could be brought to the new Plurinational Constitutional Court, and doing so would in fact be in accord with the new "democratic, intercultural, and decentralized" spirit of the nation.[112] Beyond the common avenues to environmental justice like citizen suits and constitutional protections, Bolivia also has an explicit environmental statute on the books.[113] The environmental statute, *Ley* 1333, forbids anyone from taking actions that damage, deteriorate, or destroy the environment.[114] *Ley* 1333 is the most direct and immediately applicable method by which citizens can seek remedies for violations of environmental rights.

IV. CLIMATE CHANGE AS AN ENVIRONMENTAL JUSTICE PROBLEM

This section frames human rights violations due to climate harm as examples of the lack of environmental justice because poor and marginalized communities are forced to bear a disproportionate environmental burden.[115] It then addresses the challenge of creating accountability for harms arising out of the collective and anonymous nature of the climate change problem without a comprehensive international framework with the capacity to hold entities liable for specific harms. The solution, as presented in the next section, is that environmental justice must be re-categorized as a civil rights issue. Citizens must demand domestic avenues to justice in the judicial system,

109. MAURICIO IPIÑA NAGEL, THE BOLIVIAN LEGAL SYSTEM AND LEGAL RESEARCH (2009), *available at* http://www.nyulawglobal.org/globalex/Bolivia.htm.

110. *Id*.

111. *Id*.

112. *Id*. at 2.

113. *Ley* 1333, *supra* note 18.

114. *Id*.

115. Cha*, supra* note 5.

and judiciaries must be willing to recognize rights to a healthy environment and remedies in the interest of preserving indigenous peoples' way of life. International lawyers and activists must demand a change in rhetoric that will include environmental justice as civil rights in international negotiations, treaties, and other agreements.

A. Defining Environmental Justice

"Environmental justice" is a term widely used to highlight the disproportionate environmental burdens placed on "poor and marginalized communities" and to demand remedies to the unfair distribution of harm. [116] Different advocacy groups tend to base their definitions on the types of remedies that they seek.[117] In his book on defining environmental justice, David Schlosberg identifies four distinct strains of environmental justice arguments represented by various advocacy groups and their causes.[118]

Groups concerned with the unequal distribution of wealth and resources define environmental justice in terms of equity in distribution. This definition is perhaps the most familiar characterization of environmental justice to date.[119] Environmental justice as an equity issue focuses on the harms caused by rural communities' challenges in maintaining property rights and access to natural resources.[120] They call for local ownership and control over natural resources, arguing that indigenous peoples' local knowledge will help to preserve and sustain the biodiversity of the region.[121] These groups protest outsider action that threatens local control over natural resources, such as government policies that encourage trade in resources for capital, because they inhibit local communities' ability to exercise control over their traditional lands.[122] Arguments surrounding unfair distribution of resources focus on the injustice inherent in these actions and policies, especially because local indigenous communities rely on those resources to survive.[123]

A second type of environmental advocacy group defines environmental justice as the recognition of "diverse cultures, identities, economies, and ways of knowing" presented by "the relationship between social, cultural, and ecological misrecognition and community

116. *Id.* at 186; SCHLOSBERG, *supra* note 14.
117. SCHLOSBERG, *supra* note 14, at 4–5.
118. *Id.* at 5.
119. *Id.* at 82.
120. Cha, *supra* note 5, at 186–87.
121. *Id*.
122. *Id*.
123. *Id.* at 187.

devastation, the lack of democratic participation in the construction and ongoing processes of governing institutions, and the debilitation of many individual and community capacities necessary for healthy functioning."[124] Two important demands include: (1) recognition that indigenous communities live in areas where the majority population does not acknowledge them; and (2) recognition that indigenous cultures and traditions are just as valid as other cultures and traditions.[125]

A third type of advocacy group defines environmental justice as providing indigenous communities with access to procedural justice or the ability to participate in legal and other institution building processes.[126] This group frames the lack of environmental justice as forcing marginalized communities to live with a disproportionate share of environmental degradation because they do not have access to policy making processes, leaving them with no form of redress for environmental harms.[127]

Finally, the fourth type of advocacy group argues that environmental justice must address reduced capabilities and functioning of local communities due to environmental harms.[128] In this conception, environmental justice is degraded "as a process that takes away the ability of individuals and their communities to fully function, through poor health, destruction of economic livelihoods, and general and widespread environmental threats."[129] Indigenous peoples, being more vulnerable to change, less able to adapt, and more reliant on their lands and resources, experience severely reduced capabilities resulting from any threats to their environments.[130] This category of environmental justice is fairly broad, addressing any change in environment that reduces the functioning of the community, including "the impact of culture, race, gender, age, class, and power relations on issues ranging from health-related agricultural issues to inner-city toxic contamination of children."[131] One major problem that creates a loss of functioning is forced migration from traditional lands into urban centers in order to survive, which denies indigenous peoples the opportunity to use their unique capabilities that centered exclusively on a rural lifestyle.[132] Beyond immediate suffering due to loss of capabilities, forced migration

124. SCHLOSBERG, *supra* note 14, at 86.
125. *Id.* at 87.
126. *Id.* at 89.
127. Cha, *supra* note 5, at 188.
128. SCHLOSBERG, *supra* note 14, at 91.
129. *Id.* at 80.
130. *Id.* at 91.
131. Cha, *supra* note 5, at 189.
132. SCHLOSBERG, *supra* note 14, at 92.

is a major challenge presented by climate change because it ensures loss of culture, adding the problem of "cultural" survival to that of outright survival.[133]

B. Accountability when Climate Change Causes the Degradation of Environmental Justice

The climate change problem presents a unique challenge for framing environmental justice.[134] The nature of climate change makes definition, redress, accountability, and enforcement very difficult.[135] Because the harm arises from a collective contribution of greenhouse gases into the atmosphere, there are numerous distributional challenges that arise in any effort to provide redress or assign responsibility to specific actors generally.[136] Instead, the carbon stock in the atmosphere has built up over the span of life on Earth, and the over-accumulation of carbon due to anthropogenic emissions has accrued since the industrial age.[137] As the carbon concentration in the atmosphere is now reaching unprecedented high levels, the impacts of the warming themselves cannot be attributed to specific entities, and this is a major challenge to climate justice.[138]

The fact that carbon lingers in the atmosphere for many years creates a temporal anonymity in emissions, and the fact that once carbon is emitted, it joins the common stock in the atmosphere without geographical distinction creates a spatial anonymity in emissions.[139] Temporal and spatial anonymity make it difficult to determine which emissions are responsible for individual harms on a technical level.[140] Instead, policymakers must attempt to place legal accountability on parties based on their general contributions to the problem. Accountability standards may be based on a party's percentage of overall emissions, usage of best practices, and compliance with voluntary

133. *Id*. at 93.

134. *See generally* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, FOURTH ASSESSMENT REPORT, WORKING GROUP 3: MITIGATION OF CLIMATE CHANGE (2007) [hereinafter IPCC MITIGATION] (discussing various mitigation strategies and the accompanying risks, uncertainties, and challenges that arise due to the complicated nature of climate change).

135. *Id.* at 119.

136. *See id.* at 127.

137. IPCC POLICYMAKERS, *supra* note 2, at 2.

138. *See generally* IPCC MITIGATION, *supra* note 134; *see also* IPCC POLICYMAKERS, *supra* note 2, at 2.

139. *See* IPCC MITIGATION, *supra* note 134.

140. *See id.*

commitments to reductions.[141] Without specific accountability, any attempt to pursue justice for climate change harm becomes complicated and highly controversial. This is *the* challenge in creating environmental justice for those affected most by climate change.

V. RE-CHARACTERIZING THE CLIMATE CHANGE PROBLEM IN ORDER TO INCREASE THE AVAILABILITY OF SOLUTIONS

The climate change problem must be recast as a civil rights problem in order to expand the availability of solutions, and the definition of environmental justice must be broadened in order to include all of the factors that contribute to a lack of climate justice. Indigenous groups and those living in poverty have historically been excluded from the legal system to a much greater extent than groups that are better represented among decision makers. Reframing the problem in broader terms and in the rhetoric of civil rights will help propel the issue to the level of political attention and popular recognition necessary to encourage united efforts toward solutions.

A. Reframing the Definition of Environmental Justice to Encompass All Factors Contributing to a Lack of Climate Justice

Due to the anonymous nature of climate change contributors, advocates for environmental justice need to reframe the definition of environmental justice to encompass all of the contributing factors to the problem. This is in contrast to focusing on only one category of redress, like broader participation or better distribution of resources.[142] The definition of environmental justice must harness all four focuses described above in this section: distributional inequities, recognition, participation, and loss of capabilities.[143] Advocates must embrace a broader sense of responsibility that attaches to all parties involved in emission activities. This implies greater responsibility for bigger

141. *See generally* MEINHARD DOELLE, FROM HOT AIR TO ACTION? CLIMATE CHANGE, COMPLIANCE AND THE FUTURE OF INTERNATIONAL ENVIRONMENTAL LAW (Thomson Carswell 2005).

142. *See* JOSEPH WAYNE SMITH, ET AL., CLIMATE CHANGE AS A CRISIS IN WORLD CIVILIZATION; WHY WE MUST TOTALLY TRANSFORM HOW WE LIVE 52 (The Edwin Mellen Press 2007).

143. SCHLOSBERG, *supra* note 14, at 5.

emitters, for unsustainable practices, and for any activities that can be characterized as unhealthy for the environment. The hope is that a broad definition of environmental justice can capture harmful behaviors that may have avoided accountability previously due to the anonymity problem in climate change.

Eventually, this new definition of who is responsible for environmental harms may create accountability at an individual level. Because the science does not point to specific bad actors from which injured parties may seek redress, the justice system must provide other redress for those parties separately. The justice movement must seek redress from any bad actors that it can characterize as contributors to excess carbon accumulation. The causes of climate change are fragmented temporally and spatially from the eventual harm caused,[144] and in the same way, justice for the contributors must be fragmented and pursued separately from the remedies for the injured, with the punishment and the remedy existing entirely apart from the other. The legal process by which the punishment and the remedy are realized should be a separate cause of action for each, likely taking place at different times and in different places. Once all activities that contribute to the problem become characterized as part of the problem, then victims can pursue all avenues accompanying the four types of environmental justice, expanding the likelihood that indigenous peoples can achieve real justice in the process. Because climate change is a global problem, environmental justice must be framed as a global movement.

B. The Importance of Accountability for Harms to Underrepresented Groups

Another reason that the definition of environmental justice must expand is that avenues to accountability must be broad in order to reach the people who are excluded from the system due to the fact that they are poor, indigenous, or both.[145] While accountability is a special problem for addressing climate change because there are rarely situation-specific bad actors, accountability is a fundamental problem in the broader environmental justice context. A major problem is that socioeconomic and environmental harms are poorly articulated in the law, making them

144. *See* IPCC MITIGATION, *supra* note 133, at 127.

145. *See* U.N. Econ. and Soc. Council, Rights Violations of Indigenous Peoples 'Deep, Systemic and Widespread' (April 22, 2010), http://www.un.org/News/Press/docs/2010/hr5016.doc.htm (statement of James Anaya, Special Rapporteur, on indigenous peoples being excluded from state .decision making).

difficult to remedy.[146]

Environmental war crimes (intentional damage to the natural environment as a tactic of war), for example, are exceptions to that norm because their definitions have been further developed in conventional and customary international criminal law.[147] Yet, it is still unclear whether or not it would improve accountability to increase individual criminal trials and civil claims.[148] Mark Drumbl argues that accountability for environmental war crimes may become just as robust with investments in alternative types of accountability, like "truth commissions, reparations, constitutional reform, memorialization, public inquiries, affirmative action, and instantiating pedagogy."[149] Drumbl's conclusion that environmental war crime accountability may not be improved by traditional means reinforces the idea that environmental justice is an incoherent and disjointed problem that requires creative responses along various avenues.

The reason that improving or ramping up the adjudicative process might not necessarily achieve further accountability for environmental war crimes is—according to the theory behind this paper—that there must first be a supportive and inclusive conception of environmental justice at play in efforts to seek redress for environmental harms, even for specific crimes that can be traced to a bad actor. Environmental war crimes make up one category of environmental justice that is particularly well-defined and legally founded,[150] yet the judicial system cannot achieve accountability for these crimes to the degree that it has for core civil and political rights violations.[151] Environmental justice must be recast as civil justice so that environmental crimes, like war crimes, can achieve adequate force in the law.

C. Towards Recasting Environmental Justice as Civil Rights

The problem is one of definition, so there are a number of ways in which activists and peoples' movements must endeavor to redefine environmental justice. First, the term "environmental justice" must broaden to include each of the iterations that have been used so far in environmental rhetoric (distributional inequity, recognition, participation,

146. DRUMBL, *supra* note 13, at 5.
147. *Id.* at 5, 7.
148. *Id.*
149. *Id.* at 21.
150. *Id.* at 5.
151. *Id.* at 20.

and reduced capabilities)[152]—along with any other strands of environmental justice—in a comprehensive, collective form embodying the whole problem and all of the parties affected. Second, the remedies must similarly broaden their applicability and demands for accountability so that the new norm for environmental justice will be expanded options available to injured parties, allowing for creative solutions and more solutions overall. To this effect, activists and advocates must pursue all methods of expanding accountability in environmental justice in the international context, such as negotiating treaties for international and environmental rights, expanding customary international law, and arguing rights violations under treaties and other sources. In the domestic context, activists and advocates must pursue expanded avenues to environmental justice via lobbying efforts, increased political pressure, intensified media exposure for the issues, increased civil claims on behalf of domestically recognized rights, and broader standing for environmental harms.

Finally, at both the international and domestic level, the environmental justice groups need to re-characterize environmental harms as civil rights violations. This step of harnessing the civil rights rhetoric will accomplish points one and two above: broadening the definition of environmental harms and the remedies available to redress such harms. The civil rights movement will help to reframe the issues from isolated struggles with changing climatic conditions to violations of core civil rights belonging to vulnerable and marginalized peoples. The movement should seek to unite human rights, environmentalism, and social justice[153] under the umbrella of civil rights. The civil rights movement has successfully redefined human rights justice before, and in doing so, it achieved radical changes in popular thought and created legal remedies for equal rights violations in situations where those rights were previously inconceivable.[154] Because the environment has tended to fall to the periphery of social issues, it has failed to be the vehicle for indigenous rights in the face of climate change.[155]

However, human rights and civil rights are more readily recognized in domestic courts and international discussions. If applied to the environmental justice problem, human and civil rights could push climate change harm into a new consciousness that would provide for better solutions, more vibrant discussion, and action on the ground to

152. SCHLOSBERG, *supra* note 14, at 5.

153. *Id.*

154. *See, e.g.*, Jacqueline Jones Royster & Molly Cochran, *Human Rights and Civil Rights: The Advocacy and Activism of African-American Women Writers*, 41 RHETORIC SOC'Y Q. 213, 223–228 (2011).

155. *See* DRUMBL, *supra* note 13.

prevent and adapt to climate change. Furthermore, environmental rights violations *are* civil rights violations because they discriminate against poor, marginalized indigenous groups, and there is no measure of equality when it comes to environmental rights.[156] Therefore, it is not only useful to capture environmental justice under civil rights rhetoric, but it is also a more accurate characterization. In fact, considering environmental harms separately from other civil and political rights violations is an arbitrary distinction, and it creates an incomplete conception of justice.[157]

Treating environmental issues in the same context as civil rights is a means through which the actual concerns of local communities, such as indigenous groups, can be heard in a manner that may offer real solutions.[158] Small communities in the environmental justice movement in the United States have used this approach, achieving the positive result of providing politically marginalized individuals with additional tools in the fight against the "disproportionate environmental burden."[159] The reason that civil rights is the method by which environmental justice should seek to broaden its applicability and enforceability is that the civil rights tradition in the United States was one of the most compelling movements for the equality of races.[160] Because the United States has a rich history of civil rights, "[g]rassroots environmental protests have forced American society to recognize the conjunction of race, gender, indigenous culture, and class in contesting the landscapes and workscapes of environmental inequality."[161] Environmental movements in the United States have been able to successfully reframe environmental interests in terms of civil justice, and therefore, "political economy must focus on this conjunction in order to explain the unequal pattern of environmental harm and risk,"[162] and "the critique of 'environmental justice' has emerged as a potent challenge for political economy."[163]

Such a "strong, preexisting, race-based" tradition has not manifested in many other places as it did in the civil rights movement in the United

156. *Id.* at 5.

157. *See* SCHLOSBERG, *supra* note 14.

158. Cha, *supra* note 5.

159. *Id*. (citing Robert D. Bullard, *Anatomy of Environmental Racism and the Environmental Justice Movement*, *in* CONFRONTING ENVIRONMENTAL RACISM: VOICES FROM THE GRASSROOTS 15, 22 (Robert D. Bullard ed., 1993)).

160. *See, e.g.*, Royster & Cochran, *supra* note 154.

161. John Byrne et al., *A Brief on Environmental Justice*, *in* 8 ENVIRONMENTAL JUSTICE 3, 7 (John Byrne et al., eds., Transaction Publishers 2002).

162. *Id*.

163. *Id*.

States, and for that reason environmental justice has largely failed to capture a sufficiently broad, powerful audience in order to implement real avenues to justice for indigenous peoples.[164] Although some indigenous groups have occasionally used the language and methods of the civil rights movement, they have not been able to achieve these goals because the success of the environmental justice movement requires more association with the civil rights movement than merely using some of its tools. Instead, environmental justice must become nested under civil rights to the point that people begin to feel strongly that having a healthy environmental is an individual's civil right.[165] The "rights" discussed in Section III of this Note must be removed from abstract agreement on a theoretical level and transformed into practical demands in the name of civil justice.

The challenge for international environmental groups is to enact this transition via the rhetoric because "[t]he thing the civil rights movement had that the environmental community . . . does not enjoy right now is a unified sense of dissatisfaction, outrage, indignation . . . with the current status quo."[166] As opposed to wasting time, energy, and expense in creating an original voice that embodies the right tenor of "dissatisfaction, outrage, [and] indignation,"[167] environmental justice groups should simply recognize the problem as the next major civil rights problem for the world. It is not necessary to distinguish rights regarding the environment as separate from human rights, indigenous rights, or basic due process rights, because climate change will almost surely reach the level of devastation for communities around the world that will implicate each of those categories of civil rights. Characterizing the climate justice problem as the next civil rights problem is one possible way to make an impact on law and policy makers, using the civil rights movement's historically recognized strength, equality implications, and emphasis on the *justice* part of the problem.[168]

Re-characterizing environmental justice as a civil rights problem is feasible. The process requires a broadening of the scope of environmental justice as discussed previously, and subsequent introduction of a new all-encompassing concept of environmental justice into the domain of civil rights. The groundwork for both of these refocusing efforts has already been laid by activists from all sides of the

164. SCHLOSBERG, *supra* note 14, at 80.

165. *Id.*

166. *Environmental Protection in the Developing World: A Look at the Responsibility of State and Non-State Actors*, 15 FORDHAM ENVTL. L. REV. 403, 419–20 (2004) (Statement of Samuel LaBudde) [hereinafter *Environmental Protection*].

167. *Id*.

168. DRUMBL, *supra* note 13, at 19–20.

problem.[169] The existing environmental justice rhetoric suggests that environmental rights are civil rights, indicating that this reframing has support in the field and is already a logical connection for many movement groups and scholars.[170] For example, in her article, "Environmental Justice in Rural South Asia," J. Mijin Cha explains that environmental justice requires that "clean air and water . . . and nontoxic living conditions must be viewed as basic civil rights, not just environmental concerns, which are no less important than freedom of speech and the freedom to vote."[171] The Indigenous Environmental Network provides the indigenous perspective, characterizing the degradation of environmental justice as a "new form of racial discrimination against Indigenous Peoples," and arguing that the "lack of recognition of, and religious intolerance toward, traditional indigenous beliefs and practices has led to the denigration, prohibition, and persecution of [i]ndigenous spiritual beliefs and ceremony."[172] The only way to remedy this problem is through the vehicle of civil rights, a movement that has already been created, identified with justice for marginalized groups, and proven to create results in domestic courts and common discourse.[173] These are the precise goals of the environmental justice movement, and civil rights will help bridge the gap in the rhetoric in order to bring accountability to climate change harm.

VI. THE BOLIVIAN ANDES EXAMPLE

Bolivia is the ideal ground for recasting environmental and climate justice as a civil rights problem and transforming that new concept of justice into recognizable rights for indigenous peoples. First, the Bolivian people have much to lose at the hands of climate change due to extreme poverty, vulnerable ecosystems, and little capacity to adapt.[174] Second, the Bolivian culture, political leadership, and indigenous tradition provide for a unique atmosphere that supports indigenous rights in the

169. *See* SCHLOSBERG, *supra* note 14 (arguing for broadening the environmental justice definition); Cha, *supra* note 5 (characterizing environmental justice as a civil rights issue).

170. *See* Cha, *supra* note 5, at 189.

171. *Id*. (internal quotations omitted).

172. SCHLOSBERG, *supra* note 14, at 88 (internal quotations omitted).

173. *See, e.g.*, Royster & Cochran, *supra* note 154, at 217 (discussing the challenge of bringing other human rights debates into the vibrant and recognized arena of civil rights discourse).

174. *See* Bill Weinberg, *Bolivia's New Water Wars: Climate Change and Indigenous Struggle*, 43 NACLA REPORT ON THE AMERICAS 19, 20 (2010) (discussing the climate change impacts facing Bolivia).

domestic and international realm.[175] Finally, it is in Bolivia's self-interest to provide domestic justice on the climate change issue in order to legitimize its vocal opposition to the failure to agree to enforceable environmental rights in international agreements like the Cancún Agreements.[176] By making good on its international position at the domestic level, it may also achieve greater international political legitimacy in general.

A. Bolivians Have Much to Lose at the Hands of Climate Change

Bolivia is the poorest country in South America.[177] The 9.6 million people living there are spread across the highly variable geography of the country "from the Andes mountains, highland valleys and *Altiplano* in the west to the arid Chaco and tropical lowlands of the Amazon jungle in the east."[178] The most destitute citizens are the sixty percent of the population who identify as indigenous, mostly Quechua and Aymara Indians, many of them living in the mountainous highlands,[179] along with other smaller groups like the Chiquitano and Guaraní,[180] many of them living in the jungle areas.[181] A study of some of the predominantly indigenous Bolivian towns and communities revealed that ninety-six percent of the people are living in extreme poverty, forty-three percent are suffering from malnutrition, and the infant mortality rate is 129 per every 1,000 births.[182]

The majority of Bolivians live on the *Altiplano*, the high plateau between two chains of Andes Mountains, sitting at about 12,000 feet, making it one of the highest inhabited regions in the world.[183] Many of

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175. *See Bolivia's President Urges Development*, *supra* note 86.

176. *See* Pablo Solon, *Why Bolivia Stood Alone in Opposing the Cancún Climate Agreement,* THE GUARDIAN, Dec. 21, 2011, *available at* http://www.guardian.co.uk/environment/cif-green/2010/dec/21/bolivia-oppose-cancun-climate-agreement.

177. Franz Chávez, *Not Another 500 Years of Marginalisation, Say Indigenous Leaders*, INTER PRESS SERVICE, June 13, 2007, *available at* http://ipsnews.net/news.asp?idnews=38154 [hereinafter Chávez, *Not Another 500 Years*].

178. *Id*.

179. *Id*.

180. U.S. Dep't of State, *Background Note: Bolivia*, (May 13, 2010), http://www.state.gov/r/pa/ei/bgn/35751.htm.

181. Chávez, *Not Another 500 Years, supra* note 177.

182. *Id*.

183. Tim Eigo, *Overview*, COUNTRIES AND THEIR CULTURES: BOLIVIAN AMERICANS, http://www.everyculture.com/multi/A-Br/Bolivian-Americans.html (last visited Mar. 22, 2012).

the two-thirds of Bolivians living in poverty are subsistence farmers on the *Altiplano*,[184] making them heavily reliant on the climate and land rights.[185] In fact, the Andean highlands and *Altiplano* are among the few areas in the world where people practice subsistence farming at such a high altitude, and this practice creates numerous challenges for the poor indigenous communities relying on variable climate conditions in the cold, windy Andes Mountains.[186] Studies have shown that deteriorating conditions for subsistence farming and livestock grazing are not due to livestock practices like over-grazing, but instead are due to changes in climate like sporadic rainfall and drought.[187] Due to the already fragile nature of the *Altiplano* climate for farming and raising livestock, many indigenous families must send a member of the family to work in lowland cities in Bolivia or Argentina to supplement their meager income.[188] If the climate worsens any further with reduced rainfall and prolonged drought, these indigenous communities that already supplement their traditional livelihoods with work in bigger cities[189] will have to permanently migrate to the lowlands.[190] The vulnerability of the majority of Bolivia's indigenous population, especially those living in extreme poverty and subsisting on farming on the *Altiplano*, provides a strong popular will to compel change on behalf of the state, and the Bolivian judiciary should be willing to recognize that need.[191]

Another motivating factor in the lives of Bolivians is the exorbitantly high price of food.[192] For example, in 2007, food prices rose much faster than the inflation rate for many countries in South America, and they rose the fastest in Bolivia, Brazil, and Chile.[193] Food prices

184. U.S. Dep't of State, *Background Note*, *supra* note 180.

185. *See* Valdivia et al., *Adapting to Climate Change in Andean Ecosystems: Landscapes, Capitals, and Perceptions Shaping Rural Livelihood Strategies and Linking Knowledge Systems*, 100 ANNALS ASS'N AM. GEOGRAPHERS 818, 820 (2010).

186. U.N. EDUCATIONAL, SCIENTIFIC, AND CULTURAL ORGANIZATION, SUSTAINABLE MANAGEMENT OF MARGINAL DRYLANDS 23, *available at* http://www.unesco.org/science/doc/mab/SUMAMADProjectDocumentPhase2.pdf [hereinafter UNESCO, SUSTAINABLE MANAGEMENT].

187. *See* R. A. Washington-Allen et al., *Change Detection of the Effect of Severe Drought on Subsistence Agropastoral Communities on the Bolivian Altiplano*, 19: 7 INT'L J. REMOTE SENSING 1319, 1319 (1998).

188. David Preston et al., *supra* note 43, at 146.

189. *Id.* at 146.

190. UNESCO, SUSTAINABLE MANAGEMENT, *supra* note 186.

191. *See* Bryan R. Roberts & Alejandro Portes, *Coping With the Free Market City: Collective Action in Six Latin American Cities at the End of the Twentieth Century*, 41 LATIN AM. RES. REV. 57 (2006), on the idea that people react to "constraints, crises, and opportunities" by popular collective demand-making.

192. *See id*.

193. The World Bank, Latin America & The Caribbean, *What Are the Facts About*

were so high in 2008 that President Morales and the farmers backed off their opposition to foreign limits on growing coca, and the farmers agreed to switch some of their crops over to rice in return for loans backing their switch.[194] Part of the incentives to switch may have been that the price of rice in Bolivia had tripled over the course of that year.[195] Unfortunately, food prices have only gotten worse since 2008, "following a global trend that is worrying the UN Food and Agriculture Organization."[196] In February 2011, thousands of Bolivians protested all over the country over rising food prices and food shortages, causing major cities and important sectors to shut down.[197] These protests grew so violent—with explosions set off in Oruro during a visit by President Morales—that Morales had to flee the public event.[198] The Bolivian population is suffering from hunger, and their protests demonstrate that they have the popular will and motivation to demand change.[199] Extreme poverty, hunger, vulnerability to climate change, and increased suffering due to rising food prices put the Bolivian population in the position of fighting for survival,[200] and these abject conditions mean that the country is ripe for popular action to take up the demands for climate justice.

If there was a time to implement on-the-ground justice in Bolivia, it is now. The people have basic human rights,[201] constitutional rights,[202] and national legislation[203] to back up their demands, and because they are fighting for basic needs, action on climate change cannot wait. The majority of Bolivians have been suffering in extreme poverty for decades, and so they should not accept empty promises from their government to add "rights" for the indigenous,[204] just as their government should not accept overly simple economic solutions to the

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Rising Food Prices and Their Effect on the Region?, http://go.worldbank.org/CJYWKZPMX0 (last visited Mar. 22, 2012).

194. *Rise in Food Prices Has Bolivian Coca Farmers Planting Rice*, N.Y. TIMES, July 20, 2008, *available at* http://www.nytimes.com/2008/07/20/world/americas/20ihtbolivia.1.14625676.html?_r=1.

195. *Id.*

196. *Thousands Protest in Bolivia over Food Prices*, AFP, Feb. 19, 2011, http://au.finance.yahoo.com/news/Thousands-protest-Bolivia-afp-2855564450.html.

197. *Id.*

198. *Bolivian President Evo Morales Flees Food Price Protest*, BBC NEWS, Feb. 10, 2011, http://www.bbc.co.uk/news/world-latin-america-12427057.

199. *See* Roberts & Portes, *supra* note 191.

200. *See* Valdivia et al., *supra* note 185.

201. *See, e.g.*, Universal Declaration of Human Rights, *supra* note 16.

202. MAURICIO IPIÑA NAGEL, *supra* note 109.

203. *Ley* 1333, *supra* note 18.

204. *See* Declaration on the Rights of Indigenous Peoples, *supra* note 16.

complex scientific and collective problem of global warming in unenforceable international treaties.[205] In other words, the problem of justice is too strong in Bolivia for developed nations to continue failing to address the problem of climate change while promising that they will pay for needed adaptation when the time comes.[206]

B. Bolivia's Unique Culture and Political Landscape Enable it to Pursue Environmental Justice for Indigenous People

While the Bolivian populace is largely indigenous and very poor, the rest of the world cannot afford to ignore the country, especially if the people conceive of a united voice with which to propel their legitimate demands for civil justice. As opposed to many other countries with indigenous mountain populations, Bolivia has both strong institutions[207] and valuable resources.[208] Bolivia has the second largest natural gas reserves in South America and contracts to sell gas to other South American countries, including a contract with Brazil through 2019.[209] Bolivia is also home to almost half of the world's lithium, a mineral that carmakers need to power hybrid and electric cars.[210] Bolivia has a strong government, and under the presidency of Morales, the institutions have only been strengthened with greater constitutional rights and indigenous representation.[211] Due to the strength of Bolivia's institutions and its store of resources, if Bolivians are able to bring a popular, coherent message of civil justice into international climate discussions, they are likely to influence many other developing nations, especially nations from the southern bloc and other South American nations.

The second reason that Bolivia should be the leader in recasting environmental justice as a civil right is that the country has a strong new tradition of advocating indigenous rights internationally.[212] As a state leader, President Morales is unique in that he is the first indigenous president of a South American country, [213] he strongly and actively

205. *See* Szasz, *supra* note 79.

206. *See* DOELLE, *supra* note 141, at 62–63.

207. *See* U.S. Dep't of State, *Background Note*, *supra* note 180.

208. *See id.* at "Economy."

209. *Id.*

210. Shani Saxon-Parrish, *World Looks to Bolivia for Alternative Fuel* (Feb. 3, 2009), http://www.latina.com/lifestyle/news-politics/world-looks-bolivia-alternative-fuel.

211. U.S. Dep't of State, *Background Note*, *supra* note 180, at "Government Organization."

212. *See, e.g.*, *Bolivia's President Urges Development*, *supra* note 86.

213. Mariela Rosario, *Bolivians Approve New Constitution: Empower Indigenous*

defends indigenous rights in both domestic[214] and international contexts,[215] and he is an advocate for action on behalf of the rights of the Earth and indigenous communities in the face of climate change.[216] Morales emphasizes his role as a social movement leader, advocating for equality for all peoples, and speaking out on behalf of indigenous rights.[217] Morales told the United Nations that he believes "the best way forward lay in social movements, such as the indigenous people's movement, which would not fall silent until it had brought about change."[218]

When Morales first took office in December of 2005,[219] he told crowds in La Paz, "The colonial state ends here. Here we begin to reach true equality for all Bolivians."[220] As the first head of state to address the UN Permanent Forum on Indigenous Issues ("UNPFII") in 2008, Morales proclaimed that "indigenous peoples in Bolivia had 'achieved the Presidency,' enabling it to proceed in the fight for justice and equality."[221] The concept of expanded rights, especially for the indigenous, is one of Morales's deepest concerns for his country, as evidenced by his embrace of social movements, attention to the peoples' voice, and focus on justice for indigenous peoples facing "extermination."[222] One of Morales's campaign promises and one of his first tasks upon taking office was to summon a Constituent Assembly to rewrite the constitution for the country he officially renamed the "Plurinational State of Bolivia."[223] There was much internal opposition and conflict during the process of rewriting the constitution in reaction to Morales's reforms, like those declaring Sucre the only official capital city, decentralizing government power, and placing new limits on land ownership, but ultimately in 2009—after three years of political and social struggles—the new constitution was approved.[224] The constitution,

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Groups (Jan. 26, 2009), http://www.latina.com/lifestyle/news-politics/bolivians-approve-new-constitution-empower-indigenous-groups.

214. *See id*.

215. *See Bolivia's President Urges Development*, *supra* note 86.

216. *See id.*

217. *Id*.

218. *Id*.

219. John Hunt, *Evo Morales Elected Bolivian President in Landslide Victory*, MY LATINO JOURNAL, Dec. 18, 2005, http://nylatinojournal.com/home/eagles_in_fall,_lions_in_spring/news/evo_morales_elected_bolivian_president_in_landslide_victory.htm.

220. Rosario, *supra* note 213.

221. *Bolivia's President Urges Development*, *supra* note 86.

222. *Id.*

223. Chávez, *Morales Gets Boost*, *supra* note 104.

224. Rosario, *supra* note 213.

as discussed in Section III of this Note, established many rights for Bolivians including equality for men and women and rights of indigenous peoples to autonomous self-government.[225] Additionally, Bolivia was one of the first countries to adopt and ratify by domestic law the provisions of the UN Declaration on the Rights of Indigenous Peoples, according to the UNPFII in April 2008,[226] demonstrating that even in the international politicized context of the United Nations, Bolivia is a leader in advocating indigenous rights.

The fact that Morales has carried through with his controversial reforms and positions in the name of equal rights for indigenous Bolivians is indicative of a trend in which state leadership is entering a new phase of popular representation and alternative priorities. This is in contrast to elite outsider rule that has dominated in developing nations for many years.[227] Morales's stance is reminiscent of the rich history in Bolivia, especially among the indigenous Aymara and Quechua groups, of resisting colonial oppression,[228] and it is this revolutionary spirit that could provide the fuel for creating an international indigenous and civil rights movement. It is obvious to many that Morales's changes indicate "a new era of equality for the historically marginalized indigenous community," especially considering the fact that "[o]nly 50 years ago, Aymar and Quechua were not even allowed to walk in the central square of La Paz, and now one of them is president."[229] One representative of an indigenous group from La Paz said, "[a] new era is starting now in which indigenous people will be the citizens of this country."[230]

In his 2008 address to the UNPFII, Morales suggested that gatherings of indigenous peoples like the UNPFII must work to spread their message asking for inclusion and access to other world leaders.[231] This mobilization of indigenous peoples on behalf of rights and representation is the precise action that this paper argues could begin on the ground in Bolivia, and then spread to international forums via the changed rhetoric of environmental justice. Morales's unique role as an indigenous leader who is willing to spread messages of indigenous

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225. NAGEL, *supra* note 109.

226. *Bolivia's President Urges Development*, *supra* note 86 (statement of Evo Morales Ayma).

227. *See, e.g.*, Sinclair Thomson, *"We Alone Will Rule . . ." Recovering the Range of Anticolonial Projects Among Andean Peasants (La Paz, 1740s to 1781)*, 8 COLONIAL LATIN AM. REV. 275 (1999).

228. *See id.*

229. Rosario, *supra* note 213.

230. *Id.*

231. *Bolivia's President Urges Development*, *supra* note 86 (statement of Evo Morales Ayma).

equality in international contexts[232] is one of the main reasons that the proposition of civil justice for indigenous peoples facing climate change is politically feasible in his country.

Morales has also stated that it is "important to promote unity and diversity of economies, and that the indigenous movement should put forth a call for unity and diversity in the spirit of multilateralism."[233] This idea of plurality and diversity in unity supports the very basis of the strength of a peoples' movement. Distinct indigenous groups identify with other groups simply on the basis of identifying as indigenous, which may give the movement a strong cohesive identity and a common mission.[234]

C. Bolivia Should Promote Its Position In Support of Environmental Justice in International Agreements

The final reason that Bolivia is an ideal ground for climate justice to take shape as a civil movement is that it has already been a leading voice of opposition to business-as-usual in the context of developed countries' failures to act on climate change, and the implications those failures have for the inherent inequities of the climate change problem.[235] Bolivia has a history of passionately expressing its opposition to continuing unfair and discriminatory policies of climate justice,[236] which indicates that it would be willing to defy the norms in the future with a new idea of peoples' justice, and that stance would actually reinforce Bolivia's legitimacy in the international political arena.

At the UN Conference of the Parties in 2010, Bolivia stood alone in opposition to the official Cancún Agreements.[237] Morales opposed in Cancún because he believed the Agreements should require developed nations to take the lead in climate change mitigation due to their greater contribution to the carbon accumulation in the atmosphere and because they have more financial resources than developing countries to dedicate to the problem.[238] Morales stated that Bolivia chose "to be on the side of the peoples of the world that defend life in the face of aggression toward

232. *See id*.

233. *Id*.

234. *See generally, Indigenous Peoples Must be Included*, *supra* note 9.

235. *See* Pablo Solon, *Why Bolivia Stood Alone in Opposing the Cancún Climate Agreement,* THE GUARDIAN, Dec. 21, 2011, http://www.guardian.co.uk/environment/cif-green/2010/dec/21/bolivia-oppose-cancun-climate-agreement.

236. *See id*.

237. *Id.*

238. *Id.*

the environment and the planet."[239] While Bolivia was criticized for attempting to obstruct agreement, Morales said that he refused to sign in Cancún "based on the principle of responsibility and the need to defend Mother Earth, which is under attack from the irrational politics of industrialization of the developed nations."[240] This firm ideological stance on behalf of indigenous peoples and the environment is precisely the kind of atmosphere that will foster a reformulation of climate justice in the spirit of civil rights. Additionally, that same year Bolivia hosted the World People's Conference on Climate Change and the Rights of Mother Earth ("Conference"), as an alternative to failing UN negotiations.[241] At the Conference, a group of 35,000 environmental activists from 125 nations signed a Peoples Agreement on behalf of the Earth.[242] The Peoples Agreement calls for "the building of a Global People's Movement for Mother Earth, which should be based on the principles of complementarity and respect for the diversity of origin and visions among its members, constituting a broad and democratic space for coordination and joint worldwide actions."[243] The Conference and the Peoples Agreement laid the ideological foundations for the popular movement. Social progress on behalf of the environment and the will to move beyond imbalanced and ineffective international negotiations in the face of real climate change threats are already vibrant in the Bolivian rhetoric.

Additionally, there are multiple levels on which a political response to a peoples' movement in Bolivia is in the self-interest of the nation. First, if couched as a civil rights issue, then Morales will have found the perfect domestic forum to make good on his early promises of democratic reform and the broadening of indigenous rights.[244] Second, because Bolivia currently seeks legitimacy in the international political context, taking action on behalf of the criticisms Bolivia leveled in Cancún will provide the exact sort of sovereign legitimacy needed in these highly contentious negotiations. By implementing a domestic framework aimed at the problems that Bolivia expressly raised at

239. Lemuz, *supra* note 19.

240. *Id.*

241. Matthew O. Berger, *Expectations Scaled Back for Cancún Climate Summit*, INTER PRESS SERVICE NEWS AGENCY Sept. 17, 2010, http://ipsnews.net/africa/nota.asp?idnews=52878.

242. *Id; see also* World People's Conference on Climate Change and the Rights of Mother Earth, Cochabamba, Bol., *Peoples Agreement*, (Apr. 22, 2010), http://pwccc.wordpress.com/support/.

243. *Peoples Agreement*, *supra* note 242.

244. *See Morales Promises a Tighter State Control Economy for "Post-Colonial" Bolivia*, MERCOPRESS, Jan. 23, 2010, http://en.mercopress.com/2010/01/23/morales-promises-a-tighter-state-control-economy-for-post-colonial-bolivia.

Cancún, the nation will gain legitimacy in the international context for its critical perspective.[245] Once it achieves this recognition, the generally uncontroversial point that the current climate change framework is ineffective and unfair could give way to a meaningful alternative, and especially developing nations in similarly vulnerable conditions will have a new path to follow in seeking effective climate change responses.

While other developing countries may have been hesitant to oppose the Cancún Agreements due to the lack of a meaningful alternative,[246] Bolivia is in a unique position to offer an alternative with the popular support and widespread appeal to actually work in a global sense. Furthermore, this grassroots movement avoids the complexity of the legal regime presented in Cancún and appeals to a less definitive, but more powerful sense of justice. This is something that can be shared across all cultures, especially when it is human survival that is at stake. Real enforcement can arise out of action induced by popularly changing the political perception of environmental harm in the same way the civil rights movement brought new definitions of equality and recognition.[247] This popular movement can redefine discrimination based on resources, race, wealth, class, and ability to adapt to climate change, forcing it to become unacceptable to leave the world's most vulnerable and least guilty individuals to suffer the consequences of climate change.

VI. CONCLUSION

Climate change is the most difficult collective action challenge to ever face our world.[248] Dealing with its effects and trying to prevent some of its most threatening catastrophes will require unprecedented collaboration and ingenuity if civilization is to continue in a form that is anything similar to the way it has for the past several centuries.[249] The political challenges themselves have understandably impeded any decisive action on behalf of international agreements to stop the business-as-usual before disaster stops it for us.[250] While governments

245. *See Environmental Protection*, *supra* note 166 (discussing the idea that implementing ideas domestically improves international policies).

246. *See, e.g.*, DOELLE, *supra* note 141, at 110.

247. *See* Royster & Cochran, *supra* note 154, at 216.

248. *See* Mark Lubell et al., *Collective Action and Citizen Responses to Global Warming*, 29 POL. BEHAV. 391 (2007) (studying the collective action problem implicated by climate change).

249. *See* William R. Travis, *Going to Extremes: Propositions on the Social Response to Severe Climate Change*, 98 CLIMATIC CHANGE 1, 2 (2010).

250. *See* Benedict Southworth, *Priorities for Decision Makers: Tackling Climate Change in a Time of Corporate Globalization*, 5 GLOBALIZATIONS 72, 72 (2008)

alone cannot stop climate change specifically for indigenous peoples or choose to take on some of the site-specific burdens themselves, there are many things that they *can* do.

There are communities, ethnicities, settlements, and individuals in the world who suffer (and have historically suffered) from marginalization in the form of discrimination, denial of access to lands and resources, diminished enforceable rights, violence and forced migration, and lack of access to justice for their hardships.[251] Climate change is simply an additional way in which the unequal burden of surviving will disproportionately harm these marginalized peoples. They already struggle to survive and therefore cannot adapt easily, if at all, and there is no avenue to achieve justice before devastation hits.[252] It is within the power of states, groups, and individuals today to change the status quo.

The indigenous condition can improve with help in the form of expanded recognizable rights to land and resources and expanded access to justice for peoples suffering from climate change. Governments should work to provide remedies for climate change challenges that scientists fairly predict to be coming. It is difficult to know what precise future climate phenomena will bring for citizens of the world, but if any of the predictions about the climate change impacts of drought, flooding, sea level rise, and desertification are true, then the indigenous peoples living directly off of the land will suffer first.[253] At a minimum, a world working towards justice for its peoples would do what it could today to give those most at risk at least one viable option for rescue and a chance to rebuild their unique cultures. If not for simple justice alone, then it might do this in the interest of diversity, plurality, and the enriching value of individualism.

However, preventative measures on behalf of these vulnerable communities and climate areas would be ideal.[254] General mitigation efforts by all countries, and especially the biggest emitters, will do the most today to stop or slow disasters in the future. Adaptation efforts can help those areas that are most obviously at risk, especially in the case of sea level rise for small-island and coastal communities and other impacts that are fairly predictable. Finally, and resting on the argument in this paper, legal claims supported by internationally and domestically

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(summarizing the political challenges for international negotiations and some suggestions for the future).

251. *See* Cha, *supra* note 5.

252. SCHLOSBERG, *supra* note 14, at 84–85.

253. *See* Valdivia et al., *supra* note 185.

254. *See* Goffman, *supra* note 72, at 15.

recognized human rights in response to climate harm would accomplish many diverse goals of indigenous justice.

Legal claims for vulnerable indigenous peoples would help to give them a way to participate in their future and with their land. Additionally, giving them legal claims based on civil rights could engage indigenous communities in the political and social process rather than simply exercising their rights to remedies. Perhaps indigenous community members would then participate in other state activities regarding climate change, the environment, and human rights. It would benefit both the state and the indigenous communities for indigenous peoples to have opportunities to apply their localized knowledge to climate change impacts on lands and ecosystems that they know better than anyone else.[255] Finally, and most importantly, this access to justice and broader participation would be an important first step toward achieving environmental justice for indigenous peoples who have not contributed to, but are threatened by, climate change.[256]

Once courts are willing to recognize legal actions on behalf of rights relating to environmental justice, figuring out what forms of redress to grant is the next challenge. They should be open to new, creative ways of helping to solve the inequities inherent in the disproportionate burdens of climate change that are placed on already vulnerable communities. Public forums for debate and idea exchange would allow different parties to suggest creative solutions to the problem. Expanded representation for historically marginalized groups in decision-making bodies would help to balance the scales as well. Adaptation funds and efforts will certainly be necessary for practical responses to climate harms. The world is in an era when the law and judiciaries do not simply settle disputes between two private litigants. The sooner lawyers, lawmakers, and judges embrace this reality, the sooner the legal system will be able to offer more remedies for the diverse sets of problems it can solve. Climate change is the quintessential nontraditional and non-private challenge, and so courts must first recognize that they can deal with these challenges and next must be willing to support nontraditional remedies for them. The recognition stage is the focus of this Note, and it entails recognizing and invigorating the rights expressed in sources like treaties, constitutions, and statutes, and then bringing them from the abstract theoretical realms of "justice" and "equality" into the concrete world of real decision making.

While it may be difficult to conceive of an orderly or logical way to go about finding justice for likely climate change victims, the broader

255. *See Agenda 21*, *supra* note 20, ¶ 13.14.

256. SCHLOSBERG, *supra* note 14, at 89–91.

climate change problem and the few solutions currently in place now (in the form of individual states and nations working in a fragmented manner to slow and reverse their own contributions to climate change) demonstrate the simple fact that climate change is not a top-down problem. The world must recognize the injustices inherent in the modern-day status quo and work towards remedies for the most marginalized peoples. The form of implementing climate change justice *will* matter eventually because justice often depends fully on procedure. However, the first step is the idea. The *idea* of climate change justice is what is at stake today, and today it is conceptually limited to the specialized field of environmental law and policy forums. The task today is to get the idea into the mainstream social and political rhetoric, and to recognize that civil justice is the vehicle for this redistribution. Climate change justice is civil justice; the popular voice just needs to express it as such, and the rest of the world must accept the reformulation. If climate change justice can capture the power of civil rights, then justice for climate victims should follow.

Leading by Example: The Fracturing Responsibility and Awareness of Chemicals Act of 2011 as a Catalyst for International Drilling Reform

Jason Obold*

TABLE OF CONTENTS

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* Jason Obold holds a J.D. from the University of Colorado and a B.A. from American University. He would like to thank *Colorado Journal of International Environmental Law & Policy* Note Editor Ethan Mooar (2009-10) for his time reading countless drafts and providing insightful comments, and Professor Joe Feller for his expert advice on federal land management statutes. This Note won the *Colorado Journal of International Environmental Law & Policy*'s "Best 2L Note" Award in April 2011.

I. INTRODUCTION

As nations around the world thirst for more nonrenewable resources to fuel their economies, they are faced with the reality that the world's remaining nonrenewable energy resources are both scarce and increasingly hard to acquire. A 'toe' is a unit of measurement equal to 1 ton (7.35 barrels) of oil.[1] A 2010 study by the German government projects that the Earth's reserves still hold approximately 406 billion toes of hydrocarbons that can be extracted with current technology and at a cost that is economically practical given current market prices.[2] To put this figure in context, the International Energy Agency ("IEA") calculated that the entire planet used approximately 8.353 billion toes of energy in 2009.[3] At 2009 consumption rates, 406 billion toes would serve the entire planet's energy needs for over forty-eight years.[4] Of those 406 billion toes of hydrocarbons, 335 billion toes are viscous hydrocarbons, capable of being pumped out of the earth using conventional drilling techniques.[5] The remaining 71 billion toes represent heavier, unconventional hydrocarbons like oil sand, extra heavy oil, and tight gas.[6] Unconventional hydrocarbons are not capable of flowing because they are trapped in hard, nonporous earth.[7] Therefore, unconventional hydrocarbons require more advanced drilling technologies both to reach the reserve and to pull the oil or gas to the surface.

As the world's conventional hydrocarbons are burned to extinction, the extraction of unconventional hydrocarbons is becoming increasingly profitable by way of the well-established practice of hydraulic fracturing.[8] "Fracking," as hydraulic fracturing is commonly known in

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1. FED. INST. FOR GEOSCIENCES & NATURAL RES., ANNUAL REPORT: RESERVES, RESOURCES AND AVAILABILITY OF ENERGY RESOURCES 81, 86 (2010), *available at* http://www.bgr.bund.de/EN/Themen/Energie/Downloads/annual_report_2010_en.pdf?__blob=publicationFile&v=3 [hereinafter FED. INST. FOR GEOSCIENCES & NATURAL RES. 2010 ANNUAL REPORT].

2. *Id.* at 12.

3. INT'L ENERGY AGENCY, KEY WORLD ENERGY STATISTICS 28, 64 (2011), *available at* http://www.iea.org/textbase/nppdf/free/2011/key_world_energy_stats.pdf.

4. Remaining reserves (406 billon toes), divided by 2009 global consumption (8.353 billion toes), equates to approximately 48.61 years of consumption.

5. FED. INST. FOR GEOSCIENCES & NATURAL RES. 2010 ANNUAL REPORT, *supra* note 1, at 12, 80.

6. *Id.* at 12.

7. Tomás Felipe Correa Gutiérrez, Nelson Osorio, & Dora Patricia Restrepo Restrepo, *Unconventional Natural Gas Reserviors*, Energética, Dec. 2008–July 2009, at 61, 62, *available at* http://redalyc.uaemex.mx/pdf/1470/147012859006.pdf.

8. Hannah Wiseman, *Untested Waters: The Rise of Hydraulic Fracturing in Oil and Gas Production and the Need to Revisit Regulation*, 20 FORDHAM ENVTL. L. REV. 115, 115, 122 (2009).

the industry, is the process of pumping a primarily liquid cocktail down a well to break up very dense hydrocarbon-bearing geological formations so the trapped hydrocarbons can flow into the well.[9] Fracking has become more popular in recent years with advances in drilling technologies and the increasing worldwide demand for hydrocarbons.[10] This boom has brought fracking closer to populated areas and generated numerous questions concerning its effects on people and the environment.[11] Because fracking was removed from regulation under the Safe Drinking Water Act ("SDWA") by the United States Congress in 2005, many of these questions remain unanswered, and fracking continues nation-wide with scattered and inconsistent regulation at the state level.[12] However, both the House and Senate have offered to repeal the exemption for hydraulic fracturing in the SDWA and finally bring fracking back under federal regulation.[13] The Fracturing Responsibility and Awareness of Chemicals Act of 2011 ("FRAC Act") would establish the regulatory framework necessary to efficiently monitor the environmental impacts of fracking, facilitate the expansion of scientific inquiry into fracking's effects on humans, and bring greater transparency and accountability to the fracking industry in the United States.[14]

The potential impacts of passing the FRAC Act and forcing fracking back into the federal regulatory scheme go beyond the borders of the United States. With more experience developing unconventional hydrocarbons than any other nation, the United States is a coveted advisor for many countries looking to develop their tight oil and gas resources in a manner that is both efficient and sustainable.[15] The world's two most populous countries, China and India, are among the nations

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9. *Id.* at 117-21; *see* Emily Rand, CBS News, *EPA Subpoenas Halliburton Over "Fracking"* (Nov. 9, 2010), http://www.cbsnews.com/8301-31727_162-20022247-10391695.html.

10. *See* Joe Carroll, Bloomberg, *Fracking Market to Grow 19% to $37 Billon Worldwide in 2012* (Jan. 19, 2012), http://www.bloomberg.com/news/2012-01-19/frack-market-to-grow-19-in-2012-to-37-billion-correct-.html.

11. Rand, *supra* note 9.

12. Wiseman, *supra* note 8, at 145, 157.

13. H.R. 1084, 112th Cong. (introduced Mar. 15, 2011), *available at* http://www.govtrack.us/congress/bill.xpd?bill=h112-1084; S. 587, 112th Cong. (introduced Mar. 15, 2011), *available at* http://www.govtrack.us/congress/bill.xpd?bill=s112-587.

14. *See id.*

15. David L. Goldwyn, Special Envoy for International Energy Affairs, U.S. Dept. of State, Briefing on the Global Shale Gas Initiative Conference (Aug. 24, 2010) (transcript available at http://www.state.gov/s/ciea/rmk/146249.htm); *see* Carroll, *supra* note 10 (North America accounted for 87% of the fracking market in 2011).

that have come to the United States looking for help.[16] The importance of fracking regulation cannot be understated. Fracking catastrophes abroad could devastate densely populated regions, which would inevitably impact the United States because of the interconnected global economy. Now, with the global unconventional hydrocarbon boom in its infancy, the United States must act to prevent fracking from contaminating its domestic environment and to avoid an environmental catastrophe abroad that might cripple the U.S. economy. The FRAC Act establishes a regulatory foundation the United States can take to the international community to begin discussing the adoption of serious reforms in fracking regulation worldwide.

This Note begins by discussing the history and procedure of fracking. Part II focuses on the unintended side effects of fracking and the resulting personal and environmental injuries. Part III outlines the history of fracking regulation in the United States and its role in mitigating the consequences of fracking. This history moves chronologically from federal fracking regulation under the SDWA to the express removal of fracking from the SDWA and the creation of today's inconsistent and unchecked system of state control. Part III concludes by offering insight into the prospects of Congress bringing fracking back under federal regulatory control in the near future and by explaining why doing so is in the best interests of the United States. Part IV examines the global community and analyzes the state of fracking and the environment internationally by focusing on what is happening in China and India. Finally, this Note explains why fracking that results in environmental degradation in other nations is a threat to the United States' national interests, offering insight into how the United States may use its technological prowess and the regulatory foundation of the FRAC Act to spark change in less developed nations that are looking to fracking to solve their energy demands. This Note concludes that the United States should pass the FRAC Act to ensure safe and sustainable fracking practices domestically, and that the United States should use the FRAC Act as the foundation for better domestic regulation and building a cooperative international understanding of safe and sustainable fracking practices.

16. Sheila McNulty, Fin. Times, *China and India See What the US Doesn't – the Potential of Natural Gas* (Nov. 11, 2010), http://blogs.ft.com/energy-source/2010/11/11/china-india-see-natural-gas-potential-us-government-is-missing.

II. HYDRAULIC FRACTURING: HOW IT IS DONE AND ITS UNINTENDED CONSEQUENCES

A. Journey to the Center of the Earth

The oil and gas industry has come a long way since Edwin Drake first discovered oil in a field in Titusville, Pennsylvania in 1859.[17] In addition to conventional fluid oil reservoirs or gas pockets, geologists have located great reserves of oil and gas trapped thousands of feet below the Earth's surface in tight geological formations.[18] Traditional drilling techniques either cannot reach these deep reserves or cannot feasibly produce the hydrocarbons because traditional wells can only extract the unconventional hydrocarbons immediately surrounding the wellhead.[19] Commercial operators first developed the technique of hydraulic fracturing to exploit oil and gas trapped in tight, nonporous geological formations with widely dispersed oil or gas pockets in 1949.[20] Fracking allows oil and gas to permeate difficult geological features by injecting fluid cocktails into the well at high pressure, which induces the hydrocarbon-bearing rock formations to crack or expand existing fractures, giving the hydrocarbons a path to the wellhead.[21] Hydraulic fracturing is an expensive endeavor, requiring that the operator truly understand the geology of the rock formation and chemistry of the fluid being used.[22] However, fracking has become more economically viable as the industry's technology has improved and the value of oil and gas has increased, due to scarcity of conventional hydrocarbons.[23]

The exact consistency of the fluid cocktail used to fracture a formation depends on the specific geology and desired hydrocarbon, but the two primary ingredients are typically water and sand.[24] Sand is considered a "proppant," meant to hold open the fracture to maximize the

17. Wes Deweese, *Fracturing Misconceptions: A History of Effective State Regulation, Groundwater Protection, and the Ill-Conceived FRAC Act*, 6 OKLA. J. L. & TECH. 49, at *28 (2010).

18. *See id.* at 4; *see also* FED. INST. FOR GEOSCIENCES & NATURAL RES. 2010 ANNUAL REPORT, *supra* note 1, at 12.

19. *See* FED. INST. FOR GEOSCIENCES & NATURAL RES. 2010 ANNUAL REPORT, *supra* note 1, at 12, 79 (unconventional hydrocarbons need to be stimulated to be able to reach the wellhead).

20. Wiseman, *supra* note 8, at 122.

21. *Id.* at 118–19.

22. Deweese, *supra* note 17, at 3.

23. *Id.* at 4.

24. *Id.* at 18.

flow of hydrocarbons to the well.[25] Depending on the rock formation being fracked, additional chemicals are added either as proppants, to induce fracturing, to help push granulated substances into the fracture, or to help extract the fracturing fluid once the well has been exploited.[26] Once the well has been exploited, the fracking fluid either remains in the fractures or comes to the surface with the hydrocarbon, where it is either recycled onsite, trucked off for treatment, or filtered and disposed.[27]

Tight, hydrocarbon-bearing geologic formations come in many varieties, but two of the most discussed and exploited tight formations today are shale and coal beds. Shale is sedimentary rock that is "formed by the consolidation of clay, mud, or silt, has a finely stratified or laminated structure, and is composed of minerals essentially unaltered since deposition."[28] In an exploitable deposit of shale, also known as a resource play or shale play, oil or gas is trapped in pores separated by relatively impermeable layers of shale.[29] In exploitable coal beds, natural gas is similarly trapped in the bed in pores.[30] Fracturing these features connects the pores so operators can draw the trapped hydrocarbons to the wellhead and pump them to the surface.

In the United States, some of the largest and most talked about deposits of hydrocarbons are trapped in shale plays found along the Rocky Mountains, from Montana to the Western Slope of Colorado, and scattered in a broad swath of the United States from southwest Texas to the Adirondack Mountains in New York.[31] The Marcellus Shale, an underground layer of shale covering all of West Virginia and over half of Ohio, New York, and Pennsylvania, is estimated to contain up to 489 trillion cubic feet of natural gas.[32] To put this number in context, the U.S. Energy Information Administration projects that the nation will use approximately 68.9 billion cubic feet of natural gas per day in 2012.[33]

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25. Wiseman, *supra* note 8, at 118.

26. *Id.* at 118–19.

27. *Id.* at 120–21.

28. Merriam-Webster's Dictionary, *Shale*, http://east.merriam-webster.com/dictionary/shale (last visited Mar. 2, 2012).

29. Deweese, *supra* note 17, at 4; U.S. GEOLOGICAL SURVEY, NATIONAL ASSESSMENT OF OIL AND GAS FACT SHEET: COAL BED GAS RESOURCES OF THE ROCKY MOUNTAIN REGION, *available at* http://pubs.usgs.gov/fs/fs-158-02/FS-158-02.pdf.

30. U.S. GEOLOGICAL SURVEY, NATIONAL ASSESSMENT OF OIL AND GAS FACT SHEET: COAL BED GAS RESOURCES OF THE ROCKY MOUNTAIN REGION, *available at* http://pubs.usgs.gov/fs/fs-158-02/FS-158-02.pdf.

31. ENERGY INFO. ADMIN., LOWER 48 STATES SHALE PLAYS, *available at* http://www.eia.doe.gov/oil_gas/rpd/shale_gas.pdf.

32. New York Dep't. of Envtl. Conservation, *Marcellus Shale*, http://www.dec.ny.gov/energy/46288.html (last visited Mar. 2, 2012).

33. U.S. ENERGY ADMIN., SHORT-TERM ENERGY OUTLOOK: NATURAL GAS: U.S.

Besides satisfying the nation's thirst for natural gas, a May 2010 study by the University of Pennsylvania estimated that over $4.5 billion had already been spent developing the Marcellus Shale in Pennsylvania alone; generating $389 million in state local tax revenue and over 44,000 jobs.[34] Companies are already beginning to use fracking to unlock the Marcellus Shale and other major hydrocarbon plays across the nation.

B. When Fracking and People Collide

All across the United States, people are encountering unusual problems in and around their homes that were not present until hydraulic fracturing operations came to their neighborhoods. During fracking of natural gas deposits, gas has been known to "migrate" away from wells and up through bedrock fractures into permeable soil and aquifers, which eventually deposit the gas on the surface.[35] Methane, a colorless, odorless, and flammable gas, is the main constituent of natural gas.[36] In New Mexico's San Juan Basin, explosive levels of methane have been found in homes near a fracturing operation extracting methane from a coal bed deep underneath the earth's surface.[37] A Duke University study analyzed water from sixty-eight groundwater wells in five northeastern Pennsylvania and New York counties and found methane levels to be seventeen times higher on average in wells located within a kilometer of active fracking sites.[38] After touring a coal bed methane drilling operation in Colorado, the U.S. Environmental Protection Agency ("EPA") reported brown and dying trees and grass in areas with normal soil conditions prior to the commencement of drilling.[39] The

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NATURAL GAS CONSUMPTION (Mar. 6, 2012), *available at* http://www.eia.gov/forecasts/steo/report/natgas.cfm (last visited Mar. 18, 2012).

34. Clifford Krauss & Tom Zeller, Jr., N.Y. Times, *When a Rig Moves In Next Door* (Nov. 6, 2010), http://www.nytimes.com/2010/11/07/business/energy-environment/07frack.html?scp=1&sq=marcellus%20shale%20fracking&st=cse.

35. THE PITTSBURGH GEOLOGICAL SOC'Y, NATURAL GAS MIGRATION PROBLEMS IN WESTERN PENNSYLVANIA, *available at* http://www.pittsburghgeologicalsociety.org/naturalgas.pdf.

36. The Free Dictionary, *Methane* http://www.thefreedictionary.com/methane (last visited Mar. 2, 2012).

37. Wiseman, *supra* note 8, at 129–30.

38. Duke Univ. Nicholas Sch. of the Env't, *Methane Levels 17 Times Higher in Water Wells Near Hydrofracking Sites*, May 9, 2011, http://www.nicholas.duke.edu/hydrofracking/methane-levels-17-times-higher-in-water-wells-near-hydrofracking-sites (last visited May 28, 2012); *see* Dina Cappiello, MSNBC, *Methane in Water Near Gas Drilling Sites Study Finds* (May 9, 2011), http://www.msnbc.msn.com/id/42964307/ns/us_news-environment/t/methane-water-near-gas-drilling-sites-study-finds/#.T1pJPIFQ5Ao.

39. Wiseman, *supra* note 8, at 130.

documentary *Gasland* tells the stories of homeowners, living in the vicinity of methane producing coal bed fracking operations on Colorado's Eastern Plains, who took lighters to their kitchen faucets, sparking spectacular fires even as water continued to flow from the tap.[40] In pursuit of natural gas, fracking operations leave some of their prized hydrocarbons in the trees, homes, and drinking water of their neighbors, damaging the environment and endangering human health.

Improperly managed fracking operations also result in surface pollution. On September 16, 2009, failed pipe connections caused two chemical spills at a hydraulic fracturing operation in Dimock, Pennsylvania, 150 miles northwest of New York City, sending approximately 8,000 gallons of fracturing fluid into a nearby creek.[41] That fluid contained the chemical LGC-35 CBM, a hazardous and potentially carcinogenic liquid gel concentrate.[42] While the Pennsylvania Department of Environmental Protection ("PA DEP") found no evidence of well or groundwater contamination,[43] private tests discovered fracking chemicals including ethylene glycol, propylene glycol, and toluene in the town's water supply.[44] But this incident is only a whisper of what could happen if a neighborhood or watershed was exposed to more dangerous or concentrated fracking chemicals.

Fracking chemicals have been linked to serious health problems in humans that come into contact with them. The PA DEP has compiled and published a list of the more than eighty chemicals being used in fracking operations throughout the state.[45] Among those chemicals are compounds "associated with neurological problems, cancer and other serious health effects."[46] In August 2008, an energy services employee in Colorado went to a hospital complaining of nausea and headaches

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40. Andrew Maykuth, *'Gasland' Documentary Fuels Debate Over Natural Gas Extraction*, PHILA. INQUIRER, June 23, 2010, at A01, *available at* http://articles.philly.com/2010-06-23/news/24961785_1_natural-gas-marcellus-shale-gas-drilling.

41. Deweese, *supra* note 17, at 7.

42. *Id.*; HALLIBURTON, LGC-35 CBM MATERIAL SAFETY DATA SHEET (2008), *available at* http://newyork.sierraclub.org/fingerlakes/MSDS/LGC-35%20CBM%20MSDS.pdf.

43. Deweese, *supra* note 17, at 7.

44. The Herald-Dispatch, *Toxic Fracking Chemicals Found in Pennsylvania Drinking Water* (Sept. 16, 2010), http://www.herald-dispatch.com/news/briefs/x1988164152/Toxic-fracking-chemicals-found-in-Pennsylvania-drinking-water.

45. Marc Levy, The Huffington Post, *Pennsylvania Fracking Fluid Found to Contain Neurologically Harmful Chemicals* (June 28, 2010), *available at* http://www.huffingtonpost.com/2010/06/28/pennsylvania-fracking-flu_n_628373.html.

46. *Id.*

allegedly resulting from exposure to fracking fluids.[47] The emergency nurse who treated the man later complained of similar symptoms, which lead to vomiting and yellowing skin.[48] She was diagnosed with chemical poisoning, but the specific chemicals could not be identified because the fracking fluid's safety data failed to disclose several proprietary compounds.[49] Reading, hearing, or experiencing stories like these raises an important question: how are fracking operations regulated in the United States to ensure that exploiting America's energy resources does not come at the expense of the environment and human health?

III. FRACKING IN AMERICA: REGULATION, DEREGULATION, AND THE PROSPECT OF RENEWED REGULATION

A. Regulation of Hydraulic Fracturing Prior to 2005

The primary avenue to address the safety of hydraulic fracturing prior to 2005 was the Safe Drinking Water Act ("SDWA"), which proved relatively successful. Congress passed the SDWA in 1974 to regulate the nation's drinking water supply in order to protect public health.[50] Part C of the SDWA covers the protection of underground drinking water sources.[51] To prevent contamination of underground drinking water sources, Part C requires the EPA to establish and publish regulations that set minimum requirements and restrictions for underground injections nationwide.[52] For a state to obtain regulatory and enforcement responsibility within their borders from the EPA, it must submit an Underground Injection Control ("UIC") proposal to the EPA that meets the EPA's minimum requirements.[53] The EPA has the right to take responsibility back from a state if it determines, by rule, that the state UIC program no longer satisfies the SDWA.[54] In *Legal*

47. Jim Moscou, Newsweek, *A Toxic Spew?: Officials Worry About Impact of 'Fracking' of Oil and Gas* (Aug. 19, 2008), *available at* http://www.newsweek.com/2008/08/19/a-toxic-spew.html.

48. *Id.*

49. *Id.*

50. *See* Safe Drinking Water Act, 42 U.S.C. § 300F–300J-26 (2006); Envtl. Prot. Agency, *Safe Drinking Water Act (SWDA)*, http://water.epa.gov/lawsregs/rulesregs/sdwa/index.cfm (last visited Mar. 2, 2012).

51. 42 U.S.C. §§ 300h–300h-8.

52. *Id.* § 300h.

53. *Id.* § 300h-1.

54. *Id.*

Environmental Assistance Fund v. EPA, a landmark case in hydraulic fracturing and the field of environmental law generally,[55] the Eleventh Circuit held that the SDWA requires hydraulic fracturing to be regulated under state UIC programs.[56] This decision led Alabama to add fracking to its UIC.[57] In response, the EPA began a study to determine whether fracking in coal bed methane reservoirs should be regulated under the SDWA.[58] When it finished in June 2004, the EPA found that fracking coal bed methane reservoirs poses "minimal threat" to underground sources of drinking water.[59] Just over a year later, as environmental groups and even EPA scientists were contesting the methodology of the study and impartiality of the panel that conducted it, Congress put an end to the debate by expressly excluding fracking from the SDWA.[60]

B. Regulation of Hydraulic Fracturing Since 2005

1. The Energy Policy Act of 2005

Less than three weeks after he took office in 2001, President George W. Bush created the National Energy Policy Development Group to develop energy policy aimed at reducing American dependence on foreign energy and appointed Vice President Dick Cheney as its chair.[61] For seven years prior to becoming vice president, Cheney was chairman and chief executive officer of Halliburton, one of the world's largest oil field services companies.[62] Unsurprisingly, the findings of this group were heavily influenced by the concerns of the oil and gas industry.[63]

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55. Legal Envtl. Assistance Found. v. EPA, 276 F.3d 1253, 1263 (11th Cir. 2001).

56. *Id.*

57. Wiseman, *supra* note 8, at 144.

58. *Id.*

59. ENVTL. PROT. AGENCY, EVALUATION OF IMPACTS TO UNDERGROUND SOURCES OF DRINKING WATER BY HYDRAULIC FRACTURING OF COALBED METHANE RESERVOIRS (2004), *available at* http://www.epa.gov/ogwdw/uic/pdfs/cbmstudy_attach_uic_final_fact_sheet.pdf.

60. Wiseman, *supra* note 8, at 145; Union of Concerned Scientists, *EPA Findings on Hydraulic Fracturing deemed "Unsupportable"*, http://www.ucsusa.org/scientific_integrity/abuses_of_science/oil-extraction.html (last visited Mar. 2, 2012).

61. Eric Dannenmaier, *Executive Exclusion and the Cloistering of the Cheney Energy Task Force*, 16 N.Y.U. ENVTL. L.J. 329, 331 (2008).

62. Richard Bruce Cheney, *Biographical Directory of the U.S. Congress*, http://bioguide.congress.gov/scripts/biodisplay.pl?index=C000344 (last visited Mar. 2, 2012); Halliburton, *Corporate Profile*, http://www.halliburton.com/AboutUs/default.aspx?navid=966&pageid=2458 (last visited Mar. 2, 2012).

63. Dannenmaier, *supra* note 61, at 331.

The Energy Policy Act of 2005, in turn, was substantially influenced by the findings of the Cheney group and as a result, enacted sweeping policy changes that deregulated much of the oil and gas industry.[64]

Section 300h(d)(2) of the SDWA states that:

> [u]nderground injection endangers drinking water sources if such injection may result in the presence in underground water which supplies or can reasonably be expected to supply any public water system of any contaminant, and if the presence of such contaminant may result in such system's not complying with any national primary drinking water regulation or may otherwise adversely affect the health of persons.[65]

Prior to 2005, this section applied to hydraulic fracturing fluids and bestowed upon the EPA a duty to ensure that the fluids used in fracking projects did not endanger drinking water supplies.[66] The Energy Policy Act of 2005 expressly exempted hydraulic fracturing fluids, other than diesel, from Part C of the SDWA.[67] Where the EPA previously had the authority under the SDWA to remove state regulatory powers and regulate fracking itself when it felt a state's UIC was not meeting the SDWA's requirements, the Energy Policy Act of 2005 made it clear that the EPA could not invalidate a state's UIC for failing to regulate fracking. This had the practical effect of taking the regulation of fracking out of federal hands and placing it entirely with state governments.[68]

2. Inconsistent and Deficient State Regulation Since the Energy Policy Act of 2005

The biggest problem with state regulation of hydraulic fracturing under the Energy Policy Act of 2005 is that it varies widely among states in the absence of a federal law requiring specific minimums. Colorado, for example, has one of the nation's better regulatory schemes, requiring drillers, including those who conduct fracking, to apply for and obtain a permit from the director of the state's Oil and Gas Conservation Commission ("COGCC").[69] The permit application must include, among other things, where the well is to be drilled and the location of water

64. *Id.* at 331–32.

65. 42 U.S.C. § 300h(d)(2).

66. *See* Natural Res. Def. Council, Inc. v. EPA, 907 F.2d 1146, 1157 (D.C. Cir. 1990).

67. Energy Policy Act of 2005, Pub. L. No. 109-58, § 322, 119 Stat. 594, 694 (2005).

68. Wiseman, *supra* note 8, at 145.

69. COLO. CODE REGS. § 404-1:303(d)(3)(c) (2010).

sources within 400 feet of the wellhead.[70] If the COGCC Director believes that the well is an imminent threat to "public health, safety, and welfare, including the environment," then he may withhold the permit.[71] Pennsylvania and New York have similar requirements and, like Colorado, are considered to be some of the nation's strictest fracking regulators.[72]

In contrast, Oklahoma has one of the nation's weakest fracking regulatory schemes. To be clear, Oklahoma is not entirely silent when it comes to regulating fracking. Oklahoma requires wells to be cased and cemented to the greater of ninety feet below the surface or fifty feet below the base of treatable water, and pressure tested to make sure they are sealed once exhausted.[73] While ensuring the integrity of the well through the water supply is important, Oklahoma fails to address the integrity of the casing beyond that shallow depth, which could be a mere fifty feet from treatable water.[74] In Texas, fracking regulations also address well integrity, but, as in Oklahoma, fail to address what is happening to the greater environment as a result of the fracking process.[75] What is happening in the well is certainly important and vital to preventing environmental degradation. However, a UIC is not truly effective until it also addresses what is happening in the earth outside the well bore.

Almost six years after fracking was expressly removed from the SDWA, the United States has evolved into a patchwork of regulations. Even in states with relatively strong regulatory schemes, existing regulatory frameworks are failing to prevent and redress harm to people and the environment. The aftermath of the Energy Policy Act of 2005 demonstrates that states are unable to handle the job of regulating fracking on their own. It is time for the federal government to re-establish its authority to regulate fracking operations and to re-enter the business of regulating fracking operations that affect public health.

C. The Prospects of Future Federal Fracking Regulation

1. The CWA

The Clean Water Act ("CWA") is a possible federal statutory tool for preventative regulation of potentially hazardous fracking operations

70. *Id.*
71. *Id.* § 404-1:303(m)(1).
72. *See* Deweese, *supra* note 17, at 24–26, 28–29.
73. *Id.* at 27–28.
74. *See id.*
75. *See generally id.* at 29–30.

and for remedying fracking related damages once they occur.[76] However, the practical reality is that the CWA is ineffective with respect to regulating hydraulic fracturing. The CWA established effluent limitations and standards governing the discharge of pollutants into the waters of the United States.[77] To implement these standards, the CWA requires point sources that discharge into the waters of the United States to obtain a permit pursuant to the National Pollutant Discharge Elimination System ("NPDES").[78] Permits are issued by the EPA or by states or tribes with a qualified water program.[79] The CWA has been successful at regulating the surface activities of hydraulic fracturing operations, but has not been and should not be the vehicle for policing underground operations.[80] Past cases suggest that drillers will not be compelled to get NPDES permits for underground injection until a solid causal connection can be made between fracking fluid injection and injuries to people and property.[81] Without a stronger regulatory scheme, drillers will hide behind causation and engage in drawn out legal battles over their responsibility. Underground injection requires a regulatory regime that polices drillers before any fracking fluids are deposited into the ground, not only after irreparable damage has been done to the environment. It would take a serious overhaul of the CWA to make it the proper vessel for fracking regulation.

2. Congressional Studies

Congress has demonstrated an interest in researching and reporting on hydraulic fracturing, which suggests that legislation on the matter may be forthcoming. A recent probe by the House Energy and Commerce Committee found that fracking companies have injected at least 32 million gallons of diesel fuel, which was not exempted from the SDWA by the Energy Policy Act of 2005, in nineteen states between 2005 and 2009.[82] This contradicts the long-standing industry claim that

76. Clean Water Act, 33 U.S.C. §§ 1251-87 (2006).

77. Ann Wooster, *Actions brought under Federal Water Pollution Control Act Amendments of 1972 (CWA) (33 U.S.C.A. §§ 1251 et seq.)—Supreme Court cases*, 163 A.L.R. Fed. 531 § 2(a) (2000).

78. *Id.*

79. *See* 40 C.F.R. §§ 123.1-.64- (2012).

80. *See* Office of Pub. Affairs, Dep't. of Justice, *Texas Natural Gas and Oil Drilling Contractor Pleads Guilty to Negligent Violation of Clean Water Act in Oklahoma* (2011), http://www.justice.gov/opa/pr/2011/October/11-enrd-1342.html (last visited Mar. 2, 2012).

81. *See* Deweese, *supra* note 17, at 7.

82. David O. Williams, Real Aspen, *House Probe: Fracking Companies Injected 32 million gallons of diesel fuel into ground*, 2011, http://www.realaspen.com/article/449/House-probe-Fracking-companies-injected-32-

diesel is no longer used in the fracking process.[83] In addition to demonstrating congressional interest in fracking, the Energy and Commerce Committee's study provides House members who are skeptical of federal regulation of fracking with evidence supporting the call to amend the SDWA and bring hydraulic fracturing back under federal regulation.

On October 29, 2009, Congress asked the EPA in the Interior and Environment Appropriations Bill to revisit the impact of hydraulic fracturing on the environment and safe drinking water.[84] In response, the EPA initiated the Hydraulic Fracturing Study, to be completed by the end of 2012.[85] As Representative Diana DeGette of Colorado, a co-sponsor of the FRAC Act has noted, this study is an important step toward ensuring safe drinking water in America.[86] The EPA's research will shed light on the true effects that fracking has on the environment. However, because of the Energy Policy Act of 2005, this study will not change the status of fracking regulation at the federal level. Only Congress can bring fracking operations back under federal regulation and ensure that all fracking operations in the United States meet nationally recognized minimum standards. The EPA's study is an important step toward bringing fracking back under federal regulation, but it will take more than research to remedy the effects of the Energy Policy Act of 2005.

3. The Fracturing Responsibility and Awareness of Chemicals Act of 2011

The FRAC Act would bring fracking back under the purview of the

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million-gallons-of-diesel-fuel-into-ground (last visited Mar. 2, 2012); Mike Soraghan, N.Y. Times, *Fracking Companies Injected 32M Gallons of Diesel, House Probe Finds* (Jan. 31, 2011), http://www.nytimes.com/gwire/2011/01/31/31greenwire-fracking-companies-injected-32m-gallons-of-die-24135.html.

83. *Id.*

84. H.R. 2996, 111th Cong. (2010) (enacted), *available at* http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h2996enr.txt.pdf; Abrahm Lustgarten & Sabrina Shankman, Propublica, *Congress Tells EPA to Study Hydraulic Fracturing* (Nov. 10, 2009), http://www.propublica.org/article/congress-tells-epa-to-study-hydraulic-fracturing-hinchey-1110.

85. U.S. Envtl. Prot. Agency, *Hydraulic Fracturing*, http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/index.cfm (last visited Mar. 2, 2012)*;* U.S. Envtl. Prot. Agency, *EPA's Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources*, http://www.epa.gov/hfstudy/index.html (last visited Mar. 2, 2012).

86. David O. Williams, Colo. Indep., *EPA to study hydraulic fracturing, but calls for FRAC Act to continue*, (Mar. 18, 2010), http://coloradoindependent.com/49367/epa-to-study-hydraulic-fracturing-but-calls-for-frac-act-continue.

EPA, force fracking operations to be more transparent and compel fracking operators to cooperate with medical officials in the event of an emergency. Beyond reinstating the ambiguous pre-2005 language of Section 1421(d) of the SDWA, the FRAC Act expressly includes "fluids or propping agents pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities" in the definition of underground injections to be included in state UIC program regulations.[87] The FRAC Act will still allow a state to regulate drilling within its borders, but will also ensure that fracking operations nationwide are subject to scrutiny if a state's UIC fails to adequately protect the public.[88]

While environmentalists applaud these measures, oil and gas companies are complaining that the FRAC Act will hurt their business. Some in the oil and gas industry believe that the FRAC Act should be rejected for failing to adequately protect the proprietary formulas that companies use in the fracking process.[89] However, proprietary information is protected under the FRAC Act. Both the House and Senate versions of the FRAC Act require fracking operators to disclose to the relevant SDWA enforcement authority (either the state or EPA) the "chemical constituents" used in their fracking operation, but explicitly maintain that the company does not have to disclose the quantities of each constituent, its "proprietary chemical formulas."[90] The EPA or state UIC administrator is then required to make the identity of the chemicals used available to the public.[91] The FRAC Act would serve the important interest of public disclosure about the chemicals being pumped into the ground beneath their communities, but has been written such that adequate safeguards exist to protect the legitimate concern of industry confidentiality.

The FRAC Act would also force operators to disclose, under optional confidentiality agreements, their proprietary formulas if a state, EPA administrator, or health care official deems it necessary for medical treatment in the event of an emergency.[92] Some in the oil and gas industry believe that confidentiality agreements will be insufficient and that time may not provide for a confidentiality agreement to be signed

87. H.R. 1084, 112th Cong. § 2(a); *see* S. 587, 112th Cong. § 2(a).

88. *See* 40 C.F.R. § 145.1 (permitting states to apply to run state UIC program); *see also* 40 C.F.R. § 145.33
(criteria for the EPA to withdraw state programs; assuming control).

89. Deweese, *supra* note 17, at 11.

90. H.R. 1084, 112th Cong. § 2(b); *see* S. 587, 112th Cong. § 2(b).

91. *Id.*

92. H.R. 1084, 112th Cong. § 2(b)(iii).

before the information would need to be disclosed.[93] However, nothing forecloses a company's ability to bring suit against anyone who might abuse this provision. Oil and gas employees, medical professionals, and the public at large deserve access to the best medical care available when needed. Requiring companies to tell medical professionals the levels of chemicals people have been exposed to gives health care providers a clearer picture of the problem they are charged with treating. The FRAC Act adequately balances the proprietary interests of the oil and gas industry against the dangers to public health that fracking chemicals pose.

The American public is already starting to send signals to Congress indicating that fracking is dangerous business, that it is causing serious consequences to the environment, and is rife with trans-boundary and public health issues that call for federal regulation. The cities of Pittsburgh and Buffalo have banned hydraulic fracturing amid concerns that the practice contaminates drinking water.[94] Placing fracking regulation back under the primary authority of the federal government does not weaken state's rights; it merely strengthens the system of regulatory checks on industry and provides greater access to information in the interest of public health. The FRAC Act is the best opportunity to restructure fracking regulation, close loopholes in state regulatory schemes that appeared after fracking was federally deregulated in 2005, and afford greater protection to public health than what is currently being offered through state regulation.

IV. THE START OF SOMETHING BIGGER: THE FRAC ACT AS A CATALYST FOR INTERNATIONAL COOPERATION

In the United States, public perception and political pressure often focus on energy availability and independence while obscuring the issue of safe drinking water. Worldwide oil production peaked in 1970.[95] "By 1975 . . . the oil embargo imposed against the United States by certain foreign countries had placed national political attention on the economic

93. Deweese, *supra* note 17, at 13–14.

94. Daniel Trotta, Reuters, *City of Buffalo Bans Hydraulic Fracturing* (Feb. 8, 2011), http://www.reuters.com/article/2011/02/08/us-energy-natgas-buffalo-idUSTRE7176BZ20110208.

95. U. S. GOV'T ACCOUNTABILITY OFFICE, CRUDE OIL: UNCERTAINTY ABOUT FUTURE OIL SUPPLY MAKES IT IMPORTANT TO DEVELOP A STRATEGY FOR ADDRESSING A PEAK AND DECLINE IN OIL PRODUCTION 7 (2007), *available at* http://www.gao.gov/new.items/d07283.pdf.

and national security problems connected with relying on foreign energy sources, and resulted in the first comprehensive federal energy conservation policy."[96] Since then, energy and dependence on foreign oil and natural gas has remained a serious concern in the United States.

However, in many other parts of the world, energy dependence is taking a back seat to water security and policy.[97] In *Aqua Shock – The Water Crisis in America*, author Susan Marks points out that 1.1 billion people in the world do not have access to safe drinking water and 2.5 billion cannot access proper water sanitation services.[98] A United Nations ("UN") Educational Scientific and Cultural Organization report projects that freshwater scarcity affects approximately seventy-five percent of the global population.[99] Since 1900, the world's population has doubled, but the demand for water has increased a staggering six-fold.[100] UN estimates project that the world will add 57 million people every year for the first half of the twenty-first century, bringing the world population to 8.9 billion in 2050.[101] More people coupled with higher demand generated by rising standards of living in the developing world means that an already stretched necessity is on pace to become even more scarce in the foreseeable future.[102] The current scarcity of safe drinking water worldwide, coupled with the alarming projections for the future, illustrates why countries need to pay close attention to and start remedying the causes of freshwater shortages and water pollution.

Fixing the shortage of fresh drinking water, however, cannot come unless nations address the sources of their water shortages and contamination. Many nations see hydraulic fracturing as the solution to their energy demands and independence.[103] However, these same nations

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96. Alexandra B. Klass, *State Standards for Nationwide Products Revisited: Federalism, Green Building Codes, and Appliance Efficiency Standards*, 34 HARV. ENVTL. L. REV. 335, 347 (2010).

97. World Water Org., *China*, *available at* http://www.theworldwater.org/world_water.php?id=china (last visited Mar. 2, 2012).

98. Todd Likman et al., *Book Notes*, 13 U. DENV. WATER L. REV. 405, 432 (Spring 2010).

99. *Id.*

100. Arizona Water Res., Univ. of Arizona *Global Water Shortage Looms In New Century* (1999), *available at* http://ag.arizona.edu/AZWATER/awr/dec99/Feature2.htm (last visited Mar. 2, 2012).

101. U.N. DEP'T OF INT'L ECON. & SOC. AFFAIRS, WORLD POPULATION TO 2300 4 (2004), *available at* http://www.un.org/esa/population/publications/longrange2/WorldPop2300final.pdf.

102. Arizona Water Res., *supra* note 102.

103. David Winning, Wall St. J., *China Considers Shale-Gas Potential* (June 28, 2010), http://online.wsj.com/article/SB10001424052748703615104575328200873180036.html.

are moving forward with large-scale fracking projects while considerable debate still exists over fracking's effects on the environment and water quality.[104] Moreover, many of these countries do not even come close to the basic regulatory system established in the United States, making them especially susceptible to incurring water or greater environmental damage without the prospect of recourse against the fracking industry.[105] The following sections focus specifically on two of the larger developing countries experimenting with fracking, China and India, and illustrate how the consequences of fracking may affect the world's two most populous nations.

A. China

China has already identified vast unconventional hydrocarbon reserves and has begun using hydraulic fracturing to extract them. By early 2009, over thirty large and medium low-permeability (tight) gas reserves had been identified in China, "accounting for more than half the total proved natural gas reserves in China."[106] While these discoveries are good for China's movement toward resource independence, their development could pose a significant environmental threat, especially in an already polluted environment.[107] Eighty percent of the major rivers in China are too polluted to support fish and an estimated 500 million people in China do not have access to clean drinking water.[108] With millions already struggling for access to clean drinking water, a lack of proper fracking regulation and enforcement in China could lead to millions more being affected by water contamination.

For a good example of the severity of the current situation, one should look to what is happening in and around the hydrocarbon reserves just west of China's capital, Beijing. The greater Beijing area is home to just under 20 million people.[109] The city is heavily dependent on

104. Ben Schiller, Yale Env. 360, *'Fracking' Comes to Europe, Sparking Rising Controversy* (Feb. 28, 2011), http://e360.yale.edu/feature/fracking_comes_to_europe_sparking_rising_controversy/2374//.

105. *See* Sonja Schiller, *Avoiding the Problem of the Commons in a Communist Society: The Role of Water Rights in the Enforcement of Environmental Law in China*, 29 WASH. U. J.L. & POL'Y 349, 349–54 (2009).

106. Lou Dongkun & Dai Youjin, *China's Low-Permeability Gas Resources Await Development*, 1/5/09 OIL & GAS. J. 37.

107. Sonya Schiller, *supra* note 107, at 350–52.

108. *Id.* at 350–51.

109. Meng Jing, China Daily, *Beijing's Population Surges Near 20 million* (July 23, 2010), http://www.chinadaily.com.cn/china/2010-07/23/content_11038489.htm (last visited Mar. 2, 2012).

groundwater to supply its citizens with drinking water, but its groundwater and local reservoirs are drying up at an alarming rate.[110] As Beijing exhausts the water that is left in its immediate vicinity, the government is looking to import water from far outside the city to fuel its demand and growth.[111] Projects are already underway to bring water 800 miles from the Yangtze River. The Sulige field, China's largest natural gas reserve, consisting primarily of tight gas reserves, is in the Ordos Basin, approximately 450 miles west of the center of Beijing, and is already producing over 10 billion cubic meters of natural gas a year.[112] Every water system in the Ordos Basin is part of the Yellow River system.[113] Even though the Yellow River is already too polluted to be used for drinking water, the Chinese government's western water diversion project plans to bring water all the way from the Tibetan plateau into the Yellow River.[114] As the Chinese government looks to serve the water needs of Beijing and the other 440 million people in northern China, it grows increasingly closer to the effects of underground injection into the Sulige field.[115] The effects on drinking water that have been associated with hydraulic fracturing in rural America would be exponentially greater in a country as densely populated as China. The scale of the impact requires careful regulation to ensure that an already stretched and contaminated water supply is not permanently handicapped.

B. India

Like China, India is looking to unconventional hydrocarbons, especially those trapped in shale deposits, for an answer to its growing energy needs.[116] Preliminary estimates show that India's shale gas

110. Edward Wong, N.Y. Times, *Plan for China's Water Crisis Spurs Concern* (June 1, 2011), http://www.nytimes.com/2011/06/02/world/asia/02water.html?pagewanted=all.

111. *Id.*; Li Jing, China Daily, *Project to Increase Beijing's Water Supply* (Aug. 9, 2004), http://www.chinadaily.com.cn/english/doc/2004-08/19/content_366665.htm.

112. Energy-Pedia News, *China: PetroChina's 2010 Gas Output in Sulige to top 10 bcm* (May 28, 2010), http://www.energy-pedia.com/article.aspx?articleid=140526 (last visited Mar. 2, 2012).

113. CHINA NAT'L PETROLEUM CO., ORDOS BASIN 4, *available at* http://www.cnpc.com.cn/resource/english/images1/pdf/Brochure/Ordos%20Basin.pdf.

114. Wong, *supra* note 112.

115. *See id*; *see* China Nat'l Petroleum Corp., *Efficient Development of Sulige Tight Sandstone Gas Field*, http://www.cnpc.com.cn/en/press/Features/Efficient_development_of_Sulige_tight_sandstone_gas_field.htm (last visited Mar. 2, 2012).

116. R. Suryamurthy, The Telegraph, *Shale Gas Mission to US* (July 5, 2010),

resources exceed its remaining traditional gas resources.[117] While the existence of these reserves has been known for some time, the technology to develop them has only come about recently and has yet to be fully utilized in India.[118] Like American companies and the Marcellus Shale, companies in India are also testing fracking as an option for exploiting resources trapped in tight geological formations.[119] Indian officials acknowledge that exploration laws in the country will have to change because licensing in India does not currently cover the exploitation of unconventional resources like shale gas.[120] Not only is India in need of hydraulic fracturing technology, but also a regulatory system to deal with it.

As India moves toward developing its shale gas resources, it is simultaneously dealing with one of the world's greatest water crises. Author Philippe Cullet points out in his book, *Water Law, Poverty, and Development: Water Sector Reforms in India*, that while eighty-six percent of the country has proper access to water, only thirty-three percent has access to adequate sanitation to ensure the water is safe to drink.[121] Beyond issues of water quality, India also faces quantity concerns because projections show that without serious governmental intervention, demand for water in India is expected to exceed its supply of potable freshwater by forty percent as early as 2030.[122] These alarming statistics paint a dire picture for water issues in India even before hydraulic fracturing enters the conversation.

To illustrate the human cost that unsafe fracking might have in India, it is helpful to use the city of Ahmedabad as a case study. Ahmedabad is approximately sixty miles inland from the Arabian Sea and 350 miles due north of India's largest city, Mumbai, which had an estimated population in 2010 of over 20 million.[123] Ahmedabad's population in 2010 was estimated to be just over 5.7 million people.[124]

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http://www.telegraphindia.com/1100706/jsp/business/story_12650352.jsp.

117. *Id.*

118. *Id.*

119. European Formation Damage Conference, Schevenigen, The Netherlands, May 30–June 1, 2007; Josef Shaoul et al., *Massive Hydraulic Fracturing Unlocks Deep Tight Gas Reserves in India*, *available at* http://www.onepetro.org/mslib/servlet/onepetropreview?id=SPE-107337-MS&soc=SPE.

120. Suryamurthy, *supra* note 118.

121. Geoffrey Frazier et al., *Book Notes*, 13 U. DENV. WATER L. REV. 405, 427.

122. Anjli Raval, Financial Times, *WEF India: Thirst for Water* (Nov. 15, 2010), http://blogs.ft.com/beyond-brics/2010/11/15/wef-india-thirst-for-water/.

123. UNITED NATIONS, WORLD URBANIZATION PROSPECTS: THE 2009 REVISION POPULATION DATABASE (2009), *available at* http://esa.un.org/wup2009/unup/p2k0data.asp.

124. *Id.*

While only India's seventh largest city, Ahmedabad is, as recently noted by Forbes Magazine, one of the world's fastest growing cities, with an expected population of over 7.5 million by 2025.[125] Ahmedabad sits in the Indian state of Gurajat on top of one of the most promising shale gas reserves in India, the Cambay Basin.[126] The Cambay is a tight gas reservoir that is estimated to hold approximately 248 billion cubic feet of natural gas.[127] Since the reserve holds tight gas, conventional commercial drilling has been unable to exploit this resource.[128] However, fracking technology borrowed from shale gas developers in the United States has made this previously unbreakable reserve exploitable for commercial production.[129] The millions of people living in the vicinity of this reserve are already at risk, given India's significant water problems. Hydraulic fracturing, which is currently unregulated in India, poses an additional serious threat to the health of these inhabitants.

C. What Environmental Degradation in Nations like China and India Means to the United States

Before moving into how the United States can prevent environmental degradation abroad, it is necessary to first explain why the United States has a vested interest in avoiding environmental destruction thousands of miles from its borders. Over the last twenty-five years, the United States has become dependent on foreign economies. In 1985, the United States imported approximately $6 million more worth of goods from China than it exported to the Chinese.[130] In 2010, the United States' trade deficit with China was approximately $273 billion.[131] Over the same twenty-five year span, the U.S. trade deficit with India grew by approximately $9.56 billion.[132] The products imported are vital to the U.S. economy. In 2005 alone, the United States imported $174 billion

125. *Id.*; *see* Joel Kotkin, Forbes, *The World's Fastest-Growing Cities* (Oct. 7, 2010), http://www.forbes.com/2010/10/07/cities-china-chicago-opinions-columnists-joel-kotkin.html.

126. *See* Suvrat Kher, *Fossils in Amber from Eocene Cambay Basin India* 2 (2010), http://suvratk.blogspot.com/2010/10/fossils-in-amber-from-eocene-cambay.html (last visited Mar. 2, 2012).

127. The Hindu, *Oilex Strikes Big Gas Reserves South of Ahmedabad* (Nov. 11, 2010) http://www.thehindu.com/business/Industry/article879973.ece.

128. *Id.*

129. *Id.*

130. U.S. Census Bureau, *Trade in Goods with China*, *available at* http://www.census.gov/foreign-trade/balance/c5700.html (accessed Feb. 2, 2011).

131. *Id.*

132. U.S. Census Bureau, *Trade in Goods with India*, http://www.census.gov/foreign-trade/balance/c5330.html (accessed Feb. 2, 2011).

worth of electrical machinery, $33 billion worth of plastics, $26 billion worth of iron and steel, and $8 billion worth of grain, seeds, and fruit from China.[133] The United States depends on the developing world to manufacture the goods it needs to function as a service economy and economic power.

Environmental degradation in foreign nations can hurt the quality and quantity of products produced, which in turn would harm the United States' ability to deliver high-quality products to American consumers. The most obvious example of harm coming to the United States as a result of fracking in China is crop destruction. In 2007 alone, the United States imported over 2 million metric tons of agricultural and seafood products from China, totaling $4.9 billion dollars.[134] Growing grains, seeds, and fruits viable for sale to the American market is nearly impossible when irrigation water is polluted with methane and fracking chemicals. Over 350,000 metric tons of fish and related products were sent from China to the United States in 2007.[135] Fish farmed in water polluted with carcinogenic chemicals and diesel fuel is an unattractive sale in the United States. Without China's supply of goods, prices would rise in the United States, negatively affecting consumers, which in turn would negatively affect the economy as a whole.

Environmental degradation also has an effect on the availability of the workforce to produce the goods Americans and their economy depend on. Consuming water and food contaminated with diesel fuel can damage the linings of the esophagus, intestines, mouth, stomach, and throat, and may cause serious damage if diesel fuel enters the lungs.[136] Without healthy and productive people to operate the massive manufacturing sectors in China and India, the United States would lose the lifeblood of goods on which it has become so dependent. As the United States has grown more dependent on other nations for the products that drive its economy, the United States has also become interested in the health and viability of the foreign nationals that are manufacturing goods. A healthy environment means a healthy workforce, which in turn means that the United States gets the products it needs. Environments contaminated by hydraulic fracturing pose a threat to the economic interests of the United States.

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133. CONG. RESEARCH SERV., CHINA'S TRADE WITH THE UNITED STATES AND THE WORLD 11 (2007), *available at* http://www.fas.org/sgp/crs/row/RL31403.pdf.

134. CONG. RESEARCH SERV., FOOD AND AGRICULTURAL IMPORTS FROM CHINA 5 (2008), *available at* http://www.fas.org/sgp/crs/row/RL34080.pdf.

135. *Id.* at 6.

136. U.S. Nat'l Library of Medicine, *Diesel Oil*, http://www.nlm.nih.gov/medlineplus/ency/article/002753.htm (last visited Mar. 2, 2012).

D. International Cooperation

Cooperation between the United States and its trade partners, to ensure that the world's unconventional hydrocarbon resources are efficiently and safely produced, is already underway, but has yet to offer any solid promise of true reform and protection. China hopes to push its domestic shale gas production from its current output, which is negligible, to 15-30 billion cubic meters by 2020.[137] However, China has been unable to develop its estimated 26 trillion cubic meters of shale gas because it lacks the technology to reach the reserves.[138] On November 17, 2009, President Barack Obama signed the U.S.-China Shale Gas Resource Initiative ("the Chinese Initiative"), offering cooperation between the two countries with the goal of efficiently and safely developing China's shale gas resources.[139] The Chinese Initiative is aimed at lending American expertise in the area of shale gas development, to help China efficiently develop its shale gas resources with minimal environmental impact.[140]

In India, officials have also reached out to the United States for help with developing their shale resources. Almost one year after signing the Chinese Initiative, President Obama signed a Memorandum of Understanding ("MOU") with the Indian government on energy development, including the development of shale resources.[141] The MOU calls for cooperation in the pursuit of clean energy, but its shale gas language focuses on resource assessment and personnel training, while remaining silent on the "clean" part.[142] It is clear that India needs foreign help to develop its tight gas resources,[143] however, the United States should make sustainability a priority before helping India develop these reserves. The United States is giving India the technology and knowledge to drill in tight geologic formations before India has

137. Winning, *supra* note 105.

138. *Id.*

139. THE WHITE HOUSE: OFFICE OF PRESS SECRETARY, FACT SHEET: U.S.-CHINA SHALE GAS RESOURCE INITIATIVE (2010), *available at* http://www.america.gov/st/texttrans-english/2009/November/20091117145333xjsnommis0.4233515.html.

140. *Id.*

141. McNulty, *supra* note 16.

142. Patricia Zengerle & Alister Bull, Reuters, *India and U.S. to Cooperate on Clean Energy, Shale Gas*, (Nov. 8, 2010), http://www.reuters.com/article/idUSTRE6A712N20101108.

143. *See* Shubi Arora, Bar & Bench, *Shale Gas: An Essential Part of India's Plan for Energy Independence* (Nov. 17, 2010), http://www.barandbench.com/brief/3/1113/shale-gas-an-essential-part-of-indias-plan-for-energy-independence-.

established even basic licensing procedures for operators to become unconventional drillers, let alone enacted environmental regulations to protect its people from the environmental effects of fracking.[144] India has already identified substantial reserves in its northeastern states and is looking to adopt and implement a royalty and leasing system based on the United States' model as early as 2013.[145] As India grows closer to exploitation of its unconventional hydrocarbons without substantive environmental regulation in place, the opportunity to establish meaningful fracking regulation slips further and further away.

E. Toward International Reform

To understand how the FRAC Act can spark an international agreement for global cooperation on regulating and reducing fracking's impacts, it is useful to draw analogies between fracking and the Montreal Protocol.[146] The Montreal Protocol, which went into effect in 1989, was developed to protect the ozone layer from further degradation, primarily as a result of the release of chlorofluorocarbons ("CFCs").[147] The first hints that CFCs were damaging the environment came from a 1974 paper that argued that CFCs release chlorine atoms as they migrate through the upper atmosphere, which destroy the ozone layer.[148] Even as scientific evidence that CFCs were damaging the ozone layer mounted and the public awakened to the issue, industry representatives denied that CFCs were harmful and argued that regulation was unnecessary without more concrete evidence on the connection between CFCs and the environment.[149] Eventually, multi-nation talks, spearheaded by the United States and culminating in Montreal in September of 1987, resulted in an international agreement to both freeze the use of CFCs in

144. *See* Suryamurthy, *supra* note 118.

145. Gireesh Chandra Prasad, *Royalty Regime to be Adopted for Shale Gas Operators*, FIN. EXPRESS, Aug. 6, 2010, 2010 WLNR 15633641; World Oil Online, *India Delays Shale Gas Auction to 2013* (Feb. 14, 2012), http://www.worldoil.com/India_delays_shale_gas_auction_to_2013.html (last visited Mar. 2, 2012); Rakesh Sharma, Wall St. J., *India Official: Expect Shale Gas Block Auction by End 2013* (Dec. 21, 2011), http://online.wsj.com/article/SB10001424052970204464404577111683701766096.html.

146. *See* ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE, & POLICY 1050–1055 (2006).

147. T. Rick Irvin et al., *Kyoto Comes to Georgia: How International Environmental Initiatives Foster Sustainable Commerce In Small Town America*, 36 GA. J. INT'L & COMP. L. 559, 566 (2008).

148. Cass R. Sunstein, *Of Montreal and Kyoto: A Tale of Two Protocols*, 31 HARV. ENVTL. L. REV. 1, 10 (2007).

149. *Id.* at 10–11.

new commercial products and cut their use by fifty percent over the following decade.[150] The industry responded to the Montreal Protocol not by stalling or trying to circumvent the restrictions, but by recognizing the new market for CFC alternatives and beginning to develop substitutes.[151] The industry's cooperation in reducing CFC emissions made the impact of the Montreal Protocol much greater than if it had simply resulted in an international agreement.[152]

In addition to the work done through the Montreal Protocol, the reduction of CFCs was also due in part to the fact that the CFC industry's cost-benefit analysis began to favor the change.[153] Science showed the industry that the risk of serious and expensive remediation was not worth the monetary benefits of continuing to produce CFCs.[154] This financial calculation induced the industry to develop new technology to replace CFCs, which was to the benefit of all parties involved; the ozone was protected, while the producers of products that formerly used CFCs retained marketable products.[155]

Much like the former CFC producers, today's oil and gas interests are arguing that the science on fracking is wrong, and, moreover, that the necessity of these fuels requires fracking since no reasonable substitutes are available.[156] However, these arguments are without merit. As the unbiased science proving the ill effects of fracking mounts and the public awakens to the dangers of fracking, the industry is likely to take a serious look at the costs and benefits of spearheading their own preventative measures.[157] In fact, the fracking industry is already starting to hint that they are seeing the cost-benefit analyses favoring prevention and

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150. *Id.* at 16.

151. *Id.* at 21.

152. *Id.* at 22–23.

153. *Id*. at 15.

154. *Id.*

155. PERCIVAL ET AL., *supra* note 148, at 1053.

156. Alex Cameron, News On 6, *Oklahoma Oil and Gas Execs Concerned About EPA's 'Fracking' Study*(2011), http://www.newson6.com/Global/story.asp?S=14266933 (last visited Mar. 2, 2012); *see* Steve Hargreaves, CNN, *Billions of Barrels of Untapped U.S. Oil* (Mar. 9, 2011), http://money.cnn.com/2011/03/04/news/economy/oil_shale_bakken/index.htm (last visited Mar. 9, 2011).

157. *See* Ian Urbina, N.Y. Times, *Regulation Lax as Gas Wells' Tainted Water Hits Rivers* (Feb. 26, 2011), http://www.nytimes.com/2011/02/27/us/27gas.html?_r=1&src=me&ref=homepage; *see also* Anne C. Mulkern, N.Y. Times, *Natural Gas Companies Send Workers to Hill to Make Case for Fracking* (Mar. 8, 2011), http://www.nytimes.com/gwire/2011/03/08/08greenwire-natural-gas-companies-send-workers-to-hill-to-83229.html.

regulation. Halliburton, originally opposed to disclosing the chemicals they use in fracking, has consented to releasing the constituents of their fracking fluids.[158] The experience of CFCs suggests that greater international cooperation is likely as more of the industry moves to voluntary regulation.

As for the future prospects of remedying the fracking problem, the fracking industry is less of an environmental problem compared to what CFCs were pre-Montreal. Unlike with CFCs, fracking damage has been localized so far, and has not caused extensive damage to humans and the environment.[159] Further, many countries are only beginning to experiment with fracking, which leaves time to implement preventative measures before the extent of the damage grows.[160] Having most nations enter the discussion at the same stage of development leaves every nation ready for fracking regulation and limits the need for differentiating responsibilities between the developed and underdeveloped nations.[161] Like with CFCs, the United States is in a prime position to lead the international community in the quest for safer fracking practices. The United States should start with the FRAC Act's stronger regulatory foundation and build on its lessons. Then, it should use the subsequent experience to work with the industry and global community to develop an agreement regulating fracking before the localized environmental degradation that has been documented takes place on an inconceivable scale in cities like Ahmedabad, Yulin, Mumbai, and Beijing.

Given the substance of its current agreements, the United States has a responsibility to China and India to impart the importance of extensive investigation of proposed fracking operations to ensure sustainable growth. It is part of America's pledge to China to work with the Chinese to efficiently and effectively develop China's shale gas resources.[162] However, development should not come at the expense of China's environmental sustainability.[163] The lessons of the FRAC Act can be taken to countries like China to teach foreign oil and gas developers how

158. Matthew Daly, The Huffington Post, *EPA: Halliburton Issued Subpoena For Refusing To Disclose Hydraulic Fracturing, 'Fracking,' Chemical Ingredients* (Nov. 9, 2010), http://www.huffingtonpost.com/2010/11/09/epa-halliburton-subpoenae_n_781045.html (last visited Mar. 7, 2011); Mike Soraghan, N.Y. Times, *Halliburton Announces Ecofriendly Fracking Fluid, More Disclosure* (Nov. 15, 2010), http://www.nytimes.com/gwire/2010/11/15/15greenwire-halliburton-announces-ecofriendly-fracking-flu-80875.html.

159. *See* Sunstein, *supra* note 150, at 14; *see also* Urbina, *supra* note 159.

160. Schiller, *supra* note 106; Winning, *supra* note 105.

161. *Id.*; PERCIVAL ET AL., *supra* note 148, at 1053–54.

162. FACT SHEET: U.S.-CHINA SHALE GAS RESOURCE INITIATIVE, *supra* note 141.

163. *Id.*

to balance the important concerns of efficient and sustainable development. The FRAC Act is crucial to international hydraulic fracturing reform and must not be undervalued as the tool that can lead to the end of unsafe fracking worldwide.

V. CONCLUSION

As the global leader in fracking technology, the United States has the ability to advocate effectively for safe fracking worldwide. Giving countries like China and India the technology to drill unconventional oil and gas reserves, without also advocating for better regulation of fracking, is an irresponsible policy and is inconsistent with the goals of America's global clean energy, shale development, and fracking initiatives. While the United States certainly does not have the authority to force any country to strictly regulate hydraulic fracturing, it can lead by example and demonstrate that strict, well enforced, and nationally consistent regulation can foster the exploitation of tight oil and gas formations in a way that is both economically and environmentally sound.

In the end, fracking will not have to disappear in order to fix the problem. However, the world's current fracking regulations do not adequately protect against environmental degradation. Pollution can be mitigated, if not eliminated altogether, through better regulation. People around the world can sleep better knowing that the international community is working to ensure that their natural resources are being used in a manner that is both efficient and environmentally friendly.

The world is looking to the United States for guidance on shale development and regulation. By adopting the FRAC Act, Congress is taking a big step in support of America's commitment to efficient and sustainable development of unconventional oil and gas resources at home and abroad. By recognizing the dangers posed and addressing them early, hydraulic fracturing has the potential to become one of the unique examples of when the planet came together to do something great for all mankind. Domestically, the FRAC Act will protect the nation's drinking water supply. The lessons from the FRAC Act will guide the international community to conduct fracking responsibly and will also protect the United States' interests by ensuring that foreign environmental degradation does not have a negative impact on the U.S. economy. The FRAC Act is the tool with which the United States can lead the international community to develop an international fracking agreement, which the entire world has an interest in developing.