

CLIMATE CHANGE, COLLECTIVE ACTION, AND STATE COMPLIANCE:  
OBSTACLES ON THE ROAD TO COPENHAGEN

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## ABSTRACT

Climate change is a type of prisoner's dilemma. Reductions in greenhouse gas (GHG) emissions are a public good and are costly to provide. Consequently, nation-states generally have done little to curb their emissions. Countries could be encouraged to reduce their emissions if the international community of states were to sanction, or the world were to shame, states that did not act. However, financial and technological aid is more likely to induce states to impose tougher restrictions on GHG emissions.

In order for Copenhagen to precipitate major action on climate change the treaty must either compel countries to fulfill their obligations or assist states in transitioning their economies away from fossil fuels toward alternative energy sources. If the treaty fails to do both of these things then we can only hope that the largest producers of greenhouse gases either take steps to reduce their emissions voluntarily or are forced to take action in response to domestic pressure from their citizens and/or sub-national governments. Otherwise, we will have no choice but to adapt to an increasingly warmer planet and the consequences thereof.

## TABLE OF CONTENTS

Abstract .....	ii
Table of Contents .....	iii
Acknowledgments .....	iv
Dedication .....	v
Introduction .....	1
Progress under the Kyoto Protocol .....	4
The Bali Roadmap .....	7
The Challenges of Implementation .....	10
Climate Change as a Prisoner's Dilemma .....	13
Third-Party Enforcement under Kyoto .....	17
Bali, Bangkok and the Backing of Copenhagen .....	19
Alternative Paths to Compliance .....	27
Conclusion .....	34
Bibliography .....	37

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*For my parents*

## I. Introduction

Over a decade has passed since the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) opened for signature on March 16, 1998. Since then, 176 sovereign nations have ratified the treaty.<sup>1</sup> By signing and ratifying the Protocol, developed countries have agreed to reduce their greenhouse gas (GHG) emissions by an average of 5.2 percent below 1990 levels by 2012,<sup>2</sup> but many are not on track to meet their targets. Moreover, developing world signatories are not bound by numerical commitments as it was agreed that on a per capita basis industrialized countries are responsible for a disproportionate share of global GHG emissions, and developing nations would emit more as their economies grew and modernized.<sup>3</sup> Thus scholars and popular commentators alike have come to question the impact and legacy of the treaty.<sup>4</sup>

In December 2007, representatives from 190 countries met in Bali, Indonesia to negotiate a process for developing a new international climate change regime. The resulting “Bali roadmap” established a template for two years of negotiations aimed at producing a Copenhagen protocol to replace the Kyoto agreement when it ends in 2012. In March 2008, 162 nations met in Bangkok, Thailand to consider which aspects of Kyoto should be incorporated into the new treaty, and to finalize the subject matter of future talks. The early stages of the talks illustrate some of the challenges associated with

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<sup>1</sup> According to UNFCCC, 179 countries have signed and ratified the Kyoto Protocol, but included among them are Niue and the Cook Islands, both of which are part of New Zealand, and the European Union. The Clinton administration signed the Kyoto Protocol but did not introduce it to the Senate for ratification. The Bush II administration subsequently withdrew its signature from the agreement.

Kyoto Protocol Status of Ratification. 13 May 2008. United Nations Framework Convention on Climate Change (UNFCCC). 18 April 2008

<[http://unfccc.int/files/kyoto\\_protocol/status\\_of\\_ratification/application/pdf/kp\\_ratification.pdf](http://unfccc.int/files/kyoto_protocol/status_of_ratification/application/pdf/kp_ratification.pdf)>

<sup>2</sup> Kyoto Protocol. UNFCCC. 18 April 2008 <[http://unfccc.int/kyoto\\_protocol/items/2830.php](http://unfccc.int/kyoto_protocol/items/2830.php)>

<sup>3</sup> Ibid.

<sup>4</sup> See Rabe 2007; Hovi and Skodvin 2008

addressing collective problems. Investigating the evolution of the UNFCCC from Kyoto to Copenhagen provides insight into possible ways to address not only global climate change, but also international collective action problems more generally.

Global climate change is a prisoner's dilemma collective action problem. Reductions in GHG emissions are a public good and are costly to provide. Consequently, nation-states generally have done little to curb their emissions. In theory, individual states could be encouraged to reduce their emissions if the international community of states were to sanction or otherwise penalize countries that failed to act. In practice, however, it is unlikely countries will be coerced into combating climate change. Nation-states might be persuaded to take steps to reduce their GHG emissions if the world were to shame states that did not act. However, financial and technological aid is more likely to induce states to impose tougher restrictions on GHG emissions and abandon fossil fuels for nuclear, hydro, solar, and wind power. If the talks fail to generate a means to enforce the agreement reached at Copenhagen, and to create positive incentives to motivate states to act, the only alternative international-level compliance-inducing mechanism would be for persuasion and socialization to affect the behavior of states and their climate change policies. Unfortunately, given the weaknesses of the latter measures, this would likely result in emissions continuing to rise and the planet heating up accordingly, unless the international community generates an alternative "bottom-up" (i.e. civil society-led) solution.

This thesis focuses on the international-level solutions to climate change advocated in both Kyoto and the Bali roadmap. Section II evaluates the progress industrialized countries have made toward achieving their Kyoto targets and outlines the

importance of US involvement in the climate talks. Section III describes the ambitious aims of the Bali roadmap and argues that it improves on Kyoto in four substantive ways. Section IV establishes the magnitude of the challenge that international efforts face in combating climate change. Section V explores climate change as a prisoner's dilemma collective action problem and evaluates the feasibility of third-party enforcement as a means to promoting cooperation. Section VI analyzes the enforcement of Kyoto and Section VII assesses the potential for enforcement under Copenhagen. Section XIII investigates the possibilities for inducing states to reduce their GHG emissions in the absence of effective state-level enforcement. This thesis concludes that in order for Copenhagen to precipitate major action on climate change the treaty must either compel countries to fulfill their obligations or assist states in transitioning their economies away from fossil fuels toward alternative energy sources.



## II. Progress under the Kyoto Protocol

Six industrialized countries either have surpassed or are on track to meet their Kyoto commitments.<sup>5</sup> Sweden has reduced its GHG emissions to 2 percent below 1990 levels even though it was permitted a 4 percent increase under the agreement.<sup>6</sup> Britain has already met its target of reducing greenhouse gas emissions to 12.5 percent below 1990 levels and is on track to reduce them further to 23 percent below 1990 levels by 2010.<sup>7</sup> France aimed to reduce its GHG emissions to 1990 levels by 2012 and is currently 2 percent below that target.<sup>8</sup> German emissions are 18.5 percent below 1990 levels, within reach of its 21 percent goal.<sup>9</sup> Iceland and New Zealand are also likely to meet their Kyoto commitments. Iceland's GHG emissions are currently below 1990 levels (Iceland was permitted a 10 percent increase under Kyoto), and New Zealand is on track to stabilize its emissions at 1990 levels by 2010.<sup>10</sup>

However, the progress these countries are making is overshadowed by the fact that Denmark, Spain, Portugal, Italy, Ireland, Austria, Belgium, Finland, Italy, the Netherlands, Norway, Canada, and Japan are not on track to meet their commitments.<sup>11</sup> In 2005, Canada's emissions rose to 33 percent above its Kyoto target.<sup>12</sup> Moreover, key countries remain outside the treaty. Most notably, the George W. Bush administration's

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<sup>5</sup> Who's Meeting Their Kyoto Targets? May 2006. David Suzuki Foundation. 19 April 2008  
<[http://www.davidsuzuki.org/files/climate/kyoto\\_progress.pdf](http://www.davidsuzuki.org/files/climate/kyoto_progress.pdf)>

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

<sup>10</sup> Ibid.

<sup>11</sup> Ibid.

<sup>12</sup> Greenhouse Gas Emissions. 24 Oct. 2007. Government of Canada. 12 August 2008  
<<http://www.environmentandresources.ca/default.asp?lang=En&n=A85B7F27-1>>

continued opposition has kept America out of the agreement,<sup>13</sup> and climate activists both critical and supportive of the Kyoto Protocol agree that US participation is critical to the success of the UNFCCC.<sup>14</sup>

The United States is the world's largest emitter of greenhouse gases, producing roughly 7 billion metric tons (MT) of carbon dioxide equivalents annually.<sup>15</sup> American motor vehicles account for nearly 45 percent of the world's automotive carbon dioxide production.<sup>16</sup> Thus, reducing global greenhouse gas emissions would be made easier by a reduction in US output. Unfortunately, the Bush administration's emphasis on voluntary measures has done little to reduce actual emissions. Total US greenhouse gas emissions reached an all-time high in 2004 and again in 2005,<sup>17</sup> though emissions in 2006 were down 1.5 percent from 2005.<sup>18</sup> In December 2007, the Environmental Protection Agency (EPA) denied the State of California permission to set stricter motor vehicle emissions regulations than the federal government.<sup>19</sup> Moreover, neither the White House nor the EPA has taken steps to regulate American automotive emissions.<sup>20</sup>

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<sup>13</sup> "Rudd Acts to Ratify Kyoto Accord in Australia." *International Herald Tribune* December 3, 2007  
<<http://www.iht.com/articles/2007/12/03/asia/climate.php>> (accessed April 20, 2008)

<sup>14</sup> "What are the UN Climate Talks?" *Reuters* March 31, 2008  
<<http://www.reuters.com/article/environmentNews/idUSL2887709120080331>> (accessed April 20, 2008)

<sup>15</sup> Carbon dioxide equivalents refer to the six greenhouse gases: carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. Revkin, Andrew. "Gas Emissions Reached High in US in '04." *New York Times* December 21, 2005  
<<http://www.nytimes.com/2005/12/21/national/21pollute.html>> (accessed April 18, 2008); Emissions of Greenhouse Gases Report. 28 Nov. 2007. Energy Information Administration. 18 April 2008  
<<http://www.eia.doe.gov/oiaf/1605/ggrpt/index.html>>

<sup>16</sup> Freeman, Sholnn. "New Report Cites U.S. Motorists For Production of Greenhouse Gases." *Washington Post* June 28, 2006  
<<http://www.washingtonpost.com/wpdyn/content/article/2006/06/27/AR2006062701757.html>> (accessed April 20, 2008)

<sup>17</sup> Revkin, "Gas Emissions Reached High in US in '04," December 21, 2005; Emissions of Greenhouse Gases Report. 28 Nov. 2007

<sup>18</sup> Ibid.

<sup>19</sup> "Confessions on Climate." Editorial. *New York Times* March 4, 2008  
<[http://www.truthout.org/issues\\_06/030408EC.shtml](http://www.truthout.org/issues_06/030408EC.shtml)> (accessed April 20, 2008)

<sup>20</sup> Ibid.

US participation is also important in terms of international leadership. In order for a top-down climate strategy imposed by an international regime on national governments to turn “Kyoto-type pledges into real policies that reduce real emissions,” America must lend credibility to the regime by proactively reducing its own emissions and pressuring other countries to follow suit.<sup>21</sup> Developing nations wish to modernize relatively cheaply through the use of fossil fuels just as the industrialized world did. While American leadership and diplomatic pressure may be insufficient to motivate developing nations to curb their GHG emissions, US reluctance to move towards green technologies would likely delay the South’s transition.<sup>22</sup> It is imperative that China, India, and Brazil in particular be persuaded to use alternative energy sources. In 2007, China produced more carbon dioxide than any other country, including the US.<sup>23</sup> It is estimated that China and India will build an additional 850 coal-fired power plants by 2012.<sup>24</sup> Any long-term strategy to stabilize or reduce global greenhouse gas levels will require engaging developing nations such as China and India that are increasingly large contributors to the problem.<sup>25</sup> US leadership is necessary to move developing nations toward cleaner energy sources.

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<sup>21</sup> Rabe, “Beyond Kyoto,” 424

<sup>22</sup> See Hovi and Skodvin 2008

<sup>23</sup> America remains the world’s biggest polluter since it produces more of the other greenhouse gases than any other country.

Vidal, John and David Adam. “China overtakes US as world’s biggest CO2 emitter.” *Guardian* June 19, 2007 <<http://www.guardian.co.uk/environment/2007/jun/19/china.usnews>> (accessed March 31, 2008)

<sup>24</sup> Clayton, Mark. “New Coal Plants Bury ‘Kyoto’.” *Christian Science Monitor* December 23, 2004 <<http://www.csmonitor.com/2004/1223/p01s04-sten.html>> (Accessed July 26, 2008)

<sup>25</sup> According to UNFCCC estimates, Chinese and Indian GHG emissions in 2000 were up 33 and 69 percent, respectively, from 1990.

The First Ten Years. 2004. UNFCCC. 12 August 2008

<[http://unfccc.int/resource/docs/publications/first\\_ten\\_years\\_en.pdf](http://unfccc.int/resource/docs/publications/first_ten_years_en.pdf)>

### III. The Bali Roadmap

As the Kyoto Protocol is set to expire in 2012, the international community of states has taken steps to forge a new agreement on climate change. Delegates met in December 2007 to establish the “Bali roadmap,” convened again in March 2008 in Bangkok, Thailand, and met most recently in June 2008 in Bonn, Germany.<sup>26</sup> The talks are scheduled to resume in August 2008 in Accra, Ghana. In December 2008, they move to Poznan, Poland, and in 2009 conclude in Copenhagen, Denmark, where the UN Intergovernmental Panel on Climate Change (IPCC) hopes to establish a treaty to replace the Kyoto Protocol.<sup>27</sup>

Cynics might argue that the Bali roadmap merely commits countries to “talk some more,” but more optimistic observers cite four reasons the Bali talks signal progress has been made since Kyoto in 1997.<sup>28</sup> First, UN climate conferences have traditionally afforded industrialists an opportunity to register concern over strict emissions regulations. However, industrialists were not given such an opportunity at Bali, perhaps signaling that countries are taking climate change more seriously than they did previously.<sup>29</sup>

Second, Bali was also the first UN climate conference at which emissions cuts in the 25-40 percent range were seriously considered.<sup>30</sup> European delegations led by Germany wanted developed nations to commit to emissions cuts between 25 and 40 percent below present levels by 2020, and for global emissions to peak by 2023 and halve

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<sup>26</sup> “What are the UN Climate Talks?” *Reuters* March 31, 2008

<sup>27</sup> *Ibid.*; Bangkok: First Step on the Road to Copenhagen, 2008. UNFCCC. 21 April 2008 <[http://unfccc.int/meetings/intersessional/awg-lca\\_1\\_and\\_awg-kp\\_5/items/4334.php](http://unfccc.int/meetings/intersessional/awg-lca_1_and_awg-kp_5/items/4334.php)>

<sup>28</sup> Sachs, Jeffrey. “Climate Change after Bali.” *Scientific American* 298 (3) 2008

<sup>29</sup> Pearce, Fred. “Roadmap to Where? Analysis on the climate change talks in Bali.” *New Scientist* 196 (2635/2636) 2007

<sup>30</sup> *Ibid.*

by 2050.<sup>31</sup> Though fixed emissions targets were not reached at Bali – America, Canada, Japan, and Russia all joined to veto their inclusion in the roadmap – the document does call for “deep cuts,” suggesting even the US recognizes that drastic action of some kind is required to curb rising GHG emissions.<sup>32</sup> If developed states can agree on fixed emissions targets before the talks end in 2009, developing nations may be more inclined to commit to sharp reductions.

Third, China and other developing countries committed themselves to “measurable, reportable, and verifiable...mitigation actions.”<sup>33</sup> Although this pledge did not amount to a promise to reduce actual emissions, it did mark a pivotal step in the negotiations as the developed world was forced to make an important concession. In return for their commitment, developing nations were assured they would receive “measurable, reportable, and verifiable” help from developed countries, primarily in the form of money and technology transfers.<sup>34</sup>

Fourth and finally, the “roadmap” identifies deforestation and land degradation as major sources of growing emissions, a mechanism that was left out of the Kyoto Protocol.<sup>35</sup> Deforestation and land degradation currently account for approximately 20 percent of global carbon dioxide production.<sup>36</sup> Bali will surely be seen as a pivotal step toward a climate change solution should the Reducing Emissions from Deforestation and Forest Degradation (REDD) scheme developed during the Bali talks improve forest cover and effectively curtail carbon loss. Supporters of REDD tout the scheme as a way for

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<sup>31</sup> Pearce, “Roadmap to Where,” 2007

<sup>32</sup> Ibid.

<sup>33</sup> Ibid.

<sup>34</sup> Ibid.

<sup>35</sup> Ibid.

<sup>36</sup> Ibid.

developing nations to demonstrate their commitment to combating climate change in the near term, and as way to reward those countries by giving them carbon credits, which would afford developing nations emissions increases attributable to economic growth.<sup>37</sup>

However, there are reports that while in the conference chamber most delegates supported REDD, in the conference corridors many delegates were skeptical that the oversight and reward mechanisms would work.<sup>38</sup> Moreover, skeptics argue that even with improved satellite monitoring it is difficult to assess carbon loss from forests, and loggers could protect well-monitored areas, pocket the rewards, and log elsewhere.<sup>39</sup> Delegates were also divided over whether governments or private companies would receive the rewards.<sup>40</sup> Further, some representatives expressed concern that if carbon credits were used to reward forest protection, credits might flood the global carbon market and eliminate the incentives for reducing emissions in other areas like energy.<sup>41</sup> Nevertheless, REDD was included in the roadmap given the impact it could have on climate change if these issues can be resolved.<sup>42</sup>

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<sup>37</sup> Pearce, "Roadmap to Where," 2007

<sup>38</sup> Ibid.

<sup>39</sup> Ibid.

<sup>40</sup> Ibid.

<sup>41</sup> Ibid.

<sup>42</sup> Sachs, "Climate Change after Bali," 2008

#### IV. The Challenges of Implementation

Jeffrey Sachs suggests that the toughest challenge on the road to combating global climate change is not whether 190 countries can agree on specific targets, but rather whether it is even possible to stabilize emissions at a level that would not bring serious harm to the planet. Sachs suggests that anthropogenic carbon dioxide emissions are approximately 36 billion tons annually, and the current concentration of carbon dioxide in the atmosphere is around 380 parts per million (ppm).<sup>43</sup> The IPCC estimates that 450 ppm might be a “safe” concentration of carbon dioxide equivalents in the atmosphere.<sup>44</sup> Since every 30 billion tons of carbon dioxide released into the atmosphere raises the CO<sub>2</sub> concentration by about 2 ppm, achieving the 450 ppm ceiling by 2050 would require limiting cumulative emissions to roughly 900 billion tons, or 21 billion tons per annum on average until then.<sup>45</sup> The problem is, “if rich nations continue to grow in income and the poor ones systematically narrow the income gap with successful development, by 2050 the global economy might increase six fold and global energy use fourfold.”<sup>46</sup> Sachs puts the challenge this way: “Can the world economy use four times more primary energy while lowering emissions by one third?”<sup>47</sup>

In order to achieve such a feat, current fossil-fuel combustion and industrial processes need to be made virtually emission free through widespread use of solar and nuclear power, and through capture and sequestration of carbon dioxide<sup>48</sup> from coal-

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<sup>43</sup> Sachs, “Climate Change after Bali,” 2008

<sup>44</sup> Ibid.; The IPCC also suggests 650 ppm might be “safe.” Pearce, “Roadmap to Where,” 2007.

<sup>45</sup> Sachs, “Climate Change after Bali,” 2008

<sup>46</sup> Ibid.

<sup>47</sup> Ibid.

<sup>48</sup> Carbon capture and sequestration (CCS) is the process of trapping carbon dioxide from large sources such as coal power plants and storing it rather than allowing it to escape into the atmosphere.

burning power plants.<sup>49</sup> The IPCC estimates that carbon capture and sequestration would raise electricity costs by one to three cents per kilowatt-hour, and the mass conversion of industrial countries to solar power would raise their overall electricity costs by eight to nine cents per kilowatt-hour.<sup>50</sup> According to Sachs, IPCC calculations “imply that far less than 1 percent of the world’s annual income [would be required] to convert to a clean power grid.”<sup>51</sup> If a clean power grid could be established so cheaply, it is entirely possible that global emissions could be lowered to 21 billion tons per annum despite a fourfold increase in global energy use over the same time period. Hybrid automobiles could be charged on virtually emission-free electricity, and the savings from lower fuel costs could easily pay for batteries or fuel cells.<sup>52</sup> Plus, residential heating by electricity or cogeneration would also yield lower emissions, and the net savings could be applied to further technological improvements.<sup>53</sup>

That the Bali roadmap contains these IPCC markers is a positive sign. Indeed, Sachs believes the Bali talks should be considered a success if only because they have directed the world’s attention to “supporting the speedy adoption of low-emissions technologies.”<sup>54</sup> Of course, the question is both whether industrialized countries are willing to clean up their own energy systems, and whether developed states are willing to bear part of the costs of providing developing nations with “measurable, reportable, verifiable” help in order to make the necessary conversions. Thus the key challenge in reducing global emissions by a third despite a fourfold increase in global energy use is

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<sup>49</sup> Sachs, “Climate Change after Bali,” 2008

<sup>50</sup> Ibid.

<sup>51</sup> Ibid.

<sup>52</sup> Ibid.

<sup>53</sup> Ibid.

<sup>54</sup> Ibid.



getting the international community of states to *cooperate* not only in principle but also in practice.

## V. Climate Change as a Prisoner's Dilemma

Global climate change constitutes a quintessential collective action problem. Every country releases greenhouse gases, and although developed states of North America and Europe have long been the dominant sources, developing nations such as China, India, and Brazil are increasingly large contributors to the problem. Thus any long-term strategy to stabilize or reduce the concentration of greenhouse gases in the atmosphere will require widespread engagement. Moreover, “unlike other environmental problems that can literally be exported from one jurisdiction to another, any release or reduction of greenhouse gases from any source has global ramifications.”<sup>55</sup>

The particular kind of problem climate change presents is an  $n$ -player prisoner's dilemma of indeterminate length. Every country is better off pursuing its development goals than restricting its GHG emissions. However, the outcome we should anticipate if every state continues to pollute unabated is potentially far worse than the outcome we could expect if every country were to curb its emissions. The end game is unclear because we do not know for certain when or even if the effects of anthropogenic climate change will severely impact human life. In reality, the problem is complicated further by the large number of actors that are involved. People are working to combat climate change not only at the international level, but also at the national, sub-national, and domestic-societal levels. This thesis simplifies the problem slightly by focusing on cooperation among nation-states.

The nature of climate change seemingly offers a strong incentive to cooperate: collective action may stabilize rising temperature levels and stave off famine, drought, flooding, and species migration of unprecedented proportions. However, since emissions

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<sup>55</sup> Rabe, “Beyond Kyoto,” 423

reductions are a public good and are costly to provide, action on climate change is susceptible to the free-rider problem. It is worth considering this particular kind of collective action problem in the abstract before evaluating past and current efforts to tackle global climate change.

In a prisoner's dilemma situation, group members are collectively better off cooperating, but each member is individually better off defecting from group commitments and free-riding on others' efforts. Acting independently yields the highest payoff, which consists of reaping the benefits of others' contributions at no expense of one's own. Since defection yields a higher payoff than cooperation, provided everyone else remains committed, the incentive to defect is strong. Of course, if all group members believe they can free-ride without being detected, no one makes a contribution and cooperation fails entirely. This suboptimal outcome is the Nash equilibrium, or the outcome we would expect to observe among group members each trying to maximize their own utility.

In order to ensure cooperation in a prisoner's dilemma situation, group members must be encouraged to abandon their dominant strategy of defection. According to neoliberal institutionalist theory, this can generally be achieved by punishing group members who fail to maintain the agreement. This requires that groups be able to monitor or measure each member's degree of commitment, and have some kind of enforcement power.

The Kyoto Protocol and the Bali roadmap are top-down approaches to tackling the problem of climate change. They attempt to address global warming primarily by imposing international rules and restrictions on national governments. The question for

this thesis is whether this kind of regime can effectively alter global greenhouse gas emissions.

Lisa Martin contends that since prisoner's dilemma situations "contain strong incentives to defect from cooperative patterns of behavior...mechanisms to promote cooperation must focus on maintenance of agreements."<sup>56</sup> In this light, establishing the Bali roadmap was relatively easy, getting states to uphold the eventual agreement – if one is established – will be much more difficult. Indeed, as seen above, it has proved especially difficult to keep countries committed to their obligations under Kyoto.

Martin notes that small groups or entrepreneurial states can resolve prisoner's dilemma situations but neither has emerged. Koremenos et al. (2001) also suggest that centralization is the answer to collective problems when many actors are involved, asymmetries among actors' capabilities and preferences are great, participants are wary about others' commitment to the regime, actors are uncertain about the state of the world, and enforcement is difficult. If the solution to collaboration problems in the absence of a state acting as an entrepreneur and in the presence of large numbers of players is centralization,<sup>57</sup> then the solution to global climate change is a formal organization that can both monitor and assess the degree to which states turn pledges into real policies that reduce real emissions, and punish countries that fail to do so. The Bali talks included representatives from 190 nations and so far no country has proven to be an effective

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<sup>56</sup> Martin, Lisa. "Interests, Power, and Multilateralism." *International Organization* 46 (4) 1992 770

<sup>57</sup> *Ibid.*, 770

leader.<sup>58</sup> By these measures, effective monitoring and enforcement of states' commitment to a global environmental regime would require a high degree of centralization.

Where there are many countries but no entrepreneur state, Martin posits that formal organizations offer a chance of maintaining multilateral agreements in prisoner's dilemma situations.<sup>59</sup> Multilateral organizations (MOs) can monitor and assess the degree to which member states comply with the agreement. The better MOs are at this task, the more assured states will be that defection will not go unnoticed. Hence, states will be more inclined to cooperate either because countries desire the good that cooperation brings and effective monitoring assures them defectors will be caught, or because states fear they will be punished for failing to maintain their commitment. The threat of punishment, assuming it is both credible and severe, alters the payoff scheme associated with cooperation and defection such that cooperation becomes the players' dominant strategy and collective action the Nash equilibrium.

Finally, third-party enforcement may also be necessary because threats of reciprocal defection are unlikely to motivate cooperation. Climate policy leaders such as Germany have demonstrated a strong commitment to combating climate change and therefore cannot credibly threaten to shirk their responsibilities should the United States or other climate policy laggards threaten to pull out of the agreement. Since the leaders cannot keep the laggards committed by threatening to back out also, Germany and other EU member states need some external authority to punish the laggards for them.

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<sup>58</sup> While several European delegations could very well be give the mantle of climate "entrepreneurs," their actions at the Bali conference met strong resistance from America, Canada, Japan, and Russia, effectively rendering the talks void of an entrepreneur as Martin describes the role.

Pearce, "Roadmap to Where," 2007

<sup>59</sup> Martin, "Multilateralism," 766, 770

## VI. Third-Party Enforcement under Kyoto

The UNFCCC claims that Kyoto's compliance mechanism is "among the most comprehensive and rigorous systems of compliance for a multilateral environmental agreement."<sup>60</sup> While the Protocol does make provisions for determining and resolving cases of noncompliance, the mechanism has failed to fulfill its mandate. The Compliance Committee did not proceed against Canada despite that country's decision to abandon the agreement. On April 14, 2008, Canada was notified by the UNFCCC that the Compliance Committee would investigate whether Canada would be subject to penalty under the terms of the agreement.<sup>61</sup> However, during the Bonn talks in June 2008 the UNFCCC opted not to enforce the clause in the interest of moving the current talks forward.<sup>62</sup> Thus the prospects for proceedings against Denmark, Spain, Portugal, Italy, Ireland, Austria, Belgium, Finland, Italy, the Netherlands, Norway, Canada and Japan, all of whom have seen their emissions rise well past their targets, seem remote.

Scott Barrett (2007) considers Kyoto's lack of enforcement power a major failing of the agreement, and he credits the relative success of treaties made under the World Trade Organization (WTO) to the trade body's sanctioning mechanism.<sup>63</sup> While Barrett is correct in his assessment that Kyoto lacks a punitive process like the WTO, it would be a mistake to think inclusion of such a mechanism in the climate change regime would be

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<sup>60</sup> The Kyoto Protocol Compliance Mechanism. UNFCCC. 5 August 2008  
<[http://unfccc.int/kyoto\\_protocol/compliance/introduction/items/3024.php](http://unfccc.int/kyoto_protocol/compliance/introduction/items/3024.php)>

<sup>61</sup> Compliance Procedure with Respect to Canada. 23 May 2008. UNFCCC. 29 July 2008  
<[http://unfccc.int/files/kyoto\\_protocol/compliance/background/application/pdf/informal\\_information\\_note\\_on\\_the\\_comp\\_proc\\_wrt\\_canada.pdf](http://unfccc.int/files/kyoto_protocol/compliance/background/application/pdf/informal_information_note_on_the_comp_proc_wrt_canada.pdf)>

<sup>62</sup> Decision not to Proceed Further. 15 June 2008. UNFCCC. 29 July 2008  
<[http://unfccc.int/files/kyoto\\_protocol/compliance/enforcement\\_branch/application/pdf/cc-2008-1-6\\_canada\\_eb\\_decision\\_not\\_to\\_proceed\\_further.pdf](http://unfccc.int/files/kyoto_protocol/compliance/enforcement_branch/application/pdf/cc-2008-1-6_canada_eb_decision_not_to_proceed_further.pdf)>; Bonn Climate Change Talks Conclude. 26 June 2008. Climate-L.Org. 29 July 2008 <<http://www.climate-l.org/2008/06/bonn-climate-ch.html>>

<sup>63</sup> Barrett, Scott. "How Not to Repeat the Mistakes of the Kyoto Protocol." *Yale Global Online* November 14, 2007 <<http://yaleglobal.yale.edu/display.article?id=9970>> (accessed June 4, 2008)

sufficient to compel countries to meet their targets. The WTO has not always been able to exact compliance with its regulations. For example, in 2004 the WTO determined that American “anti-dumping” duties on Canadian softwood were inconsistent with the United States’ WTO obligations.<sup>64</sup> Nevertheless, the US imposed tariffs on Canadian softwood until the two countries reached an agreement in 2006.<sup>65</sup> America’s disregard for the WTO on this issue casts doubt upon Barrett’s claim that inclusion of an enforcement mechanism in the new climate treaty would sufficiently motivate states to make good on their commitments. Still, while the power to enforce may not be sufficient to guarantee Kyoto’s replacement success, it may provide greater assurances that countries would strive to meet their targets than is presently the case under Kyoto.

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<sup>64</sup> Softwood Lumber, 14 Dec. 2004. Foreign Affairs and International Trade Canada. 4 June 2008  
<<http://www.international.gc.ca/eicb/softwood/what04-en.asp>>

<sup>65</sup> “Government takes heat on softwood agreement.” *CBC News* April 27, 2006  
<<http://www.cbc.ca/money/story/2006/04/27/softwoodpolitics-060427.html>> (accessed June 4, 2008)

## VII. Bali, Bangkok and the Backing of Copenhagen

Not punishing countries that skirt their existing treaty obligations is unlikely to engender confidence in an enforcement mechanism designed to ensure compliance with a new agreement. However, punishing Canada would require punishing all of the other developed states whose emissions are above their targets, and launching 31 compliance investigations would surely hinder rather than help current negotiations. Besides, a country that could not meet its original target isn't going to be able to meet one that is 30% greater.<sup>66</sup> Moreover, even if the 30 percent penalty were to motivate a country to reduce its emissions, prohibiting that state from purchasing emissions credits would hinder, rather than help, its progress.

If Kyoto's replacement were designed to reward achievement and punish disobedience in a way that enabled all states to meet their targets, the punishment for noncompliance might actually be respected and enforced. The Kyoto Protocol aims to penalize countries for overshooting their emissions targets by saddling states with an impractical late penalty, and by revoking their right to purchase emissions credits. Copenhagen could address this by simply requiring countries that overshoot their targets to purchase credits from states that meet or better their obligations. Such a system would simultaneously reward states for meeting their emissions targets and punish countries for failing to do so. More importantly, the procedure would transfer money from industrialized countries to developing nations, which would help the poorer parts of the world adapt to the effects of climate change and invest in research and development in clean energy. It is imperative that Copenhagen move countries toward meeting their

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<sup>66</sup> The Kyoto Protocol Compliance Mechanism. UNFCCC. 5 August 2008  
<[http://unfccc.int/kyoto\\_protocol/compliance/introduction/items/3024.php](http://unfccc.int/kyoto_protocol/compliance/introduction/items/3024.php)>



obligations. A positive and negative reinforcement mechanism such as the one above is a step in the right direction.

The Bali roadmap established that for the next two years the international community of states would work towards an international regime on climate change like the Kyoto Protocol, but with the inclusion of developing nations, consideration of the effects of deforestation and land degradation, and recognition that “deep cuts” in emissions are required to stave off the worst possible consequences of human activity. However, the roadmap does not bind the hands of any government or make provisions for a multilateral organization to do so at a later date. Should a new treaty emerge from the process in Copenhagen in 2009, it is unlikely that a formal regulatory body will back the agreement for four reasons.

First, there is much debate over the maximum concentration of GHG in the atmosphere that is recommended by the IPCC. As a consequence, countries are divided over the emissions reductions that need to be made in order to meet the concentration that the IPCC recommends. If the international community of states cannot agree upon a maximum permissible concentration of GHG in the atmosphere, it will not be able to set collective targets for emissions reductions, and unspecified targets cannot be enforced. Currently, the IPCC recommends keeping carbon dioxide equivalents in the atmosphere between 450 ppm and 650 ppm.<sup>67</sup> This range of seemingly permissible GHG concentrations is significant because the difference between meeting the upper and lower bounds by 2050 in terms of emissions reductions is roughly 3 trillion tons or 71 billion tons annually.<sup>68</sup> Obviously, stabilizing the concentration of greenhouse gases in the

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<sup>67</sup> Pearce, “Roadmap to Where,” 2007

<sup>68</sup> Using conversion estimates given by Sachs; Sachs, “Climate Change after Bali,” 2008

atmosphere at 650 ppm would require less stringent cuts in GHG emissions. The major point of contention between the American and European delegations during the Bali negotiations was whether the IPCC recommended stabilizing GHG concentrations in the atmosphere at 450 or 650 ppm. As Fred Pearce writes, “most delegates left the meeting believing that the [IPCC] embraces a 450 ppm target. The Americans know better.”<sup>69</sup> Unless the European and small island nations currently set on a 450 ppm ceiling are willing to allow a higher concentration of GHG in the atmosphere, or the Americans back down and endorse the 450 ppm mark, a collective target cannot be established, let alone enforced.

Second, as countries are divided over whether the IPCC recommends a 450 or 650 ppm ceiling, states are necessarily at odds over the appropriate magnitude and scheduling of emissions reductions.<sup>70</sup> If the European and small island nations continue to push for a 450 ppm target and the US allows its inclusion in the text, the Americans will likely only pay it lip service. The United States and other powerful laggards are therefore likely to oppose a formal regulatory body that tries to enforce targets that mean sharp reductions in GHG emissions.<sup>71</sup> The concrete aims championed by the EU at Bali (25 to 40 percent below current levels by 2020) were vetoed by the US, Canada, Japan, Russia and Australia, and as a consequence, the roadmap simply calls for “deep cuts” in emissions.<sup>72</sup> A formal regulatory body that is not supported by these states cannot possibly enforce reductions. Only modest targets agreeable to all have a hope of being enforced. If the

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<sup>69</sup> Pearce, “Roadmap to Where,” 2007

<sup>70</sup> Ibid.

<sup>71</sup> Spotts, Peter N. “In Bali talks, US balks at European emissions targets.” *Christian Science Monitor* 100 (13) 2007; See also Hovi and Skodvin 2008

<sup>72</sup> Pearce, “Roadmap to Where,” 2007; Spotts, “US balks at European emissions targets,” 2007

treaty calls for drastic emissions cuts, the prospects for enforcement will be weak, particularly among powerful laggards such as the US and China.

Indeed, disagreement at Bali suggests that it may be difficult for the world's countries to even draft a new climate change regime. Koremenos et al. contend there are five factors that determine the design of international institutions: membership, scope, centralization, control, and flexibility.<sup>73</sup> One hundred and ninety nations took part in the Bali talks,<sup>74</sup> and the inclusion of so many countries with diverse interests and capabilities severely limited the form the roadmap could take. Given the differentiated responsibilities, capabilities, and short- and long-term aims of participating countries, the scope of the talks is wide-ranging.<sup>75</sup> The diversity of actors' preferences is likely to reduce the strength of the eventual agreement, as decisions to include any text require consensus.<sup>76</sup> Some environmentalists said privately that they "suspect that the reference to CO<sub>2</sub> levels eventually will get dropped to keep the US from blocking the agreement."<sup>77</sup> Moreover, despite making a nominal concession at Bali, "the United States retained the flexibility that it had sought from the outset, fending off European attempts to set binding commitments on emissions reductions."<sup>78</sup>

Third, the world's countries have yet to agree upon the reduction mechanisms that will be permissible under the new treaty. States must decide how they will reduce and measure national GHG emissions before a strong enforcement mechanism can be built

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<sup>73</sup> Koremenos, Barbara et al. "Rational Design: Looking Back to Move Forward." *International Organization* 55 (4) 2001 1052

<sup>74</sup> Pearce, "Roadmap to Where," 2007

<sup>75</sup> Koremenos et al., "Rational Design," 1058

<sup>76</sup> Spotts, "US balks at European emissions targets," 2007

<sup>77</sup> *Ibid.*

<sup>78</sup> *Ibid.*

into the agreement. Conflict among countries at Bangkok suggests it will be difficult to build consensus on these reduction mechanisms.

The Bangkok talks split into two tracks, the first led by the Ad Hoc Working Group on Further Commitments for Annex 1 Parties under the Kyoto Protocol (AWG-KP), and the second tasked with fleshing out the Bali roadmap, the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA).<sup>79</sup> In the AWG-LCA, there was much discord over which issues deserved priority. The United States and Japan pushed for sector-specific actions to be discussed in Bonn in June, but due to strong opposition from China, India, Brazil, and Mexico, sector approaches have been pushed back to the Accra conference.<sup>80</sup> Each of the three reduction mechanisms that created a rift between the American and European Union delegations during the Kyoto process is currently on the table: carbon capture and storage, emission trading, and joint implementation projects.<sup>81</sup> As noted, the Bali talks raised several questions about carbon sinks, but delegates were convinced of the need to pursue the matter. Joint implementation projects are expected to generate controversy, but emission trading has been met with greater acceptance this time around.

The AWG-KP decided at Bangkok to incorporate Kyoto's carbon trading scheme into the new regime, carbon capture and sequestration and other sector-specific actions are scheduled for the Accra talks, and joint implementation projects will be discussed during the Poznan negotiations. Since preventing states from achieving emissions reductions under the new treaty by trading credits, using carbon sinks, and relocating

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<sup>79</sup> Bangkok, 2008. UNFCCC. 21 April 2008  
<[http://unfccc.int/meetings/intersessional/awg-lca\\_1\\_and\\_awg-kp\\_5/items/4334.php](http://unfccc.int/meetings/intersessional/awg-lca_1_and_awg-kp_5/items/4334.php)>

<sup>80</sup> Ibid.

<sup>81</sup> Soroos, "Futility of the Kyoto Process," 4-7

operations could cause the US, China, Russia, Japan, Australia and Canada to withdraw from the talks, the EU will likely consent to their inclusion in the text. However, the topic of reduction mechanisms is a contentious issue, and the parties will need to decide which reduction actions the treaty will recognize before an enforcement mechanism is even a possibility. States will then have to decide how emissions reductions will be measured and reported so that they may be verified and enforced.

Finally, tension between the North (in particular the United States) and the South on the subject of finance and technology may also prevent delegates from reaching an agreement that imposes enforceable restrictions on the US and developing countries. At present, the quid pro quo agreement reached at Bali remains void of any detail.

Developing nations have agreed in principle to stabilize and eventually reduce their GHG emissions, and in return developed countries have agreed in principle to provide developing nations with financial and technological assistance. However, the devil is still very much in the details as the two sides have yet to determine an amount of aid that would be mutually satisfactory.

China and the G77 group of developing nations expect industrialized states to “transfer technologies that would enable developing countries to leapfrog over the fossil fuel intensive forms of development.”<sup>82</sup> However, developed countries are not prepared to make such a commitment, “especially [if] they are also expected to assist severely impacted developing countries adjust to the impacts of climate change.”<sup>83</sup> In order for Copenhagen to regulate transfers of technology and financial aid packages, the North and

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<sup>82</sup> Soroos, “Futility of the Kyoto Process,” 7

<sup>83</sup> Ibid. 7

South must come to an agreement on what constitutes “adequate” assistance.<sup>84</sup>

Developed countries must agree among themselves how much assistance they are prepared to provide developing nations, and that assistance must meet the South’s expectations. Otherwise, the new treaty will not be able to enforce finance and technology transfers, and voluntary aid is likely to be insufficient to motivate states like China and India to invest in costly alternative energies that would slow economic growth.

It is worth restating that the United States did not fully endorse the commitment of financial and technological aid to developing nations. In fact, the American delegation actually threatened to veto such a commitment until representatives from other developed countries expressed outrage and shamed the US delegates.<sup>85</sup> Without American assistance it is unlikely developed countries will be able to provide the money and technology necessary to induce China and the G77 to reduce their GHG emissions in line with the new treaty.<sup>86</sup> Thus, developing nations will be reluctant to sign off on any formula involving specific figures and implementation measures absent a credible US commitment to help “Third World” economies transition to clean energy.

Agreement on sector-specific mechanisms, mitigation actions, adaptation measures, technology transfers, and financial assistance will be hard to come by. For the group of delegates charged with making the Bali roadmap a little clearer, the Bangkok talks served mainly to set the agenda items of future negotiations. That countries were seriously disputing the order in which topics would be discussed suggests that discussion of the actual topics themselves will be rife with bickering and strife. The next step on the Bali roadmap is Accra, Ghana, where discussions will focus on mitigation actions such as

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<sup>84</sup> See Hovi and Skodvin 2008

<sup>85</sup> Pearce, “Roadmap to Where,” 2007

<sup>86</sup> Soroos, “Futility of the Kyoto Process,” 7

forest conservation.<sup>87</sup> The last of this year's negotiations will take place in Poznan, Poland, where discussions will "address research and development of technology, risk management and risk reduction strategies, and the key elements of a shared long-term vision for joint action on climate change, including a long-term target to reduce greenhouse gas emissions."<sup>88</sup> Prospects for break-through negotiations at either venue currently appear slim as the issues that dogged Kyoto continue to divide nations in the Bali process.

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<sup>87</sup> "Bangkok. 2008. UNFCCC. 21 April 2008

<[http://unfccc.int/meetings/intersessional/awg-lca\\_1\\_and\\_awg-kp\\_5/items/4334.php](http://unfccc.int/meetings/intersessional/awg-lca_1_and_awg-kp_5/items/4334.php)>

<sup>88</sup> Ibid.

## VIII. Alternative Paths to Compliance

It may be possible to achieve compliance with the new treaty in the absence of a strong enforcement mechanism. At least some signatories will have every intention of honoring the agreement. Britain, Germany, France, Sweden, Iceland and New Zealand are set to meet or better their Kyoto commitments and barring unforeseen changes in domestic consumption habits or political leadership objectives that would ratchet up their emissions, these states may be expected to meet or better their targets under the new climate change regime as well. Additionally, small island nations increasingly threatened by rising sea levels and developing countries facing irregular famine and drought are ready to play their part in combating climate change. However, to halt rather than simply slow global warming, a Copenhagen protocol must garner the participation and commitment of those countries that will have the greatest impact on global GHG emissions in the near and distant future. Thus the United States, China, Japan, India, Russia, Australia, Canada, and Brazil would have to be persuaded to agree to, and ultimately comply with, the treaty's terms. Without the threat of punishment for noncompliance, there are two possible means of encouraging compliance at the international level.<sup>89</sup>

First, an effective international agreement can “create incentives for countries to do what the treaty says must be done.”<sup>90</sup> While Kyoto's replacement would do well to punish countries for noncompliance, states could be given carrots as well as sticks to

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<sup>89</sup> National governments may be pressured by their domestic publics and/or sub-national governments to curb their country's emissions. As the focus of this paper is international action on climate change, efforts to regulate GHG emissions at the sub-national level are not explored.

<sup>90</sup> Barrett, “How Not to Repeat the Mistakes of the Kyoto Protocol,” 2007  
<<http://yaleglobal.yale.edu/display.article?id=9970>> (accessed June 4, 2008)



meet their emissions targets under the new regime.<sup>91</sup> The Montreal Protocol on Substances that Deplete the Ozone Layer is an excellent example of an effective international agreement that attracts participants and encourages compliance by giving states added incentives to cooperate.<sup>92</sup>

The 1990 London amendment created the Montreal Protocol Multilateral Fund (MPMF) to aid participating developing nations in phasing out the use of certain ozone-depleting substances (ODSs) such as Chlorofluorocarbons (CFCs).<sup>93</sup> Industrialized states (parties whose annual per capita production and consumption of ozone depleting substances is greater than 0.3 kg, referred to as non-Article 5 countries) contribute to the fund, and only developing nations (parties whose per capita use of ODSs is less than 0.3 kg, termed Article 5 countries) can draw from it.<sup>94</sup> UN assayers determine the contributions developed countries must make to the fund based on those parties' per capita production and consumption of ozone-depleting substances.<sup>95</sup> The fund's Executive Committee (which consists of seven Article 5 and seven non-Article 5 representatives, selected annually) is responsible for granting developing nations access to the funds.<sup>96</sup> The MPMF totaled US \$240 million for the initial triennium (1991-1993) and has since grown to US \$470 million for 2006-2008.<sup>97</sup> Currently, 146 of the 191 parties to the Montreal Protocol are eligible for funding.

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<sup>91</sup> Barrett, "How Not to Repeat the Mistakes of the Kyoto Protocol," 2007 <<http://yaleglobal.yale.edu/display.article?id=9970>> (accessed June 12, 2008)

<sup>92</sup> Ibid.

<sup>93</sup> Multilateral Fund. 2003. Secretariat of the Multilateral Fund for the Implementation of the Montreal Protocol. 13 June 2008 <<http://www.multilateralfund.org/>>; Sand, Peter H. "Carrots without Sticks? New Financial Mechanisms for Global Environmental Agreements," Max Planck Yearbook of United Nations Law, Vol. 3, 1999 368

<sup>94</sup> Multilateral Fund. 2003. Secretariat. 13 June 2008 <<http://www.multilateralfund.org/>>

<sup>95</sup> Ibid.

<sup>96</sup> Ibid.

<sup>97</sup> Ibid.

According to G.J.M. Velders et al., the Montreal Protocol “has successfully reduced the global production, consumption, and emissions of ozone-depleting substances.”<sup>98</sup> And while protecting the ozone layer is Montreal’s raison d’être (and success in this endeavor is to be celebrated), the treaty’s accomplishments extend much further. Because ozone-depleting substances are also greenhouse gases that contribute to global warming, the Montreal Protocol has already afforded us four times the climate protection Kyoto stood to provide if implemented perfectly.<sup>99</sup>

Arguably part of Montreal’s success can be credited to the degree to which developing nations have bought into the treaty.<sup>100</sup> Whereas Kyoto excused the developing world from emissions reductions, “Montreal imposed restrictions on all countries from the start.”<sup>101</sup> Developing nations have slowly phased out the use of ODSs because the treaty has facilitated the process.<sup>102</sup> The Montreal Protocol subsidizes the efforts of developing nations through the MPMF, lowering the cost of altering production technologies and consumption habits to produce cleaner emissions.

Kyoto does not provide developing countries with the same kind of assistance to reduce GHG emissions and Copenhagen must improve upon its predecessor in this regard.<sup>103</sup> The Bali talks revealed that China and the G77 are willing to consider

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<sup>98</sup> Velders, G.J.M. et al. “The importance of the Montreal Protocol in protecting climate.” *Proceedings of the National Academy of Sciences* 104 (12) 2007

<sup>99</sup> Velders et al., “The importance of the Montreal Protocol in protecting climate,” 2007; Barrett, “How Not to Repeat the Mistakes of the Kyoto Protocol,” 2007 <<http://yaleglobal.yale.edu/display.article?id=9970>> (accessed June 19, 2008)

<sup>100</sup> Ibid.

<sup>101</sup> Ibid.

<sup>102</sup> Ibid.

<sup>103</sup> In 2001, the UNFCCC established the Special Climate Change Fund (SCCF) to help developing countries adapt to the effects of climate change. Copenhagen needs to create a fund like the MPMF to wean developing nations off fossil fuels.

Special Climate Change Fund. 11 May 2007. UNFCCC. 12 August 2008 <[http://unfccc.int/cooperation\\_and\\_support/financial\\_mechanism/special\\_climate\\_change\\_fund/items/3657.php](http://unfccc.int/cooperation_and_support/financial_mechanism/special_climate_change_fund/items/3657.php)>

emissions controls provided they are given financial assistance to alleviate part of the cost burden of developing and implementing “green” technologies. However, China’s commitment to emissions reductions was entirely dependent upon a real commitment from developed states to provide assistance in return. As noted, the political will of industrialized countries is uncertain, but if the Americans can be persuaded to join the developed world in helping China and the G77 convert to a clean power grid, the developing world might buy into the new climate change regime. The MPMF induced developing countries to cooperate with the Montreal Protocol; a similar fund could do the same for a Copenhagen Protocol.

To generate the political will necessary to establish such a fund, Copenhagen would likely need to make some concessions to the United States and other laggards to bring those nations on board. It is doubtful the MPMF would have been created had the Americans’ not been given some control over the fund.<sup>104</sup> The US stood to provide 25 percent of the initial expenditure, making it the fund’s largest contributor by far.<sup>105</sup> In return for its participation, the United States was granted a permanent seat on the Executive Committee.<sup>106</sup> In addition, the US was afforded a proviso in the preamble to the London amendment that recognized the “funding pact did not commit the United States to a similar package of expenditures when the issue of the greenhouse effect comes up...acknowledging the ozone question as ‘unique’.”<sup>107</sup> The US might be persuaded to contribute to a fund like the MPMF under Copenhagen if the Americans were afforded some control over the fund and given some assurances that their participation did not

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<sup>104</sup> Frankel, Glenn. “Governments Agree on Ozone Fund; Negotiations Speed Pace of CFC Ban.” *The Washington Post* June 30, 1990

<sup>105</sup> Ibid.

<sup>106</sup> Ibid.

<sup>107</sup> Ibid.

obligate them in future.<sup>108</sup>

Second, as an alternative to financial and technological incentives, “naming and shaming” could potentially help generate compliance with a new climate change regime. If a punishment and reward system cannot sufficiently motivate countries to meet their treaty obligations, international efforts aimed at shaming climate policy laggards could provide the added incentive necessary to exact compliance. Australian Senator Robert Hill believes “it is a country’s political commitment to meet its international obligations that underpins the effectiveness of any international agreement on climate change,” and “a punitive approach cannot compensate for lack of political will.”<sup>109</sup> The question is whether international efforts aimed at shaming countries for noncompliance could persuade states to take significant measures to combat climate change.

There is some evidence that shaming can impact climate change negotiations. For example, during the Bali talks, Papua New Guinea’s Kevin Conrad successfully shamed the American delegation into withdrawing a threat to veto a commitment of money and technology to developing nations. When the US moved to veto inclusion of that text,

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<sup>108</sup> Cass Sunstein suggests international concessions may not be able to motivate US political leadership to support a climate change fund. She argues that a domestic cost-benefit analysis reveals that whereas the benefits of reducing ODSs greatly outweighed the costs, the benefits of reducing GHGs are dwarfed by the costs. As the US stands to be a “net loser” from strict GHG regulations, generating support for a climate fund similar to the MPMF in the US would be difficult. To be sure, the American economy is heavily dependent on fossil fuels and strict emissions regulations may face strong opposition in both the House and the Senate. Nevertheless, the American people are more aware now of the risks of global warming than they were ten years ago. Moreover, the next administration is likely to be more proactive in combating climate change than the current administration, as Senator McCain has a rich history of climate activism in the Senate and Senator Obama appears to have embraced the issue as central to the Democratic Party. In any event, certain concessions may make reducing GHG emissions and contributing to a global fund to help developing nations sufficiently attractive to the Americans and therefore should be pursued. Sunstein, Cass R. “Of Montreal and Kyoto: A Tale of Two Protocols.” *Harvard Environmental Law Review* 31 (2007) 5

<sup>109</sup> Hill, Robert. “The International Climate Change Agreement: An Evolution.” *University of NSW Law Journal* 36 2001  
<<http://www.austlii.edu.au/au/journals/UNSWLJ/2001/36.html>> (accessed June 28, 2008)

Conrad bellowed, “If you are not prepared to lead, get out of the way.”<sup>110</sup> As it happened, the Americans backed down from their veto threat and allowed the commitment of money and technology transfers to developing nations to be included in the final document.<sup>111</sup>

However, it is doubtful this tactic will affect real policies. In general, shaming tends to be far less effective when it aims at inducing states to take costly actions. For example, international pressure has yet to compel countries to end humanitarian strife in Darfur. State intervention has been so severely limited that the mantra following the Rwandan genocide, “never again,” appears to have fallen on deaf ears at the level of the nation-state. The dearth of state intervention in Darfur casts doubt upon the ability of international pressure to induce countries to reduce their GHG emissions.

The United States in particular has withstood pressure both at home and abroad to ratify the Kyoto Protocol. The George W. Bush administration has been criticized numerous times for its seemingly close ties to the oil and gas industry in the United States. It is the administration’s resolve in the face of such scrutiny that suggests the White House will not bow to domestic or foreign pressure to aid China and the G77 invest in clean energy. While the second and final year of UN climate change talks in the lead up to Copenhagen will fall under the purview of a new American president, there is little reason to think either Senators Barack Obama or John McCain will be any more responsive to shaming tactics than President Bush. If in 2009 the US decides to help developing nations combat climate change by providing them with financial and/or technological assistance, it will be because of the change in the presidency rather than the

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<sup>110</sup> Hill, “The International Climate Change Agreement,” 2001  
<<http://www.austlii.edu.au/au/journals/UNSWLJ/2001/36.html>> (accessed June 28, 2008)

<sup>111</sup> Ibid.

increased effectiveness of environmental naming and shaming. Thus, there appear to be limits to this international mode of inducing compliance.

In short, Copenhagen must encourage not only participation but also compliance. Financial and technological incentives are more likely to induce states to change their climate policies than pressure from shaming efforts. The Montreal Protocol, which boasts greater participation and still greater compliance than the Kyoto Protocol, is evidence that Copenhagen can succeed in this regard. However, financial and technological inducements may not be sufficient to motivate states to change their climate policies, and efforts to punish noncompliance and shame laggards should also be pursued in earnest.

## IX. Conclusion

The Kyoto Protocol and the Bali roadmap represent international efforts to tackle climate change. It remains to be seen whether an international regime can effectively impose rules governing global greenhouse gas emissions upon national governments. Only six industrialized countries are on track to meet or better their Kyoto commitments and developing nations are not bound by the Protocol. Although China and the G77 have participated in commitment talks in the current set of UNFCCC negotiations, the agreement that replaces Kyoto in 2012 must motivate the parties to follow through on the promises they make in Copenhagen in 2009. National governments might be motivated to impose tougher emission standards on consumers and industry if the international community of states were to sanction or otherwise penalize countries that failed to act. However, contention over atmospheric GHG concentration limits, emissions targets, reduction mechanisms, and “Third World” assistance is likely to prevent states from forging an agreement to which all parties would like to bind themselves.

In the absence of effective state-level enforcement of action on climate change, inducing states to reduce their emissions will require alleviating at least part of the cost of abandoning fossil fuels as a means to development. If the talks fail to generate both a means to enforce the agreement reached at Copenhagen and positive incentives to motivate states, compliance will depend on countries simply being persuaded of the need to act. Eventually, melting ice caps, rising sea levels, shrinking habitats, and dwindling food supplies will force states to respond. The dynamics of the prisoner’s dilemma, however, raise the spectre that this response could come disastrously late. The question is whether Copenhagen can precipitate more timely action.

The UNFCCC thinks that because delegates were able to hammer out agendas for each of the climate talks scheduled this year, “the all-important first milestone has thus been reached on the journey to Copenhagen.”<sup>112</sup> It was certainly difficult to get states to agree on the scheduling of topics, and the Bangkok talks can be labeled a success in so far as they established an agenda and kept countries at the bargaining table despite a few ruffled feathers. However, it remains to be seen whether negotiations will continue past Poznan in December 2008 to Copenhagen in 2009,<sup>113</sup> let alone culminate in a stronger, broader, and more inclusive version of the Kyoto Protocol. Moreover, no matter the strength of the agreement in principle, in order for the treaty to be considered a success it must compel or induce states to make good on their promises and take steps to reduce actual emissions. The history of the Kyoto Protocol shows us this is easier said than done.

The involvement of China, India, and other developing nations is important because they are becoming increasingly big polluters; however, the concerns of the developing world stand to complicate rather than simplify the discussions. The parties to Copenhagen will have to resolve North-South issues on top of the subjects that made establishing Kyoto so difficult. While the United States has been an active participant so far, the world’s biggest polluter has not yet become the climate leader it needs to be in order for China and the G77 are to remain engaged in the talks and for the treaty to be enforceable.

Thus it would be premature to conclude that Copenhagen will surpass Kyoto in its ability to precipitate reductions in global GHG emissions. However, the comprehensiveness of the talks combined with the active involvement of the United

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<sup>112</sup> Bangkok. 2008. UNFCCC. 21 April 2008

<[http://unfccc.int/meetings/intersessional/awg-lca\\_1\\_and\\_awg-kp\\_5/items/4334.php](http://unfccc.int/meetings/intersessional/awg-lca_1_and_awg-kp_5/items/4334.php)>

<sup>113</sup> Dates and venues of future talks between Poznan and Copenhagen have not yet been scheduled.



States, China and the G77 thus far suggest that a new agreement has the potential to impact global climate change on a much larger scale than Kyoto could have if it had enjoyed widespread compliance. To realize that potential a Copenhagen protocol must either create an enforcement mechanism to hold countries to account for the pledges they make or provide financial and technological assistance to states that are willing to abandon fossil fuels for alternative energy sources. If Copenhagen fails to do both of these things then we can only hope that the largest producers of greenhouse gases either take steps to reduce their emissions voluntarily or are forced to take action in response to domestic pressure from their citizens and/or sub-national governments. Otherwise, we will have no choice but to adapt to an increasingly warmer planet and the consequences thereof.

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