

# Climate Change Justice: The Challenge for Global Governance

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*Private equity offsets can be a partial solution to the difficult justice issues raised on the global level by climate change. Equity offsets allow individuals to follow their moral intuitions about the global differences in carbon emissions and the impact of global warming on individual lives. An active equity offset market could precede a post-Kyoto international agreement for global emissions reductions and could enhance the prospects for the adoption of such an agreement.*

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## I. INTRODUCTION

Climate change-related inequalities pose difficult issues of justice and governance on the domestic and global levels. Scholars and policy analysts have acknowledged these difficulties.<sup>1</sup> The challenge is in addressing them. Debates

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1. See generally Mathew D. Adler, *Corrective Justice and Liability for Global Warming*, 155 U. PA. L. REV. 1859, 1861-62 (2007); Daniel A. Farber, *Compensation for the Victims of Climate Change*, 155 U. PA. L. REV. 1605, 1606 (2007); Eric A. Posner & Cass R. Sunstein, *Climate Change Justice*, 96 GEO. L.J. 1565, 1611-12 (2008); 3 (John M. Olin Law & Economics Working Paper No. 354, 2007); Daniel A. Farber, *The Moral Case for Climate Compensation: Doing Justice in a Complex World 2* (working paper, 2008). United Nations Framework Convention on Climate Change, arts. 2 & 4, May 9, 1992, 1771 U.N.T.S. 107 (entered into force

about the global justice dimensions of climate change focus on the moral justification for dealing with the inequities of climate change, the political impasse between the greatest emitters (China and the United States), and the impasse between the greatest emitters and the developing countries, where many of the greatest initial climate change harms are likely to occur.

Poverty, disease, water shortage, food insecurity, and conflict are harms. They are not by definition injustices.<sup>2</sup> To understand when these should be viewed as injustices, we need a theory of justice. Theoretical reflections on the nature of the injustice at stake differ significantly.<sup>3</sup> Even those with a moral intuition that justice is at stake in climate change-related harms struggle against other ideological commitments to justify those intuitions.<sup>4</sup>

For the purposes of this article, the authors recognize that consensus is unlikely on the moral justification for addressing global climate change-related injustice and on whether a solution would require a profound restructuring of the global political economy. As authors, we can stipulate, however, that questions of justice apply to (1) individual behavior and the choices of individual agents to consume or produce in carbon emitting ways, (2) local technological, social, political, and economic infrastructural conditions that affect the carbon footprint of any individual action (without a bus system, I cannot opt to take the bus; if solar panels are prohibitively expensive, I cannot use solar energy to power my house), and (3) the macrostructure, or what John Rawls called the “basic structure,”<sup>5</sup> which includes considerations of global capital and international agreements.<sup>6</sup>

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March 21, 1994); United Nations Conference on Environment and Development, June 3-14, 1992, *Agenda 21*, U.N. Doc. A/CONF.151/26 (Aug. 12, 1992), available at <http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21toc.htm>; ANDREW SIMMS, *ECOLOGICAL DEBT: THE HEALTH OF THE PLANET AND THE WEALTH OF NATIONS* (2005); Wilfred Beckerman & Joanna Pasek, *The Equitable International Allocation of Tradable Carbon Emissions*, 5 GLOBAL ENVTL. CHANGE 405 (1995); Simon Caney, *Environmental Degradation, Reparations, and the Moral Significance of History*, 37 J. SOC. PHIL. 464 (2006); Michael Grubb, *Seeking Fair Weather: Ethics and the International Debate on Climate Change*, 71 INT'L AFF. 463 (1995); Arnulf Grubler & Yasumasa Fujii, *Inter-Generational and Spatial Equity Issues of Carbon Accounts*, 16 ENERGY 1397 (1991); Sivan Kartha et al., *Cutting the Knot: Climate Protection, Political Realism and Equity as Requirements of a Post-Kyoto Regime* (2005), <http://www.ecoequity.org/docs/CuttingTheKnot.pdf>; Adam Rose et al., *International Equity and Differentiation in Global Warming Policy*, 12 ENVTL. & RES. ECON. 25 (1998); Henry Shue, *Global Environment and International Inequality*, 75 INT'L AFF. 531 (1999).

2. UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC), *CLIMATE CHANGE: IMPACTS, VULNERABILITIES, AND ADAPTATION IN DEVELOPING COUNTRIES* (2007) available at <http://unfccc.int/resource/docs/publications/impacts.pdf>.

3. Justice concerns could be framed as corrective or distributive (as Posner and Sunstein have argued, see Posner & Sunstein, *supra* note 1, at 1567) or as more foundationally related to the basic structure of the global political economy (as the political theorist in this paper's co-authorship would argue). See generally THOMAS POGGE, *WORLD POVERTY AND HUMAN RIGHTS* (2002); DAVID SCHWEICKART, *AFTER CAPITALISM* (2002).

4. See generally Posner & Sunstein, *supra* note 1.

5. See JOHN RAWLS, *A THEORY OF JUSTICE* (1999) (introducing the concept of “basic structure”); See also JOHN RAWLS, *POLITICAL LIBERALISM* 257-288 (1996) (developing the implications of the concept for justice under political liberalism of a state).

6. See generally Charles R. Beitz, *Justice and International Relations*, 4 PHIL. & PUB. AFF. 360 (1975) (examining what it means to think about justice globally); Charles R. Beitz, *Cosmopolitanism and Global*

This third area of justice consideration is in the realm of the most interesting philosophical work and of the least consensus. More important for our purposes, action at the macrostructural level is the traditional realm of global governance. Although the effects of the individual, infrastructure, and macrostructure can be related (with an international agreement on climate change, presumably changes will be needed in infrastructure at the country and local levels), we also can act in ways to enhance justice at just one of these levels. These actions can be justified by incompletely theorized<sup>7</sup> moral intuitions and, if aggregated with similar actions (consistent with perhaps differently justified moral intuitions), can have an impact on the inequitable distribution of climate change-related harms.

Even without a moral or political consensus on the causes or appropriate responses to global climate change-related inequities, we can recognize that the inequitable distribution of harm due to climate change arises in many ways, including the harm of environmental effects of climate change,<sup>8</sup> the harm of human conflict that will arise from the environmental effects,<sup>9</sup> and inequitable ability to invest in adaptation or mitigation. Although we recognize that global economic and political inequalities influence the differences in the ways countries contribute to and are affected by climate change, neither global climate change policy nor the scheme we propose is the best means for mitigating all global inequalities.<sup>10</sup> Nevertheless, the present political environment suggests that attending to international inequities related to climate change is necessary to achieve such agreements and to enable compliance with them.<sup>11</sup> Inequity can arise from differing abilities at the individual and country level to bear the higher costs of energy that will be an outcome of most greenhouse gas (GHG) emissions reduction schemes. For example, in the absence of extraordinary measures, the two leading systems for addressing climate change – carbon taxes and cap-and-trade schemes – will exacerbate within-country inequalities and global inequali-

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*Justice*, 9 J. ETHICS 11 (2005); Iris Marion Young, *Taking the Basic Structure Seriously*, 4 PERSP. ON POL. 91 (2006) (reflecting on the vast scope of what we need to consider as part of the basic structure).

7. See Cass R. Sunstein, *Incompletely Theorized Agreements*, 108 HARV. L. REV. 1733 (1995) (deploying the concept of “incompletely theorized agreements”).

8. See, e.g., David B. Lobell et al., *Prioritizing Climate Change Adaptation Needs for Food Security in 2030*, 319 SCIENCE 607, 607-10 (2008) (noting that South Asia and Africa will suffer greater agricultural losses than other regions); INTERNATIONAL PANEL ON CLIMATE CHANGE (IPCC), CLIMATE CHANGE 2007: IMPACTS, ADAPTATION, AND VULNERABILITY (2007), available at <http://www.ipcc.ch/ipcreports/ar4-wg2.htm> (noting the effects of climate change on agriculture and disease rates in African and India).

9. See, e.g., Michael P. Vandenbergh & Anne K. Steinemann, *The Carbon-Neutral Individual*, 85 N.Y.U. L. REV. 1673, 1685 (2007) (noting concerns about armed conflicts arising from climate change-related events). These conflicts may be particularly likely in those countries with unstable political regimes or that neighbor countries with unstable political regimes.

10. Cf. Posner & Sunstein, *supra* note 1, at 1611-12.

11. It is not, however, sufficient for compliance. As Yang argues in this issue, China's obstacles to participating in a global carbon mitigation and reduction scheme are infrastructural as well as political. See Tsemin Yang, *The Implementation Challenge of Mitigating China's Greenhouse Gas Emissions*, 20 GEO. INT'L ENVTL. L. REV. 681 (2008).

ties as people struggle to adapt to the higher cost of energy.<sup>12</sup>

We have demonstrated in earlier work that a novel concept, "equity offsets," can address some of the justice issues on the domestic level,<sup>13</sup> and in this article we demonstrate that equity offsets also can contribute to the resolution of the even more intractable justice problems at the global level. An equity offset scheme can encourage and enable carbon reductions with or without international or national carbon emissions reduction regulation. That is, equity offsets do not rely on success in global governance to begin mitigating some intra-country and global inequities caused by climate change and to begin facilitating and encouraging emissions reductions from changes in individual behavior. Further, such a scheme can mitigate the inequities that inevitably are associated with the increased energy costs anticipated from most GHG reduction schemes.

After a brief consideration of the complicated moral reflections invited by global climate change-related inequalities (Part II) and the global governance systems that are directed at global climate change (Part III), this article proposes creation of a global market for private equity offsets. These equity offsets will enable individuals to follow their moral intuitions about global climate change and take responsibility for their individual carbon emitting behaviors. Additionally, it will change aspects of local carbon footprint infrastructures. The combined effect will be to decrease carbon emissions through cooperation and coordination among those differently located in the global economy. Part IV outlines the equity-improving features of the equity offset proposal. The conclusion shows that these improvements may even make it easier to surmount other political challenges related to climate change.

## II. GLOBAL CLIMATE CHANGE AND RELATED INEQUALITIES

Issues of justice pose instrumental and non-instrumental challenges in global politics: the sense of injustice can be a barrier to resolution of a collective problem,<sup>14</sup> and an inability to identify the source of injustice can be used to justify inaction.<sup>15</sup> The field of philosophical inquiry into global obligation has

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12. See ROBERT GREENSTEIN ET AL., CTR. ON BUDGET AND POLICY PRIORITIES, DESIGNING CLIMATE-CHANGE LEGISLATION THAT SHIELDS LOW-INCOME HOUSEHOLDS FROM INCREASED POVERTY AND HARDSHIP 1, 3, 9 (2007) (concluding that even a modest 15 percent greenhouse gas emissions reduction from current levels as is proposed in recent federal legislation would increase energy-related costs by \$750 to \$950 per year for the poorest fifth of the U.S. population, which has a household annual income below \$27,000). See also Michael P. Vandenbergh, Jack Barkenbus & Jonathan Gilligan, *Individual Carbon Emissions: The Low-Hanging Fruit*, 55 UCLA L. REV. 1701 (2008) (discussing costs of tax and cap and trade schemes in the United States).

13. Michael P. Vandenbergh & Brooke Ackerly, *Climate Change and Individual Behavior: The Equity Problem*, 26 VA. ENVTL. L.J. 55 (2008).

14. See, e.g., Michael P. Vandenbergh, *Climate Change: The China Problem*, 81 S. CAL. L. REV. (forthcoming 2008) (noting the equity arguments raised by developing nations in negotiations over greenhouse gas emissions reductions).

15. See Walter Sinnott-Armstrong, *It's Not My Fault: Global Warming and Individual Moral Obligations*, in

generally focused on poverty and human rights, and sometimes on the connections between the two. We are interested, more narrowly, in inequities arising from, and contributing to, climate change. We consider these other issues important and connected to climate change-related injustices through the macro-structure.<sup>16</sup> In this Part we consider recent arguments about climate change-related injustice, and we argue that given the obstacles to philosophical agreement on the nature of universalizable global injustices, addressing climate change-related injustice will challenge existing systems of global governance.

#### A. DISAGREEMENTS ABOUT CLIMATE CHANGE-RELATED INJUSTICE

Significant moral disagreement persists among philosophers and legal scholars as to the basis, meaning, and extent of global obligation in general,<sup>17</sup> and as to climate change-related injustice in particular.<sup>18</sup> We focus on mechanisms for addressing climate change-related injustice and do not expect these mechanisms to mitigate inequities in global development, poverty, human capabilities, or human rights. These other problems are significant and they may be exacerbated by climate change. Yet, although we should attend to the ways in which climate change can exacerbate these injustices, we also should attend to the possibility that some solutions to the climate problem may create further injustices. We conclude that there is an important role for climate change measures that mitigate these injustices.

Moreover, even if a consensus existed on the normative basis for correcting climate change-related injustice, correcting that injustice would remain a particularly challenging problem of global governance. Given the failure of global governance systems to deal with other significant global problems, a climate change solution should include a system that allows those who share the intuition of moral obligation for mitigating the impact of climate change-related inequities to act on their intuitions. Such a system also should mitigate the impact of carbon emissions controls (which are likely to increase the cost of energy). Most schemes for the latter would just compensate people living in poverty with side payments.<sup>19</sup> We favor a solution that integrates people living in poverty into the

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PERSPECTIVES ON CLIMATE CHANGE: SCIENCE, ECONOMICS, POLITICS, ETHICS 285, 289–94 (Walter Sinnott-Armstrong & Richard B. Howarth eds., *Advances in the Economics of Environmental Resources* Series vol. 5, 2005). This form of argument is not unique to arguments about climate change. See, e.g., SAMANTHA POWER, “A PROBLEM FROM HELL”: AMERICA AND THE AGE OF GENOCIDE (2002) (documenting this strategy in the field of human rights).

16. See generally BROOKE A. ACKERLY, *UNIVERSAL HUMAN RIGHTS IN A WORLD OF DIFFERENCE* (2008).

17. See generally POGGE, *supra* note 3 and *FREEDOM FROM POVERTY AS A HUMAN RIGHT* (Thomas Pogge ed., 2007); ONORA O’NEILL, *BOUNDS OF JUSTICE* (2000); SAMUEL SCHEFFLER, *BOUNDARIES AND ALLEGIANCES: PROBLEMS OF JUSTICE AND RESPONSIBILITY IN LIBERAL THOUGHT* (2002); Iris Marion Young, *Responsibility and Global Labor Justice*, 12 J. POL. PHIL. 365 (2004).

18. See sources cited *supra* note 1.

19. See Lieberman-Warner Climate Security Act of 2007, S. 2191, 110th Cong. §§ 4501, 4502 (setting aside

solution, fostering a normative sense of the shared impact of climate change.<sup>20</sup>

Consider four themes of climate change-related inequities. First, assuming climate change inequities exist, are they unjust? Second, assuming they are unjust, who or what entity has an obligation to mitigate that injustice? Third, assuming an entity or entities have an obligation to mitigate that injustice, what should they do? And fourth, what should we do if we do not know what we should do?

One argument that might be used to dismiss concern over the injustice of climate change inequities concludes that there is no principle that can be argued to justify concern for climate-related inequalities.<sup>21</sup> Another approach is to argue that although climate inequalities exist and these inequalities are unjust there is no entity that has the authority to mitigate these injustices because individuals within states are not responsible for the problem (as they have no control over their infrastructure or the global macrostructure) and states cannot participate in global redistribution without creating internal and unjust inequalities or redistributions.<sup>22</sup>

Aside from curtailing carbon emissions, it is not clear what should be done to ameliorate the injustice related to carbon emissions. Even schemes to offset carbon emissions have the potential to generate national and global inequalities.<sup>23</sup> Such schemes are part of a growing business and most benefits accrue to large scale enterprises not to economically disadvantaged individuals or communities.<sup>24</sup> Moreover, disadvantaged individuals and communities have been threatened or harmed in some cases. For example, indigenous people have lost use of grazing land in Ecuador,<sup>25</sup> and forest-dwellers in India have been removed from their land.<sup>26</sup> For others, the carbon offset schemes have been lucrative.<sup>27</sup> Even if

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a portion of emissions allowance auction revenues to create Energy Assistance Fund and Rural Energy Assistance Program to address effects of increased energy prices on low-income populations); GREENSTEIN, ET AL., *supra* note 12, at 9 (evaluating provisions for low-income households in Lieberman-Warner bill and suggesting greater compensation).

20. Iris Marion Young has developed a theory of shared responsibility for systematic injustices. *See generally* Young, *supra* note 17.

21. *See* Sinnott-Armstrong, *supra* note 15, at 289-94. *But see* CHRISTOPHER KUTZ, *COMPLICITY: ETHICS AND LAW FOR A COLLECTIVE AGE* 137-44 (2000) (proposing a theory of moral complicity). *But see also* Young, *supra* note 17, 372-73 (arguing instead that we need a theory of political responsibility that takes into account the ways in which globalization makes us imbricated in "the objective systemic institutional relations in which [the people of different parts of the world] dwell together").

22. *See* Posner & Sunstein, *supra* note 1, at 1586-91. *But see* Adler, *supra* note 1, at 1866 (concluding that "[a] government-versus-government structure for global warming liability seems particularly promising as a matter of" corrective justice).

23. For example, these concerns have been raised about the Clean Development Mechanisms. *See, e.g.*, CARBON TRADING: A CRITICAL CONVERSATION ON CLIMATE CHANGE, PRIVATISATION, AND POWER (Larry Lohman ed., The Dag Hammarskjöld Centre Development Dialogue No. 48, Sept. 2006) (identifying criticisms regarding implementation of the Clean Development Mechanisms).

24. *Id.*

25. *See id.* at 226-36 (describing and criticizing tree plantation project in Andean highlands).

26. *See id.* at 265 (describing displacement of Adivasi people).

27. *See generally id.*

there is no consensus on whether global climate change-related inequalities are unjust, even if there is no consensus (globally or within the United States) about who or what entity has an obligation to respond to global climate change-related inequalities, and even if there is no consensus on what just obligations require (side payments,<sup>28</sup> charity,<sup>29</sup> or restructuring the global economy<sup>30</sup>), in fact *because* there is no dominant shared view about climate change-related injustice, global climate change justice presents a crisis for global governance.

#### B. AVOIDING CLIMATE CHANGE-RELATED INJUSTICE

Some have argued that we can avoid facing this crisis with a relatively cheap technological fix. On this view, global governance issues (and, hence, justice issues) can be bypassed by geoengineering technology.<sup>31</sup> Geoengineering proposals shift our economic attention from reducing emissions to attempting global cooling, for example “by stratospheric scattering at a very modest cost without the need for costly adaptation, human lifestyle changes, or the general public’s active cooperation, all required by emission controls.”<sup>32</sup> The geoengineering approach shifts the costs of addressing climate change from adaptation and mitigation to a technological intervention, but the shift does not avoid the challenges to global governance. Instead it makes us pose a different and equally challenging set of governance and justice questions.

Although it is important to encourage inquiry into all ways of mitigating climate change and its impact, we cannot avoid difficult global governance and justice issues by substituting geoengineering for international agreements. The geoengineering approach merely puts additional issues on the table. By adding technical considerations to other responses to climate change, we do not avoid dealing with the structural challenge of global governance. For example, who decides when to adjust the global climate and by how much? Who pays and how much should they pay? If the technology will have different effects on different parts of the planet, who decides which effects are desired or acceptable in which places? Technological considerations may make us feel that we do not need to change individual behavior or change economic and political conditions to limit greenhouse gas emissions. Yet the technological approach of global cooling will generate winners and losers. Adjudication between winners and losers in global

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28. See Posner & Sunstein, *supra* note 1, at 1582-83.

29. See generally POGGE, *supra* note 3 (discussing poverty and charity but not applying argument about poverty to climate change).

30. SCHWEICKART, *supra* note 3 (also not applying argument about poverty to climate change).

31. See generally, Alan Carlin, *Global Climate Change Control: Is There a Better Strategy Than Reducing Greenhouse Gas Emissions?*, 155 U. PA. L. REV. 1401 (2007) (proposing sulfate aerosol geoengineering solution). See also Ken Caldeira, Op-Ed, *How to Cool the Globe*, N.Y. TIMES, Oct. 24, 2007, at A19 (noting that geoengineering with aerosols should not be a substitute for greenhouse gas emissions limitations but could be an “insurance policy” if emissions limitations fail).

32. See Carlin, *supra* note 31, at 1401.

cooling may be as challenging than adjudicating between winners and losers in climate change.

### C. A PROBLEM FOR GLOBAL GOVERNANCE

Within countries and across countries, global climate change will affect people differently. Moreover, we note that there are winners and losers both in addressing global climate change and in ignoring climate change.<sup>33</sup> Nature will determine some of these. The market will determine others. And politics will determine yet others. Shifting the focus of solution-generation from emissions reduction to global cooling, or to expending resources on other problems rather than climate change, will not address the problems of global injustice created by climate change, nor will it generate political institutions necessary to adjudicate among these. All solutions, including the failure to come up with solutions, are *political* solutions. They will generate winners and losers. Adjudicating among these “players” makes solution-generation a matter for global governance. There is no philosophically justifiable escape route and no technological fix for the demands of global governance.

In short, the scholarship to date has not resolved how to address the actual or perceived justice issues that make global governance so difficult. And yet, accepting the physical science of global climate change,<sup>34</sup> which none of the authors taking the views cited above dispute, something must be done.

### III. GLOBAL GOVERNANCE

Like poverty, terrorism, infectious disease, gender inequality, and trafficking in drugs, money, weapons and people, global climate change lays bare the shortcomings of our existing systems for global governance. The capacity for participating in the choice of measures for holding people and institutions responsible for emissions and for distributing the costs and benefits of measures that deal with climate change are not shared globally.<sup>35</sup> Nor are the consequences of climate

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33. See generally John C. Dernbach, *Achieving Early and Substantial Greenhouse Gas Reductions Under a Post-Kyoto Agreement*, 20 GEO. INT'L ENVTL. L. REV. 573 (2008).

34. Eileen Claussen, *An Effective Approach to Climate Change (Climate Policy)*, 306 SCIENCE 816 (Oct. 2004); K. Hasselmann et al., *The Challenge of Long-Term Climate Change*, 302 SCIENCE 1923 (2003); Thomas R. Karl & Kevin E. Trenberth, *Modern Global Climate Change*, 302 SCIENCE 1719, 1720-21 (2003); David A. King, *Climate Change Science: Adapt, Mitigate, or Ignore*, 303 SCIENCE 176, 177 (2004); Stephen H. Schneider, *Can We Estimate the Likelihood of Climatic Change in 2100?*, 52 CLIMATIC CHANGE 441, 446-49 (2002); Roger Pielke, Jr., & Daniel Sarewitz, *Wanted: Scientific Leadership on Climate*, ISSUES SCI. & TECH., Winter 2002, at 27-30, available at [http://www.issues.org/19.2/p\\_pielke.htm](http://www.issues.org/19.2/p_pielke.htm).

35. Twentieth century history offers few examples of global systems for holding individuals or states responsible for globally recognized injustices. For a review of international responses to genocides, see generally POWER, *supra* note 15. For a review of the scholarship on tribunals see Jack Snyder & Leslie Vinjamuri, *Trials and Errors: Principle and Pragmatism in Strategies of International Justice*, INT'L SECURITY, Winter 2003-2004, at 5-44; Leslie Vinjamuri & Jack Snyder, *Advocacy and Scholarship in the Study of*

change.<sup>36</sup> Climate change and solutions to climate change thus need governance solutions.

Two avenues of inquiry are important to global governance: (1) attributing responsibility for global climate-related injustice (discussed in Part II above); and (2) generating governance strategies for mitigating or ameliorating such injustice. Political theorists like to consider questions of what should be done and what can be done side by side.<sup>37</sup> In this paper we consider them separately. We demonstrated in Part II that the approach of attributing responsibility for global climate change-related inequities is academically interesting but so far not politically fruitful. Despite theoretical debates about whether the United States has obligations to participate in global emissions reduction schemes, few argue that U.S. actions do not have political importance. Politically, as the greatest contributor to the current stocks of GHG in the atmosphere,<sup>38</sup> as the wealthiest nation in the world, as the country with the second greatest per capita emissions (after the United Arab Emirates), and as a political leader whose participation in an international agreement is necessary for the participation of India, China, and many smaller countries,<sup>39</sup> many demand that the United States be part of a global solution to emissions reductions.<sup>40</sup> In global politics, the theoretical arguments against U.S. responsibility are academic.

#### A. GLOBAL PUBLIC GOVERNANCE

In this Part, we focus on global governance possibilities. In global politics, three principal challenges exist: (1) to create a global emissions reduction

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*International War Crime Tribunals and Transnational Justice*, 7 ANN. REV. POL. SCI. 345, 345-362 (2004). For an assessment of international organizations and their ability to deal with gender-based human rights violations, see generally LOUISE CHAPPELL, GENDER MAINSTREAMING IN INTERNATIONAL INSTITUTIONS: DEVELOPMENTS AT THE UN AD HOC TRIBUNALS AND THE INTERNATIONAL CRIMINAL COURT (2005). For an account of transnational activism's role in addressing global injustices, see generally MARGARET E. KECK & KATHRYN SIKKINK, ACTIVISTS BEYOND BORDERS (1998).

36. See generally CHRISTIAN AID, THE CLIMATE OF POVERTY (2006); COMMONWEALTH (UK) SECRETARIAT SOCIAL TRANSFORMATION PROGRAMMES DIVISION, GENDER AND CLIMATE CHANGE (2007); THE WORLD BANK, POVERTY AND THE ENVIRONMENT: UNDERSTANDING LINKAGES AT THE HOUSEHOLD LEVEL (2008).

37. To see a range of views in reflecting on the same problem, poverty, see generally POGGE, *supra* note 3; SCHWEICKART, *supra* note 3; PETER SINGER, ONE WORLD: THE ETHICS OF GLOBALIZATION (2002). For a discussion of globalization and global governance more generally see JAMES BOHMAN, DEMOCRACY ACROSS BORDERS (2007); MICHAEL GOODHART, DEMOCRACY AS HUMAN RIGHTS (2005); James Bohman, *International Regimes and Democratic Governance: Political Equality and Influence in Global Institutions*, 75 INT'L AFF. 499 (1999); James Bohman, *Toward a Critical Theory of Globalization: Democratic Practice and Multiperspectival Inquiry*, 9 CONCEPTS & TRANSFORMATION 121 (2004).

38. See Posner & Sunstein, *supra* note 1, at 1579.

39. On this last point see generally Dale Jamieson, *The Post-Kyoto Climate: A Gloomy Forecast*, 20 GEO. INT'L ENVTL. L. REV. 537, 538 (2008).

40. See, e.g., Dean Scott, *Senators Cite Growing Support for Cap; European Officials Call for U.S. Leadership*, DAILY ENV'T REP. (BNA), No. 186 at A-7 (Sept. 26, 2007), (quoting statement of Danish Minister for the Environment Connie Hedegaard that "China, India, and other developing counties will not do anything [without] U.S. leadership").

scheme; (2) to include in that scheme a system for mitigating the effects of climate change even if we are successful at reducing emissions; and (3) to include in that scheme a system for enabling those least able to respond to the shifting emissions standards to do so in a way that does not threaten their basic capabilities.<sup>41</sup> What systems do we have to do this?

References to “global governance” can have multiple meanings. One field of inquiry argues that the scope of global problems – including climate change, poverty, and the other problems identified above – requires a global government.<sup>42</sup> Several scholars have reflected on the plausibility of extending the authority of existing regional governance institutions (like the European Union), or expanding the decision-making capacity of the United Nations.<sup>43</sup> Others have examined the problem of democratic accountability in existing institutions of global governance such as the International Labor Organization, the World Bank, and other treaty-based delegations of authority to supra-national entities that are not democratic and that receive their authorities through nondemocratic means.<sup>44</sup>

Another focus in understanding global governance comes from Anne-Marie Slaughter, who notes that branches of governments network government-to-government to carry out governing responsibilities.<sup>45</sup> Examples include many bi-lateral trade agreements and the Carbon Intensity Standards.<sup>46</sup> Such government coordination may be very helpful in tracking trade, carbon, and the trafficking of drugs, money, weapons, and people. In Slaughter’s view, such government-to-government networks have more autonomy than others might argue.<sup>47</sup> The point is not how powerful or autonomous they can be but rather that this is a form of governance to which nations may resort for coordinating their

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41. Theorists offer us many theoretical arguments for how to understand justice internationally. Although we mean to argue that an equity offset scheme appeals to those acting on moral intuitions whose theoretical justifications are not universally shared (and perhaps even incompletely theorized at the individual level), convention makes us reference *some* justice language. The capabilities language comes from one scheme whose possible considerations of justice can include individual culpability, microstructural, and macrostructural or systemic injustices. For a long time, global inequality was measured by national differences in per capita GDP and Gini coefficients that measured income inequality within states. Since the 1990s, the United Nations Development Program has considered ways of measuring human capabilities across nations and overtime. This approach is inspired by the work of Amartya Sen. See generally Amartya Sen, *Rights and Agency*, 11 PHIL. & PUB. AFF. 3 (1982).

42. LUIS CABRERA, POLITICAL THEORY OF GLOBAL JUSTICE: A COSMOPOLITAN CASE FOR THE WORLD STATE (2004); Richard Falk & Andrew Strauss, *Toward Global Parliament*, FOREIGN AFF., Jan./Feb. 2001, at 212, 216-20.

43. See *id.* See also GOODHART, supra note 37, at ch. 8, 165-93 (focusing on institutionalizing democratic accountability).

44. See Bruce Bueno De Mesquita et al. *Thinking Inside the Box: A Closer Look at Democracy and Human Rights*, 49 INT’L STUD. Q. 439-457 (2005); SIDNEY G. TARROW, THE NEW TRANSNATIONAL ACTIVISM (2005).

45. See generally ANNE-MARIE SLAUGHTER, A NEW WORLD ORDER (2004).

46. *Climate Change: Competitiveness Concerns and Prospects for Engaging Developing Countries: Before the Subcomm. on Energy and Air Quality of the H. Comm. on Energy and Commerce*, 110th Cong. 1-7 (2008) (statement of Jim Slattery).

47. See, e.g., DANIEL DREZNER, ALL POLITICS IS GLOBAL 147-148 (2007).

behavior when international agreements are implausible.<sup>48</sup>

#### B. GLOBAL PRIVATE MECHANISMS: RETAIL OFFSETS

A third sphere of governing activity arises from the private sector. International nongovernment organizations (INGOs) like the Red Cross and *Médecins sans Frontières* provide services when local governments cannot, often in places where international conflict makes government-sponsored activity particularly suspect or difficult. Such private activities may be necessary where no government perceives such action to be in its national interest, or where no government can gain political support for such action. In the absence of global public governance, INGOs, at times, serve governmental functions and purposes, with support from individuals, firms, and private donors.<sup>49</sup> Whether we understand such private action as “governance” is not important for our argument; rather, for our purposes, we note that international non-governmental actors have stepped in when more traditional global governance institutions have not. The equity offset scheme we propose creates a voluntary market that generates funds from those conscious of the inequities caused by their own unwillingness or inability to reduce carbon emissions and directs the funds toward those who are willing but unable to curb their carbon emissions due to economic circumstance.

Private action may be one way to begin to address global justice issues, not to the exclusion of more traditional public governance, whether national, international or global, but as a supplement and jump-start measure. In an earlier work, we proposed the notion of equity offsets, which offer a variation on the retail carbon offset market that will enhance equity and potentially increase the effectiveness of emissions-reducing legislation.<sup>50</sup> In this paper we argue that equity offsets can be effective mechanisms for addressing climate change-related inequities globally even without (but in anticipation of) effective public global governance.

Cap-and-trade schemes often include offset mechanisms that allow emitters who cannot reduce their emissions to balance or “offset” their emissions by enabling others to reduce their emissions or to otherwise prevent carbon from entering the atmosphere.<sup>51</sup> Offsets can be generated by preventing emissions that would have occurred otherwise or by removing carbon from the atmosphere.

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48. See Bruce Ackerman, *Bush Can't Act Alone*, L.A. TIMES, Nov. 29, 2007, at A23; Tom Karako, *It's OK to Go It Alone*, L.A. TIMES, Dec. 18, 2007, <http://www.latimes.com/news/opinion/la-ow-karako18dec18,0,7386108.story>.

49. See, e.g., BEN CASHORE ET AL., GOVERNING THROUGH MARKETS: FOREST CERTIFICATION AND THE EMERGENCE OF NON-STATE AUTHORITY 88-126 (2005) (noting the role of INGOs and other private parties in forestry governance).

50. See Vandenberg & Ackerly, *supra* note 13, at 64-74.

51. See, e.g., Kyoto Protocol to the United Nations Framework Convention on Climate Change, art. 12, Dec. 11, 1997, U.N. Doc. FCCC/CP/1997/L.7/Add.1 (entered into force Feb. 16, 2005), available at <http://unfccc.int/resource/docs/convkp/kpeng.pdf> (authorizing Clean Development Mechanism).

Large projects administered by corporations, governments, or non-governmental organizations (NGOs) typically are the sources of carbon offsets. Examples include projects that capture methane from landfills, or that install wind power and other renewable energy sources.<sup>52</sup> We use the term “offset” in a generic sense to refer to renewable energy credits, allowances, and the other forms of offsets that have arisen over the last several years.<sup>53</sup> The private retail market in carbon offsets in the United States and around the world is growing rapidly.<sup>54</sup>

Although cap-and-trade schemes have been the subject of a robust academic literature,<sup>55</sup> scholars have written far less about the potential application of emissions trading to individuals.<sup>56</sup> Nevertheless, the recent growth of the voluntary carbon offset market from \$6 million in 2004 to more than \$110 million in 2006 suggests that if an equity offset market can be created, it may be substantial in size.<sup>57</sup> In the current retail carbon offset market, the offset sellers include both for-profit firms and NGOs.<sup>58</sup> Although offset sellers often are located in developing countries, existing offset schemes pay very little attention to issues of equity.<sup>59</sup>

In the United States and other countries, the retail carbon offset market is driven by consumer demand, not by legal requirements or economic incentives.<sup>60</sup>

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52. See, e.g., Terrapass, <http://www.terrapass.com> (listing three sources of offsets: wind power, biomass, and industrial efficiency). See also CARBON TRADING, *supra* note 23, at 219-320 (identifying offset projects that did not generate environmental gains or raise social justice concerns).

53. See, e.g., David J. Hayes, Voluntary Reduction Commitments and the World of Offsets, presented at American Law Institute/American Bar Association and Environmental Law Institute, *Global Warming: Climate Change and the Law*, Washington, D.C., 4-6 (Mar. 22, 2007) (discussing different forms of offsets) (copy on file with the author).

54. See generally Robert R. Nordhaus & Kyle W. Danish, *Assessing the Options for Designing a Mandatory U.S. Greenhouse Gas Reduction Program*, 32 B.C. ENVTL. AFF. L. REV. 97 (2005) (examining cap-and-trade schemes).

55. See, e.g., Jonathan Baert Wiener, *Global Environmental Regulation: Instrument Choice in Legal Context*, 108 YALE L.J. 677, 763 (1999) (examining emissions trading and other options for addressing global environmental concerns).

56. See, e.g., Nordhaus & Danish, *supra* note 52, at 125 (noting that “[i]ncluding any but the very largest domestic landowners in a cap-and-trade program does not appear to be feasible currently.”).

57. See James Kanter, *Guilt-Free Pollution. Or Is It?*, N.Y. TIMES, Feb. 20, 2007, at C1 (noting that the value of retail carbon offsets sold in Europe and North America increased from \$6 million in 2005 to \$110 million in 2006).

58. An example of a non-profit retail-offset organization is The Carbon Fund. See [Carbonfund.org](http://www.carbonfund.org), <http://www.carbonfund.org>; The Climate Trust, <http://www.climatetrust.org>. For-profit retail offset firms include Native Energy, a privately held renewable energy company. See [Native Energy](http://www.nativeenergy.com), <http://www.nativeenergy.com>. Natsource is a corporate partnership between DuPont and Blue Source. See [Natsource LLC](http://www.natsource.com/buycredits), <http://www.natsource.com/buycredits>.

59. Several possible exceptions exist regarding large-scale projects in the developed world. See, e.g., The Solar Electric Light Fund, <http://self.org> (generating offsets from installing photovoltaics in low-cost housing); Climate Trust, *supra* note 58 (selling offsets generated by making multi-unit housing more efficient); Bonneville Environmental Foundation, <http://www.b-e-f.org> (selling offsets derived from replacing traditional power sources with renewable energy, including those directed at low-income uses).

60. See Lucy Sherriff, *UK Ponders Personal Carbon Allowances*, REGISTER, July 19, 2006, available at [http://www.theregister.co.uk/2006/07/19/carbon\\_allowances/print.html](http://www.theregister.co.uk/2006/07/19/carbon_allowances/print.html).

Even in the absence of legal or economic incentives, individuals appear to be responding in large numbers to their moral intuitions and to the personal and social norm-generated benefits of reducing their carbon footprints. Social-norm benefits may arise from the enhanced reputation that some may gain from being known as an offset-purchaser. Personal-norm benefits may arise from guilt expiation or an enhanced sense of self-worth.<sup>61</sup> In addition, offset purchasers may benefit by passing along information about their retail offset purchases to others in their social networks. Each transaction thus may generate norm-based benefits for the individual, disseminate information about retail offsets, and foster the formation of networks of individuals who have reduced their carbon footprints.<sup>62</sup>

Although the retail-offset market is driven by incompletely theorized moral intuitions or personal norms, its existence can be the basis of a similar offset scheme, an equity offset market in which the purchaser of voluntary carbon offsets could direct her funds to expenditures that enable emissions reductions by those particularly and generally socioeconomically disadvantaged by climate change. For example, an equity offset scheme could enable individuals in developed countries to satisfy, in one step, norms favoring amelioration of climate change emissions and poverty. The individuals that receive the equity offset funds now would have the resources to make it possible to reduce their carbon footprint and reduce the economic burden of higher global energy costs. In Part IV we discuss how aggregation of these actions can be used to support changes in the microstructure.

We recognize that a vital aspect of a successful equity offset market is that the offsets generate the promised emissions reductions. Commentators have raised valid concerns about whether some types of offsets generate actual emissions reductions.<sup>63</sup> In addition, it is unclear how offset purchases affect other behaviors. Do individuals who purchase offsets respond by taking additional emissions reduction steps, take fewer steps, or do they not otherwise change their behaviors?<sup>64</sup> Would voluntary participation of some reduce or increase the sense of political urgency of others?<sup>65</sup> The answers to these questions are unclear and are vitally important to the ultimate effect of retail offsets on greenhouse gas emissions.

In addition, public perceptions of the legitimacy of carbon offsets are critical. It is too early to tell the extent to which the reductions generated by retail offsets

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61. See Vandenberg & Steinemann, *supra* note 9, at 130-47, 160.

62. See Vandenberg & Ackerly, *supra* note 13, at 65-70.

63. See Kanter, *supra* note 57, at C1. See generally Clean Air-Cool Planet, *A Consumer's Guide to Retail Carbon Offset Providers* (Dec. 2006), available at <http://www.cleanair-coolplanet.org/ConsumersGuidetoCarbonOffsets.pdf> (examining retail carbon offset providers).

64. See Andrew Revkin, *Carbon-Neutral is Hip, But Is It Green?*, N.Y. TIMES, Apr. 29, 2007, at 4-1, available at <http://www.nytimes.com/2007/04/29/weekinreview/29revkin.html>; Vandenberg & Steinemann, *supra* note 5, at 147-49.

65. Thanks to conference participants for raising this question.

are genuine, but recent experience in related areas suggests that a range of private or public enforcement mechanisms may be able to generate an adequate degree of quality control. For example, private monitoring and verification schemes have had a substantial influence on the environmental behavior of private corporations on a domestic and global level.<sup>66</sup> In the last few years, legitimacy concerns also have induced private actors to develop private standards for carbon offset providers, and private offset verification firms have emerged.<sup>67</sup>

As we try to address questions of global equity, it will be important to pay attention to the impact of carbon offset schemes on local populations and on sustainable development in their communities.<sup>68</sup> Private monitoring and verification certainly are not a panacea, but they offer the prospect of a quick and effective alternative or complement to government regulation.<sup>69</sup> The legitimacy that can arise from effective monitoring and enforcement schemes will enable the equity offset market to increase cooperation and coordination among people differently located in the global economy without the exercise of power by a global governance authority. Importantly, an equity offset scheme can not only anticipate and complement a cap and trade scheme, but also a carbon tax or other scheme,<sup>70</sup> and thus will not limit the options that global negotiators may consider.

#### IV. EQUITY OFFSETS: THE BENEFITS

Equity offsets can facilitate emissions-reducing behavior and can do so with sensitivity to inequities within and between countries. Because this system's credibility and success depends on transparency in the emissions reductions achieved, it also can serve an educational function, creating greater awareness of the ways in which individual behavior can change, the ways in which infrastructural conditions can and need to change, and the burdens that climate change

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66. See e.g., CASHORE ET AL., *supra* note 49, at 88-126 (discussing Forestry Stewardship Council standards); Errol Meidinger, *The Administrative Law of Global Private-Public Regulation: the Case of Forestry*, 17 EUR. J. INT'L L. 47, 48-57 (2006); Petra Christmann & Glen Taylor, *Globalization and the Environment: Determinants of Firm Self-Regulation in China*, 32 J. INT'L BUS. STUD. 439, 452 (2001) (reporting results of empirical study finding correlation between firm environmental behavior and private standard adoption by trading partners).

67. See CARBON TRADING, *supra* note 23, at 132, 147-48, 160, 188-89, 301, 310 (discussing offset fraud). For an example of a renewable energy certification organization, see Green-e Verification Process, [http://www.green-e.org/getcert\\_re\\_veri.shtml](http://www.green-e.org/getcert_re_veri.shtml) (last visited Aug. 13, 2008) (noting that Green-e works with offset organizations to certify offsets).

68. The Gold Standard is a Swiss-based NGO operating in the offset market. It offers emissions reductions projects that make "a genuine reduction in CO<sub>2</sub> emissions as well as being beneficial to the host country and sustainable development." Gold Standard, Objectives, <http://www.cdmgoldstandard.org/objectives.php> (last accessed Aug. 12, 2008). See also CARBON TRADING, *supra* note 23, at 296.

69. See, e.g., Michael P. Vandenbergh, *The New Wal-Mart Effect: The Role of Private Contracting in Global Governance*, 54 UCLA L. REV. 913, 944-56 (2007) (examining efficacy of supply-chain contracting and private environmental certification schemes).

70. For other schemes see generally Jamieson, *supra* note 39, at 539.

measures will impose on people in poverty. Equity offsets will allow people to respond to their moral intuitions *and* educate themselves about the material bases of those intuitions.

Equity offsets can address both inequities within countries and inequities between countries.<sup>71</sup> They will work within the existing global structure to change individual behavior and to change the carbon footprint of individuals by affecting the microstructure. They will not affect the macrostructure, the locus of many theoretical discussions of justice that we mentioned in Part II. Equity offsets can change the allocations of climate change burdens (and other aspects of global inequality) among individuals either through individual-to-individual offsets that affect individual emissions of recipients, or through aggregations of individual donations to enable infrastructural change. Offsets can be distributed within a country, affecting inequity within a developed or developing country, or across the globe, affecting global inequalities.

In the global North, individual-to-individual equity offset transfers can reduce individual consumption by enabling recipients of offsets to increase the efficiency of their cars, home heating and cooling systems, and other energy-using equipment. In doing so, individual-to-individual transfers not only can reduce emissions and save money, but also can reduce resistance to future regulatory standards.<sup>72</sup> Through aggregation mechanisms, equity offsets can enable infrastructural change as well. Within the global North, an equity offset program could fund a wide range of equity-enhancing projects, such as local community solar-power generation or energy-efficiency improvements in low-income housing.<sup>73</sup> Within the global South, equity offsets might provide upfront financing for community-based emissions reduction plans, like the effort of Barefoot College engineers in India to install grid solar power stations across India. This project has not been able to reach a large scale due to lack of funding. The equity offset market could support projects that cannot achieve the economies of scale of the industrial offset market. Equity offsets may work best where the infrastructure already exists for NGOs, CDMs, internal markets,<sup>74</sup> and other institutionalized mechanisms of social cooperation necessary to design and implement equity offset projects.<sup>75</sup>

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71. On intra-country inequalities see generally Albert Mumma & David Hodas, *Designing a Global Post-Kyoto Climate Change Protocol That Advances Human Development*, 20 GEO. INT'L ENVTL. L. REV. 619 (2008).

72. See Vandenberg & Ackerly, *supra* note 13, at 60-63.

73. See Posner & Sunstein, *supra* note 1, at 1571 (noting that equity oriented carbon emissions reductions may not be the best way to achieve global welfare-based or fairness-based redistributive goals).

74. See Ruth Greenspan Bell & Clifford Russell, *Ill-Considered Experiments: The Environmental Consensus and the Developing World*, HARV. INT'L REV., Winter 2003, at 20, 22, 25 (arguing that offset markets and emissions-trading schemes require adequate markets and institutional infrastructure that only the most developed nations currently possess).

75. See CARBON TRADING, *supra* note 23, at 257.

Globally, increased expenditures on energy efficient technologies that assist people in poverty will increase demand for those technologies, increasing production economies of scale and decreasing costs in the global North and global South. Additionally, technological innovations in the global North will find their way into the global South, as traditional foreign aid programs require recipient countries to purchase their technologies from donor countries.<sup>76</sup> Historical experiences with global transfers of technology and Northern technologies' abilities to be adapted to local communities (and to achieve sustainable development around the world) make us less sanguine about the potential gains from technology transfers and relatively more confident in pooling schemes that fund locally-developed technologies such as those discussed above.<sup>77</sup>

Equity offsets also will enable individuals to take responsibility for their emitting behaviors without requiring them to do so, thereby bypassing the need to engage in the theoretical debates about whether individuals *should* be morally responsible for their emissions. Moreover, through the transfer of resources and technology that the equity offset schemes facilitate,<sup>78</sup> individuals from major carbon-emitting states (and states through their foreign aid schemes) will contribute to carbon-emissions reductions without engaging in the theoretical debate about whether they *should*.<sup>79</sup>

Even without a global political identification of "offenders" and "victims," equity offsets offer redistributive possibilities. The principal focus of equity offsets is not redistribution, however, but reduction. Through equity offsets, more people will be able to reduce their carbon emissions. "Offenders" identify themselves as people who are willing to pay for carbon emissions reductions but are unable or unwilling to reduce their own emissions, and "victims" identify

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76. See generally CURT TARNOFF & LARRY NOWELS, CONG. RES. SERV., FOREIGN AID: AN INTRODUCTORY OVERVIEW OF U.S. PROGRAMS AND POLICIES (2004) (noting the use of foreign aid as an element of U.S. policy). Iraq was the biggest recipient of foreign development assistance aid, and foreign aid funding priorities have shifted with the war on terrorism. See *id.*, summary; see also U.S. Dept. of State, Bureau of Econ. & Bus. Affairs, *Fact Sheet: U.S. Nearly Doubles Foreign Aid*, Mar. 19, 2005, <http://www.state.gov/e/eeb/rls/fs/40940.htm>.

77. See TARNOFF & NOWELS, *supra* note 76, at 2 (noting that the United States allocated only 0.2 percent of GDP to foreign aid in 2002 and 2003 and concluding that "[t]he United States is the largest international economic aid donor in dollar terms but is the smallest contributor among the major donor governments when calculated as a percent of gross national income").

78. The kinds of technology transfers we envision are *importantly* locally appropriate technologies. The current Clean Development Mechanisms (CDMs) of Kyoto allow a range of activities that increase inequities, replace low-carbon technologies in places in the global South, and destabilize entitlements to land. In this issue Hart argues that CDMs have helped develop capacity for emissions management, and Yang argues that CDM activities have drawn resources away from those clean mechanisms they are intended to encourage. See Craig Hart et al., *East Asia Clean Development Mechanism: Engaging East Asian Countries in Sustainable Development and Climate Regulation Through the CDM*, 20 GEO. INT'L ENVTL. L. REV. 645 (2008); Yang, *supra* note 11, at 690. It is important to separate concerns that CDM is not properly designed or implemented from concerns that any offsetting is problematic. See generally CARBON TRADING, *supra* note 23.

79. See Adler, *supra* note 1, at 1861-65; Sinnott-Armstrong, *supra* note 15, at 289-94.

themselves as those willing but unable to reduce their carbon emissions or as “innovators” who are able to develop new emission-reduction schemes.

Eric Posner and Cass Sunstein are concerned that “offenders” and “victims” are difficult to identify and that carbon-emissions reductions are not the best way to achieve global equity goals.<sup>80</sup> Although we recognize the political obstacles to identifying offenders and victims, for some people there is no moral challenge in self-identifying as an offender and seeking to mitigate the carbon footprint of their productive and consumptive lives. Although we agree with Posner and Sunstein that it is difficult to achieve global redistributive goals through shifts in carbon emissions, climate change and climate-change responsive policies will have a distributive effect. Although offsets will not mitigate that effect, they will draw attention to the problem in a way that also provides an incremental and partial solution to it. Moreover, an equity offset scheme will allow offenders and victims to coordinate their moral and material responses to climate change.

Equity offsets thus will reduce the political obstacles associated with consideration of the inequity in carbon emitting behavior. They also will reduce the impact of global warming on people based on their behavior, their local infrastructure, and where they are in the world. They will do so in a way that will invite those who contribute relatively more to global carbon emissions to do something about it and to enable those who contribute relatively less to become part of the solution. Perhaps most importantly, an equity offset scheme can perform these functions promptly and without an international political agreement.

The allocation of burdens to reduce GHG emissions is perhaps the greatest barrier to a global agreement.<sup>81</sup> Equity offsets will go part of the way toward funneling funds to those who are least able to reduce their emissions. We are not arguing that equity offsets will solve the global climate change problem or the political problems associated with international climate change negotiations. But Global Giving and other organizations have demonstrated that surprisingly large amounts of funds can be conveyed when people believe that their money is being well-used, that overhead is low, and that there is some direct connection between the donor and the recipient, even if only over the internet.<sup>82</sup> It is conceivable that more money will be generated from equity offset schemes than from nation-to-nation foreign aid, given the sorry history of the percentage of GDP given to foreign aid.<sup>83</sup> Moreover, equity offset dollars will go where the impact on decreasing carbon emissions or ameliorating the impact of global warming would be the greatest.<sup>84</sup>

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80. See Posner & Sunstein, *supra* note 1, at 1595-97.

81. See Jamieson, *supra* note 39, at 538 (noting positions of China and India).

82. See Vandenbergh & Ackerly, *supra* note 13, at 65-70.

83. See TARNOFF & NOWELS, *supra* note 76, at 2.

84. By contrast foreign aid is allocated with significant weight given to strategic interests (hence Israel and

Equity offsets bypass the question of whether one country, entity, or person actually has an obligation to a particular country, entity or other person. Many people obviously believe they do. Equity offsets allow us to acknowledge and harness that moral sentiment to reduce emissions and ameliorate the impact of global warming.

## V. CONCLUSION

Public and private measures are necessary to address the global justice issues that arise from climate change, whether the justice issues are actual or perceived. Perceptions of injustice are politically salient. Geoengineering and philosophical argument to the contrary will not shift the political expedience of developing a global mechanism for mitigating carbon emissions and ameliorating the negative impacts of global warming on some of the world's most at risk populations. Equity offsets offer not a comprehensive solution, but a politically viable incremental piece in the global response to climate change.

Many avenues are available to address the contribution of individuals to global emissions, including reducing individual carbon emitting behavior, changing local infrastructures so as to decrease the impact of individual consuming and producing behaviors, and changing the global "basic structure" in ways that take into account global macro-inequalities and their historical roots.<sup>85</sup> This last may be the most fruitful terrain for *scholars of global justice*, but it is not necessarily the most fruitful terrain for developing political solutions to climate change. We offer an approach to global climate change-related inequalities that does not require philosophical or political agreement on the causes of or the appropriate responses to global inequalities nor even a completely theorized basis for claiming that these are unjust. Instead, equity offsets can affect individual behavior, microstructural conditions that affect the carbon footprint of individual behavior, and the conditions of those who are least able to adapt to changing climate conditions and energy prices.

Global leaders have taken up some issues that require global governance such as poverty, terrorism, infectious disease, and human trafficking, but a sustained structural analysis of these problems has been lacking *even when there has been a global political will to address them*. Political leaders have not figured out how to combat terrorism without fueling it. Government leaders have goals to ameliorate global poverty but addressing increasing global wealth inequality is not visibly part of that plan.<sup>86</sup> Moreover, on global poverty they are falling short of their goals even though we clearly have the economic capacity on the planet to end

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Egypt have received the greatest proportion of U.S. foreign aid since the 1979 Camp David accords).

85. See generally Caney, *supra* note 1.

86. See generally U.N. DEPT. ECON. & SOC. AFFAIRS, THE MILLENNIUM DEVELOPMENT GOALS REPORT (2007) available at <http://www.un.org/millenniumgoals/>.

poverty.<sup>87</sup> Global governance institutions do not foster the structural analysis necessary to address global problems. This is the realm of human activity where we fail ourselves. Genocides, terrorist attacks, poverty, AIDS, and climate change are all crises in global governance.

Until humankind develops and exhibits some impressive capacity in the realm of global governance, we need to deal with global crises such as climate change not only on a global level but also through piecemeal efforts – by changing individual behavior and making minor changes to consumption through design and public policy innovations. The normative theorist in this collaboration would like to see humankind and scholars take up the challenge of global governance, but we both know that changing individual behavior and the policies that affect the climate change impact of that behavior are necessary for giving humankind the time it will take to develop its capacities for global governance. Equity offsets will not make the world carbon neutral, but they can slow the rate of growth of carbon emissions and allow carbon emitters to follow their intuitions about the impact of their consumption and production on global justice, thereby laying the ground work for global public governance solutions.

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87. See generally POGGE, *supra* note 3; SCHWEICKART, *supra* note 3; SINGER, *supra* note 37.