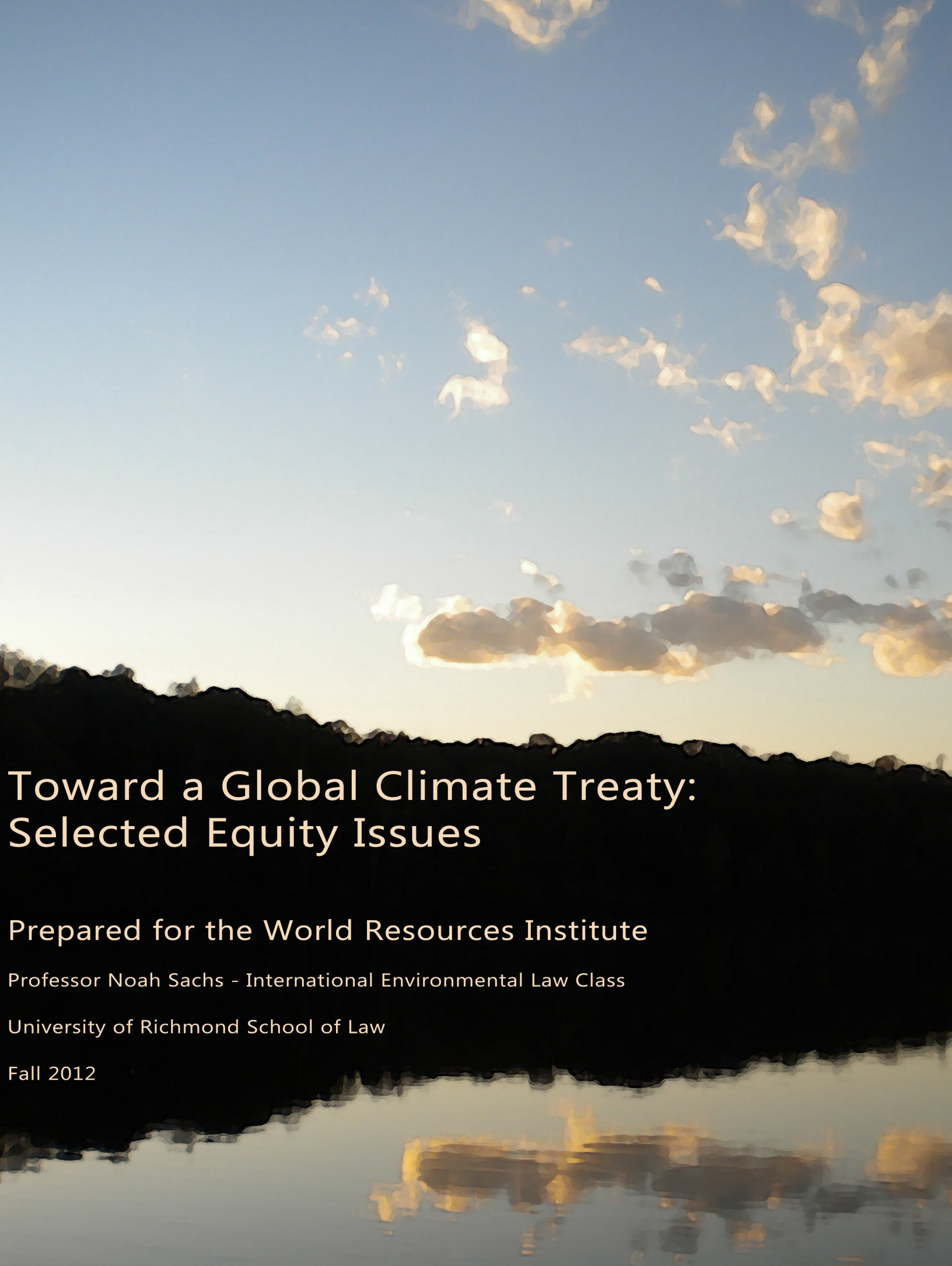

Toward a Global Climate Treaty: Selected Equity Issues

Prepared for the World Resources Institute

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Introduction

At the University of Richmond T.C. Williams School of Law, the International Environmental Law course, instructed by Professor Noah Sachs, was designed to introduce and to explore possible solutions for the climate change crisis regarding equity, fairness, technology, and finances. The purpose of this course was to prepare a report for submission to the World Resources Institute (WRI). The class decided to research and analyze the equity aspects of climate change per WRI's request.

To prepare for this report, the students reviewed literature on climate ethics, politics, treaties, and distributive justice over the course of the semester. Most of the readings focused on solving a global problem regarding a fair distribution of responsibility among the countries. To prepare solutions to this puzzle, the students participated in an engaging workshop environment, wrote reflections for every class and debated about these principles.

The students also had the opportunity to have Skype presentations and conferences with the following climate change specialists: Jonathan Pershing, the Deputy Special Envoy for climate change at the State Department; Professor Robert Verchick, the Gauthier-St. Martin Chair in Environmental Law at Loyola University New Orleans; Michael Gerrard, Professor of Law at Columbia University, and WRI staff Edward Cameron and Paul Joffe. These Skype presentations created rewarding experiences in learning about real-world applications of climate change theories. These experts also provided excellent insight into the big picture of climate change politics today.

Through these experiences during the course, the students selected topics for their individual papers, which each address some aspect of equity and justice in the climate change debate. We hope that this report informs WRI's work and the larger climate equity debate as nations work toward a binding climate treaty by 2015.

Equity within Local and Regional Efforts to Adapt to and Prepare for the Impacts of Climate Change

Many of these papers discuss issues of equity with respect to the response to the impacts of climate change. In her paper, ***Helping Those who Help Themselves: CARICOM and Future Climate Change Adaptation,*** **Laura Boorman** discusses adaptation issues and explains how many of the Caribbean nations are working to adapt to the current and future impacts of climate change. Laura discusses the current state of climate change adaptation financing, and how funds have been distributed to developing countries in recent years. The paper also discusses the CARICOM member states' impressive efforts, including the Implementation Plan, to adapt to the impacts of climate change. Finally, Laura's paper presents a proposed framework for determining which developing countries will receive funds contributed by developed states, and for ensuring that these funds are utilized in the most efficient and cost-effective manner.

Similarly, in her paper, ***Climate Change Adaptation Financing: Matching Supply with Locally-Controlled Demand,*** **Brianne Mullen** discusses the local government approach to climate change adaptation and demonstrates how local governments (as opposed to national governments) can contribute to the adaptation planning for climate change. Brianne's paper argues for local governments to play a primary role in directing the flow of adaptation financing under a global climate change regime. The paper first describes local governments' role under the current system, and shows that while they have very limited involvement in existing adaptation financing, local governments are advocating for a greater role. Brianne's paper then explores equity issues in the top-down/bottom-up debate, arguing that the latter approach leads to a more equitable regime. She examines two case study projects demonstrating success in locally focused adaptation financing, from which she draws guidance for the design of a bottom-up adaptation financing mechanism in the final sections of her paper.

In ***Precaution Pays: Creating an Equitable Solution to Vulnerability And Disaster Preparedness in the Adaptation Climate Discussion,*** **Patrick Fanning** proposes methods for planning and preparation for natural disasters and extreme weather likely to occur as a result of climate change. Patrick discusses the current state of affairs with regard to natural disaster preparedness, the current state of international politics on the issue, and the current means through which disaster preparedness is being addressed. He notes the lack of current metrics for measuring disaster preparedness, and advocates for the use of the scenario-planning model to evaluate disaster preparedness and

vulnerability. Patrick's paper explains that harnessing the results of the scenario planning approach, vulnerable countries will be empowered with objective, statistical information that will help them insert disaster vulnerability and preparedness into the climate adaptation debate. He believes an international accord should be reached setting a minimum floor of disaster preparedness to assist the most vulnerable countries.

Patrick's research lays out a framework for incorporating disaster vulnerability and preparedness into the climate debate and argues for the creation of an adaptation fund to address disaster preparedness. The paper shows how creating a disaster preparedness fund similar to the Green Climate Fund, a mitigation fund called for in the Copenhagen Accord, will promote climate change equity, and argues that implementation of climate-related disaster preparedness should be carried out at the local level with the assistance of non-government organizations ("NGOs") and the private sector, with input and oversight from the national and international communities.

Equity Applied to Financing from Industry and Largest Emitting Countries to Help Ensure Financing is Equitable and Effective

Some of the papers discuss issues of financing, and propose new ideas for determining which countries, regions, or industries will contribute to the funding of climate change mitigation. In her piece, ***A Domino Effect: A Carbon Tax on International Aviation Trade*, Evelyn Kwak** discusses a strategy to finance climate change research for aviation technology by implementing a carbon tax on the international aviation trade of corporations. She proposes that the United States, the European Union (EU), and China, should form an agreement to substitute a portion of corporate income tax (or other corporate taxes) with a carbon tax on the international aviation trade of corporations. Evelyn indicates that this group of countries best fits this proposal, because it imposes large political and economic influences on international aviation trade. Moreover, she suggests that this group would likely agree to this compromise because of recent controversies over the EU's Aviation Directive, which imposed an industry-wide tax on aviation. Evelyn further encourages this proposal, by discussing the benefits and ease in implementing a substitute carbon tax among the various countries in the selected group.

In his paper, **Nick Surace** proposes an approach financed by the largest emitting countries. He proposes that this focus will help to attain firm emissions reductions through a binding legal agreement in the run-up to Durban in 2015. The paper focuses on how engaging the BASIC countries leading up to 2015 can help foster strong international agreement leading to real emissions reductions by the world's largest GHG emitting countries. Nick discusses his proposals to engage the BASIC countries and explores the following: (1) establishing the BASIC countries as a distinct "club"; (2) applying a modified Greenhouse Development Rights Framework to the BASIC and Annex I country blocs; and (3) using Climate Accession Deals between the BASIC and Annex I groups. Nick also responds to potential criticisms for each proposal.

Andrew Pericak explores the REDD program and how a pro-poor approach and a bottom-up treaty will likely enhance equity for forest-dwelling peoples within the nations participating in the REDD financing mechanisms. Andrew's paper, ***Equity for Forest-Dwelling Peoples within the REDD+ Mechanism: A Pro-Poor Approach and the Case for a Bottom-Up Treaty***, shows how the international community can best incorporate a pro-poor REDD system into a near-future climate regime. Through his analysis, Andrew argues that a pro-poor REDD has the greatest chance of implementation only if international society can agree to a reconceptualization of REDD via a new, bottom-up climate treaty. Andrew explains the benefits of pro-poor REDD, addresses potential criticisms of pro-poor REDD, and details the specifics of the reconceptualization, ultimately calling for a vastly decentralized REDD infrastructure.

In his paper, ***Climate Negotiations: Sometimes Less is Better***, **Barton Grover** discusses the background of the UN treaties, how to correct past mistakes, and introduces the makeup of the members of the treaty and how this treaty will both be similar and different to current UNFCCC treaties. Barton's paper proposes that this treaty will rely on countries already part of the Major Economies Forum (MEF), an organization composed of the world's 17 largest economies that pursue an agreement at UN climate treaties and a move to cleaner energy.

The fairness and equity of this new treaty will be discussed. According to Barton's proposal, small nations will have a say at the treaty to allow their voice to be heard, but no vote. The developing nations most affected by climate change are willing to cut emissions, yet it is not their emissions that are responsible for the current problem. It is

the large nations that must jointly work together and push each other to lower emission levels. As Barton suggests, only through their action can developing nations be benefited. While procedural equity may not be present in this treaty, the consequences of the largest emitters being forced to act will provide equity.

In ***A More Equitable CDM: Recognizing the Fading Lines Between Kyoto's Developed/Developing Country Distinction,*** **Brittney McClain** proposes reform of the Clean Development Mechanism (CDM) in a new climate treaty to give non-Annex 1 countries the option to accept binding emissions for the right to participate in the CDM as hosts and developers of the projects. Brittney encourages this proposal by discussing the equitable and financial benefits of this new climate treaty. For instance, by incentivizing greater participation from non-Annex 1 countries, Brittney suggests that developing countries would profit as investors in the projects. The goal of the new climate treaty would be to make the distribution of CDM projects more equitable. She concludes that this change, through a new climate treaty, would resolve the steady decline in the CDM by stabilizing the price of CER credits.

We hope that our analysis of these important equity issues contributes to WRI's work in this field, and we remain available to answer any questions about our work.

Respectfully submitted,

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Helping Those Who Help Themselves: CARICOM and Future Climate Change Adaptation

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> *"If done properly, shifting power and responsibility to developing countries, through greater voice in decision making and 'direct access' to funds, will entail greater responsibility for the consequences of investment. Combining this with a climate change finance architecture that* ***promotes transparent, participatory, and accountable national and international systems for decision making, measuring, reporting, and verified funded actions*** *may lead to a more reciprocal relationship and deeper partnership between contributors and recipients and, ultimately, to* ***more effective and sustainable efforts to combat climate change****."*
>
> *From Copenhagen to Cancun: Adaptation*,
> World Resources Institute (emphasis added)

I. INTRODUCTION

Equity suggests that developed countries, which caused many of the impacts of climate change and are more likely to have the financial capacity to adapt, should assist developing and impoverished countries with adapting to climate change. Though researchers and climate change experts have given much consideration to formulas for determining how much each developed state should contribute, less effort has been directed at determining how resulting funds should be distributed to the poorer states.

If world leaders and climate change experts develop a formula to determine which of the developing countries should receive funds from developed states, these governing bodies could ensure that funds are distributed equitably and used cost-effectively. While much of the current distribution of climate change adaptation resources is based on a country's vulnerability to the more extreme effects of climate change – such as hurricanes, flooding, or drought – and the country's level of poverty, other factors should be considered. In particular, if a uniform framework for distribution of funds is established that emphasizes the developing states' domestic efforts to help themselves adapt, funds will be distributed more equitably and used more cost-effectively.[1]

A distribution framework benefitting developed countries that have worked to help themselves will more than likely benefit countries such as the Caribbean Community and Common Market ("CARICOM") States.[2] CARICOM was established following the end of the British West Indies Federation in 1962, and was meant to provide regional integration for the Caribbean community.[3]

Today, CARICOM serves to facilitate economic and trade goals within the region, and to advance political and social endeavors.[4] CARICOM has also, in relevant part, been active in establishing environmental principles to help adapt to the impacts of climate change. Despite minimal financial capacity, these states have invested considerable human and financial resources in developing and implementing a plan to aggressively ensure the region is able to adapt. Developed countries' financial contributions would be best utilized in support of efforts such as CARICOM's because these domestic efforts have already been considerably well planned and, in some cases, have already gotten off the ground.

Part II of this paper will discuss the current state of climate change adaptation financing, and how funds have been distributed to developing countries in recent years. Part III will discuss the CARICOM member states' impressive efforts to adapt to the impacts of climate change. Finally, Part IV will discuss a proposed framework for determining which developing countries will receive funds contributed by developed states, and for ensuring that these funds are utilized in the most efficient and cost-effective manner.

II. CURRENT STATE OF CLIMATE CHANGE ADAPTATION FINANCING

Though many different theories and proposals have been made to determine how developed states will assist developing nations in climate change adaptation, little research or commentary has been presented to determine how that assistance will be most effectively or equitably distributed.[5]

Despite years of planning for climate adaptation funding, there has been little progress on development of criteria for how those funds, once collected, should be distributed to developing states.[6] Currently, there is no established framework for distribution, and

as a result, the distribution is unfair, ineffective, and inequitable. Though groups have recognized the need for a framework, and have called for more transparency and organization in distribution, few specifics have been suggested.[7]

Three main global funds implement adaptation initiatives and handle the funds collected. The Kyoto Protocol Adaptation Fund ("the Adaptation Fund")[8], the World Bank Pilot Program on Climate Resilience ("PPCR")[9], and the Global Environmental Facility ("GEF") distribute funds to developing states working on adaptation initiatives.[10] Though it is difficult to determine the direct framework that each of these funds uses for distribution, each has indicated some of the factors it considers in making contributions to developing states.

The Adaptation Fund finances "concrete adaptation projects" for particularly vulnerable developing countries that are parties to the Kyoto Protocol.[11] The criteria for distribution of capital from the Adaptation Fund include:

> (a) Level of vulnerability; (b) Level of urgency and risks arising from delay; (c) Ensuring access to the fund in a balanced and equitable manner; (d) Lessons learned in project and programme design and implementation to be captured; (e) Securing regional co-benefits to the extent possible, where applicable; (f) Maximizing multi-sectoral or cross-sectoral benefits; (g) Adaptive capacity to the adverse effects of climate change.[12]

The Adaptation Fund therefore places an emphasis on the state's levels of vulnerability and on the level of urgency and risk based on the potential impacts of climate change.[13] The Fund's criteria consider regional and multi-sectoral benefits, as well.[14] Though the UNFCCC has developed a set of characteristics to consider in distributing funds, this list focuses almost exclusively on level of vulnerability and risk.[15]

Unlike the UNFCCC and its Adaptation Fund, however, the PPCR and the GEF do not state explicit criteria for funding. However, some inferences regarding the criteria that the PPCR and the GEF consider in approving climate change adaptation funding can be gleaned from commentary on approved projects.

The PPCR, for example, states that it "complements existing development efforts and supports actions based on comprehensive planning consistent with countries' poverty reduction and development goals."[16] It seems, therefore, that the PPCR works with countries or regions that have already begun adaptation efforts by complementing existing efforts and expanding upon them. Moreover, the PPCR has stated that it "giv[es] priority to ***highly vulnerable least developed countries***, including the small island developing states."[17] Like many other organizations, therefore, PPCR explicitly indicates a preference for particularly vulnerable states, such as those in the CARICOM region. Various research has shown that these states are vulnerable to many impacts from climate change.[18] In recent years, PPCR funding has been disbursed to projects within the region, including projects in St Vincent and the Grenadines.

Finally, the GEF does not list any direct criteria or preference for funding approval for adaptation projects. The criteria listed on its website is focused solely on the procedural aspects of the application process.[19]

The Green Climate Fund, established at the Durban Conference, was developed to contribute funds to "global efforts towards attaining the goals set by the international community to combat climate change."[20] The GCF states that, "in allocating resources for adaptation, the Board will take into account the urgent and immediate needs of developing countries that are particularly vulnerable to the adverse effects of climate change, including LDCs, SIDS and African States, using minimum allocation floors for these countries as appropriate."[21]

Though each of the three leading global funds, and the new Green Climate Fund give some hints as to how their decisions regarding adaptation funding are made, and though some provide some explicit information regarding those decisions, there is little transparency or consistency with regard to how these decisions are made overall. Therefore, a consistent set of factors should be established to assist funds such as the Adaptation Fund, PPCF and GEF to distribute climate change adaptation assistance in a manner that is both transparent and equitable.

Overall, the CARICOM States have historically received an insufficient share of funding, especially in light of the efforts the states and the region have made to adapt to climate change with a limited amount of domestic resources. If some funding mechanism or set of factors were developed, these states would arguably receive

financial support from the global funds that is more proportional to the efforts they have put forth, and their current state of vulnerability and necessity.

Under the Adaptation Fund, for example, the only CARICOM State that received funding between September 2010 and June 2012 was Jamaica.[22] Jamaica's approved project received less than 6% of the funds distributed by the Adaptation Fund during this time period.[23] None of the other individual states within the CARICOM organization received funding, even though each had proposed significant adaptation projects and had made significant efforts to adapt at home. Many projects were funded in South American states[24] and in African states.[25] Based on information available, it is unclear how many other proposals have been made by CARICOM states, and of those proposals, how many of the projects have been rejected or are still under review.

Adaptation funding from GEF and PPCR was insufficient with regard to the CARICOM states, as well. Of the 300 projects that have been funded under the GEF Trust Fund since January 5, 2010, only six that were funded affected the Caribbean States.[26] Further, only one of those projects was directed toward a specific Caribbean State within the CARICOM group.[27] Again, many of the projects GEF funded between 2010 and 2012 were located in Africa, South America, or Asia.[28]

III. CARICOM STATES' IMPLEMENTATION PLAN

Despite continued disagreement and uncertainty with regard to future international climate change adaptation plans, some state and regional governmental organizations have taken it upon themselves to begin the adaptation process. The CARICOM States, for example, are working on aggressive and promising initiatives that present good solutions to climate change adaptation challenges.

CARICOM's Past Efforts Toward Climate Change Adaptation

The Caribbean Community and Common Market States ("CARICOM") was established in 1962.[29] The organization serves to facilitate economic and trade goals within the region, and to advance political and social endeavors.[30] CARICOM has helped establish environmental principles to help adapt to the impacts of climate change and has worked towards including climate change issues amongst the economic initiatives

because of the potential impacts that climate change will have on the CARICOM states' economies.[31] The CARICOM Secretariat, and the Secretary General, who is the Chief Executive Officer of the Community, lead the organization.[32]

CARICOM has taken on a number of projects to adapt to climate change. In the mid-1990's, various Caribbean governments requested support from the Organisation of American States ("OAS") to fund regional projects for climate change adaptation.[33] The OAS and CARICOM jointly implemented the Caribbean Planning for Adaptation to Climate Change (CPACC) project, which involved $5.6 million worth of adaptation projects, carried out from 1997 to 2001.[34] CPACC's specific pilot projects included "coral reef monitoring for climate change, coastal vulnerability and risk assessment, economic valuation of coastal and marine resources, formation of economic/regulatory proposals, and national communications."[35]

A similar project was implemented in 2001, called the Adaptation to Climate Change in the Caribbean Project ("ACCC"), which was overseen by the World Bank and CARICOM. The project had many significant outcomes, including integration of climate change impacts in environmental impact assessments ("EIA's"), training and education at various levels of government for climate change adaptation strategies, and implementation of pilot programs for adaptation studies in the water health and agricultural sectors.[36]

Finally, in 2004, the Mainstreaming Adaptation to Climate Change ("MACC") project was implemented with $5 million in funding from the World Bank and from GEF.[37] The purpose of the project was "to mainstream climate change adaptation strategies into the sustainable development agendas of the small island and low-lying states of CARICOM."[38] The CARICOM website lists extensive details regarding adaptation projects related to coral reef protection, climate monitoring, public outreach and education, and adaptation related to key economic sectors such as tourism, water resource management and agriculture.[39]

According to the Implementation Plan, a significant number of adaptation initiatives have been undertaken through June 2011:

CCCCC Strategic Element[40] **Only adaptation-related Strategic Elements are listed.*	**Estimated Number of Initiatives Undertaken**
"Reduce vulnerability to a changing climate."	400
"Effectively access and utilize resources to reduce vulnerability to a changing climate."	375
"Build a society that is more informed about and resilient to a changing climate."	340
"Promote the adoption of measures and disseminate information that would make water supply systems resilient to climate-induced damage."	120
"Promote the implementation of measures to reduce climate impacts on coastal and marine infrastructure."	90
"Promote the adoption of measures and dissemination of information that would adapt tourism activities to climate impacts."	60
"Promote sound conservation practices in coastal and marine ecosystems to shelter these resources from climate-induced damage."	100
Various renewable energy initiatives.	155
"Promote the adoption of sound practices and measures to prevent and/or reduce climate-induced health impacts in the community."	165
"Promote actions to reduce the vulnerability of natural and human systems in CARICOM countries to the impacts of a changing climate."	365
Total adaptation initiatives.	2,170

CARICOM's Current Implementation Plan Represents an Aggressive and Successful Approach to Climate Change Adaptation

CARICOM's past successful efforts lend themselves to a hopeful outlook for the organization's current projects. More recently, CARICOM commissioned the Caribbean Community Climate Change Center ("CCCCC") to prepare the *Regional Framework for Achieving Development Resilient to Climate Change*[41] and later prepared a plan for

implementing the framework.[42] The Implementation Plan sets forth the region's strategy for climate change adaptation in the future and discusses specific projects, the costs of those projects, how they will be funded, and how they will help with overall adaptation efforts in the region.

CARICOM's projects span a wide range of adaptation methods and approaches. For example, some of the proposals involve initiatives such as development of renewable energy, agribusiness development, reducing vulnerability to climate change, and public outreach and education on adaptation methods.[43] The Framework allows nations to make their own decisions regarding prioritization of projects.[44]

For example, the CCCCC created the *CCCCC Knowledge Clearing House*, an online database that provides climate related information and knowledge regarding the current and future impacts of climate change.[45] This information will help support research, public education, and open access to the data, and "will facilitate greater participation of the region's decision makers and citizens in building a society that is resilient to a changing climate."[46] Other successful projects have included education and public outreach programs, coral reef protection and revitalization, pilot programs for studies in water health and agricultural sectors, and adaptation related to tourism, water resource management and agriculture.[47]

According to CARICOM, the need for assistance far outweighs the actual assistance that has been received.[48] The organization states that "[t]he costs arising from the impacts of a changing climate, and the budget implications in responding to these impacts and then building resilience are far greater than the financial resources of the [CARICOM] Member States."[49] Because need outweighs assistance, it is "imperative that the Caribbean takes advantage of international funding opportunities."[50]

To fund the projects, the Implementation Plan utilizes domestic funding where available, and seeks external funding where necessary. The Implementation Plan works at both a regional and a national level. At the national level, the Plan requires that adaptation strategies are "embedded within, and become central to, government policy and action."[51] At the regional level, CARICOM will adapt its "three-ones principle" to help coordinate the national efforts and monitor them under a committee of the Heads of Government called "The Liliendaal Bureau on Climate Change."[52]

Though they have received some money from the global funds, the CARICOM States have worked to help themselves, investing domestic funds in adaptation. When the Implementation Plan was published, a cursory review of projects showed that nearly 300 actions, in addition to all of the projects undertaken in the CPACC, ACCC and MACC, were either "currently underway or about to be started in the Caribbean."[53] This figure suggests a promising future for adaptation projects in the CARICOM region generally, and specifically for the success of the Implementation Plan.

When domestic funding has fallen short, the CARICOM States have successfully secured outside funding through private grants, loans, and other instruments. In the Implementation Plan, CARICOM makes sources of outside funding readily available to the states by providing a list of "possible sources of investment in the form of grants or loans to support adaptation and mitigation to climate change."[54] This list provides detailed information regarding the types of projects typically funded and in some cases, the known criteria for consideration.[55] These resources have proven helpful not only for CARICOM's projects, but also for individual states within the Caribbean region that have worked to fund their own domestic state-specific plans.

Similarly, CCCCC is working with NGO's, CBO's, and other funding organizations "to identify funding mechanisms that will direct funds into local communities."[56] Like the list provided by CARICOM in the Implementation Plan, the CCCCC's efforts to secure outside funding will help locate financial assistance for the CARICOM projects and for other state-specific projects.[57] The effort CARICOM, CCCCC, and the individual states have put into finding financing information and the resources made available to the public through these organizations demonstrate their commitment to bringing adaptation projects to fruition, despite insufficient domestic funds or support from developed states.[58]

CARICOM's Implementation Plan is Likely to be Successful

The CARICOM Implementation Plan also represents a successful use of a regional approach to adaptation. Most climate change researchers agree that "[t]he biodiversity of the Caribbean region is trans-boundary and therefore is best managed regionally."[59] According to the Implementation Plan, "[t]he scale of the challenges facing CARICOM countries limits the ability of any country acting on its own to build resilience and create low carbon economies."[60] Recognizing the need and the benefit of working

regionally, the Implementation Plan mandates regional agencies that will work towards adapting to climate change.[61] This regional approach presents a more efficient effort towards climate change adaptation, rather than a piecemeal approach that would likely result if each of the CARICOM States presented their own plans.

The Implementation Plan also covers an area vulnerable to climate change risks and in great need of adaptation efforts. According to the PPCR, "the Caribbean region [] is prone to a range of natural hazards, including tropical cyclones, and is most likely to be directly affected by sea level design."[62] The CARICOM States are particularly vulnerable because the warming of the ocean surface around the CARICOM States is projected to increase. This warming may cause "an increase in heavy rainfall events and other temporal and spatial changes in precipitation patterns, and … more intense or frequent cyclones/hurricanes."[63] In addition to these effects, the CARICOM States predict that "arable land, water resources and biodiversity," which are all already stretched as a result of population increase and the unsustainable use of available natural resources will continue to stress the region.[64]

These effects are likely to impact tourism and agriculture in the region – the two most important aspects of these states' economies.[65] The changes will also likely hasten the effects on the coral reefs, which "will be threatened by increased sea surface temperatures and acidification of the oceans."[66] Therefore, the projected impacts of climate change will affect not only the natural resources and the geographic characteristics of the region, but will also greatly affect the economic livelihood of the states that depend on agriculture and tourism to sustain their economies.

Because of these vulnerabilities, the PPCR estimates that "the region experienced some US $135 billion in losses from a total of 165 [extreme weather] events between 1990 and 2008."[67] As discussed, many global funds explicitly state that they give preference to states or regions that are particularly vulnerable to the impacts of climate change. Therefore, the CARICOM States should receive a greater share of these adaptation funds because they are more vulnerable and more likely to experience the devastating effects of climate change.

Finally, projects proposed within the Implementation Plan should receive more financial support from developed states because the CARICOM States have demonstrated an ability to use financial contributions in a responsible manner. As the

Implementation Plan states, the three-one principle, upon which the Implementation Plan is based, has been used efficiently and successfully in other endeavors that CARICOM has undertaken.[68] Therefore, it is likely the CARICOM Implementation Plan regarding climate change, which uses the same proposed principle, could be used in an accountable and responsible manner, as well.

According to the Plan, the state governments within CARICOM facilitate monitoring and evaluation methods to demonstrate accountability within their governments.[69] Addressing the fear of free riders and the possibility that funds received from developed states could be misappropriated, the Implementation Plan also provides an extensive monitoring plan.[70] According to CARICOM, the plan, entitled *Monitoring and Evaluation System* ("M&E"), is based on transparency, simplicity, integration with sustainable development indicators, and is relevant to both regional and national challenges.[71]

Because CARICOM States have put monitoring and compliance programs in place similar to those used in previous CARICOM projects, and because they have demonstrated significant accountability with regard to use of adaptation funds, these states should be recipients of funding from developed nations. Not only have CARICOM States demonstrated accountability, but they have also demonstrated, through extensive plans and detailed project proposals, that they have promising plans for successful adaptation efforts throughout the region.

Even with all of these efforts, however, it is clear that significantly increased funding is necessary to support CARICOM's plans.[72] According to the organization, "CARICOM countries have considerable concerns about the severe threats posed by a changing climate to their development prospects and have come to the conclusion that both mitigation and adaptation options will require a significant and sustained investment of resources that the [CARICOM] Member States will be unable to provide on their own."[73] Therefore, a more equitable framework for funding distribution would likely provide the CARICOM States with the financial resources necessary to carry out many of their projects.

IV. RECOMMENDATIONS FOR A DISTRIBUTION FRAMEWORK

A climate change regime in the post-2012 world that maximizes the efficiency of funds contributed depends on a set of criteria for distribution to developing states. Based on observations of the CARICOM Implementation Plan and based on the criteria considered by current global funds, four main factors should be considered when determining how climate change funds are distributed.[74] A governing body should consider states' efforts to help themselves, whether the plans take regional considerations into account, the states' vulnerability to the effects of climate change, and the state government's structure and demonstration of accountability.

Efforts a State or Region Makes to Help Itself

The first factor a global fund should take into account when distributing climate change adaptation funds is the state or region's efforts to help itself adapt. The efforts a state makes to help itself can be viewed in terms of both human and financial resources. A state or region's commitment to adaptation is evident in a state's commitment of human resources to develop and implement adaptation plans, as well as in the state's contribution of financial resources. States that have made significant efforts to help themselves, such as the CARICOM states, should be encouraged to continue such efforts through the receipt of financial support from developed nations.

Adaptation funds should be allocated to countries that meet two main requirements: first, the country has developed detailed, specific plans for climate change adaptation activities that are feasible and likely to produce successful results in the long-term, and second, the country has dedicated human and financial resources to these efforts.

Detailed, Specific Plans for Adaptation that are Feasible

First, global funds should consider whether the country has developed detailed, specific plans for climate change adaptation that is feasibly successful. The more detailed and thoughtful an applicant's plan, the more likely the state or regional applicant will be to carry out that plan. In its *Endorsement of Strategic Program for Climate Resilience for the Caribbean Program*, for example, the PPCR explicitly stated that "the quality of the proposed activities will be a significant factor in the funding to be approved" for

projects in the Caribbean.[75] Therefore, detailed projects that demonstrate significant thought in the planning process should receive preference for funding from developed states.

The CARICOM Implementation Plan, for example, sets forth a detailed, specific approach for adaptation. The Plan lists a variety of projects on the regional, state, and local level, and includes projects that reach a wide range of issues.[76] All of the proposed CARICOM projects include the amount of funding necessary, suggestions for places where the funding may come from, as well as information regarding the projects themselves and the proposed impacts and benefits of these projects.[77] The projects are broken down into a timetable that designates when they are likely to be carried out.[78] The Implementation Plan is also likely to be successful because it is based on the "three-ones principle," a method that has been used with great success in past CARICOM projects.[79]

Global funds should also consider whether the plan is feasible and likely to produce successful results in the long-term. Developed countries want to ensure their contributions are used in the most cost-efficient manner. Measuring feasibility and potential success will therefore likely be an important indicator in determining whether a proposed project receives funding.

Many will argue investment in developing countries that have not made domestic efforts to adapt to climate change is a waste of money. According to one author, "[o]nly a limited number of developing countries are currently benefitting from these new financing opportunities, as their markets are not yet in a position to attract climate investments."[80] Therefore, the most cost-efficient method for distributing adaptation funds would consider whether the country is in a position to attract investments, and whether it has worked to adapt on its own. Consideration of these factors would help ensure a funded project is feasible and is likely to succeed if funded.

The Adaptation Fund has explicitly stated that it considers the cost-effectiveness of the proposed projects and programs that it funds, so a focus on countries that are in a position to benefit from that funding, and that have demonstrated significant domestic efforts to adapt, would likely be the most cost-beneficial recipients of such funds.[81]

Domestic/Regional Contribution of Human and Financial Resources

Second, global funds should consider whether the country has dedicated human and financial resources to adaptation efforts. Financial contributions from the state itself, and a state's efforts to secure outside grants, loans and private investment, might help demonstrate the state's commitment to adaptation strategies and efforts.

As previously discussed, many developed states argue against redistribution because they worry about the problem of free riders.[82] In the context of mitigation, the free-riding concept deals with developed states' fears that developing nations will receive monetary contributions and use the money for other projects or unauthorized uses.[83] Though the authors discuss this concept in terms of mitigation, the same concept could be applied to adaptation and the potential for developing states to use contributed funds in an unauthorized manner. Therefore, international agreements should require that recipients of foreign funding make domestic and regional commitments – both financially and through human resource efforts – to address climate change, and should reward such commitments through allocation of financial resources from developed states. If developing countries can demonstrate they will not be free riders, they are more likely to demonstrate they should receive a greater share of funds from developed nations.

Though global funds do not distinctly or explicitly state that they will give preference to applicants that have made their own efforts towards adaptation, some of the funds hint, in their lists of criteria or requirements that this factor may be implicitly taken into consideration. For example, though GEF does not explicitly state that it considers domestic efforts in project approval, one of the criteria it considers is whether the project "involves the public in project design and implementation."[84] This criteria implies that human resources and public participation may potentially be a significant factor in project approval.[85]

On the other hand, however, this element – domestic efforts to contribute human and financial resources - is a bit more difficult to measure, and could create inequities in a situation where a state argues that it is so impoverished that it cannot contribute anything to adaptation efforts. This is a reasonable argument, considering many of the states that will likely need to adapt most to climate change are also those that have significant financial needs. These countries will argue, understandably, that money that

they may contribute to adaptation could instead be better used to serve the needs of their residents with regard to hunger, medical costs, and other survival needs. A potential compromise, therefore, might be to establish a framework in which the efforts made to secure outside funding (through grants, loans, etc.) could be more heavily weighted in order to consider the state's commitment to climate change adaptation.

Regional Considerations and Planning

Second, adaptation efforts that consider region-wide planning should be given preference, as well. The Implementation Plan, for example, has been successful because it has focused not only on particular nations, but has developed strategies that work across the entire region, as well.[86] Many of the problems faced as a result of climate change adaptation are not country-specific, but instead affect regions as a whole. Therefore, regional adaptation plans are more effective because they look at strengths and weaknesses of the states within the region and present a more comprehensive plan.

Information from the global funds also indicates preference may be given for regional projects. In its *Operational Policies and Guidelines*, for example, the Adaptation Fund explains that regional considerations are important, stating that one of the elements considered in allocation of resources is whether the project aims to "[s]ecur[e] regional co-benefits to the extent possible, where applicable."[87] The Adaptation Fund's inclusion of regional efforts within its criteria supports the suggestion that it should be a consideration, as well. Regional coordination of projects would benefit the CARICOM nations because states within the region could learn from one another's failures and successes, and could share information and resources for projects. Similarly, projects that might benefit states across the region can be consolidated in order to maximize efficiency and results.

Though GEF does not explicitly state whether it favors regional or national projects, the projects it has funded recently suggest that regional projects may receive preference.[88] Of the projects funded under the GEF Fund since January 5, 2010, for example, only Jamaica has received funding.[89] Otherwise, the funded projects affecting CARICOM States have been regional projects affecting more than one country within the region.[90] Similarly, the PPCF implies that it prefers regional projects, as well, since it approved funding in April 2012 for an extensive regional project within the CARICOM region, but has not funded individual state projects within the region.[91]

Therefore, because regional projects seem to be more effective, and because decisions made by global funds in recent years indicate a preference for regional projects over solely national projects, this factor should be taken into consideration when developing a standard framework for adaptation fund distributions.

Vulnerability to Extreme Weather Events, Natural Disasters, and Impacts from Climate Change over time

Vulnerability to the impacts of climate change and to extreme weather or natural disasters caused by climate change is also important in determining which countries will receive financial support for adaptation. This principle is commonly cited in criteria established for adaptation funding distribution from global funds thus far. The Adaptation Fund, for example, states, in its *Operational Policies,* that it will give priority to "developing country Parties to the Kyoto Protocol that are particularly vulnerable to the adverse effects of climate change."[92] The PPCR also explicitly states that it will give priority to countries especially vulnerable to the impacts of climate change.

Most researchers agree that the poorest, and most of the low-lying and island states will suffer the most extreme effects and damage from climate change.[93] The CARICOM States, which are all low-lying, are at risk of extreme weather events such as hurricanes and flooding, are particularly vulnerable to these impacts. Because of their physical attributes, the CARICOM states are also in danger of facing long term effects of climate change impacts such as sea level rise and increased periods of drought. These states will need to adapt in the short term to survive these impacts in the long term.

Government Structure and Accountability

Finally, global funds should consider the government structure of a potential recipient country, and look to the results of past funding to determine whether that structure will lend itself to responsible and accountable use of such funds. This type of analysis is crucial to determining whether potential recipient countries will be free riders, or whether they will use the money allotted to them in a responsible manner.

Since developed nations are understandably reluctant to hand over money for fear that it will be used for other purposes or will be caught up in corruption, priority should be given to nations that have demonstrate a high level of accountability. Developed states are reluctant to contribute because they believe that "the governments of poor states are, to a large degree, either inefficient or corrupt (or both), and partly for that reason, ordinary development financing has not been very effective."[94] Discussions at Copenhagen regarding adaptation demonstrated the lack of trust that developed countries have with respect to the developed states., since both parties seem to distrust one another.[95]

To halt distrust amongst these groups, global funds should "ensure that recipient countries manage these funds in ways that are transparent and responsive to the needs and input of the public"[96] by determining the level of accountability, and the lack of corruption in these areas before distributing funds to them.

The need for monitoring and accountability is not only evident in the apparent distrust amongst developed and developing countries, but is also evident in some of the funding criteria set forth by the global funds. The Adaptation Fund states, for example, that adaptation projects and programmes must be "activities with a specific objective(s) and concrete outcome(s) and output(s) that are ***measurable, monitorable, and verifiable***."[97] The inclusion of these qualifications demonstrates the Adaptation Fund's desire to fund projects that will have measurable outcomes, and will hold recipient governments accountable for the use of the funds they receive. Further, the Adaptation Fund's requirement that implementing entities that propose adaptation projects or programs adhere to a set of fiduciary standards, and the *Monitoring, Evaluation and Review Guidelines*, demonstrate the Adaptation Funds' emphasis on accountability and reporting amongst the recipients of such funds.[98] The new GCF guidelines propose a similar set of fiduciary standards and accountability mechanisms.[99]

Some argue that subjecting recipient countries to accountability or reporting requirements might be undesirable enough that developing countries would not want to receive funds from developed states. According to Posner and Weisbach, for example, developing countries "would most certainly reject the conditions that are routinely used for foreign aid – inspection, monitoring, reporting and so forth."[100]

Though strict reporting and monitoring efforts may be undesirable, these checks and balances on developing countries are necessary to ensure that a trust is developed between the developed and developing countries, and to ensure that adaptation projects can be further supported in the future.

V. CONCLUSION

Developed countries have caused many of the impacts of climate change and are also more likely to have the financial capacity to adapt to it. Therefore, principles of equity suggest that these developed countries should assist developing and impoverished countries with adaptation. According to most analysts, the need for funding greatly outweighs the actual funding that developing countries are receiving. Developed nations and the world at large can capitalize on the investments they are making, however, by considering important factors that will help them to get the most beneficial investments and projects off the ground. If factors such as domestic human and financial resource commitments, vulnerability, regional planning and accountability are considered, groups such as CARICOM will be rewarded for their aggressive and promising efforts to adapt to climate change.

World leaders and climate change experts should develop a formula to determine which of the developing countries should receive funds for adaptation projects. If such a formula is developed, these governing bodies could ensure that funds are distributed equitably and used most cost-effectively. A uniform framework that emphasizes the state's domestic efforts to help themselves adapt, and considers regional plans, government accountability and the state's vulnerability will ensure that funds are distributed in an equitable manner. Developed countries' financial contributions would be best utilized in support of efforts such as CARICOM's because these domestic efforts have already been considerably well planned and, in some cases, have already gotten off the ground.

[1] Some global organizations have recognized the need for equity in the distribution of funds. For example, in its *Operational Policies and Guidelines for Parties to Access Resources from the Adaptation Fund*, the UNFCCC states that one of the considerations for determining recipients of adaptation funds is "[e]nsuring access to the fund in a balanced and equitable manner." *See Operational Policies and Guidelines for Parties to Access Resources from the Adaptation Fund*, at 3, available at

http://www.adaptation-fund.org/sites/default/files/OPG%20Revised%204.4.12%20(with%20annexes).pdf (last visited Oct. 28, 2012) [hereinafter "*Operational Policies*"].

[2] *CARICOM Member States*, available at http://www.caricom.org/jsp/community/member_states.jsp?menu=community (last visited Nov. 15, 2012).

[3] *History of the Caribbean Community*, available at http://www.caricom.org/jsp/community/history.jsp?menu=community (last visited Nov. 15, 2012).

[4] *The Caribbean Community*, available at http://www.caricom.org/jsp/community/community_index.jsp?menu=community (last visited Nov. 15, 2012) (stating the objectives of CARICOM) [hereinafter *The Caribbean Community*].

[5] *Counting the Cash: Elements of a Framework for the Measurement, Reporting, and Verification of Climate Finance*, World Resources Institute Working Paper at 7 (proposing a list of elements that "should be kept in mind when assessing countries' proposals to generate new and additional finance for developing countries" and determining how much financial support should be given by developed states).

[6] *See* Athena Ballesteros & Vivek Ramkumar, *Accounting for Results: Ensuring Transparency and Accountability in Financing for Climate* Change, International Budget Brief Partnership, Budget Brief No. 9, 2010, available at http://www.embarq.org/en/node/1660 (last visited Nov. 15, 2012) ("While much of the energy so far has been on securing commitments from countries to contribute financial resources to the global effort to combat climate change, it is important how these commitments are managed").

[7] *Copenhagen to Cancun.* Though groups such as WRI have called for such methods, there have been no detailed proposals for distribution ("The ministers face some clear options on each of these issues [regarding the New Global Climate Fund] in Cancun … at the end of the day the Fund needs to be established in a way that is representative of both developed and developing country interests while at the same time allowing for maximum efficiency and effectiveness to disburse and deliver resources to those who need it most").

[8] *Id*.

[9] *Id* ("Funded by contributions from several wealthy countries, the PPCR is piloting new approaches to integrating adaptation into broader development decision-making").

[10] *Id* ("The GEF is the traditional repository for funds associated with the UNFCCC, and has been supporting adaptation projects for several years. However, recipient governments have expressed frustration with the slowness of the GEF, as well as the extent to which UN agencies hold the reins on its projects").

[11] *Adaptation Fund*, available at http://unfccc.int/cooperation_and_support/financial_mechanism/adaptation_fund/items/3659.php (last visited Oct. 28, 2012).

[12] *Operational Policies* at 3; *see also Adaptation Fund Project/Programme Review Criteria*, available at http://www.adaptation-fund.org/sites/default/files/Review%20Criteria%205.12.pdf (last visited Nov. 15, 2012).

[13] *Operational Policies* at 3.

[14] *Id*. at 3. The Adaptation Fund further states:

> "in assessing project and programme proposals, the Adaptation Fund Board shall give particular attention to '(a) consistency with national sustainable development strategies, including, where appropriate, national development plans, poverty reduction strategies, national communications and national adaptation programmes of action and other relevant instruments, where they exist; (b) Economic, social and environmental benefits from the projects; (c) Meeting national technical standards, where applicable; (d) Cost-effectiveness of projects and programmes; (e) Arrangements for management, including for financial and risk management; (f) Arrangements for monitoring

and evaluation and impact assessment; (g) Avoiding duplication with other funding sources for adaptation for the same project activity; (h) Moving towards a programmatic approach, where appropriate." *Id*. at 3.

[15] *Id*.

[16] *Pilot Program for Climate Resilience: Climate Investment Funds*, available at https://www.climateinvestmentfunds.org/cif/ppcr (last visited Nov. 15, 2012) [hereinafter *Pilot Program*].

[17] *Pilot Program* (emphasis added).

[18] *See Vulnerability and Adaptation to Climate Change in Small Island Developing States*, UNFCCC, available at http://unfccc.int/files/adaptation/adverse_effects_and_response_measures_art_48/application/pdf/200702_sids_adaptation_bg.pdf (last visited Dec. 30, 2012) [hereinafter *Vulnerability and Adaptation*].

[19] *See Who Can Apply and How*, Global Environmental Facility, available at http://www.thegef.org/gef/who_can_apply (last visited Oct. 28, 2012) [hereinafter *Who Can Apply*] (stating that a project will be considered if it:

> (1) it is undertaken in an eligible country. It is consistent with national priorities and programs, (2) It addresses one or more of the GEF Focal Areas, improving the global environment or advance the prospect of reducing risks to it, (3) It is consistent with the GEF operational strategy, (4) It seeks GEF financing only for the agreed-on incremental costs on measures to achieve global environmental benefits, (5) It involves the public in project design and implementation, (6) It is endorsed by the government(s) of the country/ies in which it will be implemented").

[20] *Green Climate Fund: Mandate and Governance,* Green Climate Fund, available at http://gcfund.net/about-the-fund/mandate-and-governance.html (last visited Dec. 30, 2012) [hereinafter *Green Climate Fund*].

[21] *Governing Instrument for the Green Climate Fund,* Green Climate Fund, available at http://gcfund.net/fileadmin/00_customer/documents/pdf/GCF-governing_instrument-120521-block-LY.pdf (last visited Dec. 28, 2012).

[22] *Adaptation Fund: Funded Projects*, available at http://www.adaptation-fund.org/funded_projects (last visited Nov. 15, 2012) [hereinafter "Adaptation Fund"]. Jamaica received $9,965,000 for a project entitled "Enhancing the Resilience of the Agricultural Sector and Coastal Areas to Protect Livelihoods and Improve Food Security. *See Adaptation Fund*.

[23] *Funded Projects*, UNFCCC Adaptation Fund, available at https://www.adaptation-fund.org/funded_projects?order=field_project_amount_value&sort=asc (last visited Dec. 30, 2012) [hereinafter *Funded Projects*].

[24] Projects were funded in Ecuador, Colombia, and Uruguay for a total of $25,935,453 or about 16% of the total distributed funds. *See Funded Projects*.

[25] The Adaptation Fund financed projects in Dijibouti, Cambodia, Tanzania, Madagascar, Eritrea, Papua New Guinea, Egypt, Mauritania, and Senegal for a total of $56,104,464 or almost 34% of total funds distributed. *See Funded Projects*.

[26] *See GEF Full-Sized Projects Proposals Circulated to Council Prior CEO Endorsement (FSP)*, available at http://www.thegef.org/gef/geffsp (last visited Oct. 28, 2012) [hereinafter *GEF Project Proposals*].

[27] *Id.*

[28] *Id.*

[29] *See The Caribbean Community*.

[30] *See Id.* (giving the Mission Statement of the CARICOM Secretariat, which is "[t]o contribute, in support of Member States, to the improvement of the quality of life of the People of the Community and the

development of an innovative and productive society in partnership with institutions and groups working towards attaining a people-centered, sustainable and internationally competitive Community").
[31] *See Id.*
[32] *The Caribbean Community (CARICOM) Secretariat,* CARICOM.org, available at http://www.caricom.org/jsp/secretariat/secretariat_index.jsp?menu=secretariat (last visited Dec. 28, 2012).
[33] *Caribbean Planning for Adaptation to Climate Change (CPACC) Project,* CARICOM.org, available at http://www.caricom.org/jsp/projects/macc%20project/cpacc.jsp (last visited Dec. 28, 2012) [hereinafter *CPACC Project*].
[34] *See Id.* (stating the CPACC project was funded by the GEF, and implemented by the World Bank, executed by the OAS, and overseen by CARICOM).
[35] *See Id.*
[36] *Adaptation to Climate Change in the Caribbean (ACCC) Project,* CARICOM.org, available at http://www.caricom.org/jsp/projects/macc%20project/accc.jsp (last visited Dec. 28, 2012).
[37] *Mainstreaming Adaptation to Climate (MACC) Project*, Caribbean Community Secretariat, available at http://www.caricom.org/jsp/projects/macc%20project/macc.jsp?null&prnf=1 (last visited Nov. 15, 2012) [hereinafter *MACC Project*].
[38] *See Id.*
[39] *Mainstreaming Adaptation to Climate Change (MACC) Project Components*, CARICOM.org, available at http://www.caricom.org/jsp/projects/macc%20project/macc_components.jsp (last visited Dec. 28, 2012).
[40] *Id.* at 190-91.
[41] *See Caribbean Regional Strategic Program for Climate Resilience,* available at, http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/Caribbean_Regional_Track_SPCR_CIF_Endorsed_Final.pdf (last visited Nov. 15, 2012) ("The Regional Framework is a ***major policy and action*** initiative intended to facilitate a ***comprehensive and strategic approach to adaptation*** across the Caribbean") (emphasis added).
[42] *See generally Delivering Transformational Change 2011-2012: Implementing the CARICOM "Regional Framework for Achieving Development Resilient to Climate Change*," Caribbean Community Climate Change Center, March 2012, [hereinafter *CARICOM Implementation Plan*].
[43] *See MACC Project*; *see also Caribbean Regional Strategic Program for Climate Resilience,* available at, http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/Caribbean_Regional_Track_SPCR_CIF_Endorsed_Final.pdf (last visited Nov. 15, 2012) ("[T]he region's climate change response efforts have been aimed primarily at building capacity and generating key knowledge products for policy and action on climate monitoring, disaster risk reduction and management, climate change adaptation and renewable energy and energy efficiency").
[44] *CARICOM Implementation Plan* at 92.
[45] *Id.* at 18.
[46] *Id.*
[47] *Mainstreaming Adaptation to Climate Change (MACC) Project Components*, CARICOM.org, available at http://www.caricom.org/jsp/projects/macc%20project/macc_components.jsp (last visited Dec. 28, 2012).
[48] *CARICOM Implementation Plan* at 17.
[49] *Id.* at 63.
[50] *Id.*
[51] *See Id.* at 11.
[52] *See Id.*
[53] *Id.* at 9.
[54] *Id.* at 157-76.

[55] *Id.*
[56] *Id.* at 106; *see also id.* at 10 ("A multifaceted system of public … and private finance is required to provide the incentives that are necessary to go beyond 'business as usual' in the Caribbean and to allow access to capital to build low carbon climate resilient communities").
[57] *Id.* at 157 (providing a list of "possible sources of investment in the form of grants or loans to support adaptation and mitigation to climate change").
[58] *Id.* at 14 ("CARICOM member states should develop a region-wide position on the most effective and equitable funding mechanisms and engage with donors and IFIs on the basis of country-led needs assessments and processes").
[59] *Id.*
[60] *Id.*
[61] *Id.* at 15 ("Working collectively through a regional support structure allows countries to maximize their resources and technical expertise to the benefit of all [individual countries]").
[62] *See Caribbean Regional Strategic Program for Climate Resilience,* available at, http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/Caribbean_Regional_Track_SPCR_CIF_Endorsed_Final.pdf (last visited Nov. 15, 2012) (detailing all of the potential effects of climate change on the Caribbean region, and outlining all of the ways in which the region is extremely vulnerable to the impacts of climate change).
[63] *See Vulnerability and Adaptation* at 4.
[64] *Id.* at 4 (stating that "mangroves will be threatened by sea level rise and an increase in extreme weather events," and that "water resources are expected to be stressed by changes in precipitation patterns").
[65] *Id.*
[66] *Id.*
[67] *See Caribbean Regional Strategic Program for Climate Resilience,* available at, http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/Caribbean_Regional_Track_SPCR_CIF_Endorsed_Final.pdf (last visited Nov. 15, 2012).
[68] *CARICOM Implementation Plan* at 10 ("The 'three-ones' principle is an approach that has been used with great success in the Caribbean and provides a model for mobilizing limited resources, policy setting and decision making in the context of a changing climate").
[69] *Id.*
[70] *Id.* at 113-14.
[71] *Id.*
[72] *CARICOM Implementation Plan* at 17.
[73] *Id.*
[74] Of course, most, if not all global funds require that recipient countries are members of the Kyoto Protocol, and of the UNFCCC. For the purposes of this paper, the author will assume that this requirement is uniform and accepted throughout the global funds and the international community. *See Operational Policies* at 3.
[75] *Endorsement of Strategic Program for Climate Resilience for the Caribbean Program – Regional Track*, Apr. 30, 2012, available at http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/Endorsement_of_SPCR_for_the_Caribbean_Program-Regional_Track.pdf (last visited Nov. 15, 2012).
[76] *CARICOM Implementation Plan* at 92.
[77] *Id.*
[78] *Id.*

[79] *Id.* at 10 ("The 'three-ones' principle is an approach that has been used with great success in the Caribbean and provides a model for mobilizing limited resources, policy setting and decision making in the context of a changing climate").
[80] *Id.* at 63 ("Developing the capacity of low-income countries to create conditions that enable public and private investment flows to address pressing environmental problems is a key priority to finance the transition toward a low-emission climate-resilient society").
[81] *See Operational Policies* at 15.
[82] Farber at 987 (citing Climate Change Justice) ("Finally, Posner and Weisbach believe that it is unethical for nations to refuse to join a climate treaty because those nations would prefer to free ride, allowing other countries to make the necessary sacrifices to eliminate a threat to global well-being").
[83] Farber at 987 (citing Climate Change Justice).
[84] *See Who Can Apply*.
[85] *See Id*.
[86] *CARICOM Implementation Plan* at 9.
[87] *Operational Policies* at 3.
[88] *GEF Project Proposals*.
[89] *See Id*. Jamaica received $2,770,585 USD for the project entitled "Strengthening the Operational and Financial Sustainability of the National Protected Area System" on April 23, 2010, and $2,630,100 for a project entitled "LGGE Promoting Energy Efficiency and Renewable Energy in Buildings in Jamaica" on October 9, 2012. *See GEF Project Proposals*; *see also Letter from Global Environmental Facility regarding Strengthening the Operational and Financial Sustainability of the National Protected Area System*, Apr, 23, 2010, available at http://www.thegef.org/gef/sites/thegef.org/files/documents/document/4-26-10%20-%20Web%20Posting%20-%203764.pdf (last visited Nov. 15, 2012).
[90] *See GEF Project Proposals.*
[91] *See Endorsement of Strategic Program for Climate Resilience for the Caribbean Program – Regional Track*, Apr. 30, 2012, available at http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/Endorsement_of_SPCR_for_the_Caribbean_Program-Regional_Track.pdf (last visited Nov. 15, 2012) ("[R]ecognizing that the Caribbean regional program is comprised of six country pilots and a regional track of activities…"); *see also Caribbean Regional Strategic Program for Climate Resilience (SPCR),* available at, http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/Caribbean_Regional_Track_SPCR_CIF_Endorsed_Final.pdf (last visited Nov. 15, 2012) ("[W]hilst only six countries within the [Caribbean] region are participating in the pilot, benefits from its implementation are intended to accrue to the entire Region. In light of this, they recognize it as crucial that regional factors be taken into account in the design of both national and regional [projects]").
[92] *Operational Policies* at 3, 4, 14 ("In developing projects and programmes, special attention shall be given by eligible Parties to the particular needs of the most vulnerable communities").
[93] *See Vulnerability and Adaptation* at 4.
[94] Climate Change Justice at 90.
[95] *See Copenhagen to Cancun* (stating that discussions at Copenhagen "came to embody the lack of trust between developed and less developed countries – those who have the money do not trust their developing country partners to spend it wisely, while countries who need support do not trust their wealthier negotiating partners to deliver on their promises"); *see also* Ballesteros.
[96] Ballesteros.
[97] *Operational Policies*.

[98] *See Operational Policies* at 6-8, 11 (emphasis added) ("Implementing entities shall ensure that capacity exists to measure and monitor results of the executing entities at the country-level. The Board requires that projects and programmes under implementation submit annual status reports to the EFC").
[99] *Governing Instrument for the Green Climate Fund,* Green Climate Fund, available at http://gcfund.net/fileadmin/00_customer/documents/pdf/GCF-governing_instrument-120521-block-LY.pdf (last visited Dec. 28, 2012).
[100] Climate Change Justice at 87.

Precaution Pays: Creating an Equitable Solution to Vulnerability and Disaster Preparedness in the Adaptation Climate Discussion

Patrick J. Fanning

In the wake of Hurricane Sandy, assessing natural disaster vulnerability and preparing accordingly has finally made headlines in the United States. It is imperative that this domestic momentum be carried out on the international level. With little foreseeable progress on an international climate agreement, efforts to react to a constantly changing world are becoming ever more important. As the atmosphere heats and extreme weather events become both more extreme and more frequent, perhaps the most important piece of the climate puzzle for the developing world will be their ability to survive these natural disasters. Disaster vulnerability and preparedness must become a larger priority in the climate debates if equity between developed and developing countries is to be achieved. Many developing countries are more vulnerable to climate-related natural disasters due to their geographic, demographic, and socioeconomic positions. Disaster preparedness is one of the few forms of proactive, rather than reactive, adaptation measures that can be taken to promote climate equity.[1] As Seventh Circuit federal Judge Richard Posner has pointed out, "[t]he number of extreme catastrophes that have a more than negligible probability of occurring in this century is alarmingly great, and their variety startling."[2] Implementing disaster preparedness makes sense from an economic and an equitable perspective. Taking steps to create more robust disaster preparedness systems in developing countries will immediately address climate equity and thus should be a priority in the climate discussion.[3] If a locality is well prepared for a natural disaster, the costs, in terms of human lives, economic recovery, and infrastructure repair, will be substantially lower than in countries that neglect disaster preparedness implementation.[4]

The international community has recognized disaster preparedness as an important part of the climate debate.[5] Both the Bali Action Plan and the Copenhagen Accord recognize the increased vulnerability of many developing

nations and call for stronger response strategies and resilience.[6] The Bali Action Plan provides that,

> "[e]nhanced action on adaptation, including, inter alia, consideration of: (i) International cooperation to support urgent implementation of adaptation actions, including through vulnerability assessments . . . capacity-building and response strategies . . . taking into account the urgent and immediate needs of developing countries that are particularly vulnerable to the adverse effects of climate change, especially the least developed countries and small island developing States, and further taking into account the needs of countries in Africa affected by drought, desertification and floods"[7]

Likewise, the Copenhagen Accord in 2009 reiterated the international community's responsibility to address natural disaster vulnerability through increased preparedness efforts.

> "Enhanced action and international cooperation on adaptation is urgently required to ensure the implementation of the Convention by enabling and supporting the implementation of adaption actions aimed at reducing vulnerability and building resilience in developing countries . . . We agree that developed countries shall provide adequate, predictable, and sustainable financial resources, technology, and capacity-building to support the implementation of adaptation action in developing countries."[8]

However, despite these recognitions, not enough efforts have been taken to actually implement disaster preparedness, which may be due to the lack of data identifying which countries, and areas within countries, are particularly vulnerable to climate-related natural disasters. Identifying the most vulnerable countries and then ensuring that they are adequately prepared to face natural disasters must become a priority in the climate discussion.

In this paper I will argue that natural disaster vulnerability and preparedness must be analyzed and quantified. To meet this end, I propose using the scenario planning approach to evaluate natural disaster vulnerability and preparedness for developing countries. Under this approach, potential future natural disaster events for a country, ranging from minimal impacts to extreme catastrophes, are analyzed to determine a country's overall vulnerability.[9] The objective, measurable outcomes of this approach may then be used to inform and influence the climate debate. Specifically, I will argue that the collective natural disaster vulnerabilities of all developing countries, derived from the scenario planning approach analysis, should be used to lobby developed countries to encourage their funding of disaster preparedness efforts. Currently, individual countries can present evidence of their own vulnerability to climate-related natural disasters, but this information will be much more powerful if information regarding all vulnerable developing countries can be used collectively as criteria for aid, adaptation funding, and priority-setting in the climate debate.

A separate, distinct, and additional climate-related natural disaster preparedness fund should be created and funded by developed countries, to assist developing countries in creating more robust disaster preparedness programs. This fund should be created to mirror existing mitigation funds under international agreements[10], and the fund's creation and implementation should proceed alongside any developing country mitigation efforts since disaster preparedness should be considered equally as important as mitigation efforts given the ongoing and increasing threat of natural disaster.[11]

In Part I, I will give a brief synopsis of what countries are currently doing to prepare for natural disasters as well as the current state of international debate on the issue. In Part II, I will address the current means through which disaster vulnerability is being addressed, the current metrics for measuring disaster preparedness, and why the scenario planning model should be used to evaluate disaster preparedness and vulnerability.

In Part II, I will also lay out a framework for incorporating disaster vulnerability and preparedness into the climate debate. I will argue for the creation of an adaptation fund to address disaster preparedness is. I will show how creating a disaster preparedness fund similar to the Green Climate Fund, a mitigation fund

called for in the Copenhagen Accord[12], will promote climate change equity. Finally, in Part III, I will lay out how disaster preparedness should be implemented under my proposal.

I. Background

Currently, the developing world's only defense to natural disasters is an insufficient patchwork of local government and non-government organization ("NGOs") disaster preparedness efforts. Given the increased severity and frequency of natural disasters, however, it has never been more important to implement stronger disaster preparedness measures. The Center for Research on the Epidemiology of Disaster has demonstrated a trend that natural hazards are killing more people over time and costing more.[13] "The period between 2002 and 2011 included over 4000 disasters linked to natural hazards, resulting in over one million deaths and greater than $1 billion in losses."[14] Additionally, the world's poorest nations are disproportionately affected, and the most vulnerable people within these poorer nations often bear the brunt.[15] According to the Climate Vulnerability Monitor, over 90 percent of deaths due to natural disasters occurred in developing countries, and over 98 percent of climate-related deaths occur in developing countries.[16]

The need for greater disaster preparedness in general, and not exclusively related to climate change, has been internationally recognized.[17] Disaster Risk Reduction, The Hyogo Framework for Action, was the outcome of a 2005 United Nations Conference held in Kobe, Japan.[18] The Framework suggests five specific priorities for action: making disaster risk reduction a priority; improving risk information and early warning; building a culture of safety and resilience; reducing the risks in key sectors; and strengthening preparedness for response.[19] In the framework, the burden for action is placed on individual states.[20] "States have the primary responsibility to protect the people and property on their territory from hazards and . . . to give high priority to disaster risk reduction in national policy, consistent with their capacities and resources available to them."[21] In fact, state level action has been the dominant form of disaster preparedness to date.[22] Additionally, cities and towns are taking their own steps to ensure they are adequately protecting their citizens,[23] including the formation of climate resilience networks.[24]

While the Hyogo Framework and its efforts will certainly complement the proposed disaster preparedness efforts argued in this paper, the two should be considered distinctly. Placing a larger onus on the developed countries in terms of funding and technology and information transfer is imperative if there is to be an equitable solution to climate change.[25] Developed countries are by and large responsible for climate change, yet developing countries with poor infrastructure and little means of protecting themselves face the harshest backlash.[26] Utilizing funding from the developed world, developing countries can increase their disaster preparedness efforts in concert with the Hyogo Framework efforts. Currently, many countries are failing to meet their obligations under the Hyogo Framework.[27] Countries' failures to implement the Hyogo Framework are largely due to financial and economic constraints; meaning developing countries are the least likely to have met their obligations.[28] Developed countries have a particular obligation to help the poorest countries prepared for natural disasters. The poorest countries have contributed negligibly to climate change, but are likely to be most greatly influenced by it due to their lack of preparedness, their high poverty rates, and their poor healthcare systems.[29] In order for this reality to be recognized internationally developing country vulnerability needs to be analyzed and quantified.

II. Quantifying Need and Necessity

Every country, and even different regions within a country, has a unique susceptibility to natural disasters. Coastal and island nations are particularly susceptible to hurricanes, sea-level rise, and tsunamis, while other geographies face drought and flooding.[30] It takes quite an imagination to envision all the potential threats faced by each country. In light of this fact, it is necessary to narrow the scope of potential future natural disaster that should be evaluated, just as it is necessary to narrow the realm of potential preparedness actions that should be taken by countries to brace themselves for these future natural disasters. There are many means of evaluating a particular country's natural disaster vulnerability and potential preparedness efforts, such as feasibility studies, holistic approaches, and cost-benefit analyses. However, the scenario planning approach to disaster vulnerability is the best option due to its flexibility. As explained below, this approach considers a range of potential natural disasters that a country may face in the future and evaluates

vulnerability based on these scenarios.[31] Based on the information developed using this approach, an implementation plan for distributing money, technology, and information from the Preparedness Fund should be developed for each country.[32] Additionally, a floor of minimum preparedness mechanisms should be established so that every country has a minimum set of disaster preparedness instruments in place.

Employing Scenario Planning

Try to imagine the natural disasters that your city, state, or country may face in the next year; the next decade; the next century. It is impossible. The scenario planning approach, rather than trying to predict what will *actually* happen in the future, determines a set of potential future events or scenarios.[33] Based on this broad range of potential futures, a localities' natural disaster vulnerability can be analyzed.

Professor Robert Verchick of Loyola University of New Orleans College of Law advocates for the use of the scenario planning approach in natural disaster preparedness.[34] He interprets the scenario planning approach as "the close examination of a carefully chosen range of potential futures."[35] Under this approach, imagination and knowledge are combined to create predictions grounded in knowledge but viewed in light of potential events.[36] Professor Jamison Colburn of Pennsylvania State University Law School has worked with scenario planning approach in a variety environmental hazard situations. He describes the scenario planning approach as

> "a [set of] techniques pioneered in the 1970s both to envision plausible future events and to plot out strategic, outcome-inducing responses thereto. It begins with the definition of a problem: something specific and generally risky. Once the problem has been identified, no more than a couple of dozen people should brainstorm [a list of key factors and environmental forces that may influence outcomes.] And once that has been done, the group should settle on no more than a handful of scenario "plots"--stories or narratives that have a beginning, a middle, and an end. Settling on these plots and populating them with events and forces

> normally happens in some kind of workshop the achievement of which is hopefully identifying "those areas about which we don't know enough about the present and past, much less the future."[37]

This approach gives experts the ability to think beyond known statistics and use their imaginations to develop potential scenarios that may not otherwise get considered under an approach like cost-benefit analysis.[38] Additionally, this approach has already been successfully implemented in an environmental setting.[39] The Environmental Impact Statement analysis under the National Environmental Policy Act in the United States, which uses a range of alternatives to evaluate major federal actions and evaluates each alternative, is one example of scenario planning. As Verchick points out, NEPA does not allow government agencies to ignore potentials threats simply because they are not easily quantifiable.[40] To be sure, applying scenario planning to natural disaster preparedness would be a much larger endeavor than meeting the NEPA requirements for an individual project in the United States, but the same framework can still be applied.

In the case of a hurricane-prone country, for example, scientists and citizens from a broad array of society would brainstorm a "long list of key factors and environmental forces that might influence the outcomes[s] of the focal issue."[41] This is part of the beauty of the scenario planning method. Economic, demographic, and other information from actual citizens is included in the planning. Then, a set of potential future natural disasters for that country, likely ranging from low, to moderate, to catastrophic impacts, would be determined.[42] This is where scientists will be able to include climate data, such as temperature increase projections. Based on this information, a set of projections and hypotheses, rather than predictions and forecasts, would be determined, including potential costs (both economic and in terms of human lives lost) of the projected events.[43] From this information a country's vulnerability could be determined relative to other developing countries.

Prioritizing Minimum Protection Mechanisms

Given the disparate impact on poor and developing nations[44], as well as their general inability to pay for disaster preparedness mechanisms, each country

should have a minimum level of preparedness. Professor Verchick's argues that "a set of binding principles should be negotiated to provide some minimum protection for vulnerable populations in times of catastrophe, based on the Hyogo Framework and the Guiding Principles on Internally Displaced Persons."[45] Since each country has its unique vulnerabilities, economy, and priorities, it is challenging to incorporate the individual needs of each country into a uniform set of priorities. That being said, several programs likely have crosscutting applicability, including reinforcing infrastructure, training, community education and awareness raising, and establishing or improving local early-warning systems and contingency-planning.

One universally applicable program is that of early detection and early action systems. At a minimum, for time-sensitive natural disasters such as hurricanes and flooding, each country should have the ability to warn its citizens of the likely event in a timely manner so that fewer people will be impacted by the event. This has been a priority in several countries, and through the partnerships between local, state, and federal governments, as well as NGOs, much progress has been made. For example, the International Federation of Red Cross and Red Cross Crescent Societies ("Red Cross") has developed an Early Warning, Early Action program. The premise of this Red Cross program is to, "invest[] more into people-centered early warning systems so that their early action (preparedness and mitigation/prevention) are suited to face the rising risks of extreme weather events as a result of climate change."[46]

Another potential preparedness mechanism is the development of coastal setbacks. Seaside property certainly carries a premium in the developed world, but in developing nations it would be much easier and cheaper to implement larger setbacks so that hurricanes and flooding will have a reduced impact. Even if such setbacks had to be implemented through American-style eminent domain with payment to landowners, the costs would be substantially lower in developing countries, and the benefits would outweigh the costs, especially when considering the enhanced vulnerability to flooding of many developing countries.[47] Even in the United States, the efficacy of dense coastal development is being challenged in the wake of recent Hurricane Sandy.[48] Where available, uniform coastal setbacks, supported by the Preparedness Fund, should be incorporated as a minimum protection mechanism.

Assessing need will be one of the greatest challenges to setting up a uniform system for evaluating disaster vulnerability. While a country's physical features play a large role in determining a country's vulnerability, a whole web of issues can impact a country's vulnerability and thus its need for disaster preparedness funding. The location and density of its population, the quality of its building infrastructure, the sufficiency of its government and public services, and many other factors play an important role. In assessing need, it will be important for a country to play a primary role in identifying its own strengths and weaknesses.

Brainstorming a set of minimum preparedness mechanisms for the developing world is only helpful if wealthy countries are willing to commit to assisting with the implementation of these mechanisms. Many developing countries may place a higher priority on diversifying their economy, or reducing poverty. Without help from the developed world, vulnerability analysis using the scenario planning approach will be of little importance as developing countries prioritize more pressing, or at least more tangible, needs.[49] So how can developing countries make their voices heard and convince the developed world that natural disaster preparedness should be a priority in the climate equity debate?

III. Incorporating Disaster Vulnerability into the Equity Debate

Increasing understanding of disaster vulnerability by utilizing the scenario planning method is the first step in creating climate equity through disaster preparedness, but actually implementing disaster preparedness mechanisms will take much more work. Developing countries must utilize their collective vulnerability information to make disaster preparedness a pillar in future climate negotiations. By harnessing the valuable information gained through the scenario planning evaluations previously discussed, developing countries will be able to collectively present their natural disaster vulnerability to the international community.[50] Using collective statistics derived from implementing the scenario planning approach will give developing countries powerful, objective statistics to make disaster preparedness a priority in the climate debate. This information should be used to lobby for additional international aid to implement disaster preparedness. Convincing the developed world to agree to make disaster preparedness a priority will be an uphill battle, but assuming they do so, it is necessary to determine what form such an assistance program should take.

Creating a disaster preparedness fund

A climate-related Natural Disaster Preparedness Fund ("Preparedness Fund") should be established. This fund should mirror the Green Climate Fund established at the Conference of Parties in Cancun, Mexico in 2010.[51] The Green Climate Fund was launched in March 2012 after its Governing Instrument was approved by the United Nations Framework Convention on Climate Change ("UNFCCC"), at the Durban Conference in 2011.[52] To implement the Green Climate Fund, a board was created whose membership consisted of half developed and half developing countries.[53] A similar framework would be appropriate for the Preparedness Fund. Several other principles of the Governing Instrument should also be present in the Preparedness Fund. Namely, the Governing Instrument mandates that financial inputs shall come from developed country Parties to the Convention.[54] It also sets up an access mechanism, which creates national, regional, and international implementing entities accredited by the Board, and gives countries receiving funding the primary role in determining fund allocation.[55] This will also be an important aspect of the Preparedness Fund, allowing a state to decide for itself what is a priority.

The existence of current disaster preparedness funds indicates that a global disaster Preparedness Fund for climate-related natural disasters can become a reality. The European Commission, for example, donated over 35 million euros to Central America, South East Asia, Central Asia, and Southern Africa for disaster preparedness in 2012 alone, through its Disaster Preparedness Programme (DIPECHO). [56] While this is not a climate-related program, it shows that developed countries (and the EU in particular, which has been a global leader in climate change) believe that natural disaster preparedness is important. Additionally, the proposed Preparedness Fund will be able to benefit from, and should coordinate with, the efforts established under the Hyogo Framework, so that state-level efforts can be combined with new, additional funding from developed countries.[57] This coordination will allow efforts to be implemented more quickly and efficiently. The World Bank has also proposed a similar fund, geared toward city-level preparedness efforts.[58] Its "Program for Climate Finance and Assistance for Cities" helps developing countries find and utilize existing resources by creating "one access window for the programs" and leverages public and private sources to implement disaster preparedness, while also

encouraging low carbon development.[59] These various funds show great potential for the creation of the Preparedness Fund under the UNFCCC, which will help bolster developing country equity in the climate debate.

Promoting equity through the disaster preparedness fund

Establishing a disaster preparedness fund and convincing developed countries to contribute to it will help promote equity between developed and developing countries. However, ensuring that funding for disaster preparedness to developing nations is additional funding is necessary if equity is to be derived through this climate adaptation mechanism. Many developing countries currently receive international aid from developed countries, even for climate-related projects.[60] There may be a tendency for these countries to reallocate existing aid toward climate-related disaster preparedness instead of providing additional funding. One way to combat this tendency is by making the compelling argument that implementing natural disaster preparedness will result in future savings that far outweigh implementation costs if and when a natural disaster does occur.[61] Since developed countries already frequently assist developing countries in recovering from natural disasters[62], a compelling argument can be made that devoting money to disaster preparedness could reduce demand for aid following a natural disaster. If equity is to be achieved through disaster preparedness, implementation of disaster preparedness mechanisms must be carried out at the appropriate level of government.

Implementation, by whom?

Assuming a Preparedness Fund is established, disaster preparedness implementation efforts should occur at the lower political levels.[63] To increase local control of disaster preparedness implementation, the principle of subsidiarity should be incorporated. This principle promotes decisionmaking at lower levels of government.[64] Governmental decisions regarding funding, designing, and implementing disaster preparedness projects should be as localized as possible. "Because there is a natural tendency of bureaucracies to accrue more authority over more issues, the principle of subsidiarity places a presumption on decentralizing decisionmaking as far as is appropriate given the

nature of the specific issue."[65] Using subsidiarity instead of the top-down, centralized approach common in other climate-related policies such as current mitigation efforts,[66] will empower local government officials, with the most knowledge of their own community's strengths and vulnerabilities, to implement the most appropriate disaster preparedness measures for their specific community.

Although local governments should play the primary role in designing and implementing disaster preparedness efforts, they need not go it alone. NGOs, public-private partnerships, and federal governments should also have an active role in coordinating efforts within and amongst localities. This will ensure that collectively the efforts taken are sufficient to meet the needs of the population. Local implementation will also continue to engage the many players who are already active in implementing disaster preparedness efforts and who may currently have the most expertise.[67]

IV. Conclusion

Developing countries face difficult choices in allocating their limited resources and natural disaster preparedness is not likely to be their highest priority.[68] Promoting climate equity through increased disaster preparedness efforts will allow developing countries to focus on their most pressing priorities, while also protecting them from the inevitable increase in climate-related natural disasters. In order to make this a reality, developing countries must be able to convince the developed world of their vulnerability. Harnessing the scenario planning approach and collectively lobbying developed countries to contribute to disaster preparedness efforts should be the first step in bringing the issue to the forefront of the climate debate. Establishing a separate and distinct Preparedness Fund is necessary so that natural disaster preparedness is not marginalized in the face of other climate issues. In future UNFCCC meetings, natural disaster preparedness and adaptation equity should become a priority.

[1] Ira R. Feldman & Joshua H. Kahan, Preparing for the Day After Tomorrow: Frameworks for Climate Change Adaptation, 8 SUSTAINABLE DEV. L. & POL'Y 61, 67 (2007) (describing how disaster

preparedness represents an act of anticipation, taking action to prevent and/or reduce future impacts).

[2] Richard A. Posner, *Catastrophe: Risk and Response*, Oxford University Press, at 21 (2005).

[3] Margaux J. Hall & David C. Weiss, Avoiding Adaptation Apartheid: Climate Change Adaptation and Human Rights Law, 37 YALE J. INT'L L. 309, 321 (2012) (discussing how much better a human rights-based approach fits climate adaptation rather than mitigation).

[4] *Id.* at 323 (2012) ("Although adaptation practices will often require outlays of large sums of money for nonproductive assets, the costs of adaptive practices likely outweigh the costs of harm from failure to adapt. In this sense, investing in adaptation in the immediate term makes long-term economic sense and helps to advance a country's social and economic development.").

[5] *See* Bali Action Plan, 1 (c); *see also*, Copenhagen Accord (Dec. 18, 2009).

[6] *Id.*

[7] *Id.*

[8] Copenhagen Accord (Dec. 18, 2009).

[9] *See e.g.* Robert R.M. Verchick, "Facing Catastrophe: Environmental Action for a Post-Katrina World" Harvard University Press, at 246 (2010).

[10] *See e.g.* Governing Instrument for the Green Climate Fund, at 9, available at: http://gcfund.net/fileadmin/00_customer/documents/pdf/GCF-governing_instrument-120521-block-LY.pdf (The Green Climate Fund for climate change mitigation is a good example of what a natural disaster preparedness fund should look like).

[11] *See* Copenhagen Accord, at ¶ 10 (Dec. 18, 2009).

[12] *See supra* note 10.

[13] *See*, O'Brien, G., O'Keefe, P., Rose, J., and Wisner, B., "Climate Change and Disaster Management" published in *Disasters*, Chapter 30(I) 64-80 (2006).

[14] Keeping Up With Megatrends, "The Implications of Climate Change and Urbanization for Environmental Emergency Preparedness and Response (Joint UNEP/OCHA Environment Unit, 2012), 3, *available at*: http://www.humanitarianresponse.info/document/keeping-megatrends

[15] *Id.*

[16] Climate Vulnerability Monitor, 2nd Edition, "A Guide to the Cold Calculus of a Hot Planet" (Fundaccion DARA Internacional, 2012), at 18, *available at*: http://daraint.org/wp-content/uploads/2012/09/CVM2ndEd-FrontMatter.pdf

[17] Hyogo Framework for Action 2005-2015: *Building the Resilience of Nations and Communities to Disaster* (2005) www.unisdr.org.

[18] *Id.*

[19] *Id.*

[20] *Id.*

[21] *Id.*

[22] *See e.g.*, Tompkins, E., "Planning for Climate Change in Small Islands: Insights from National Hurricane Preparedness in the Cayman Islands" published in *Global Environmental Change* Chapter 15, 139-49 (2005) (explaining preparedness efforts taken in the small island nation, including government institution change); Dr. Hakikur Rahman, "Community Based Disaster Information Management System: Perspective Bangladesh, Sustainable Development Networking Programme, Bangladesh, available at: http://www.adpc.net/audmp/rllw/pdf/general%20papers.pdf (describing local and state preparedness actions in Bangladesh); Climate Change and Disaster Management Policy Mapping and Analysis in Cambodia available at:

http://www.climatecapacity.org/files/RC_Reports%20and%20Cases/Consultancy%20report%20on%20cc%20policy%20mapping%20in%20Cambodia_final.pdf (describing pending disaster management legislation in Cambodia and other disaster risk reduction strategies).

[23] *See e.g.* Surat, India, "Surat City Resilience Strategy" published April 2011, *available at:* http://www.indiaurbanportal.in/Publications/Publications181/Publications181755.PDF

[24] *See e.g.* Asian Cities Climate Change Resilience Network, *available at:* http://www.acccrn.org/ ("ACCCRN represents a unique initiative to develop, test and demonstrate practical strategies for responding to the impacts of climate change on urban areas.")

[25] Daniel H. Cole, Climate Change, Adaptation, and Development, 26 UCLA J. ENVTL. L. & POL'Y 1, 9 (2008) (arguing for developed countries to more directly assist developing country adaptation efforts by providing funding, technology transfers, and foreign direct investment aimed at individual adaptation projects or more general development assistance).

[26] *Id.*

[27] *See* United Nations Report, "Economic and Social Commission for Asia and the Pacific Committee on Disaster Risk Reduction" (April 21, 2011), *available at*: http://www.unescap.org/idd/events/cdrr-2011/CDR2-INF8.pdf

[28] *Id.* (finding that, "[i]n most cases [countries' inability to meet Hyogo obligations] is a matter of harnessing the financial, institutional, and human resources in more creative, integrated and effective ways.")

[29] *See supra* note 16.

[30] *See e.g. supra* note 3, at 317 (highlighting the fact that poorer developing countries face greater impacts from climate-related natural disasters due to many factors such as geography, low incomes, reliance on agriculture, and scarcity of clean drinking water).

[31] *See* Jamison E. Colburn, Necessarily Unpredictable? Oil Spill Risks Beyond the Horizon, 30 Miss. C. L. Rev. 307, 329 (2011) ("Scenario planning is a [set off] techniques pioneered in the 1970s both to envision plausible future events and to plot out strategic, outcome-inducing responses thereto. It begins with the definition of a problem: something specific and generally risky. Once the problem has been identified, no more than a couple of dozen people should brainstorm [a list of key factors and environmental forces that may influence outcomes.] And once that has been done, the group should settle on no more than a handful of scenario "plots"--stories or narratives that have a beginning, a middle, and an end. Settling on these plots and populating them with events and forces normally happens in some kind of workshop the achievement of which is hopefully identifying "those areas about which we don't know enough about the present and past, much less the future."")

[32] *See infra* Section III.

[33] James A. Ogilvy, Creating Better Futures: Scenario Planning as a Tool for a Better Tomorrow (Oxford University Press, 2002).

[34] *See supra* note 9.

[35] *Id.* (illustrating how this method is commonly applied in financial planning, military planning and emphasizing that this approach does not attempt to determine what the future *will* look like, rather it attempts to predict what it *could* look like).

[36] *Id.*; *see also*, *supra* note 31.

[37] *See* Jamison E. Colburn, Necessarily Unpredictable? Oil Spill Risks Beyond the Horizon, 30 Miss. C. L. Rev. 307, 329 (2011)

[38] *Id.*

[39] *Id.*

[40] *Id.* at 245.
[41] *See infra* note 33, at 175.
[42] *Id.*
[43] Peter Schwartz, The Art of the Long View: Planning for the Future in an Uncertain World (1991).
[44] *See e.g.* Asian Cities Climate Change Resilience Network, *available at*: http://www.acccrn.org/about-acccrn/background ("In terms of the impacts on human communities, the poor are the most vulnerable to climate change risks and impacts, as they are highly exposed to the environment through their living conditions and livelihoods. They have the fewest resources to prepare and plan for the impacts, and the lowest capacity to respond."
[45] *See supra* note 9, at 252.
[46] Early Warning, Early Action, International Federation of Red Cross and Red Cross Crescent Societies (2008), available at: http://www.ifrc.org/Global/Publications/disasters/ew-ea-2008.pdf
[47] *See e.g.*, Nicholls, R.J. et al., "Ranking of the World's Cities Most Exposed to Coastal Flooding Today and in the Future, (2007), available at: http://www.rms.com/publications/OECD_Cities_Coastal_Flooding.pdf (noting that almost 40% of the world's largest port cities are found in Asia and that many of these cities are located in deltaic locations, which tend to have higher coastal flood risk as a result of their tendency to be at lower elevations and experience significant subsidence.); *see also supra* note 16, at 27 (describing the potential for early warning systems to be implemented through cellular and wireless data networks in developing countries).
[48] *See e.g.*, Sarah Goodyear, "We've Built Right Up to the Edge in the Most Foolish Way'" available at: http://www.theatlanticcities.com/arts-and-lifestyle/2012/11/weve-built-right-edge-most-foolish-way/3789/ (criticizing coastal development in the United States and advocating for a 'retreat' from coastal development); *see also*, J.B. Ruhl, Climate Change Adaptation and the Structural Transformation of Environmental Law, 40 Envtl. L. 363, 412 (2010) (describing the inadequacy of the U.S. disaster management regime).
[49] Kelly, P.M., and Adger, W.N., "Theory and Practice in Assessing Vulnerability to Climate Change and Facilitating Adaptation" published in *Climate Change* Chapter 47, 348 (2000) (highlighting the tradeoffs developing countries must make when allocating limited resources).
[50] *See e.g.* Climate Global Forum, "A Global Partnership for Vulnerable Countries" *available at:* http://daraint.org/climate-vulnerable-forum/ (providing an example of developing countries banding together to collectively present their climate vulnerability to the international community).
[51] *See* Report of the Conference of the Parties on its sixteenth session, held in Cancun (Dec. 2010) Addendum Part Two: Action taken by the Conference of the Parties at its sixteenth session available at: http://unfccc.int/files/na/application/pdf/07a01-1.pdf
[52] *See* Report of the Conference of the Parties on its seventeenth session, Durban, South Africa, Dec. 2011
Addendum Part Two: Action taken by the Conference of the Parties: http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf
[53] *Id.*
[54] Governing Instrument for the Green Climate Fund, at 9, available at: http://gcfund.net/fileadmin/00_customer/documents/pdf/GCF-governing_instrument-120521-block-LY.pdf
[55] *Id.* at 12.

[56] *See* "European Commission Press Release Commission gives €35 million for disaster preparedness programmes in 2012" (July 12, 2012) available at: http://ec.europa.eu/echo/news/2012/20120712_en.htm
[57] *See infra* note 10.
[58] The World Bank, "Climate Change, Disaster Risk, and the Urban Poor: Cities Building Resilience for a Changing World" (June 2011) *available at:* http://siteresources.worldbank.org/INTURBANDEVELOPMENT/Resources/336387-1306291319853/Summary.pdf
[59] *Id.*
[60] *See e.g.*, U.S. Aid, Environment and Global Climate Change, last visited Nov. 4, 2012, available at: http://www.usaid.gov/what-we-do/environment-and-global-climate-change (outlining current U.S. aid efforts related to climate change).
[61] *See infra* note 3 (explaining how disaster preparedness will save money in the long-term).
[62] *See e.g.*, "Hurricane Sandy: Haiti in emergency aid plea as disaster piles upon disaster," THE GUARDIAN (Oct. 30, 2012), *available at*: http://www.guardian.co.uk/world/2012/oct/30/hurricane-sandy-haiti-emergency-aid (noting that Humanitarian Aid to Haiti in 2010 was $2 billion, but has since fallen $75 million; and emphasizing the dependence of countries like Haiti on such aid from developed countries).
[63] *Id.* at 322. ("In the long-term there might be a need for international-scale adaptation projects, but for the foreseeable future, adaptation will consist of community-based projects aimed at local interventions.")
[64] *See* David Hunter, James Salzman, and Durwood Zaelke, International Environmental Law and Policy, 3d Edition, at 522 (Foundation Press, 2007).
[65] *Id.*
[66] *See infra* note 3.
[67] *See e.g.*, Lobo, C., "Mainstreaming Climate Change Adaptation: The Need and Role of Civil Society Organizations" published in *World Resources Reports* and available at: http://www.worldresourcesreport.org/responses/mainstreaming-climate-change-adaptation-need-and-role-civil-society-organisations (explaining the local nature of adaptation efforts and the role of NGOs and other Civil Society Organizations).
[68] *See supra* not 9, at 254. (describing the temptation to shirk disaster preparedness implementations, but emphasizing the need for greater action).

Climate Negotiations: Sometimes Less is Better

Barton Grover

I. Introduction

For twenty years, the world has relied on a failed system to combat climate change. The UN Framework Convention on Climate Change (UNFCCC) proved useful in bringing together countries to acknowledge the problem of climate change, but it has not solved the issue.[1] This regime, until recently, has solely relied on a top-down approach in which international standards on greenhouse gas emissions determine domestic policy. Yet, as evidenced by the Copenhagen Protocol and the Durban platform, a bottom-up approach has now been introduced into international talks.[2] The bottom- up approach allows individual countries to set emission targets or policies that they believe are achievable and will be politically approved of in their country.

Using this approach as a basis, a treaty including only the world's largest economies and emitters should be created, which will provide for multiple tracks to meet targets, including limiting emissions, investing in projects around the world that will protect the climate, and providing adaptation resources for those countries most affected. While this treaty will not provide procedural equity, it will place the cost of combating climate change with the developed countries and benefit the whole world.

Other than setting the world on a new path for negotiations, the Copenhagen Accord also was important in gaining assurances of emission cuts from large emitters who had previously been excluded from or denied participating in the Kyoto Protocol.[3] While the Kyoto Protocol had separated nations into Annex I countries (industrialized nations) and Non-Annex I countries (developing nations), the Copenhagen Accord saw both sets of nations committing to emission cuts or policies that would lead to emission reductions.[4] The Copenhagen Accord ended the untenable situation in which developing countries like China were exempted from mandatory emission reductions[5]

The Copenhagen Accord and the subsequent 2010 Cancun Climate Change Conference[6] revealed the UNFCCC is adapting to the reality that its former agreements based on the top-down approach will not work. However, a long-term solution for climate change must lie outside of the conference. This decision must be made because in a system like the UN, which often requires unanimous consent and gives veto power to large nations, it is hard to come to an agreement that is not watered down by concessions to each individual government.[7] Even after the concessions, many countries are excluded from the agreements.

Part II of the paper will discuss the background of the UN treaties and highlight the mistakes that must be corrected to ensure a successful new treaty.

In Part III, I will introduce the makeup of the members of the treaty and how this treaty will be both similar and different to current UNFCCC treaties. I propose that this treaty will rely on countries already part of the Major Economies Forum (MEF), an organization composed of the world's 17 largest economies that pursue an agreement at UN climate treaties and a move to cleaner energy. [8] Part III will also highlight why this new treaty will be limited to these MEF nations and what role the other nations of the world will play.

In Part IV, the paper will focus on the fairness and equity of the organization of the new treaty and how the aspects of this proposed treaty will benefit the rest of the world. For countries which emit the most also happen to be the wealthiest.[9] These countries can afford to adapt to the oncoming climate change.[10] Countries who have contributed little to the problem also tend to be poor.[11] So while they have not emitted nearly as many greenhouse gases, they will feel the brunt of the effects and have little money to adapt.[12]

Therefore, it may seem fair for these large countries to own up to their self-made problem and make cuts, but also unfair for those countries who will be affected the most to be left out of the treaty. The developing nations most affected by climate change are willing to cut emissions, yet it is not their emissions that are responsible for the current problem. It is the large nations that must jointly work together and push each other to lower emission levels. Only through their action can developing nations be benefited. While procedural equity may not be present in this treaty, the consequences of the largest emitters being forced to act will provide equity.

II. History of Negotiations

To see why there needs to be a major change in the organizational strategy of climate treaties, one must understand the failures of the past. This section will note the positives of prior treaties, introducing the topic of climate change to the world stage and encouraging dialogue. This section will also note the negatives, the failure to include many high emitting nations and the slow process of the UNFCCC in moving the world in a sustainable direction.

Background

While the 1992 UNFCCC and the 1997 Kyoto Protocol were a start, they had no real effect on reducing greenhouse gas emissions. When countries tried to make the emission targets stricter, they only succeeded in causing more disagreements and less action.[13] And as these disagreements over the target emission rates and base years came about, countries who could not meet the target had no other option other than to leave.[14] The main reason for the exits of these countries from the treaty was this lack of flexibility.[15]

The most notable exit from the Kyoto Protocol was the United States. Not having one of the world's top emitters of CO_2 and an economic leader was a huge blow to both the psyche of the Conference and feasibility of slowing down climate change. Daniel Bodansky, a professor at the Sandra Day O'Connor College of Law at Arizona State University, stated "[p]erhaps the greatest failing of the Kyoto Protocol is that its emissions targets cover less than a third of global emissions as a result of the nonparticipation by the United States and exclusion of large developing countries such as China, India, and Brazil."[16] While the exclusion of the developing countries will be discussed later, their exclusion was a main reason for the United States disapproval of the treaty.[17]

The diplomats of these developed nations often supported these agreements without the support of local politicians at home, like the House and Senate in the United States.[18] Without the support of politicians, there was no hope for following through with their emissions commitment. The United States failure to sign the agreement

impacted even more countries which were wary of the competitive advantage the United States would have by not enacting emission reductions.[19]

The lack of firm targets from the Non-Annex I countries was a major issue for the United States. Citing a speech by President Bush, Professor Lisa Schenck noted that a major reason for the United States not participating was that major economies, which also happened to be developing nations, were excluded from the economic effects of emission reductions. [20] The often cited example of a developing country which also is a major economy is China. China is a country currently excelling in an economy where the United States has not taken the steps to curb emissions. If the United States would take significant and expensive measures of emission controls on its private sector, China's competitive advantage would only grow.[21] Therefore, "[t]he failure of the Protocol is often attributed to the unequal burdens it imposed upon signatory countries and its adverse impacts on national competitiveness."[22]

The Kyoto Protocol and further climate negotiations have also run into the problem of having too many parties at the table. While it is encouraging for all of the nations to recognize there is a problem and that a solution is necessary, the solution that came about was disagreeable for some and too watered down for many. David Victor, a professor at the University of California at San Diego, explained that "[d]iplomats agreed on what could be agreed and deferred everything else until later. Since the global treaty required nearly every nation on the planet to offer their consent, the final structure of the Kyoto Protocol was deeply conservative and avoided nearly all areas of controversy."[23]

Each nation wants something different out of the treaty and each nation will be affected differently, either positively or negatively. Even if countries are split into clubs of similarly situated nations as Victor suggests, that does not mean global warming will be curbed.[24] While separating the world into groups should encourage these countries to match emission cutting policies, it does not necessarily encourage them to meet the goal of keeping warming within 2^{o} Celsius. Ensuring the world acts on the problem of global warming and does not instead look out for the short term benefits of economic development will be a major issue with both his and my formula.

III. Organization of the Treaty

In this section, the members of my proposed treaty will be introduced. The organization of this treaty will be based on a group already in place, the MEF. I will also introduce why large economies will support the makeup of the new treaty. The positives and negatives of relying on solely large emitters will be discussed, along with how small nations will be able to still participate in climate negotiations.

Major Economies Forum

To achieve emission reduction goals, the major emitters must enter into a treaty and quickly. Determining the parties to this treaty may seem difficult. I propose a simple solution; that is to make the members of this new treaty the same as those who currently participate in the MEF. The Major Economies Forum on Energy and Climate includes 17 nations who agreed to work together to cut greenhouse gas emissions both in and outside of the UN process.[25] These "major economies participating in the MEF are: Australia, Brazil, Canada, China, the European Union, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, Russia, South Africa, the United Kingdom, and the United States."[26] This forum has not necessarily made great strides in reducing emissions so far due to the UNFCCC being the major venue for climate negotiations, but it does set up a foundation for a new treaty.

By entering into the MEF, these countries have shown they are willing to operate together. Therefore, I see no reason to split this group further down. Countries were wary of losing a competitive advantage to non-participating nations with treaties like Kyoto. Including all of these major nations will mean there is no real threat of competition from unregulated sources. Most of the emitting sources will be controlled by this treaty, for 74 percent of worldwide emissions of CO_2 were from the top 12 emitters. [27] The developing nations in the MEF, like India and China, will also account for most of the emissions growth in the future. [28] Any further additions of countries outside of the MEF will only add countries who account for small percentages of the emissions problem. The amount of emission reductions gained from adding another member to the treaty will not outweigh the potential negotiation issues resulting from yet another voice.

Negotiation venues like Copenhagen are negatively affected by over- participation. Instead of having only 17 major economies like the MEF, Copenhagen included over 190 countries and over 45,000 participants and viewers.[29] This amount of participation is heartening in revealing the growing number of people who believe in both the UNFCCC process and the dangers of climate change, but does not allow for an organized and effective approach to solving the problem. Elliott Diringer, vice president for international strategies at the Pew Center on Global Climate Change, and Stephen Eule, vice president for climate and technology at the U.S. Chamber of Commerce's Institute for 21st Century Energy, both noted that they do not yet suggest the U.N. process should be replaced.[30] They continue, however, to state that the amount of parties involved creates confusion and disrupts the process and other avenues including a treaty involving only select parties should be considered.[31]

Nations, especially the United States, are beginning to recognize the benefit of a smaller negotiation platform. In early 2012, the Obama administration recommended starting a program to reduce common pollutants, especially those that affect the climate in the short term.[32] This program included only a few nations that sought to make voluntary emission cuts and aid developing nations in cutting emissions and assisting in mitigation projects.[33] Parties to this program cited the slow and cumbersome process of the UN as a reason for taking this other path.[34] Durwood Zaelke, president of the Institute for Governance and Sustainable Development, stated "[w]e'd be fools to count on the U.N.F.C.C.C. for our salvation, though I wish it well, [t]his is a complement, not a substitute."[35] My paper proposes that a treaty among the MEF nations can be a reasonable substitute and not just a complement.

The Positives and Negatives of Less Parties

Having a much smaller number of countries will allow for quicker and easier negotiations. For "each new country brings a new wariness and special demands; tailoring the agreement to meet those needs becomes more complicated."[36] A plurilateral agreement provides "smaller groupings that include major emitters and countries with a comparative advantage in specialized aspects of climate regime."[37]

There are negatives to allowing only a few countries to negotiate. Many countries, which are affected the most, will not be heard. And, "[f]urthermore, in terms of equity, any climate negotiations that exclude the majority of the world's countries would be

difficult to implement and inherently flawed."[38] In my proposed treaty, smaller countries will still have a say. Non-governmental organizations (NGO's) currently interact in the UNFCCC treaties, so there is no reason smaller countries could not also observe.[39] Also, there are already organizations like AOSIS, which speak for countries vulnerable to climate change that could promote real action by the MEF countries by sending a representative.[40]

Allowing countries to sit in on these negotiations between major countries is not novel. The Fourteenth Meeting of the MEF in September of 2012 included not only the 17 nations, but also a few nations such as Barbados, New Zealand, Qatar, and other nations in both Africa and South America were invited.[41] The major economies are open to dialogue with those nations outside of the MEF. By allowing other countries to at least have a say, my proposal will keep a diversity of voices while still keeping the negotiation process streamlined.

Small countries have affected current negotiations with their voting power. Yet this multitude of voices from the small countries has not induced the world into lower emissions. One could argue that the cuts in emissions have resulted more from growing climate awareness of populations like that of the European Union than from the restrictions placed on countries by the Kyoto Protocol. My proposed treaty will decrease the power that small nations have enjoyed, yet not eliminate their voice. The major risk with this path, however, is "that the major players could agree [on] an outcome that falls short of adequate action and locks the world into a high-carbon pathway."[42]

Small nations, which are at risk the most to climate change, may see this new path as a threat to their states. They have continuously over the years rightly blamed the developed countries as the guilty party, and continued to request more action by those developed countries in Doha.[43] Yet, these high emitting nations have yet to adequately respond to the entreaties of the poorer nations. The concrete results of the UNFCCC are not high standards to meet, so the goal of my proposal is that it will hopefully push the major emitting nations to respond quickly both in decreasing emissions and in providing adaptation funds to the rest of the world. Any action by high emitting countries that exceeds what has already been done under the umbrella of the UNFCCC should be deemed success.

Another concern is that without the participation of the whole world, private corporations will respond to caps or taxes on emissions in the MEF countries and move their operations to nations with less regulations.[44] However, "actual research done on races to the bottom long ago showed that the fear of industrial flight due to differences in environmental regulation is largely overblown."[45] Therefore, major countries enacting these severe restrictions should not be worried about a race to the bottom.

IV. Equity of the Treaty

The organization of the treaty will promote action, but will that action promote equity among the world? What will prevent the major countries from agreeing to only minor emission cuts and leaving the rest of the world to fend for itself? Large economies will feel the effects of global warming, but they are better prepared for adapting to the consequences. To them, the consequences of global warming are far away and costly. To the island nations and other poorer nations, global warming is present and deadly. They are feeling the effects of flooding and drought now and do not have the infrastructure to respond. Since any emission cuts they make will have a negligible effect on slowing down climate change, they cannot solve the source of the problem.

My proposal will hopefully promote action now and not just in the future. It will work to nullify the threat of competitive advantage and allow clear and open dialogue. By allowing for funds to move to the rest of the world, the treaty will also ensure poorer countries can adapt and clean up their industry. This section will introduce how the rest of the world will benefit. It will also introduce why the major economies will act and the possible consequences, both good and bad, of this treaty going into effect.

Motivation for Major Emitters

Why would the major emitters work to solve the climate change problem while other nations can freely pollute? And why would those affected the most by climate change let the countries which caused the problem negotiate on their own? I believe there are multiple reasons for this.

One, most of the major economies are wealthy and have the money to improve technology to reduce emissions.

Two, countries like the United States withdrew from the treaty for a couple reasons. They either could not meet the standards they promised, or they did not want to meet targets when competing economies were unregulated.[46] A bottom-up based treaty among the major economies would solve this competitive advantage problem.

Three, the major economies as stated earlier are responsible for a large percentage of the emissions.[47] They have a moral responsibility for the damage being caused. The nations not included in the MEF are not responsible for the problem. Obviously, this moral responsibility has not led the major emitters to act in the UNFCCC negotiations. Yet, as the problem becomes readily apparent, one would think more and more citizens and politicians of large nations would understand their share in causing the problem.

And four, many of the smaller economies are the ones pushing for climate reform.[48] They do not need the extra push of other countries to want to cut emissions. They will feel the effects of the climate change the most.[49] If they want to reduce emissions, they can do so without a treaty and with the help of the major economies. A treaty among the major emitters is essentially making the large nations pay for their deeds and not making poorer countries pay for something they did not do.

Bottom-up Approach

The goals of the Kyoto Protocol should not be disputed, but the foundation of the treaty should. Requiring the whole world to act together to cut emissions by a certain amount has caused this treaty to fail. There are too many voices wanting to do too many things. My proposal will allow countries to take their own independent path to reduce their effect on climate change. The Copenhagen Accord improved on the Protocol in allowing countries to take the bottom-up approach, but also reaffirmed some of the aims of Kyoto.[50] The aims of treaties including limiting temperature rise to 2^{o}C, should be reaffirmed in the new treaty among the members of the MEF.

As mentioned above, the bottom-up approach is the best way to create a fair and equitable treaty among the MEF nations. Not every nation in the MEF is as rich or technologically advanced as the United States and the EU. Therefore, uniform cuts to emissions like those implemented in the Kyoto Protocol cannot be made. Often, "[t]he quantity of emissions in any year is mainly the product of the health of the economy

and other factors that governments affect only indirectly, such as the price of fossil fuels."[51] Every nation can't control what the market does, but they can control their policies. The strategy of bottom-up allows each nation to figure out "what it can and will implement at home. Just as countries learn how to control emissions they will also look at the science, along with their own national vulnerabilities to climate change, and determine the level of warming they can stomach."[52] Each nation may not have the same goal or ability in stopping climate change, but each nation can do what it does best.

Therefore, "[i]n a bottom-up approach, the function of an international agreement would not be to define commitments, but rather to aggregate and review commitments."[53] Even the current process for treaties allows for the bottom up approach to "be embodied in a treaty and be legally binding- that is the essence of Article 4.1 of the Convention."[54] The major issue with the Copenhagen Accord, which could be a problem with the bottom-up approach here is that "[a]s several analyses indicate, they do not, in fact put the world on a realistic pathway towards limiting climate change to 2^{o}C, the professed goal of the Accord."[55]

Encouraging Action

There are a few reasons why apathy and inaction will not occur in this treaty. While the threat of hurting the competitiveness of the economy has made many countries hesitant, this treaty removes that fear. Also, there are ways to promote action. David Victor promotes a strategy based on contingencies.[56] In this strategy, once each country puts out its promise for the year, they can claim they will increase financial support or reductions if another country reaches a certain target.[57] It is easily foreseeable for the European Union to make a contingency with the United States. The EU is a vital cog in this treaty. While many of the MEF nations are cutting emissions to various degrees, the EU countries are a prime example of the extent that major economies can cut. The EU has been able to cut emissions more than promised and they have shown their dedication to curbing climate change.[58] My proposal will therefore not just include reluctant actors, but a group of nations in the EU dedicated to solving the climate change problem that will push the other countries into action.

Another way to promote action is to allow adaptation funding or implementing emission reductions through the CDM instead of reducing emissions.[59] Adaptation

funding would allow those nations well-off to not just minimize regulation, but also to help those countries less well-off adapt to climate change. These funds can go to member countries who still have a large low-income population like China, or more likely the poorest countries outside of the treaty. It is well known that "countries with lower incomes have less flexible economies. And in nearly every country, the least fortunate engage in economic activities, notably farming, that are highly sensitive to climate."[60] So, if regulation would cost a nation like Australia billions of dollars, their plan could instead send a fraction of that cost to other countries to help them adapt. This would both save big governments money, and also send money where it can do more.

When the low-income countries ask for funding now, it sometimes seems like welfare for the poorer countries. But, it can now turn into a way to save governments money from regulating. By investing in CDM's or in adaptation, poorer countries get the benefits. There would have to be a system in place to control the amount spent on adaptation. For if it costs less to spend on adaptation, then many countries will spend all their money on reacting to the problem and not being proactive.

For instance, a study created by McKinsey & Company, industry experts, academics, and environmental NGOs stated that if the United States were to implement policies to cut emissions from 7 to 28 percent by 2030, it would cost $50 billion a year.[61] If the United States were to take policies to make cuts that would cost $50 billion, my proposal would not stipulate that they reach a certain amount of emissions cuts. Only that they implemented the policies that were promised in the yearly meetings.

Yet, if they promised certain policies, then decided against following through with them due to economic circumstances, they would have another option. They could provide adaptation finances or fund mitigation projects. The nations can decide on a cap and amount of adaptation funds that would equal emission cut funding. As an example, the United States promises $50 billion. If the minimum amount nations could spend on emissions cut was agreed to be 50 percent, they can choose to spend all $50 billion or, at the least, $25 billion on cutting emissions. If they choose to spend only 50 percent, they must provide adaptation funding or money for CDM's at a ratio of 5 to 1. So they must provide $5 billion to foreign nations. This would give nations flexibility in following through on commitments. Nations should not be forced into over-promising due to the bottom-up nature and then would have a safety net due to the emission cutting to

funding ratio. Also, this would ensure emission cuts are being made now to curb climate change in the future, and provide money for nations to protect themselves from the effects of climate change now.

Confronting the Negatives of Proposal

Detractors will argue that the MEF nations will not spend that much money on emission cuts, much less on foreign aid. That nations all around the world are suffering from the bad economy. That there is a growing discussion in America on whether to cut all foreign aid.[62] That Congress can't even decide how much money to spend on disaster relief for Hurricane Sandy.[63] These are problems that will be associated with any treaty. Whether it is in my proposal or in the UNFCCC, this issue will present itself.

There will also be the argument that without smaller nations being able to vote, their wants will be disregarded. Yet, while the UNFCCC has given them a voice, their wants have not been met. They have received promises and words, but not much more. By allowing them to speak in my proposed treaty, they will still have a voice. It could even be considered that there can be a voting member representing the major regions of the country like the Caribbean and Africa. This would keep the numbers low and due to each nation being able to decide on its own policies, would not hold up the conferences.

Another criticism will be that my proposal will not keep the world from rising over 2°C. This may be true, but even under the UNFCCC unless major cuts are made, the world will rise over 2°C. By limiting the parties, my proposal will encourage the major emitters to act quickly with the knowledge that their economic competitors are making the cuts also. The UNFCCC can continue to oversee the process by monitoring commitments, but should be replaced by a system which will encourage countries to act now instead of later.

V. Conclusion

No matter what treaty is enacted, the world will have a hard time limiting temperature increase under 2°C. My proposal, however, solves many of the issues that are present in the UNFCCC. The confusion and inaction caused by too many members is solved by

limiting the number of participants. Even though the number of participants is limited, the problem can still be solved because these nations are responsible for an overwhelming majority of the emissions now and in the foreseeable future. These countries will still be pushed to cut emissions by the EU and representatives from threatened nations.

This treaty and probably no treaty out there will solve the problem of apathy to the climate change problem. While numerous delegates, NGO's, and organizations like WRI have spent countless hours working through the UNFCCC, they have not made as much progress as they hoped for. Until the politicians and citizens take heed of the problem in front of them, then their efforts will continue to produce small steps in solving climate change. There is hope though. The world successfully acted to protect the ozone layer with the Montreal Protocol, even though the solution was much easier and cheaper than solving climate change.[64] The United States is willing to spend large amounts of money in certain instances, as shown with the Marshall Plan to keep communism out of Europe.[65] The world has a choice, whether to continue working on the same path as the last twenty years or to try something different. My proposal suggests the latter.

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[2] UNFCCC Rep. of the Conf. of the Parties on its 15th session, held in Copenhagen., Dec. 7-19, 2009, U.N. Doc. FCCC/CP/2009/Add.1, *available at* http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf

[3] *Id.*

[4] Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, U.N. Doc FCCC/CP/1997/7/Add.1, *available at* http://unfccc.int/kyoto_protocol/items/2830.php and http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf

[5] DAVID HUNTER, JAMES SALZMAN, DURWOOD ZAELKE, INTERNATIONAL ENVIRONMENTAL LAW AND POLICY 726 (Robert C. Clark et al. eds., 3rd ed. 2007)

[6] UNFCCC Report of the Conference of the Parties on its sixteenth session, held in Cancun., Nov. 29-Dec. 10, 2010, U.N. Doc. FCCC/CP/2010/7/Add.1. *available at* http://unfccc.int/meetings/cancun_nov_2010/meeting/6266.php

[7] DAVID G. VICTOR, GLOBAL WARMING GRIDLOCK: CREATING MORE EFFECTIVE STRATEGIES PROTECTING THE PLANET 210 (Cambridge Univ. Press. 2011)

[8] Major Economies Forum on Energy and Climate, *available at* http://www.majoreconomiesforum.org/

[9] VICTOR, *supra* note 7, at 217

[10] *Id.*

[11] *Id.*

[12] *Id.*

[13] *Id.* at 1, 40 (Noting that "Even if governments were able to hold emissions constant- itself a heroic act since CO2 emissions have risen on average 3 percent per year for the last century- atmospheric

concentrations of CO2 would continue to build. Actually stopping and eventually reversing the build-up of CO2 and other long-lived gases would require reductions of about 50 percent below current levels by 2050 and even deeper cuts in the decades beyond."

[14] *Id.* at 207

[15] Daniel Bodansky, *A Tale of Two Architectures: The Once and Future UN. Climate Change Regime*, Mar. 7, 2011, at 8 (Stating that "although the Kyoto Protocol gives states freedom in how they *implement* their commitments, it does not give them similar flexibility in *defining* the form and nature of their commitments." These are fixed emission targets that disregard any other factors that may prevent a country from meeting its target. These national targets were also decided upon by international negotiations, not by individual countries. Therefore, the ability and ease in which a country could meet its target was not fully accounted for.)

[16] *Id.* at 5

[17] VICTOR, at 207

[18] *Id.*, *supra* note 7, at 75

[19] Lisa Schenck, *Climate Change "Crisis"- Struggling for Worldwide Collective* Action, 19 Colo. J. Int'l Envtl. L. & Pol'y 319, 331 (2008).

[20] *Id.* at 336 (President Bush stated that "The world's second-largest emitter of [GHGs] is China. Yet, China was entirely exempted from the requirements of the Kyoto Protocol. India . . . among the top emitters . . . was also exempt . . . . These and other developing countries are experiencing rapid growth face challenges in reducing their emissions without harming their economies."

[21] *Id.* at 347-348

[22] *Id.* at 328

[23] VICTOR, *supra* note 7, at 206-207

[24] *Id.* at 210

[25] MEF, *supra* note 8.

[26] *Id.*

[27] VICTOR, *supra* note 7, at 213

[28] Bodansky, *supra* note 13, at 5-6

[29] Darren Goode, *Are Climate Meetings Too Big to Succeed*, National Journal (Jan. 8, 2010), http://energytopic.nationaljournal.com/2010/01/too-big-to.php

[30] *Id.*

[31] *Id.*

[32] John M. Broder, *U.S. Pushes to Cut Emissions of Some Pollutants That Hasten Climate Change*, The New York Times (Feb. 15, 2012), http://www.nytimes.com/2012/02/16/science/earth/us-pushes-to-cut-emissions-that-speed-climate-change.html?_r=0

[33] *Id.*

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[36] VICTOR, *supra* note 7, at 52

[37] WORLD RESOURCES INSTITUTE, BUILDING THE CLIMATE CHANGE REGIME: SURVEY AND ANALYSIS OF APPROACHES 33 (2011).

[38] *Id.* citing (CFR, 2010; Biermann et. Al., 2009).

[39] UNFCCC, *supra* note 1

[40] VICTOR, *supra* note 7, at 179-180

[41] Major Economies Forum on Energy and Climate, *Fourteenth Meeting of the Leaders' Representative, available at* http://www.majoreconomiesforum.org/past-meetings/fourteenth-meeting-of-the-leaders-representatives.html
[42] WRI, *supra* note 32, citing(Hare et.al.,2010)
[43] *AOSIS and LDCs Deliver Joint Statement on KP*, Alliance of Small Island States, *available at* http://aosis.org/aosis-and-ldcs-deliver-joint-statement-on-kp/
[44] VICTOR, *supra* note 7, at 51
[45] *Id.*
[46] Schenk, *supra* note 19
[47] *Id.* at 213
[48] *AOSIS*, *supra* note 43
[49] *Id.* at 179
[50]UNFCCC, *supra* note 2, *available at* http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf.
[51] VICTOR, *supra* note 7, at 215
[52] *Id.* at 6
[53] Bodansky, *supra* note 13, at 14
[54] *Id.*
[55] *Id.* at 17
[56] VICTOR, *supra* note 7, at 243
[57] *Id.*
[58] *Climate Change: European Union making deeper emission cuts than promised*, Europa, *available at* http://europa.eu/rapid/press-release_IP-10-1315_en.htm.
[59] HUNTER, *supra* note 5, at 680
[60] VICTOR, *supra* note 7, at 178
[61] McKinsey & Company, *Reducing US greenhouse gas emissions: How much at what cost?*, *available at* http://www.mckinsey.com/client_service/sustainability/latest_thinking/reducing_us_greenhouse_gas_emissions.
[62] *Can't Afford Foreign Aid, or Can't Afford to Cut It?*, New York Times (Aug. 15, 2012), http://www.nytimes.com/roomfordebate/2012/08/15/cant-afford-foreign-aid-or-cant-afford-to-cut-it/trim-the-fat-in-the-us-aid-budget; *Given The Current Deficit Crisis, Should Foreign Aid Be Cut?*, US News (Oct. 11, 2011), http://www.usnews.com/debate-club/given-the-current-deficit-crisis-should-foreign-aid-be-cut
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A Domino Effect: A Carbon Tax on International Aviation Trade

Evelyn Kwak

I. INTRODUCTION

During the year 2012, aviation produced about 2-3 percent of all carbon emissions and stands as one of the fastest growing sources.[1] Unfortunately, airlines lack the funding for the technology to reduce these emissions. Meanwhile, corporations around the world profit from the international aviation trade without contributing a portion of their increasing wealth to this problem. To resolve this discrepancy in equity, governments should use existing tax systems to channel corporate profits from international aviation to research for efficient airline technology.

Using the tax system to fund aviation research creates several benefits for equity in emissions reductions. For instance, a tax system uses a widely familiar yet sector-specific approach (i.e. focused on the private sector corporations). These characteristics of a tax system provide governments with an "opportune alignment of political will." [2] Moreover, this method enforces, and holds publicly accountable, emissions reductions funding on corporations profiting from international aviation trade, because airlines are the "world's most visible services industry."[3]

Furthermore, governments should begin utilizing their respective tax systems for emissions reductions on international aviation, rather than the domestic industry. Domestic aviation in the United States remained relatively stable from 1990 to 2008.[4] On the other hand, the demand for international aviation and internationally-traded goods peaked in 2005 and continues to rise; due to this demand for international aviation, carbon emissions overwhelmed researchers working to improve aviation technology for the environment.[5]

Despite this growing problem, the governments, meeting to discuss climate change, avoided enforcing measures for global aviation and created an entity with meager authority. Since 1944, the International Civil Aviation Organization ("ICAO") has

regulated international aviation on a global scale.[6] However, ICAO lacks sufficient legal authority to successfully regulate emissions in our airspace and hold accountability to reckless aircraft pollution.[7]

Due to ICAO's meager legal authority, many countries' governments attempted to take legal action, by proposing regulations and policies. Similar to the UNFCCC, the U.S. also took steps to regulate aircraft emissions. For example, in 2009, the United States House of Representatives passed a bill and the Senate introduced a bill that controlled carbon emissions from jet fuel. However, these U.S bills failed, because it created an indirect effect on the U.S. domestic airline industry without fair compensation.[8] The bills may have been more successful if they focused on a narrower scope—the international aviation trade of corporations. Fortunately, although the bills failed to survive, they still managed to cause heated discussions from both supporters and critics.[9] These private actions from major players in the international aviation trade, such as the U.S., brought more attention towards the significance of emissions reduction in aviation.

In this paper, I propose that three major players in the international aviation trade, the United States, the European Union ("EU") and China, should formulate an emissions reductions agreement in the international aviation trade, by modifying their respective tax systems. This agreement should only focus on substituting a corporate tax to equitably redistribute profits to aviation technology. This agreement should not add significant tax burdens on the corporations.

In Part II, I will discuss the structure of the tax and how it furthers climate change equity and differs from previous attempts to tax the industry. I will encourage the U.S., EU, and Chinese governments to agree to this proposal, because it serves as an excellent starting point for financing climate-friendly aviation technology. Furthermore, I will argue that the governments will be able to quickly use this carbon tax, because it neither relies on a new system nor imposes undue additional burdens on corporations or consumers.

In Part III, I will explain the importance of creating an agreement among the U.S., the EU and China for this proposal and the governmental roles in gaining support from corporations and consumers. In addition, I will address the governments' roles in auditing practices already-existing in the tax systems to monitor the progress of the

carbon tax and the business activities of corporations, relating to transporting their goods by aircraft. Finally, I will provide warnings in the use of governmental power, through an example of the EU's Aviation Directive, which created tension in the aviation industry worldwide.

II. OUTLINE OF MY PROPOSAL: WHO ARE THE MAJOR PLAYERS AND WHAT SHOULD THE CARBON TAX LOOK LIKE?

In this section, I discuss the substance of my proposed carbon on the international aviation trade, by outlining the specific key actors in its implementation and the respective countries' viewpoints on the use of this system. My proposal focuses on how key figures in climate change—the United States and China—reacted to the EU's recent legislation on taxing the commercial airlines not only from domestic companies but also those of foreign origins. I will propose strategies to present a carbon tax on the international aviation trade that would be both workable and agreeable to the U.S. and China.

A. Who Imposes and Regulates the Taxes?

The United States, European Union, and China should create an international aviation emissions agreement to implement a carbon tax on the corporations involved in the international aviation sector.[10] Each of the three countries should legally promise to implement a carbon tax on corporations, within its jurisdiction, that conduct international aviation trade, or in other words, its imports and exports.[11] This carbon tax agreement should be limited to only the U.S., the EU, and China, because a global implementation on aviation would raise significant criticisms about international governance.[12]

Each of the three countries should propose some governmental control over the tax regulations that would directly affect all international aviation trade for its corporations. The governments of these three countries should use familiar legislative action, for example, in altering the policies for corporate income taxes. Governments may use this legal strategy for a carbon tax, because they hold a wide range of policy routes to indirectly assign costs to specific environmentally damaging practices in the private sector and promote incentives for creating environmental compliance.[13] By taking a

industry-specific approach, in the aviation industry, the government narrows legislation to this area and therefore creates less conflict. On the other hand, the government has wide powers to affect the entire international aviation trade industry to promote uniformity in implementing a carbon tax.

B. Structure of the Carbon Tax

The carbon tax proposed in this report is a substitute for an already-existing tax—not an addition—and taxes the source, i.e. corporations, based on the amount of emitted carbon.[14] For example, the flexibility in tax systems allows governments to lower income tax rates and proportionately increase the tax rate for a carbon tax.[15] For example, the tax would regulate aircraft trade emissions both within and outside U.S. sovereign territory but without directly pressuring another country to impose the same regulations.[16]

The government may impose a tax rate based on the marginal cost of carbon emissions and provide tax credits for carbon substitute or reduction programs.[17] Any tax exemption visibly displays the actions between the governmental agency and the private sector, thereby ensuring an equitable system without distributions of free, corrupt allowances.[18]

The government may want to protect the "global competitiveness" of U.S. companies by modifying a tax regulation to exclude goods exported from the country from the domestic carbon tax.[19] Tax incentives, or tax subsidies, would reduce costs for production and redirect benefits by reducing tax burdens for corporate individuals, through deductions or reduced taxable income.[20] These measures would be necessary safeguards in a carbon tax system, because the tax may gradually pass the cost to consumers under reasonable market conditions.[21]

Under this strategy of targeting air and marine trade, the government would ultimately tax the production of fossil carbon, through mining, pumping petroleum, or extracting natural gas.[22] Governments should gradually phase in carbon taxes into the respective tax systems by beginning with low initial rates and increasing over several years to allow consumers and producers to adjust.[23]

C. Domino Effect and Cautionary Statements (the EU example).

In this section, I warn governments from imposing an industry-wide carbon tax on aviation. Since the European Union established the Emissions Trading System ("EU ETS") in 2005, the EU began a third phase of expanding emissions reductions to aviation starting in 2012.[24] In 2009, the EU released a list of international airlines to become subject to the EU ETS.[25]

The EU Aviation Directive, which came into effect on January 1, 2012, was a component of the EU ETS, which made carbon tax adjustments on almost all cargo and passenger flights taking off from or landing in the EU.[26] The EU Aviation Directive targeted the carbon emitted by aircrafts not only owned by the EU but also those belonging to other countries.[27] The EU scheme affected all flights, "regardless of the operator's nationality," and involved more than 2,000 foreign airlines.[28]

In other words, an airline company needed to pay for each of its aircraft's emissions when it traveled through EU's airspace.[29] Thus, the aviation industry and governments from developed and developing countries publicly criticized the policy, refused to participate, retaliated by closing trade, and sued the EU in courts.[30] The U.S. and China especially opposed the EU Aviation Directive.[31] The EU Aviation Directive forced China to pay an estimated 800 million yuan, or $87 million for carbon emissions alone in 2012, with potential for increased amounts of 3 billion yuan, or $330 million in 2020.[32]

Addressing emissions from international aviation posed a challenge especially because of the nature of air transportation where no single nation held absolute regulatory authority.[33] The United States opposed the EU ETS model for aviation emissions, because it attempted to regulate the operations of airlines of other countries overseas; the U.S. may give consent to a carbon tax in its own aviation sector if the EU ETS established policies for taxation on its own aircraft trade.[34]

At least one airline, the Cargo Airline Association ("Cargo"), supported a carbon tax as an alternative to cap-and-trade, provided that the effect of a direct tax on aviation fuel would reflect a decrease on existing excise taxes.[35] In other words, the tax revenue would return to the aviation industry through funding technology for the airlines.[36] For over fifty years, the countries exercised sovereignty over global air space, while

compromising and surrendering some rights to maintain "order in the skies and uniform rules," providing an already familiar environment for discussing a group effort in carbon emissions.[37]

Current literature and political views reflect the increasing need for China to implement an internalized economic system in the form of a carbon tax. Cap-and-trade policies alone fail to allow China to handle the immediate climate and economic pressures during its rapid economic and cultural growth.[38] Although cap-and-trade allows China to receive investments from other countries for emission reduction projects, the country ultimately lacks the infrastructure to independently generate its own revenues from the polluting sources within its borders—largely manufacturing corporations that produce mass amounts of carbon without equally feeling international pressures to curb carbon emissions, or create substitutes for its damaging activities on the climate. An excise tax on energy seemed plausible but failed to tax carbon emissions.[39] The chances for the establishment of a carbon tax in China increased significantly, because the country's previous efforts in emissions reductions received "limited international recognition."[40]

The U.S. constantly drafted its own climate policies to target China's emissions, portraying the need for China to participate in a carbon tax on its own domestic corporate products to bring about agreement from the U.S.[41] However, China did not turn a blind eye to the possibility of imposing a carbon tax on its companies products.

In fact, the researchers at the Chinese Ministry of Finance, State Administration of Taxation, and the State Environmental Protection Administration deliberated the possibility of an environmental tax since 2008.[42] Among these taxation theories, China already planned a strategy for imposing a tax on corporate products based on the amount of consumed resources or pollutants to the environment.[43]

Current mechanisms in place for China's emission reductions created an appropriate home for modifications to the country's tax systems, because the central government mainly regulated this area.[44] China may be more open to a modified, domestic tax system specified to the aviation of corporate products, because this method would not violate the WTO principle of "common but differentiated responsibilities" between developed and developing countries mandated by the Kyoto Protocol (China previously criticized the EU's Aviation Directive for the exact concerns of "common but differentiated responsibilities").[45]

To comply under WTO law, the supporters of a carbon tax system must demonstrate "nondiscrimination standards," for example, in which the tax does not discriminate in favor of domestic products over one country's imports.[46] American manufacturers would more readily agree to a carbon tax on its products if Chinese manufacturers participated in a similar system, especially since the Chinese companies now rival those of the U.S. as the world's largest source of annual carbon emissions.[47]

III. EQUITABLE PURPOSE OF A CARBON TAX ON THE INTERNATIONAL AVIATION TRADE

A carbon tax on the international aviation trade is the most equitable and reasonable start to have corporations pay for the damages of their business activities, and at the same time, incentivize them to contribute to climate change technology. A government's tax system provides a fair, monetary means to calculate a company's damages. Furthermore, the calculation process through a tax system allows greater governmental control and organization on carbon usage for aviation. By having greater control over the aviation trade, governments may directly redistribute some corporate profit to related technology. This redistribution to aviation technology would be equitable, because it would not only benefit the airlines but also the corporations contributing to the proposal.

Furthermore, the redistribution of profit through a tax is equitable, because most countries, their respective corporations, citizens, etc. already accepted this concept to fund a cause at the governmental level. Due to this worldwide familiarity with tax systems, the primary countries participating in the international aviation trade would acquire easier access to generating revenues for emissions reductions, while also maintaining their gross domestic product ("GDP") and economic leverage. Therefore, a carbon tax on international aviation provides an equitable and readily available start to reducing emissions in aviation. Unfortunately, society still lacks substitutes for carbon usage in air travel, which performs a primary role in international trade.[48] One of the greatest challenges of international governance involves the reliance on the global economy on international trade as a tool to mitigate climate change.[49]

A. The Equity and Advantages of a Carbon Tax

A carbon tax on international aviation is equitable, because it redirects corporate consumption and profit in a familiar and simple way, along the traditional patterns of society's commercial behavior and lifestyles.[50] For example, for the U.S., a carbon tax would only need a few additions to the Internal Revenue Code.[51] By altering corporate tax regulations, governments may quickly implement a carbon tax specially-targeted for international aviation trade. Of course, governments should alter a minimum number of tax regulations for this purpose.

If the government imposed an additional tax or tax system, the federal bureaucracy, corporations, and consumers would suffer undue burdens from drastic changes to business and lifestyles. Creating these additional burdens, without a readily available means to compensate effected parties, would not be an equitable start to regulating aviation emissions. Furthermore, new policies or regulations on corporations would burden governments with substantial costs for compliance and enforcement.[52] The proposal eliminates this problem by having a carbon tax substitute a portion of corporate income tax. Corporations around the world already expect some corporate income tax and therefore would object less to a substitute, rather than an additional tax.

Moreover, the nature of corporate income taxes provides an equitable way to calculate how much each corporate should pay for its participation in international aviation trade. Usually, the rate of corporate income tax increased if the corporation's net profits increased; this nature created a direct proportional relationship between corporate income tax and a corporation's profits. Similarly, carbon emissions from aviation trade increased if profits from internationally traded goods increased. Then, the relationship between carbon emissions and profits from international aviation fits the correlation between a corporation's profits and corporate income tax. Because of this similarity, a carbon tax would most fairly fit into the tax system as a partial substitute of corporate income tax.

Furthermore, this proposal's carbon tax should substitute a portion of corporate income taxes, because tax regulations for the latter may best provide advantages in calculation, accountability, and flexibility. For instance, a government already calculates and regulates corporate income tax rates since long ago. Also, the government already established simple and efficient methods for monitoring and balancing a corporation's

tax rate. Then, the government may easily extend these familiar practices to a carbon tax on a small area of the overall tax system—a carbon tax rate on international aviation trade.

A government may use calculation methods for corporate income tax to measure carbon tax rates and alter them, using fair market statistics, when necessary. For example, the governments may enforce equity on the market, by changing carbon tax rates according to the global prices on carbon emissions. This method would be as familiar to the corporations and consumers as changes to corporate income tax rates. Therefore, corporations and consumers would agree to a substitute carbon tax, because it would behave very similarly to a corporate income tax. Otherwise, a government creates greater political and economic risks by imposing an additional tax on aviation.[53] By insisting familiarity with the corporate income tax, a government would be able to show the fairness and reasonableness of a carbon tax on international aviation trade.

Moreover, a close relationship with the tax system provides a flexible means for governments to modify the costs and effects of the carbon tax. For example, a government may increase or decrease the tax rate whenever necessary—a practice already familiar to most, if not all, countries for other taxes. A country significantly overwhelmed by global climate change may want to increase the tax rate on the air-shipment of high-emitting products; this flexibility of carbon taxes encourages its implementation in the near future and in the long-term.[54]

Another equitable function and advantage of a carbon tax is its gradual and uniform effect of the commercial lifestyles on a global scale. After the implementation of a carbon tax, corporations would indirectly contribute to aviation technology. As demand for international aviation increases, consumers would increase corporate profits in that sector. Then, corporations would gradually need to pay higher carbon tax rates in proportion to their profits. If carbon tax rates increase, due to larger profits, corporations may decide to increase the price of goods slowly in the long-run. Ultimately, a carbon tax would instigate a gradual and wide spread of participation towards funding aviation technology.

In this way, governments should start a carbon tax on corporations for international aviation trade to gradually but reasonably spread participation to all aviation. This slow but natural movement of commerce and consumerism would be possible because

of the nature of a carbon tax. A carbon tax gradually affects the "price of every activity that emits carbon-laden gases, from driving to buying manufactured products," and therefore creates incentives to develop alternatives.[55] The carbon tax on the internationally-traded goods would create a domino effect of passing along an indirect cost towards the corporations and the individual consumers in the long-run, while creating immediate revenues for aviation technology. Consumers would not object to this carbon tax substitute—not an additional tax to the system—because it would not create overwhelming burdens; instead, the carbon tax would start a predictable domino effect through a reasonable, and already-existing cost to individuals through the corporate income tax.

Furthermore, a carbon tax promotes equity, by providing private sectors with predictability and transparency for long-term implementation for the price of emissions.[56] Predictability and transparency are important tools in persuading corporations to undertake a substitute carbon tax. Past events with climate change show that the current and prevailing challenge is "the global market's failure to internalize the environmental and human costs and risks associated with" emissions.[57] Although most countries recognize the importance in reducing emissions from aviation, many of their strategies failed to regulate this industry due to uncertainty. Governments in the past chose to avoid regulating emissions in aviation because of uncertainty over enforcing uniform climate change regulations, calculating prices of emissions from aviation trade, and funding aviation technologies.

However, the predictable and transparent nature of a tax system allows the government to regulate the aviation industry and negotiate with corporations on fair compensation from their business activities. The use of a tax system eliminates previous uncertainties about monitoring aviation trade and adjusting the prices for emissions. Corporations will not likely argue against a substitute carbon tax if it closely follows existing regulations in a tax system. Similar to a corporate income tax, a carbon tax serves equitable theories of distributing a portion of corporate profits to the government. A carbon tax merely effects an additional equitable principle of holding individuals accountable for their damaging activities on the environment for others sharing the same plane. Under already-existing and recognized models of taxation, the corporate polluter must pay for its damaging business activity to the public if the polluter profited from the activity.

A carbon tax on international aviation also promotes equity by instigating uniform advantages for not only participating but also non-participating countries. Participating countries in a carbon tax will obtain immediate and long-term benefits without requiring full international cooperation.[58] Like any tax, the carbon tax would immediately generate revenues from not only domestic corporations but also international corporations related to them. Participating countries may start the process without international agreement, because they would only alter their domestic tax systems. By not requiring international cooperation, a participating country may readily begin to adapt corporate sources and consumers to an indirect change in promoting efficient technology for aviation. This adaptation function of a carbon tax further encourages its immediate use.

Given the drastic global climate change problem, a carbon tax best fits the current need for market-based strategies to meet necessary flexibility of changing conditions, through simple adjustments of tax rates.[59] For instance, a government may reduce or temporarily cease the collection from carbon taxes during emergencies, such as natural disasters, or wars.[60] This aspect of taxation at the government's regulatory control allows immediate changes to market behavior and the fluctuation of climate change. Through a carbon tax, a government would have regulatory control and thereby greater freedom for immediate change to country conditions. This flexibility of a carbon tax significantly decreases the likelihood of a worldwide economic meltdown caused by a lack of control on long-term risks and self-correction.[61]

Governments should address aviation emissions in close proximity with a carbon tax, because a tax system best fits this market phenomenon; moreover, most domestic and global institutions lack the authority and scope to address climate change issues in this industry. Addressing climate change as market inefficiency, rather than strictly an environmental deficit, presents multiple benefits: (1) the prominent international institutions, such as the WTO, the World Bank, and the International Monetary Fund primarily focus on economic developmental problems, especially in the realm of the public's welfare; and (2) countries become more ambitious with international market goals in relation to positive environmental outcomes.[62] Due to this lack of control over aviation emissions, many countries already successfully established domestic carbon tax systems, which provide encouragement in international discussions for the aviation industry.

B. Carbon Taxation Implemented by Other Nations

Various countries, including Denmark, Finland, Sweden, Germany, New Zealand, and the United Kingdom, successfully implemented and experimented with carbon taxes,.[63] For example, Norway implemented one of the highest carbon tax rates on the amount of emissions created by specified industries; the country then funneled the collected revenues into technology for capturing and storing carbon emissions, and allocating a portion to offset low-income families that struggle with the tax rates.[64] In fact, Norway's experiment managed to pool enough carbon tax revenues to create the third largest sovereign fund in the world.[65] In about 8 years, the carbon tax revenue decreased personal income taxes by $117 per Norwegian individual.[66] Simultaneously, Norway's gross domestic product during the same period of time increased by 35 percent.[67] Of course, Norway's experiment with carbon taxes did not involve aviation, or primarily funding aviation technology. However, this country's experience shows the flexibility and adaptation function of a carbon tax. Norway managed to negotiate with the corporations within its jurisdiction and alter its tax system to include a carbon tax without dropping its market profits.

Like Norway, Denmark implemented a carbon tax system in 1990 to fund technology for the energy industry, and as a result, improved its energy intensity by nearly thirty percent in ten years, by 2000.[68] Denmark's carbon tax successfully allocated twenty percent of revenues to co-financing energy-efficient measures and production technology.[69] Auditors within the country's tax agency independently reviewed the energy practices of companies and recommended methods for improvements and investments.[70] Denmark's experience shows the possibility of using the country's existing bureaucracy to treat the carbon tax like all other taxes; the government worked with the tax agencies to monitor the effects of the carbon tax on corporations.

On the other hand, instead of focusing on climate change technology, Germany implemented a carbon tax and allocated the generated revenues to reducing employers' and employees' social security contributions.[71] Germany's system more effectively recycled the revenues for the public good to encourage political support for the carbon tax.[72] Through its experiment, Germany's government demonstrates its support of a carbon tax and also displays the widespread benefits from its use.

Although these various models were fueled by differing final goals, the countries participated in similar practices of a carbon tax on industry-specific methods for the ultimate objective of funding technology in that industry. Furthermore, these countries' experiments with the carbon tax show that they did not suffer from negative economic impacts on their respective gross domestic product, due to the "revenue recycling," or lowering social security contributions.[73] These examples of a carbon tax show three important similarities: governments may readily implement a carbon tax if they take an industry-specific approach, governments should treat the carbon tax as any other tax in the system to obtain public support, and governments should redistribute the revenues from the tax to funding technology in that specific industry.

IV. CONCLUSION

To jumpstart regulation on aviation emissions, the U.S., EU, and China should join together in an agreement to implement a carbon tax specifically on international aviation trade. As previously mentioned an industry-wide carbon tax will meet overwhelming criticism and despair, as shown by EU's Aviation Directive. These three countries, that regularly control international aviation trade through its economic and political powers, should use this market leverage to begin narrow regulations in this area.

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A More Equitable CDM: Recognizing the Fading Lines Between Kyoto's Developed/Developing Country Distinction

Brittney McClain

Introduction

Article 12 of the Kyoto Protocol established the Clean Development Mechanism as a flexibility mechanism to serve the dual purposes of achieving sustainable development in the non-Annex 1, developing countries, and to assist the industrialized Annex 1 parties in achieving compliance with their emissions reduction commitments under Article 3 of the treaty.[1] In practice, the CDM enables the creation of emissions reduction projects in non-Annex 1 countries to generate Certified Emission Reduction (CER) units that are exchangeable in emissions trading schemes, or used to offset emissions to meet reduction targets in the Annex 1 countries that finance CDM projects.[2]

Among the many criticisms of the CDM are the unintended, perverse effects the mechanism causes in the developing countries that are recipients of the clean development investment. While non-Annex 1 countries are the beneficiaries of the CDM projects, critics argue that the structure of the CDM exacerbates inequity and results in the inequitable distribution of projects. Furthermore, non-Annex 1 countries are unable to participate in permit trading because they do not have binding emission caps under the Kyoto Protocol.[3]

In this paper, I propose that a new climate treaty should contain an equitable reform of the CDM to give non-Annex 1 countries the option to accept binding emission caps in exchange for the right to participate in the CDM as host and developer of clean development projects. This reform would give developing countries the opportunity to assess the costs and benefits of participation in permit trading, simultaneously creating incentives for developing countries to accept binding emissions commitments. Part 1 of this paper discusses the problem of inequity in the CDM, exacerbated by the features inherent in the CDM's design. I will further discuss how this approach in a climate treaty can achieve greater equity from the perspective of both annex 1 and non-annex 1 countries, while enhancing the success of achieving total emissions reduction. In Part 2, I propose that the CDM be modified to give developing countries the option to voluntarily commit to binding emissions targets so they can participate and profit as

investors in the CDM scheme. Part 3 of this paper briefly discusses the blurring lines between Annex 1 and non-Annex 1 countries as distinguished in the Kyoto Protocol, and its implications for a reformed CDM in a new climate treaty. In Part 4 of this paper, I will discuss the proposal's effect on the demand and supply of CER credits in the emissions trading market, presently resulting in depressed value of the credits.

Part 1: The Problem of Inequity in the CDM

A. Description of the CDM

The CDM works to achieve the ultimate goal of greenhouse gas emissions reduction by incentivizing investment in clean development projects where it is most cost-effective. Emissions cuts are generally considered less expensive in developing countries than industrialized nations, due in part to fewer environmental regulations.[4] Rules governing the issuance of CERS also require that the clean development project establish additionality, showing that greenhouse gas emissions are lower after the CDM project is implemented than emissions resulting from the most plausible alternative project that would have been implemented in the place of the CDM project.[5] More simply, the development of the CDM project should reduce emissions output compared to business-as-usual. Under the CDM, over 4,500 clean development projects have been implemented in 75 different countries, with estimated emissions reduction of 2.9 billion tons of carbon dioxide, which is equivalent to the combined annual emissions output of Australia, Germany, and the United Kingdom.[6] Despite its popularity and success, stakeholders, participants, and observers readily criticize CDM for its many shortcomings. The particular criticism addressed in this paper is the global inequity that is caused by the CDM limitation allowing only Annex 1 countries to actively trade credits in the carbon market.[7]

The adoption of Kyoto in 1997 provided for a core commitment period during which Annex 1 countries should reduce their GHG emissions by at least five percent below 1990 levels.[8] This first commitment period ends in 2012; therefore, a new round of discussions regarding a post-Kyoto international climate mitigation treaty has commenced. There is an active debate regarding the future of the CDM and whether it should be continued, and if so, ways in which it should be modified.[9] Furthermore, the price of CER credits has crashed over the past year causing concern for the economic viability of the CDM in the future.[10] In addition to practical concerns regarding the

viability of the CDM, discussion has centered on the inequitable distribution of projects and benefits resulting from market incentives. Despite these serious concerns, the CDM will likely continue to be one of the most important methods to achieve climate change mitigation in the next commitment period. Furthermore, the United Nation's long-held key goal is to create a global carbon market in piecemeal fashion by bringing in developing countries' markets individually.[11]

B. The CDM Exacerbates Inequity in Three Primary Ways

The CDM was born of the Kyoto Protocol with goals to incentivize sustainable development investment in developing countries, and provide a means for developed countries that agreed to binding emissions targets to offset greenhouse gas (GHG) emissions so not to exceed their cap.[12] While successful in initiating sustainable development investment in some developing countries, the CDM is imperfect with flaws in its design and implementation that perpetuate inequity between developed and developing countries, and amongst fastest growing and the poorest developing countries. The intended benefits of the CDM disfavor the poorest countries while benefits accrue for the fast growing, developing countries such as China, India, Brazil, Mexico and South Africa. These five countries represented about three-quarters of all registered CDM projects as of March 2010.[13] In addition to the inequitable distribution of CDM projects amongst developing countries, the full range of CDM benefits are unavailable to all developing countries that serve as hosts as they are excluded from participation in the emissions trading market and the profits that can be gained.[14] Finally, the exclusion of developing countries as investors in the CDM gives Annex 1 countries the early opportunity to pick the low-hanging fruit of CDM projects, which tend to be small-scale, most feasible, and least costly.

The very design of the CDM as a market-based mechanism inherently favors the most rapidly growing over the poorest of the developing nations to host emissions reduction projects. Private parties and government agencies in the Annex 1 countries making investment in CDM projects have a goal to maximize the value of their investment as participants in the emissions trading market.[15] These investors are primarily motivated to mitigate risk and maximize profits.[16] Choosing the more developed, non-Annex 1 countries as CDM project hosts mitigates risk and is most likely to maximize profit because those countries' advanced institutional structure includes more advanced financial markets, infrastructure and government capacity.[17] CDM investors pursue

the fastest developing countries like China, India, Brazil, and South Africa to host projects, because investors perceive the institutional capacity and political stability of these countries to reduce the risk of financial loss. Furthermore, the additionality requirement for CDM projects incentivizes investment in developing countries with growing economies that are on a steady path to industrialization.[18] These countries engage in high-pollution activities on a large scale, which creates a greater opportunity for CDM emissions mitigation projects to be truly additional.[19] Large-scale projects in the fast-growing economies minimize the administrative burden and cost of implementation as opposed to the creation of multiple projects, designed to generate sufficient credits, in the poorest economies.[20]

While the poorest developing countries are disadvantaged in the competitive process to attract CDM projects, the CDM continues to perpetuate inequity by excluding all non-Annex 1 countries from participation in the emissions trading market.[21] Developing countries that more frequently host CDM projects, such as China, began to recognize the potential advantages of trading emissions permits or credits. China's substantial participation in the CDM caused it to recognize the other benefits of emissions trading which it was unable to maximize on because of its status under Kyoto.[22] Along with China, several other countries have developed and are designing national trading markets to capitalize on this market mechanism.

The inherent features of the CDM further exacerbates inequity in the international climate change regime by excluding developing countries from participation as investors, while developed countries are given the advantage to earlier select the "low-hanging fruit" of CDM projects. This disadvantage is separate and additional to the two previously mentioned. In this sense, investors from Annex 1 countries are rewarded by early participation with first pickings of the most desired projects, much like the harvest of first fruits tend to be the finest. The inequity is that host countries seeking to invest in their own sustainable development are disadvantaged by the competitive process, and the remaining projects will be more costly and more risky.

Part 2: Reforming the CDM to include non-Annex 1 countries as Voluntary Participants to Binding Emissions Caps

I propose that the CDM be modified to give non-Annex 1 countries the option to accept binding emissions caps for the benefit of participation in the CDM as investors.

Presently, participation in the CDM as an investor requires countries to accept binding commitments to reach emissions reduction targets.[23] Developing countries in the Kyoto Protocol have not agreed to international binding emissions targets, so they are unable to participate as investors in the CDM through the first commitment period.[24] My proposal serves three significant goals in a climate mitigation agreement. First, climate equity is advanced by providing developing countries the opportunity to take potential profits in the emissions trading market as Annex 1 countries presently do. Second, my proposal will advance the ultimate goal of any climate mitigation agreement, which is to optimally reduce the number of GHG emissions contributing to global warming. Finally, consensus building and the resolution of major disputes is more likely among some of the most important and largest emitting countries, primarily the United States and China.

Climate equity is promoted in a climate treaty by opening the emissions trading market and potential profits to developing countries. Under my proposal, companies and governments of developing countries could earn CER credits for CDM project investment in their own, other developing, and even Annex 1 countries. These investors can then sell and trade CER credits to other governments and companies where they are highly valued. Accepting a binding emissions cap is risky because it is difficult for countries to accurately project emissions while in the process of industrialization and growing the economy.[25] Income growth, population growth, and technological change are also difficult factors to estimate in rapidly changing economies.[26] However, developing countries can conduct their own analyses to determine whether gains obtained by emissions trading could offset the risks of agreeing to binding emissions caps amid uncertainty. Climate equity is served under this proposal by creating opportunities for countries to take full advantage of the emissions trading mechanism. Climate equity is further achieved under such reform by incentivizing and rewarding non-Annex 1 countries to invest in mitigation projects locally, making the "low-hanging fruit" projects more competitive.

Developing countries will have to conduct their own analyses to determine whether it is in their best interest to accept the risks inherent in committing to binding emissions caps. Each country will have different responses to sensitivity analyses; therefore, the voluntary acceptance of emissions caps is most equitable. In some cases, however, the cost-benefit analysis and risk assessment will show that a country can achieve a net gain by accepting binding emissions caps in return for the potential profit as in investor in the CDM. One study by Steffen Kallbekken and Hege Westskog at the University of

Osolo analyzed whether efficiency gains obtained by developing countries' participation in a national emissions trading platform could offset the economic risks of accepting binding emissions.[27] The study concluded that developing countries could obtain substantial welfare improvements by transitioning from CDM to emissions trading.[28] While the sensitivity analyses conducted in this study surveyed an absolute move from the CDM to emissions trading, the underlying changes are similar to and its findings are applicable to the proposal discussed in this paper.[29] The changes inherent in a transition from CDM to emissions trading include a status change for developing countries from host to investor, as my proposal recommends. However, an absolute transition from CDM to emissions trading ignores the wider policy context in which climate change negotiations will take place, and it does not consider the ancillary benefits of committing to internationally binding emissions targets.[30] The main point of this study is to show that there are situations in which a developing country will have a net gain from participating in the emissions trading market as investors while limited to binding emissions caps. This conclusion shows that in some cases the benefits of emissions trading will outweigh the costs of accepting binding emissions caps.

While barred from participation in the European Union's emission trading market as part of the CDM, several developing countries have passed legislation and are implementing national cap-and-trade systems.[31] The sheer number of developing countries that have recently taken such bold steps to pass legislation on GHG emissions in order to develop an emissions trading platform indicates the willingness of these countries to accept binding emissions targets and the perception that a net gain would result. However, these national cap-and-trade systems will require appropriate rules and functioning for them to be linked to the EU trading system, and many years of evaluation before linkage. Additionally, national trading markets are relatively expensive to establish, so many developing countries will be unable to establish national and regional markets themselves.[32] This will only expand the inequity inherent in market mechanisms to mitigate climate change. The current CDM limits developing countries to alternative approaches of establishing national and regional carbon markets; rather, inclusion in the CDM as investors and participants in the EU's trading system will eliminate the need to develop national cap-and-trade systems that would only later be linked to the EU trading platform.

Developing countries are excluded from the range of benefits of participating in the emissions trading market under the CDM because they do not have binding emissions reduction requirements. The developed countries that participate as investors are

unwilling to pay a higher price for CERs than the price they pay for domestic allowances.[33] Further, the high transaction costs that are inherent in the drafting, presentation, solicitation, and implementation of projects in foreign countries result in reduced financial transfers to the host country and may be much less than the price of ordinary emission permits. This scenario exemplifies the inequity in the CDM by excluding developing countries from participating as investors. Emissions caps that are imposed on the developing countries will impact the net gain of implementing low cost abatement options and selling permits on the emissions trading market. Therefore, a new climate treaty must consider the adverse effects of imposing a harsh regime of commitments on developing countries. A country that chooses not to accept binding emissions reduction targets will simply advance the status quo; while countries that opt into a binding emissions agreement will further the agenda of mitigating climate change.

In addition to furthering the goals of equity in an international climate mitigation agreement, my proposal will have a positive effect on the overall goal of mitigating climate change by capping the number of global GHG emissions. Under Kyoto, developing countries are not subjected to binding emissions caps, including some of the world's largest emitters in China and India.[34] Under my proposal, developing countries will advance the goal of mitigating climate change by committing to binding emissions targets. Many large polluters are likely to voluntarily opt into the second commitment period to take advantage of the ancillary emissions trading benefits. Presently, the industrialized world only accounts for one-third of total global GHG emissions; and the countries comprising the remaining two-thirds are not subjected to emissions caps by the international treaty.[35] Binding caps imposed on developing countries by an international treaty will consider the rate of global temperature change in negotiating each country's targets as opposed to national caps set outside of the global discussion. The former process is better suited to estimate global emissions and anticipate global temperature increase.

Allowing developing countries to participate in the CDM would incentivize greater consensus among negotiators than that enjoyed under the Kyoto Protocol. The United States is a very important and key stakeholder in any global effort to make binding commitments on countries to reduce greenhouse gas emissions. A fundamental shortcoming of the Kyoto Protocol was its failure to obtain ratification of the treaty by the United States.[36] U.S. officials indicated that a primary reason for its rejection of the Kyoto Protocol was due to the perceived inequity in the treaty, which does not mandate

binding emission reduction targets on developing countries.[37] Early analyses of the ability of the United States to meet its obligations under Kyoto indicated extreme difficulty in the absence of a substantial emissions trading program including both developing and developed countries.[38] These statements imply that the U.S. would be more amenable to reach an international climate treaty requiring global emission reduction targets if developing countries were a party to the binding commitments. Presumably, a climate treaty that eases the responsibility of the U.S., by distributing the burden to other countries, is more preferable for to the U.S. My proposal provides non-Annex 1 countries the option to accept binding emissions reduction targets and presumably many countries will accept this option. If developing countries accept binding emissions commitments, particularly the largest emitters, then the U.S. will likely be more amenable to an international climate treaty with such binding targets.

Part 3: The Blurring Lines Between Non-Annex 1 and Annex 1 Countries

Today's world in 2012 looks much different from the world preceding the adoption of the Kyoto Protocol in the 1990s. Rapid technological innovations brought about substantial changes in modes of communication, infrastructure, income, health services, and levels of human interaction across vast borders. Countries have become more economically and politically interdependent, and cultures frequently exchange ideas and worldviews in a process that is widely called "globalization."[39] Like the fading lines and decreasing import of national borders, the distinction between Annex 1 and non-Annex 1 countries in the Kyoto Protocol is less distinctive today. Changes in the top greenhouse gas emitters, rising global incomes, population increases and global development have indeed made the world more flat. The distinction between developed and developing countries under Kyoto exacerbates global inequity, while the distinction's value in relation to the CDM is drastically diminished in two primary ways. First, developed and developing countries comprise the top greenhouse gas emitters at equally substantial levels.[40] Therefore, the environmental impact of greenhouse gas emissions is not easily attributable to one category of country over the other and the distinction does not contribute to the allocation of responsibility. Second, developing countries are better positioned, and ready, willing, and able to participate in the trade of carbon credits today, as opposed to their readiness during Kyoto's discussion and implementation.

The distinction between developed and developing countries is less pronounced when examining the rates of GHG emissions. Both categories of country contribute substantially to global greenhouse gas emissions; however, the rate of GHG emissions by developing countries is increasing much more rapidly than developed countries.[41] Additionally, emission rates for some of the largest developing countries are much higher than that for the largest developed economies.[42] For instance, China's rate of carbon dioxide emissions in 1990 and 2000 fell far below the rates of emission for the United States; however, in 2011 China's rate of carbon dioxide emissions far outpaced that of the United States[43]. Similarly, India's rate of carbon dioxide emissions was roughly equal to that of Germany and Japan; yet, in 2011 India's rate also outpaced Germany's and Japan's rates.[44] These statistics illustrate the impracticality of distinguishing countries based on their economic development for the purposes of allocating responsibility and costs of climate change mitigation. Analyses of population and carbon dioxide also illustrate the necessity of a climate treaty that eliminates the distinction between developing and developed countries.

A 1998 study by Frederick Meyerson at the Woodrow Wilson International Center for Scholars analyzed the forgotten relationship between population and carbon emissions in the Kyoto negotiations. Meyerson argued that Kyoto negotiators overlooked or ignored the wide variation in projected population change among the signatories.[45] An analysis of historical trends indicates that the gap is narrowing between developed-country emissions and developing-country emissions; therefore an agreement based on a simple national per capita formula may not be equitable.[46] Meyerson concluded that the very concept of developed and developing countries needs to be re-examined with respect to emissions in an international climate treaty.[47] Likewise, the distinction made between developed and developing countries should be re-examined regarding the allocation of responsibilities and benefits in a new climate regime.

The readiness, willingness, and ability of developing countries to impose binding emission caps in order to establish carbon trading systems is also a distinct change today from pre-Kyoto years. During the Kyoto years, negotiations for imposing binding emissions targets focused on developed nations and economies.[48] Kyoto did not "burden" developing countries with binding emissions in an effort to not impede their continued structural and economic development. The effect has been that development in some non-Annex 1 countries has continued uninhibited by a cap on GHG emissions and several of these transitioning and fast-growing economies in the developing world have created a viable atmosphere for cap and trade systems and regional and national carbon markets. The sheer number of developing countries that

have developed committees to study the viability of cap and trade systems, and enacted legislation to implement such systems nationally, indicate the desire of developing countries to have access to the carbon market. Under Kyoto, these countries are not able to participate in the EU's ETS because they have not been given binding targets and have opted to impose binding GHG emissions on their own.

China's cap and trade system is among the most significant new emissions trading schemes given China's growing economic stature and high levels of GHG emissions. China's emissions market is poised to become the world's second largest following the EU's ETS.[49] In fact, analysts anticipate that China's issuance of carbon credits in the national market will surpass the number of credits it issues from CDM projects.[50] China's decision to develop its own carbon trading system was influenced by the success it experienced by hosting CDM projects; however, the struggling price of CER credits signaled an opportunity for China to maximize on its participation in such a carbon trading scheme.[51] More importantly, China's cap-and-trade system establishes a target of reducing GHG emissions by up to 45 percent by 2020.[52] This move gives China greater flexibility to guide its national development, economic growth, and role in climate mitigation, as opposed to merely responding to the proposals of European investors.

South Korea, the world's seventh largest polluter of GHG, recently passed legislation approving a national cap-and-trade system.[53] The program will begin in early 2015 and can possibly be linked to the EU's trading system. However, analysts indicate that such linkage would not likely occur before 2018 because European Commission will first want to be comfortable with the rules and operation of the South Korean regime.[54] The alternative to this process is to impose internationally binding emissions targets on South Korea for its participation in the EU's emissions trading platform. The alternative circumvents the costs of developing and implementing a trading platform only to have it linked to the EU's years later. South Korea is the first non-Annex 1 country implement emissions trading; however, many other developing countries are in the process of designing and implementing their own emissions trading schemes.[55]

Mexico recently passed legislation that aggressively pursues the goal of climate mitigation by setting goals to reduce the country's carbon emissions, end fossil fuel subsidies, and establish a voluntary carbon trading market.[56] Additionally, Mexico's status as a developing country in Kyoto is not reflective of its economic size and GHG emissions, both ranked 11th globally.[57]

Each of these examples are provided to show that developing countries that do not have binding emissions commitments under Kyoto are now ready, willing, and able to make serious commitments. The inability to trade carbon permits in the EU's ETS is responsible for the national creation of carbon trading systems, many of which will ultimately be linked to the ETS in future years. I propose that developing countries be given the option to accept internationally imposed binding targets as opposed to nationally imposing emissions commitments.

Part 4: Increasing Demand for CERs Toward the Equilibrium Price

The value of CER credits have been in steady decline over the past couple of years, and have dramatically declined in the past year as the result of excess supply and low demand. In the past year, the value of CER credits declined by more than 70 percent as supply continued to outpace demand, which is depressed by the global economic downturn.[58] While prices for benchmark CERs have recently fallen to record lows, market analysts have still cut their initial forecasts for CER prices from 2012 to 2020.[59] In November 2012, the price of CER credits $1.11 per metric ton.[60] There is unusual consensus among financial analysts that prices will remain low indefinitely, despite renewed efforts by the European Union governments to intervene in the EU's Emission Trading System (ETS) to help boost prices. An attractive price for CER credits is essential to the survival and longevity of the CDM program because investors are motivated by the opportunity to profit from such investment.[61] The addition of new countries committed to emissions targets may positively affect the demand of CER credits to boost the price, creating additional value for the host countries of CDM projects.

Low demand is a significant driving force behind the low value of CER credits. The proposal outlined in this paper will bring the desperately needed, new demand to the emissions trading market. This increased demand could increase the market price of CERs by bringing in new actors with additional emissions reduction targets. Critics may argue that the entry of these new actors in the market will not have the desired effect on prices because the developing countries that choose to participate as Annex 1 countries in the CDM will only further increase the supply of available CERs without absorbing the demand to offset the supply increase resulting from their market entry. While this is a valid concern, the CDM Executive Board retains some ability to control the supply of carbon credits by controlling the quantity of CERs issued and the volume

of CDM projects in the pipeline.[62] However, decisions to exercise options to control the supply of CER credits will invariably be weighed against the environmental benefit resulting from greater efforts to combat and mitigate climate change.[63] Therefore, action taken by the CDM Executive Board to control the supply of credits by superficially limiting the number of CDM projects approved is not an optimal strategy to inflate the market price of CER credits. Rather, policies that promote the increase in the demand of CER credits are optimal to equalize the valuation of credits while furthering the ultimate agenda to reduce GHG emissions.

My proposal opens the emissions trading market to developing countries, which will increase demand and stabilize the price of CER credits to the advantage of all countries. Some major emitters of GHG emissions have recently taken steps toward implementing an emissions trading scheme which will likely result in new demand for CER credits. The World Bank announced that it expects future demand to come from Mexico, Australia, and South America.[64] Each of these countries have passed laws or signed agreements to commit to emissions reduction targets of development an emissions trading framework. Mexico recently passed legislation to require the country to reduce its carbon dioxide emissions by 30 percent by 2020, and provides for the development of a carbon emissions trading scheme.[65] Meanwhile Australia's carbon emissions trading system will now be linked with European Union's trading system as the country rethinks its approach to climate change as one f the largest emitters of greenhouse gases.[66] The addition of each of these countries to the emissions trading market is expected to increase demand, thereby stabilizing the CER credit price, because they are relatively large polluters of carbon dioxide and other GHG emissions. Australia relies heavily on coal for its electricity, so joining the EU's trading system enables its businesses to have access to international credits under the CDM.[67] As a developed country with a currently operational trading system, Australia's inclusion in the EU scheme is relatively seamless. The same cannot be said for the inclusion of developing countries like South Korea. Despite Korea's efforts to meet its pledged commitment to reduce GHG emissions by imposing national caps on businesses and large public entities, linking the South Korean emissions trading platform with the EU's cannot be expected before 2018 because the EU will want to become comfortable with the South Korean trading rules and operation.[68] This long process halts the potential for South Korea to generate new demand, while a climate treaty that gives non-Annex 1 countries the option to accept binding targets for immediate participation in the EU trading scheme works quicker to stabilize the price of CER credits.

Furthermore, non-Annex 1 countries will not create additional supply of CER credits by serving as additional investors that will create even more CDM projects. Rather, investment by non-Annex 1 actors in their own countries will serve to replace the investment that would take place by Annex 1 actors that would typically make the investment. The host country has some authority in determining the Annex 1 countries that propose to implement CDM projects in their sovereign limits; with this same authority, the host country can grant itself the right to implement a CDM project rather than extending the opportunity to an Annex 1 country. Under this model, demand will increase while supply remains stagnant and this formula should put upward pressure on the price of CERs, to the advantage of the non-Annex 1 new entry participants.

Conclusion

Post-Kyoto negotiations regarding a second commitment period will inevitably involve a discussion about the effectiveness of the CDM, and many commentators and spectators will likely suggest a reform of the CDM. The role and responsibility of developing countries will continue to be a significant point of discussion, particularly the responsibility of developing countries with high levels of GHG emissions. A post-Kyoto climate treaty that effectively mitigates global climate change will need full-scale involvement by both developed and developing countries. An equitable climate treaty that shares the costs and benefits with developing countries is more likely to achieve greater consensus and international support. I propose that negotiators strongly consider the implications of defining countries according to Kyoto designations that separated developed and developing countries. Furthermore, I propose that the CDM be reformed to give developing countries, as defined by Kyoto, the option to accept binding emissions commitments. With this agreement, developing countries will be able to participate in the CDM as investors, and not merely as hosts of CDM projects. This reform will generate consensus building in a new climate treaty, advance the goals of equity, and work toward the ultimate goal of mitigating global GHG emissions and climate change.

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Climate Change Adaptation Financing: Matching Supply with Locally-Controlled Demand

Brianne Mullen

Introduction

International agreements can take a top-down command approach, requiring participating countries to adopt specific policies and measures, or, at the other end of the spectrum, can adopt a flexible bottom-up approach that allows countries to establish their own.[1] The global climate regime has begun to move from a top-down approach, represented by the 1997 Kyoto Protocol, to more flexible methods involving targets, actions, and financing, such as those used in the Copenhagen Accord's pledge-and-review scheme.[2] This transition is supported by both developed and developing countries, for political and economic reasons.[3]

These motivations also exist for local governments (LGs) to call for flexibility in a global system for climate change adaptation financing. Adaptation will have impacts primarily on a local scale. A recent World Bank report estimates that urban areas will bear up to 80 percent of the expected $80 billion to $100 billion per year in global climate change adaptation costs.[4] At the same time, benefits from adaptation measures often accumulate at the individual or local level through reduced risk.[5] As the baseline implementers of adaptation policies, local governments are well positioned to establish their own comprehensive adaptation regimes, and doing so will produce effective, individualized methods for adapting to climate change.

This paper argues for local governments to play a primary role in directing the flow of adaptation financing under a global climate change regime. First, the paper describes local governments' role under the current system, and shows that while they have very limited involvement in existing adaptation financing, local governments are advocating for greater control. The paper then explores equity issues in the top-down/bottom-up debate, arguing that the latter approach leads to a more equitable regime. Then, the paper examines two case study projects demonstrating success in locally-focused adaptation financing. Finally, the lessons from the case studies are used to guide the

bottom-up adaptation financing mechanism proposed in the subsequent sections of the paper.

Local Government Role in UNFCCC Negotiations and Adaptation Financing

Local governments are coming together at global climate change negotiations to strengthen their collective voice. An important issue for LGs at these talks is adaptation financing – they support an inversion of top-down systems to provide flexibility at the local level in adapting to the effects of climate change. Although their presence at UNFCCC negotiations is growing in importance and scope, LGs still do not play an important role in current adaptation financing mechanisms.

Representation and Status

Local governments are gaining an increasingly important presence at UNFCCC negotiations. UNFCCC participants are categorized as either parties or observers.[6] Parties are subject to treaty commitments, while observers, such as NGOs, attend negotiation sessions and often provide input based on their respective interests. Observers at sessions of UNFCCC bodies form groups, called constituencies, to "bundle" their activities, and facilitate interaction among observers and between observers and parties.[7] For LGs, the constituency at international climate negotiations is the Local Government and Municipal Authorities (LMGA), with the International Council for Local Environmental Initiatives – Local Governments for Sustainability (ICLEI) being the focal point and the facilitator of local government presence at these negotiations since 1995.[8] Individual local government delegates attend open UNFCCC negotiations and network with participants to express their positions.[9] Notably, LGs were recognized as "governmental stakeholders" the 2010 Conference of the Parties (COP) in Cancun, "allowing the LGMA delegation greater access to high-level talks with negotiators."[10]

Role in Existing Financing Mechanisms

Local governments have a limited role in the existing UNFCCC climate change adaptation financing mechanisms: the Kyoto Protocol Adaptation Fund (Adaptation Fund or AF); Least Developed Countries Fund (LDCF); and Special Climate Change Fund (SCCF).[11]

While the Kyoto Protocol Adaptation Fund can provide funding for adaptation projects at the local level in developing countries, it is distributed to and controlled by national entities. The UNFCCC parties established the AF in 2001, and it came into force with the Kyoto Protocol in 2005.[12] The AF consists of two percent of the proceeds from Clean Development Mechanism (CDM) project activities, "to be utilized to assist developing countries that are particularly vulnerable to the adverse effects of climate change to meet the cost of adaptation."[13] Eligible adaptation projects can be implemented at the local level, but distributed funds are controlled by a "Designated Authority" who must be an officer of the national government applicant, who must also oversee the management of each project.[14]

Similar to the Kyoto Protocol Adaptation Fund, the Least Developed Countries Fund and Special Climate Change Fund call for national control of distributed funds. These funds are both operated by the Global Environment Facility (GEF), the financial mechanism of the UNFCCC.[15] The LCDF finances the preparation and implementation of National Adaptation Programs of Action (NAPAs) in Least Developed Country (LDC) parties, which identify the country's priorities for adaptation actions.[16] NAPAs also play a role in adaptation financing in developing countries, as they outline adaptation priorities which serve as bases for project eligibility under the SCCF.[17] This fund finances both technology transfer and adaptation projects in developing countries.[18] While projects financed by the LCDF and SCCF may be locally-based, they depend on national proposals and priorities for implementation.

LG Position on Climate Change Adaptation Financing

LGs are now seeking a greater role in UNFCCC adaptation financing mechanisms. In particular, they want to be "specifically identified as crucial partners…both in the UNFCCC negotiating text and the [NAPAs] developed individually by countries."[19]

LGs call for action on adaptation to be undertaken and financially supported at all levels of government.[20]

At its Second World Congress on Cities and Adaptation to Climate Change in 2011, ICLEI introduced its concept of climate finance mechanism "inversion."[21] This demand-driven approach calls for international adaptation funds to deviate from the traditional top-down approach by providing and leveraging funding for local planning and project preparation.[22] Jeb Brugmann, founder of ICLEI and author of the group's white paper introducing the "inversion" concept, said pointedly, "What is needed is to build on local expertise and institutions and fund what is needed locally, rather than conventional global financing mechanisms determining what local action is eligible for funding."[23] This financing model was unanimously supported at the 2011 World Mayors Council on Climate Change Adaptation Forum.[24]

Equitable Adaptation Financing

Although supportable in theory, top-down command approaches in a climate change regime are difficult to implement in a manner that produces efficient and equitable results. As proposed by local governments during international climate change negotiations, an "inversion" of this strategy remedies these issues. The equitable benefits of a bottom-up approach are highlighted in the case studies above, and described below.

Top-Down Approaches: Good Intentions, Unbalanced Results

Many international agreements follow a top-down command approach, and this is especially evident in the environmental realm.[25] The advantages of such a regime are evident: strong global coordination, pursuit of a common objective, and targets and timetables based on commonly agreed rules.[26] While these are admirable qualities of a climate change regime, the top-down approach presents several issues in its practical application. Most importantly, its lack of flexibility thwarts equitable implementation of international policies. Additionally, such approaches risk inefficient use of financial resources which could lead to inequitable distribution of funding.

A primary problem with top-down approaches to climate change is their lack of flexibility, as exemplified in the Kyoto Protocol. Although Kyoto was initially applauded for its flexibility in allowing parties to decide how to implement their commitments, it goes not provide similar flexibility in a number of key aspects, such as the type of commitment and the scope of those targets.[27] As a result, parties' individual concerns about risks to economic growth by an absolute emissions cap or individual preferences as to alternatives to such a cap are excluded from consideration under the Kyoto regime.[28] This lack of consideration of domestic sensitivities is especially precarious under a climate change regime, because the "wicked problem" of climate change implicates all areas of domestic policy, including industrial, agricultural, energy, transportation, and land use.[29] Under existing climate change adaptation financing methods, this problem persists at the local level, as described above, because the wide range of domestic sensitivities only becomes more complicated at lower levels of policy implementation. Ignoring unique risks and development challenges of local areas leads to inequitable and inefficient adaptation financing.

Another inequity associated with top-down approaches to climate change is the loss of crucial financial resources through systemic leaks and inefficiencies. Conventional top-down financing cycles encounter complex political and administrative negotiations, resource allocation, and contracting processes.[30] This problem is exacerbated by the continual failure of traditional mechanisms to generate sufficient funds relative to the scale of required financing.[31] The catastrophic effects of climate change demand efficient and effective use of all available funds, but top-down financing mechanisms may impair this obligation.

Arguments for Addressing Climate Change at the Local Level

Several arguments support locally-driven finance mechanisms for climate change adaptation. First, local governments are primary actors in climate change. Second, they are highly vulnerable to its effects. Third, they are better positioned to deal with these effects than higher levels of government.

Local governments have a major role in both the scale of the climate change problem and in adaptation. Cities account for about 80 percent of global energy consumption as well as greenhouse gas emissions.[32] These figures could very well rise, as urban population is expected to double by 2030, along with a tripling of the global built-up

area.[33] Historically, greenhouse gas emissions relate directly to economic growth, most of which occurs in urban areas.[34] Cities act as global economic engines, accounting for over half of the world's top 100 economies in 2008.[35] As major sources of emissions, local governments have an obligation to mitigate and adapt to climate change to protect their constituents. However, their financial condition is vital to the global economy and must be protected with international assistance to meet this obligation.

Cities are particularly vulnerable to the affects of climate change in several ways. First, they are immobile, which facilitates the strengths of place for populations but also presents serious threats to urban infrastructure, economic, and social systems in extreme climate events.[36] Being located near rivers or oceans, a characteristic of cities which was once a natural geographic advantage, now places a significant portion of the world's population well within the danger zone of catastrophic sea level rise.[37] Nearly a quarter of all people live within a coastal zone, and these areas are associated with growing concentrations of population and socio-economic activities.[38] This equity issue is especially pressing in communities of developing countries, where those most unable to adapt to climate change, such as children and the elderly, will also experience its most harmful effects.[39] Second, the "Achilles heel" of local governments is their vulnerability to the disruption of critical systems, such as food and water supply, waste removal, information technology, and medical services.[40] This is a great concern even for rich cities, where much of the food supply is imported and droughts affect both drinking and agricultural water supplies.[41] Finally, climate change exacerbates threats of social unrest already faced by local governments, such as unemployment and shortages and price spokes of key commodities.[42] These vulnerabilities, combined with the economic and social vitality of cities described above, necessitate significant adaptation action in cities and global political and financial support.

Local governments can address adaptation issues more effectively than their national counterparts. They are the first to experience global trends, and are therefore the "first responders" in many crises.[43] Furthermore, due to their direct proximity to and engagement with the public in their provision of basic services, LGs can be more practical in their implementation of policies and practices than higher levels of government, and are usually the key entities to do so.[44] Aptly stated in a recent World Bank report,

> *National governments may set the rules of the game, but it is cities that are the athletes. For the athletes to play the game, not only is it crucial that they know the rules, but also that their voices and those they represent are incorporated during the formulation of the rules.*[45]

These characteristics of local governments will require them to undertake significant measures to adapt to the effects of climate change that will not always have widespread public support.[46] Accordingly, financing should be made available to them as they deal with their unique challenges.

Case Studies and Key Lessons

Recent locally-based climate adaptation projects in Ho Chi Minh City (HCMC) and Bangladesh demonstrate the benefits of the bottom-up approach to adaptation financing. Among these benefits are the increased effectiveness, efficiency, and investment attractiveness of such an approach over traditional top-down regimes.[47] First, addressing climate change adaptation vulnerabilities with a customized, comprehensive plan at the local level helps to meet the area's unique needs with the most effective strategies.[48] This type of planning also presents additional opportunities for efficiency improvements to local infrastructure, such as transportation, communication, and food and water supply systems.[49] Finally, these types of improvements can create a more attractive investment market, leading to additional opportunities to adaptation project and infrastructure development financing for highly vulnerable areas.[50] The sections below describe adaptation projects from HCMC and Bangladesh that highlight these benefits and offer valuable lessons on how to create a more equitable and effective climate change adaptation financing mechanism.

HCMC Community-based Adaptation Project[51]

The Community-based Adaptation (CBA) program is the largest urban adaptation project financed by the GEF, involving almost $1 billion in pledged financing.[52] Approved for funding in 2009, the project is currently underway in nine countries, including Vietnam.[53] The planning process scales down global climate change regime indicators of efficiency, exposure, and resilience to the local level in order to evaluate local environmental impact.[54] Investments from GEF are similarly scaled down, with

the overall program being implemented through a large number of community-based projects supported by small grants to local nongovernmental organizations (NGOs) that engage communities in project identification and implementation processes.[55] The CBA also assists these communities to integrate climate adaptation strategies into their overall development planning.[56]

HCMC faces a unique urban challenge in that it is experiencing rapid urbanization and changes in land use patterns with the population doubling in less than three decades to over 7 million, while also being extremely vulnerable to the effects of climate change due to its location in an intra-tropical and low elevation coastal zone.[57] The project objective is to "increas[e] the resilience and adaptation capacities of HCMC for reducing the vulnerability of natural and human systems to the adverse effects of climate change."[58] Specific outputs of the project include a comprehensive "Handbook for Green Housing" which sets forth principles of construction to limit natural disadvantages, an urban water balance (rainfall-runoff) model to mitigate flood risks, and an "Urban Design Guidebook" to downscale general adaptation strategies into specific guidelines.[59] Specific strategies in HCMC include requiring new developments to be elevated at least 6.6 feet above sea level and building a polder system of dikes and tidal gates around the city.[60]

Under the CBA approach, the local government works with educational institutions to inform citizens about the threats of climate change and holds workshops to facilitate community action.[61] Actions under this strategy include implementing disaster warning systems, designing community evacuation routes, and constructing draining channels throughout neighborhoods that are especially vulnerable to flooding.[62] Local governments are uniquely positioned to implement this type of discrete strategy.

The HCMC adaptation project highlights the importance of paying attention to individual sensitivities of urban areas. The city's vulnerability to climate change is affected by its location and urban structure, and its ability to successfully mitigate the associated risks has to do with its socioeconomic characteristics and institutional capacity for implementing effective and comprehensive strategies.[63] These factors will be present, yet varied, in all individual communities, necessitating flexibility in adaptation project financing.

ActionAid Bangladesh (AAB) Community-based Adaptation Project[64]

AAB, an international antipoverty NGO, has assisted individuals and helped build community development capacity in Bangladesh for three decades.[65] In a 2012 study, the organization conducted interviews with academics, investors, citizens, and local and national government authorities in Bangladesh to determine how to use climate adaptation financing more efficiently by channeling it through local government institutions.[66]

Bangladesh is one of the most vulnerable countries to the effects of climate change, and it is confronting this issue head-on with national climate adaptation initiatives.[67] Its combination of low-lying geography and dense population make it particularly sensitive to the massive floods and cyclones that it often experiences.[68] Simultaneously, the country "provides an interesting study on the evolving role of local governance and potential links to climate adaptation."[69] It was one of the first least-developed countries to prepare national plans for climate change adaptation planning, but has been criticized for failing to consider the role of local governments in these strategies.[70] While Bangladesh has been successful in securing financial resources for climate change at the national level from UNFCCC mechanisms and other country or corporate donors, local government institutions have extremely limited access to these funds.[71] AAB found that "multiple people involved with the funds expressed general support for the idea of a proposal to give money directly to local government institutions for adaptation."[72]

Similar to the HCMC case study, AAB recognized the growing support for the community-based adaptation concept, "placing a strong emphasis on incorporating indigenous knowledge, social capital, and local context in adaptation planning."[73] For several years it has been pursuing several CBA projects across Bangladesh with the goal of piloting a model for nationwide use.[74] Despite some success in building local capacity for these projects, AAB's more valuable lessons come from their failures, mostly caused by lack of local government organization and power.[75] These difficulties experienced by AAB were echoed in interviews with community members and local government officials in its 2012 study, and inform a model for a successful locally-driven climate adaptation financing mechanism.[76] It gathered input that informed a set of core principles intended to guide the design of such a mechanism:

- Strong community participation is essential.
- Local government institutions must be transparent and accountable.
- Safeguards should be put in place to prevent political influence and bias.
- Local government institutions should receive finance through direct transfers.
- Adaptation finance should be mainstreamed into existing systems.
- Local government institutions should create sound plans for adaptation.
- Activities must be well coordinated between tiers of local government.
- Capacity and knowledge building is vitally necessary at all levels.
- Nongovernmental organizations should play a supporting role.
- The definition of adaptation should be broad.
- Rigorous systems for monitoring and evaluation are needed.[77]

These principles can also serve as a valuable model for climate adaptation financing outside of Bangladesh. The lessons from Bangladesh highlight the important roles of various actors in local climate change adaptation financing. Foremost, local government institutions should have planning and decision-making authority.[78] However, local NGOs can also play a significant role in capacity building for adaptation planning for these local institutions and community grounds, similar to the HCMC case study.[79]

Locally-Driven Adaptation Financing Mechanism

In order to create a more equitable and effective system under the UNFCCC for climate change adaptation project financing, local governments should be given opportunities to access and control funds on their own. The case studies above and other literature provide valuable insight into how such a mechanism should be designed.

First and foremost, such a mechanism should provide direct transfer of funds to local governments or local NGOs. Administration of the mechanism could be carried out by an existing international entity, such as the GEF. This fund would be separate from those already in existence, and would function as a project-by-project grant process. Any local government would be able to participate in this process, and the administrating entity would rank projects and distribute funding in an objective manner. First priority in this ranking process would go to the local governments most vulnerable to the effects of climate change in least developed and developing countries.

Vulnerability would be evaluated based on several factors, such as proximity to oceans or seas and susceptibility to extreme weather events. Second priority would go to the most vulnerable local governments in developed countries.

The ranking process would also entail several additional factors. Local governments, especially those in developed countries, would be required to demonstrate their need and readiness for project funding. Applicants will undoubtedly face a wide variety of different situations that could demonstrate the need for financing, ranging from spatial vulnerability to government financial crisis. Therefore, the project ranking system would have to take into account this wide range of possibilities. The local governments would also have to demonstrate readiness for funding. The United Nations Development Programme offers a useful framework for assessing an applicant's readiness for financing, which has several basic components:

- *Financial Planning*. Assess needs and priorities, and identify barriers to investment; identify policy-mix and sources of financing.
- *Accessing Finance*. Directly access finance; blend and combine finance; formulate project, program, and sector-wide approaches to access finance.
- *Delivering Finance*. Implement and execute project, program, and sector-wide approaches; build local supply of expertise and skills; coordinate implementation.
- *Monitor, Report, and Verify*. Monitor, report, and verify flows; performance-based payments.[80]

Although this is just an example of various factors to consider when determining a local government's ability to use adaptation funds effectively and is not intended to be a "one-size-fits-all model," it would be vital for the administrating entity to take into account these issues when ranking projects within this locally-based financing mechanism.[81] The most important elements of such a framework would be the delivery and monitoring of funding. Local governments would be required to demonstrate that their proposed projects would have a long-lasting positive impact on the community, possibly as components of a comprehensive, community-based adaptation plan as was seen in the HCMC and Bangladesh case studies. Additionally, funded projects would be monitored in an accessible database, similar to the GEF projects database.[82] Such monitoring and reporting would be vital to molding the financing mechanism itself to

operate more equitably and effectively, as well as provide opportunities for knowledge-sharing among participants.

Conclusion

The current shift in the global climate change regime from a top-down to a bottom-up approach is a positive one that will promote more efficient, flexible policies and practices. However, the UNFCCC should recognize that the true "bottom" for the purposes of these new, adaptable mechanisms – especially financing – should be the local level of government. This is where climate change will produce the most drastic physical and economic effects, but also where government is most able to counter those effects with individualized, effective adaptation actions. Therefore, providing local governments with a primary role in the flow of international climate adaptation financing will produce more effective and equitable results than traditional top-down financing mechanisms.

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[77] ActionAid,*Ensuring Access for the Climate Vulnerable in Bangladesh: Financing Local Adaptation – Report Summary,* 3.

[78] ActionAid,*Ensuring Access for the Climate Vulnerable in Bangladesh: Financing Local Adaptation,* 93.

[79] *Id.* at 93.

[80] United Nations Development Programme (UNDP), *Readiness for Climate Finance: A framework for understanding what it means to be ready to use climate finance* 5 (2012).

[81] *Id.*

[82] *See* GEF, "Project & Funding" (2012), *available at* http://www.thegef.org/gef/gef_projects_funding (last visited Jan. 2, 2013).

Equity for Forest-Dwelling Peoples within the REDD+ Mechanism: A Pro-Poor Approach and the Case for a Bottom-Up Treaty

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Introduction

Climate scientists inherently avoid seeking a magic bullet solution to climate change, knowing that no one action could successfully limit carbon emissions to a safe level. Yet as climate problems worsen and as international negotiations interminably flounder, scientists and policymakers have expressed great interest in a magic bullet of sorts: REDD+, or Reducing Emissions from Deforestation and forest Degradation (hereafter REDD). REDD promises to reduce global greenhouse gas emissions by having developed states either buy emissions credits from or otherwise offer cash payments to developing states who have conserved, sustainably managed, and enhanced their forests in comparison to a baseline forestry measurement.[1] Such a program holds particular relevance to the climate debate as over seventeen percent of carbon emissions derive from forestry.[2] In addition to achieving emissions reductions and co-benefits such as new revenue flows to rural areas, REDD further has the ability to protect fragile, unique forest ecosystems and the services these ecosystems provide.[3] Supporters of REDD also emphasize how forest conservation measures represent some of the easiest-attainable and least-cost mitigation measures available.[4]

Yet REDD has its critics too: skeptics point to the negative impacts such programs may have on the indigenous or local peoples living within these forest ecosystems, peoples who depend upon the forest for their livelihoods. In an effort to win foreign funds through selling emissions credits, governments of these developing states may force the indigenous peoples to sign away their rights to the land, to refrain from the selective logging or agriculture that has been their primary source of income, or to vacate the land completely.[5] In this light, the international community should seriously question REDD's inherent equity; REDD may in fact trade the rights of indigenous peoples for the good of everybody else.

Some scholars, however, have indeed given consideration to this inequity and proposed a solution: pro-poor REDD. A pro-poor approach immediately addresses these criticisms by offering policies that maintain or establish the land rights of these indigenous groups, reform governance procedures at the local level, and seek to consult directly the indigenous peoples on the front lines of forestry conservation—it allows REDD to continue but only if the people most directly affected by such conservation practices can preserve or even strengthen their rights.[6] By placing the needs of the local people first, a pro-poor REDD inherently focuses on equity. If the international community indeed wants to address equity and other social issues while solving climate change,[7] it seems prudent to shift attention toward the pro-poor option.

In this essay, I show how the international community can incorporate a pro-poor REDD into a near-future climate regime. Part I will give a brief history of REDD, define fully the characteristics of a pro-poor REDD, and explain pro-poor REDD's equity. Part II will address and respond to some criticisms that objectors could raise to a pro-poor system. Finally, Part III will investigate how pro-poor REDD could become part of an international climate treaty. In this part, I argue that pro-poor REDD—the option that truly ensures equity for the indigenous peoples relying upon forests—has the greatest chance of implementation only if international society can agree to a reconceptualization of REDD via a new, bottom-up climate treaty. This novel reconceptualization would require a state to use REDD credits it produces toward meeting its own emissions reduction goal first before allowing the state to sell any excess credits to an international market. REDD must become a decentralized program designed by each state and for the benefit of each state individually, one that especially focuses on the well-being of forest-dwelling peoples.

I. Characteristics of a Pro-Poor REDD

Broadly speaking, indigenous or forest-dwelling peoples[8] comprise those individuals who rely upon forests and their resources for their livelihoods. These peoples, who number greater than 1.6 billion across the world,[9] generally live in great poverty and use the forest as a safety net for resources like food, water, shelter, and marketable goods.[10] Not only do these peoples constitute a state's economic minorities, but they often represent social outsiders, marginalized from the operation of the state and the rest of society.[11] Poor forestry management practices in the past, in many cases run by the state's government, have served to marginalize these forest peoples even further by

making their very presence in the forests theoretically illegal.[12] In this basic context, therefore, equity means reducing these inequalities, or using the benefits of REDD—not merely reduced deforestation but also massive monetary inflows to small-scale communities—to lessen the poverties of wealth, status, and power that these forest-dwelling peoples experience. In short, forest-dwelling individuals have a history of repression; ironically, after feeling decades of pressure to cut down the forests upon which they rely, currently-existing and future REDD projects have switched the pressure toward conservation.[13]

A. Background of REDD

Yet REDD, a relatively new idea, remains largely in development: only a few pilot projects currently exist and most theories about REDD's potential impacts come from conjecture. As a brief history, international concerns about deforestation began at least two decades ago while REDD itself started to form around 2005.[14] The Kyoto Protocol did not mention REDD due to implementation concerns and political reluctance, although Kyoto did allow afforestation and reforestation projects to yield Clean Development Mechanism (CDM) credits.[15] Few investors have taken advantage of afforestation and reforestation CDM projects, though, in part because a developed state can only get one percent of its certified emissions reductions credits from afforestation and reforestation projects.[16] As a result, Kyoto has registered only twenty-seven afforestation or reforestation projects from the approximately 5000 total CDM projects.[17]

The Bali Action Plan of 2007 called for REDD explicitly,[18] so development of the program began in earnest then. Most action regarding REDD so far has dealt with investment for improving monitoring, reporting, and verification (MRV) capacity or creating necessary governmental and economic infrastructure within forested states; investors include bodies like the World Bank, the United Nations Development Programme, and the Government of Norway.[19] Some other industrialized states have entered into bilateral or multilateral agreements to begin small-scale REDD programs,[20] and additionally some private entities have financed sub-national REDD projects through initiatives like the voluntary carbon market.[21] These various bodies have sponsored some pilot projects, but notably these projects have no common standards or governing body; indeed, their primary purpose involves determining an optimal REDD setup. In sum, because only a few pilot projects exist and because of REDD's young age,

discussions surrounding the ramifications of REDD derive largely from hypothesis more than they do from actual experience in the field.

Yet the pilot programs, continuing to grow in number, have already revealed important lessons regarding REDD. In Peru, for instance, REDD has led to "carbon piracy," in which outside investors looking to fund REDD projects have tricked or cajoled forest peoples into signing away rights to their customary land and have failed to seek the free, prior, and informed consent of these peoples to undertake conservation projects.[22] In the forests of the southern African states of Mozambique, Namibia, and Zambia, REDD projects demonstrate greater respect for the rights of forest-dwelling people yet still fail to bring adequate monetary benefits to these local communities. REDD projects there have also led to issues regarding land tenure, or who has legal access to the land and its resources; conflicts could eventually arise regarding who receives monetary benefits or who holds rights to land or carbon.[23] These and other examples demonstrate how the current conceptualization of REDD does not put the needs of the local people first and instead forces them to bear the costs of forestry projects—even if the forests upon which they depend still stand.

B. Land Tenure and Equity

A pro-poor REDD, in contrast, seeks to address these problems by making the protection of the forest peoples' rights and desires the central goal of a REDD program. The principal causes of inequities in the REDD pilot projects stem from deficiencies in land tenure; the forest-dwelling people or individuals within those groups may hold customary claims to the land but in many instances have no formal or enforced recognition from their states' governments of these claims.[24] By formalizing tenure, the forest-dwelling people can decide for themselves whether they want to sacrifice rights to their land rather than having the government or another outside force take the land from them. Formalized land tenure would additionally channel the monetary and social benefits directly to the forest people and would give them a much greater voice in the planning and negotiating process for REDD, at both the domestic and international scales, because of the new sense of ownership such rights would deliver.[25] This essay does not attempt to prescribe an appropriate format for granting land tenure to forest-dwelling peoples, but rather brings up this recommendation to highlight a crucial omission in the REDD pilot projects. An international REDD agreement will likely

require strong commitments from all governments, among both the developing and the developed states, to recognize customary land claims.

C. Governance Reform and Equity

Merely granting land tenure will not automatically give REDD equity, however; a pro-poor REDD requires as well improved governance structures, especially on the local level. The forest-dwelling people, already economic and social outsiders, generally have little input into the governments that control both them and the forests upon which the people rely. REDD decisions in particular come from the top down; while land tenure may give forest dwellers more authority over their land, the upper-level government may prevent other benefits or rights from reaching these same people.[26] Through strengthened and more-powerful local governance systems, ones that actively engage the forest-dwelling peoples, REDD can ensure equitable treatment. Governance reform can also deal with the complications created by varying forestry conditions on the ground: without reform, rights the government tries to grant to all people in the state may help one locality but harm another. Rather, governance reform will allow space for local governments or communities themselves to grant rights that address the particular needs of that area, lessening the state's control. For REDD, this requirement involves the creation of a "nested" governance system, one which splits various rights and decision-making responsibilities of REDD among local, national, and international governmental scales.[27]

Evidence from past forestry experience, numerous thought experiments or logical arguments, and REDD pilot programs has offered strong support that the current, non-pro-poor conceptualization of REDD will not deliver benefits to forest-dwelling peoples and will force them to experience social and economic inequities to a greater degree than before. A pro-poor framework for REDD can address these issues so long as such a framework allows for land tenure and governance reforms. The next international climate treaty, therefore, will likely have to include language addressing these reforms in order for the REDD program to have equity and for the program to gain acceptance from the forest-dwelling people.

II. Addressing Criticisms to a Pro-Poor REDD

This section addresses and responds to criticisms of a pro-poor REDD: those caused by governmental reluctance, political feasibility, historical precedence, and logistics. I address these concerns now, rather than after my suggestions of how to implement pro-poor REDD into an international climate treaty, because of the relatively novel nature of the pro-poor framework when applied to REDD.[28] Simply put, if pro-poor REDD can deliver equity and can improve the livelihoods of the forest-dwelling peoples, why has the international community largely ignored it? The answer to this question lies within the four concerns mentioned above. In a rush to find the cheapest emissions reductions as quickly as possible, international negotiators have only considered a REDD conceptualization that would avoid as many governmental, political, historical, and logistical conflicts as possible; in so doing, they have not considered alternatives such as a pro-poor option that would ensure equity for all people affected by or involved in REDD.

Issue 1: Governmental Reluctance

The national governments of states who would host REDD projects may end up becoming the loudest objectors to a pro-poor REDD: they might feel that such a program would threaten their sovereignty. The two main components of the pro-poor system—explicit land tenure and governance reforms—both divest power from the central government and spread it out to local governments or to non-state actors. Yet in a sense, pro-poor REDD merely readjusts a state's sovereignty by allowing the state to maintain jurisdiction and control over those local governments and non-state actors carrying out the projects.[29] Unlike some pilot projects, modeled after CDM wherein foreign actors dictate what REDD projects should occur, a pro-poor REDD places nearly all of the decision-making about these projects within the national and local governments of a specific state. For instance, the state and its subsidiaries can choose what REDD projects to pursue and can select from which investors to accept funds. So while the central government's power may become more dispersed, the sovereignty of each state does not diminish under pro-poor REDD.

A similar concern asks whether the state government would even grant tenure or enact governance reforms at all. Governments know that they can most easily control the

extent of participation in REDD and the direction of the benefits if they maintain control of REDD at the national level. The governments may express wariness in granting authority of forest lands to the indigenous peoples, even when confronted with outside concerns about equity. International negotiators could easily resolve this potential hesitance, however: before any state could participate in REDD, it would have to prove that it has enacted meaningful governance and tenure reforms.[30] States could not offer their land for the REDD program if, in short, the state had attempted to institute a non-pro-poor REDD. While of course working such a prerequisite into the language of an international climate treaty may prove difficult, omitting such language may end up equally contentious due to pressure from states who support this requirement or who have already enacted the reforms.[31]

Issue 2: Political Feasibility

Closely related to governmental reluctance, political feasibility looks at whether any state government, with or without forests, would want to participate in pro-poor REDD because of its perceived potential to generate fewer emissions reductions than would a non-pro-poor REDD. This may represent a false concern, as no evidence exists saying a pro-poor REDD would have less (or more) environmental efficiency than would a traditional REDD. Nonetheless, one could easily imagine a state fearing such an outcome, as it appears that the pro-poor REDD has the potential to trade environmental efficiency for indigenous people's rights. So long as states assume such an outcome could occur and behave in a manner consistent with these assumptions, analysts must plan accordingly.

Both wealthy states and forested states may fear the outcome of less emissions. Wealthy states, who would pay the forested states to conserve their forests in return for their excess offset credits, would clearly favor whichever implementation of REDD has greater emissions reductions because that version would translate into greater economic efficiency. Likewise, forested states, who look to receive large influxes of funds to protect the forests, would also favor whichever version of REDD would grant them more profit for the least amount of work.

A pro-poor REDD could deliver these desired levels of economic efficiency. In particular, just as the pro-poor REDD would have nested governance, an ideal pro-poor REDD would also have nested finance.[32] In such a system, wealthy states would pay

REDD funds to subnational groups like communities, non-governmental organizations, private investors, or local governments, but would also offer money to the national government as well. The subnational groups would have responsibility for carrying out the REDD project while the national government would have responsibility for setting policy and dealing with enforcement. By splitting up the responsibilities, pro-poor REDD can avoid economic problems like small economies of scale for MRV, leakage of forestry projects to other locations or states, and high implementation costs. Establishing nested finance may also prove challenging, but the international community cannot ignore issues of equity. Any increased transactional cost that may accompany a pro-poor REDD thus represents the "price" for equity; continual pressure from indigenous groups can help states realize the necessity of paying this price.

Issue 3: Historical Precedence

Because REDD pilot programs already occur and continue to grow quickly,[33] would international negotiators even consider creating a new framework under which REDD could operate? The easy answer to the question would say that the negotiators must develop some sort of framework anyway, since a REDD framework does not currently exist in any formal UNFCCC declarations. While the 2007 Bali Action Plan calls for the establishment of REDD, it does not mention any specifics on how such a formation would occur. However, the Bali Action Plan acknowledges that the "needs of local and indigenous communities should be addressed" in any REDD program,[34] so international negotiators seeking to follow their own precedent would have to ensure such pro-poor provisions appear in the final REDD language. In short, the current negotiating period appears to represent the greatest opportunity for negotiators to switch easily to a pro-poor REDD, as they already must discuss and clarify REDD's specifics if they desire it in a new climate treaty.

A similar historical precedence concern involves the actions and level of involvement of the indigenous, forest-dwelling peoples. Indigenous people have recently started taking greater involvement in the Conferences of the Parties by holding outside events or petitioning as a semi-unified constituency.[35] It appears unlikely, however, that indigenous groups acting independently or as a coalition will ever have any greater voice in the negotiating process than what they can currently achieve. These people still have limited recognition on the international stage and weak acknowledgement from their state governments; enough variation between individual groups makes it difficult

to act homogeneously. One method to increase the presence of indigenous groups, however, may simply involve ensuring that states include some indigenous representatives as part of their international delegation to the Conferences. Each state decides who it wants as part of its delegation and can send any size delegation it desires, so a state has the easy power to involve indigenous people in the negotiations.[36] And to incentivize the state to include indigenous peoples, the negotiators could create a similar prerequisite to the one mentioned above: states could not participate in any REDD program if their country delegation does not meaningfully include representatives of forest-dwelling people.

Issue 4: Logistics

The fourth hurdle to pro-poor REDD involves technical issues: how will the forest-dwelling people learn about the pro-poor provisions, how will governments adequately distribute benefits to these people, and how will governments carry out MRV to assess the actual protection of forests and whether such protection follows the pro-poor principles? Indeed, such concerns have arisen as some of the most salient issues from REDD pilot programs. For instance, prior experience with REDD in Peru reveals how local communities have little or inaccurate information about REDD and its benefits, and how even some project managers have incomplete or flawed knowledge of REDD specifics.[37] As another example, the moderately-successful REDD pilot program in southern Africa still lists adequate and effective MRV as a potential area of improvement.[38] Even if the international stage can create an effective pro-poor REDD policy, technical issues such as these may hinder REDD's actual implementation.

Ideally, however, the characteristics mentioned above that define pro-poor REDD—requirements for tenure and governance reform, nested finance, and indigenous people's participation in international negotiations—should help to alleviate such technical concerns. Governance reform will place greater political responsibility into the hands of forest dwellers; this responsibility, combined with the additional incentive to protect the land that tenure reform has now legally granted to them, will make these people more eager to learn about REDD since they know they will have some level of control over its implementation. These people will then take on some MRV responsibilities in order for REDD to operate as they want and so that they can continue to receive monetary benefits, thus relieving the state government from complete MRV responsibility. Further, if given the opportunity, some forest-dwelling individuals will

seek to take part in international negotiations with their country's delegation. These individuals could then distribute among the indigenous groups the information they learned from the Conferences. And finally, nested finance will guarantee both the indigenous people and the state will benefit from REDD projects, mutually reinforcing each other to follow the regulations and policies.

The technical issues that have already sprung up in the REDD pilot programs appear to result from a lack of indigenous groups' participation in the REDD planning and implementation processes. By seeking their active involvement, many of the technical issues should become much easier to manage.

III. Pro-Poor REDD in a Future, Bottom-Up Climate Treaty

A. REDD's Applicability into the Future

This final section will examine how international negotiators could implement a pro-poor REDD policy through the creation of a new, bottom-up climate treaty, and will detail the reconceptualization of REDD necessary for these pro-poor reforms to function.

Given all the potential benefits it can bring, REDD needs incorporation into a future climate treaty; international negotiators seem poised to include it, as justified by three principal explanations. First, REDD in a basic form already exists. Adopting a pro-poor version of REDD would require some significant modification to the current REDD setup, but the grunt work of agreeing to general program specifics and encouraging developing states' participation has already occurred.

Second, REDD has political popularity.[39] While opponents may question the standalone effectiveness of REDD, leaders of both developed and developing states will likely embrace the program because it offers recognizable and easily-achievable political benefits. Moreover, REDD has the potential to address one of UNFCCC's main goals: promoting sustainable development while also helping to solve climate change.[40] REDD alone will not end emissions, but a properly-constructed REDD will gain political popularity through its promise of development.

Third, if carried out correctly, REDD has the potential to improve global equity.[41] Concerns about equity and especially poverty have become paramount to the climate treaty debate. A REDD program will not solve poverty alone, but working together with other measures and programs, REDD can help increase the wealth of poor states and their citizens while simultaneously decreasing global greenhouse gas emissions. For these reasons, REDD will likely exist as a key component of future climate treaties.

B. A New, Bottom-Up Treaty

International negotiators have several options for incorporating pro-poor REDD into a new treaty, but I conclude that pro-poor REDD has the greatest chance for implementation and success under a bottom-up climate regime. This type of regime, detailed in and advocated by the 2009 Copenhagen Accord,[42] allows each state to set its own emission reductions goals and independently to determine policies and practices to achieve such goals.[43] The treaty would establish the procedures by which states would create and publicize their aims; in such a format, the language describing and mandating pro-poor REDD reforms could exist as part of the treaty. The treaty would intentionally omit language describing how such reforms would take place, however, leaving that task to each REDD participant state individually.

Because the bottom-up treaty would leave much of the decision-making regarding REDD to the individual states, the bottom-up method offers the greatest opportunity for the forest-dwelling peoples to become involved in this decision-making. As a contrary example, the Kyoto Protocol, a top-down approach, has allowed wealthy investors to choose which projects to undertake and has given these investors the ability to ignore the needs or demands of the poorest people. So long as the project could generate emissions credits for the state, the state approves the project without considering equity. A bottom-up approach, on the other hand, would allow state governments to decide for themselves how best to reduce emissions—or in this case, how best to institute REDD so as to include forest-dwelling peoples in a project's planning and development processes. A pro-poor REDD requires these individuals' involvement; REDD will not succeed for a state—will not generate emissions credits—if these forest dwellers do not feel invested in the project too. Only a bottom-up approach can promise their involvement, so international negotiators seeking a pro-poor REDD must promote a bottom-up regime.

C. A Reconceptualization of REDD

Even if the international community can agree to a pro-poor REDD and to a bottom-up climate treaty, though, REDD still has the capability to threaten the rights of the forest-dwelling peoples. The pilot projects prove illustrative here: these projects show that the current conceptualization of REDD allows wealthy, developed states to depend on poor, forested states for cheap and plentiful emissions reductions. In return, the poor states only have to conserve land, but unlike the developed states they themselves have no emissions reduction targets. Essentially, conserving forests represents these developing states' reductions while concurrently standing for emissions reductions purchased by the developed states—in practice, the pilot programs allow double-counting of reductions. And because the forested states receive much money for doing practically nothing, the conceptualization drives these states to offer as much land for REDD as possible. In turn, this action leads to negative human rights consequences for the forest-dwelling peoples, even if a state enacts land tenure or governance reforms.

A bottom-up approach, however, will ensure that all states have emissions reduction targets and will require each state to determine how it wants to achieve its own targets. If a forested state has the potential to create emissions credits through REDD projects, the state should have the ability to use those same credits toward achieving its own reductions goals. Rather than purchasing credits from outside sources, a developing state can keep the process of meeting their emissions reduction targets as a wholly domestic operation through the in-state creation of REDD credits.

Under this reconceptualization, a state would agree not to sell any emissions credits it created through its (independently-certified) pro-poor REDD projects if it could first use those emissions credits toward meeting its own reductions goal. Having this limitation effectively eliminates any incentive these states would have to create as many emissions credits as possible because they would not have the capability to sell these initial credits to the international carbon market. As a result, the potential that the forest-dwelling peoples could suffer rights abuses declines significantly. And because the state will already have implemented pro-poor reforms as a prerequisite to beginning any REDD project, the forest-dwelling people will find themselves better-off socially than before. This reconceptualization greatly decentralizes REDD, transforming it from a large, international program to a collection of small, state-level programs. But this

decentralization offers the indigenous peoples the opportunity of involvement that they would not have under the current conceptualization.

D. Problems with this Reconceptualization?

Yet such a reconceptualization seems to ignore a few of REDD's main selling points: that REDD can offer large quantities of carbon emissions and ecosystem co-benefits by conserving as much forest as possible, and that REDD will inject much money into these poor states as the developed states pay for credits and reduce their own emissions.[44] The first concern results from misunderstanding the reconceptualization: this version of REDD will indeed have many carbon emissions, but these emissions will count toward the developing states' reduction goals. Brazil and Indonesia, for instance, account for two-thirds of emissions from land-use change;[45] REDD projects within those states will greatly reduce the world's total carbon emissions output. It follows that if states conserve forests, then the ecosystem co-benefits will automatically take place.

The second concern, that decentralizing REDD will stop inflows of money, does represent a problem. The reconceptualization strongly addresses emissions but seems to ignore poverty. Instead, the reconceptualization actually tackles poverty by allowing the forested states to sell any excess credits they created, those they did not have to use toward meeting their own emissions targets, on the international carbon market. The forested states would have to agree to limit the amount of excess credits they could sell, however, so that the market would have a much smaller global supply of REDD credits than it would under the current conceptualization.[46] The price of these credits would then rise, offering the forested states more money for their credits than the current conceptualization would grant. Additionally, poor states themselves may have the ability to devote their own fiscal resources toward helping their poor citizens. Rather than spending money on purchasing emissions credits, the state will use the credits it created for itself and will not have to buy extra ones. The state's government can then divert the remaining money toward addressing social issues within their state.

In sum, this reconceptualization of pro-poor REDD under a bottom-up climate regime greatly decentralizes the REDD process, turning REDD's primary purpose into a tool that forested, developing states can use to reduce their own emissions. International negotiations will still have to figure out the specifics, such as what percentage of excess REDD credits a state could sell to the international market; this essay does not offer

suggestions for those details. Regardless, this reconceptualization should allow REDD to reduce emissions and also to help the poor, dual outcomes that the current conceptualization cannot achieve.

Conclusions

The international community certainly pursues a noble goal in choosing to reduce carbon emissions by limiting deforestation and forest degradation. But the only way for REDD to have any equity involves ensuring that a pro-poor REDD becomes the standard. Pro-poor REDD will lead to carbon emissions reductions and will guarantee the co-benefits of social, economic, and political improvements for poor, forest-dwelling peoples. Yet in order to achieve the most effective pro-poor REDD, the international community needs a reconceptualization of REDD altogether, one that decentralizes REDD and turns it into a instrument designed to benefit each state individually.

But negotiators must exercise caution: while a reconceptualization of REDD may still appear as a magic bullet, it cannot nor should not represent the only solution for climate change or global poverty. REDD certainly can reduce a large proportion of emissions and can offer many funds for impoverished states, but it must act in tandem with various other proposals to reduce emissions and to raise wealth. And, most importantly, the international community must work diligently to ensure that those other programs promote equity too. If not, those programs may erase the monumental gains in equity possible under this reconceptualization of pro-poor REDD.

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[1] "FAQs," UN-REDD Programme, accessed October 11, 2012, http://www.un-redd.org/FAQs/tabid/586/Default.aspx.
[2] Intergovernmental Panel on Climate Change, *Climate Change 2007: Synthesis Report* (Geneva: Intergovernmental Panel on Climate Change, 2007), 36.
[3] Charlie Parker et al., *The Little REDD Book* (Oxford: Global Canopy Programme, 2009), 18.
[4] Frances Seymour, "Forests, Climate Change, and Human Rights: Managing Risks and Trade-Offs," in *Human Rights and Climate Change*, ed. Stephen Humphreys (Cambridge: Cambridge University Press, 2010), 210.
[5] Roberto Espinosa Llanos and Conrad Feather, *The Reality of REDD+ in Peru: Between Theory and Practice* (Moreton in Marsh: Forest Peoples Programme, 2011), 6.
[6] International Union for Conservation of Nature, *Building Effective Pro-Poor REDD-Plus Interventions* (Washington: International Union for Conservation of Nature, 2010), 4.

[7] David Brown, Frances Seymour, and Leo Peskett, "How Can We Achieve REDD Co-Benefits and Avoid Doing Harm?," in *Moving Ahead with REDD: Issues, Options, and Implications*, ed. Arild Angelsen (Bogor: Centre for International Forestry Research, 2008): 109.
[8] This essay will interchangeably use "indigenous peoples" and "forest-dwelling peoples" to describe this group of stakeholders. While no universal naming convention exists, and while both these terms may impart false impressions or yield incorrect assumptions, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) uses the term "indigenous" as all-encompassing; "forest-dwelling" makes "indigenous" more specific. See David Kelly, "The Case for Social Safeguards in a Post-2012 Agreement on REDD," *Law, Environment, and Development Journal* 61 (2010), 65, for a discussion of various proposed naming conventions.
[9] Thomas Sikor et al., "REDD-Plus, Forest People's Rights and Nested Climate Governance," *Global Environmental Change* 20 (2003): 423.
[10] Seymour, "Forests, Climate Change, and Human Rights," 211–216.
[11] Seymour, "Forests, Climate Change, and Human Rights," 208.
[12] Sikor et al., "REDD-Plus," 423; Brown, Seymour, and Peskett, "Achieve REDD Co-Benefits and Avoid Doing Harm?," 115.
[13] Llanos and Feather, *REDD+ in Peru*, 8–9.
[14] Seymour, "Forests, Climate Change, and Human Rights," 207; Catherine Potvin and Andrew Bovarnick, "Reducing Emissions From Deforestation and Forest Degradation in Developing Countries: Key Actors, Negotiations and Actions," *Carbon and Climate Law Review* 264 (2008): 264.
[15] Seymour, "Forests, Climate Change, and Human Rights," 210–211.
[16] Sebastian Thomas et al., "Why Are There So Few Afforestation and Reforestation Clean Development Projects?," *Land Use Policy* 27 (2010): 880.
[17] As of November 3, 2012, the UNFCCC website lists twenty-seven CDM-registered projects with "forestry," "afforestation," or "deforestation" in their project title. See http://cdm.unfccc.int/Projects/projsearch.html.
[18] The Bali Action Plan calls for "Enhanced national/international action on mitigation of climate change, including … [p]olicy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries." UNFCCC, *Report of the Conference of the Parties on Its Thirteenth Session: Action Taken By the Conference of the Parties at Its Thirteenth Session* (Bonn: United Nations, 2008): 3.
[19] Potvin and Bovarnick, "Reducing Emissions From Deforestation and Forest Degradation in Developing Countries," 268–270.
[20] David Brown and Leo Peskett, *International Forest Policy: Integrated Climate and Forest Policy Options* (London: Overseas Development Institute, 2008), 20.
[21] Arild Angelsen et al., *What Is the Right Scale for REDD?* (Bogor: Center for International Forestry Research, 2008), 2–3.
[22] Llanos and Feather, *REDD+ in Peru*, 8–9. These authors' entire report focuses in particular on the failures of REDD in Peru and offers suggestions for improvements in the future.
[23] Ivan Bond et al., *REDD+ in Dryland Forests: Issues and Prospects for Pro-Poor REDD in the Miombo Woodlands of Southern Africa* (London: International Institute for Environment and Development, 2010), v–x; Maron Greenleaf, "Using Carbon Rights to Curb Deforestation and Empower Forest Communities," *New York University Environmental Law Journal* 18 (2011), 511.
[24] For instance, among others, see Brown and Peskett, *International Forest Policy*; Bond et al., *REDD+ in Dryland Forests*; Kelly, "The Case for Social Safeguards,"; Llanos and Feather, *REDD+ In Peru*; Heike

Schroeder, "Agency in International Climate Negotiations: The Case of Indigenous Peoples and Avoided Deforestation," *International Environmental Agreements* 10 (2010); and Sikor et al., "REDD-Plus"; who all argue in favor of strengthened land tenure as a requirement for any REDD project.

[25] Kelly, "The Case for Social Safeguards," 65–66.

[26] Brown and Peskett, *International Forest Policy*, 102.

[27] Sikor et al., "REDD-Plus"; 424.

[28] The "pro-poor" qualifier itself has existed for many years, but mostly in development literature. A pro-poor policy has described any development policy that significantly involved the poor population or created new policies for their direct benefit. See Zaza Curran and Paolo de Renzio, "What Do We Mean by 'Pro-Poor Policies' and 'Pro-Poor Policy Processes'?" (London: Overseas Development Institute, 2006). In this light, pro-poor REDD may appear equally as a development policy and as it does a climate policy.

[29] Angelsen et al., *Right Scale for REDD?*, 3.

[30] Kelly, "The Case for Social Safeguards," 77. Defining "meaningful" or setting some sort of standard becomes another challenging task for international negotiators; suggesting a definition goes beyond the scope of this essay.

[31] And truly, some developing states have already made the first steps toward enacting these reforms; Bond et al. (2010) give some examples from southern African states.

[32] This remainder of this section paraphrases Angelsen et al., *Right Scale for REDD?*

[33] For example, a recent assessment of the pilot programs notes that developed states have presented so much REDD funding to forested states that those states cannot absorb the money quickly enough. Arild Angelsen, "Summary," in *Analysing REDD+: Challenges and Choices*, ed. Arild Angelsen et al. (Bogor: Centre for International Forestry Research, 2012): xiv.

[34] UNFCCC, *Report of the Conference of the Parties*, 8.

[35] Schroeder, "Agency in International Climate Negotiations," 324–325.

[36] Schroeder, "Agency in International Climate Negotiations," 323–324.

[37] Llanos and Feather, *REDD+ in Peru*, 50–51.

[38] Bond et al., *REDD+ in Dryland Forests*, 47.

[39] Arild Angelsen et al., "Introduction," in *Analysing REDD+: Challenges and Choices*, ed. Arild Angelsen et al. (Bogor: Centre for International Forestry Research, 2012): 1.

[40] UNFCCC, *United Nations Framework Convention on Climate Change* (1992): 3.

[41] Leo Peskett et al., *Making REDD Work for the Poor* (Gland: Poverty Environment Partnership, 2008), 3.

[42] Daniel Bodansky, "A Tale of Two Architectures: The Once and Future U.N. Climate Change Regime," accessed November 4, 2012, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1773865, 11.

[43] Bodansky, "A Tale of Two Architectures," 3.

[44] Brown, Seymour, and Peskett, "How Can We Achieve REDD Co-Benefits?," 108.

[45] Seymour, "Forests, Climate Change, and Human Rights," 210. Land-use change, closely related to forestry, describes emissions resulting from transitions of land from natural, undeveloped use to developed uses including agriculture.

[46] Limiting the supply of excess credits a state could sell also prevents the human rights abuses from occurring; otherwise, a state would seek to create as many excess credits as possible, as in the current conceptualization.

The Rise of the BASIC Country Club Leading up to a 2015 Climate Agreement

Nick Surace

INTRODUCTION

As highly populated areas of the Northeast United States recover from the devastation of superstorm Sandy, the need is clearly greater now more than ever for the international community to reach agreements to reduce greenhouse gas emissions [hereinafter also "GHG emissions"]. While international efforts to reach an agreement between 1992 and 2012 have failed to secure binding emissions reductions, there is still hope leading up to a 2015 climate deal. However, because the 2011 Durban negotiations resulted in agreement by "all the world's major emitters"[1] to legally binding emissions reductions by 2015, the parties to the United Nations Framework Convention on Climate Change [hereinafter also "UNFCCC" or "Convention"] must take innovative action, breaking with the traditional approach of negotiating between "developed" and "developing" countries. Future discussion must focus more specifically on the largest-emitting countries, in order to attain real emissions reductions through a binding legal agreement in a matter of only three years that "limit[s] dangerous anthropogenic interference" and "prevent[s] an unacceptable increase in global temperatures."[2]

Since its creation in 1992, the UNFCCC has relied on the restrictive concept of "common but differentiated responsibility [hereinafter also "CDR"]," which explicitly requires "the developed country Parties take the lead in combating climate change and the adverse effects thereof."[3] CDR's requirement that developed countries, or Annex I countries,[4] must commit to binding emissions reductions while developing countries, or Non-Annex I countries,[5] may continue limitless greenhouse gas emissions, is one of the chief obstacles preventing the parties to the UNFCCC from reaching a binding agreement.

Whether use of CDR is "right" or "wrong," it has created deadlock between developed and developing countries since 1992. Consequently, the world still lacks an agreement

binding all major emitters (especially the United States, China, India, Brazil and South Africa). The top-down approach that created the Kyoto Protocol has failed UNFCCC expectations, and GHG emissions continue to increase. After twenty years of unsuccessfully striving to achieve international agreement through a comprehensive approach, the parties to the UNFCCC must change course to avoid making the same mistake twice. Any climate agreement cannot depend on the unlikely hope that the 194+ UNFCCC parties[6] will quickly and efficiently agree on a legal framework requiring binding emissions reductions from only developed countries, while requiring no reductions from developing countries. The parties to the Convention must take a new approach to this growing problem.

In order to avoid another failure, negotiations must focus on smaller blocs of countries. The BASIC countries are a promising group that parties to the UNFCCC should foster and support leading up to 2015. Comprised of four countries, Brazil, South Africa, India, and China, the BASIC bloc was born in the mid-2000s.[7] These "fast-developing nations"[8] straddle the line between the developed and developing worlds. They are growing economic powers in their geographic locales,[9] they have undergone massive economic growth in the time since the UNFCCC was adopted, and they still lack much of the economic, technical and infrastructural prowess that makes developed countries distinctly "developed." However, each accounts for at least 30% of gross domestic product in their respective global regions.[10] In 2005, BASIC country economic growth also resulted in significant increases in their GHG emissions, accounting for roughly sixty percent of total Non-Annex I and almost thirty percent of total GHG emissions worldwide.[11] Steadily, the BASIC countries' growing GHG emissions and economies are beginning to resemble Annex I countries, in terms of 1) their responsibility to cut emissions and 2) their capacity to do so.

This paper explores how engaging the BASIC countries leading up to 2015 can cultivate strong international agreement leading to real emissions reductions by the world's largest GHG-emitting countries. In Part I, I discuss how to engage the BASIC countries. I explore the following: 1) taking a bottom-up approach establishing the BASIC countries as a integral "club" in future negotiations; 2) negotiating a modified Greenhouse Development Rights Framework between the BASIC and Annex I country blocs; and 3) constructing Climate Accession Deals between the BASIC and Annex I clubs. In Part II, I respond to potential criticisms regarding my proposal. Finally, I review and provide concluding thoughts on these proposals in Part III.

I. HOW TO ENGAGE THE BASIC COUNTRIES

Establish the BASIC Countries as a Distinct Negotiating Bloc

One of the major obstacles to successful negotiations thus far has been that developed countries will not accept binding emissions reductions unless the developing countries commit to their own reductions. By establishing the BASIC countries as a "group," "bloc," or "club" distinct from Annex I and Non-Annex I countries, this hurdle can be overcome. While achieving this may seem complicated, this essential first step is necessary to achieve emissions reductions in a way that equitably distributes the burden to responsible parties with the most emissions.

Incentives for BASIC Countries to Negotiate as a Club

There are strong incentives for the BASIC countries to negotiate emissions reductions agreements through a bottom-up regime rather than the current top-down, consensus-driven approach. First, a bottom-up approach that addresses this distinct club of countries is more flexible for them.[12] Unlike the current approach, which binds all the UNFCCC parties to an agreement by its rules,[13] negotiating clubs are more flexible, allowing "different states [to] sign on to different sets of agreements, making it more likely that they [will] adhere to some constraints on greenhouse gas emissions."[14] Second, a club approach is more adaptable than the UNFCCC's comprehensive approach. Negotiated agreements among country blocs can adapt to individual country needs, facilitating varying emissions reductions, at different rates and times, between Annex I countries and BASIC countries – a strategy unavailable to parties attempting to negotiate emissions reductions within a top-down regime.[15] Third, countries have found success negotiating other international agreements through blocs of countries, specifically the Law of the Sea, WTO, and Montreal Protocol.[16] The world has changed dramatically since the UNFCCC was formed in 1992, and because no individual country can force a global emissions reduction deal, the BASIC countries are more likely to reach a beneficial agreement through bloc negotiation. [17] Finally, a club approach offers a practical and realistic model for BASIC countries to reach emissions reduction agreements. The ideal top-down, comprehensive approach the UNFCCC parties have taken thus far has failed in practice to reduce emissions.[18] Because only a small group of countries generate the majority of global GHG emissions, it is unlikely

the UNFCCC will achieve unanimous agreement among all its members.[19] Therefore, it is more likely parties to the Convention can negotiate more effectively through smaller groups of countries like BASIC. While this bottom-up approach might be second best theoretically, it is the most practical way for BASIC countries to negotiate emissions reductions.

Coinciding BASIC Country Interests

In order for the BASIC bloc to succeed, the four member countries' interests must coincide more than they diverge. Fortunately, while each country inevitably has individual interests differing from the others, the BASIC countries have enough significant interests in common to make it more beneficial for them to negotiate as a bloc. Specifically, their individual interests coincide in four key areas: 1) historic responsibility; 2) financial assistance 3) economic growth; and 4) technology transfer.

Historic Responsibility

Brazil, South Africa, India, and China believe that any emissions reduction negotiations must be based on historic responsibility. Brazil puts a higher overall burden on developed countries to reduce emissions.[20] It wholeheartedly supports the principle of the Berlin Mandate, that developed countries must cut their own emissions before developing ones must do the same.[21] Similarly, South Africa believes "any future climate regime must be based on the established principle of common but differentiated responsibilities."[22] The country believes "Developed countries must do more."[23] India, while more compromising the last five years, has historically argued for "the onus for action being on industrialized countries."[24] Finally, China has persistently stressed the developed world's historic responsibility to reduce emissions, and opposes any obligation to limit its emissions.[25]

Financial Assistance

Three of the four countries, Brazil, South Africa, and China, consider financial assistance for emissions reduction a significant interest. In one proposal, Brazil supported the development of a stronger financial instrument to help fund "GHG-emissions-reduction projects in developing countries."[26] Regarding adaptation efforts,

South Africa supports the "streamlining of financing mechanisms."[27] Moreover, China expects any future agreement to "provide incentives and financial assistance for their mitigation and adaptation activities."[28] This collective country interest encourages them to negotiate the issue as a bloc.

Economic Growth

Both India and China see economic growth as a chief concern in emissions reduction negotiations. After experiencing significant economic growth in the past few decades, India worries that any emissions reductions it agrees to might hamper its future economic development.[29] Similarly, China is concerned emissions reductions could slow its economy. While China has begun to take the issue seriously, "climate change has not surpassed economic development as a policy priority."[30] Because two-thirds of China's energy is supplied by coal, any emissions restrictions on China could significantly hurt its economy.[31] Additionally, while the country has committed to "energy intensity" reductions, which do not threaten its economy, emissions restrictions could seriously threaten China's competitiveness.[32] Linked by such an important interest as their economies, both countries have incentive to collaborate on the issue.

Technology Transfer

South Africa and China coincide on the issue of technology transfer. Among its many goals in climate negotiations, South Africa hopes to quicken the pace of technology development, reduce implementation costs, and address "intellectual property protection."[33] China supports the creation of an international body to manage the transfer of emissions-reduction technology from developed to developing countries, and hopes to purchase intellectual property rights for various technologies as well.[34] This coinciding interest incentivizes both countries to work together on the issue of emissions reduction technology transfer.

As demonstrated above, there are significant interests each of the BASIC countries share, which influences all of them to negotiate as a bloc. While all four countries share some interests, and smaller sub-groups share others, an overall web of interests links each of these countries together to form a strong, unified group. Their commonly held

interests provide additional motivation for the BASIC countries to negotiate through a bottom-up approach as a distinct club.

The BASIC Club Rising Above All Competing Clubs

While the incentives and interests exist for the BASIC countries to negotiate as a bloc, parties to the UNFCCC must ensure this club becomes and remains the countries' primary negotiating body in all future climate negotiations. It cannot be denied that many loosely organized clubs came before the BASIC countries began to formally meet. Some important groups include BRICS, G8, G20 and MEF,[35] as well as the IBSA Dialogue Forum.[36] The membership of BRICS and the IBSA Dialogue Forum closely resemble the makeup of the BASIC club. Similar to BASIC, these loose organizations of countries come together at strategic times to accomplish particular international tasks.[37] Whether or not BASIC coexists with other coalitions, or absorbs groups like the IBSA and BRICS, the incentives must remain high and interests must continue to overlap, to ensure the BASIC bloc is the primary negotiating body representing these four countries in future climate negotiations.

Establishing BASIC Bloc Core Principles

The BASIC club must also establish a set of common, lasting principles. One of the dilemmas with introducing BASIC as a third negotiating bloc within the UNFCCC framework, is that it must maintain a group identity, or common purpose. While the four countries have convened repeatedly since adopting the Copenhagen Accord,[38] they often disagree on how to achieve an equitable agreement on emissions reductions. India has clung to CDR as the basis for negotiating an equitable agreement to reduce emissions, and Brazil and China have based negotiations on each country's historic emissions.[39] At different times over the last three years, China and India have taken "a more hard-line approach opposing any legally binding cuts for developing countries,"[40] but South Africa has suggested "Durban launch formal negotiations for a new compact bringing emerging econom[ies] under international commitments as well."[41] While there will always be disagreements between individual countries negotiating on an international level, if BASIC is to successfully function as a distinct negotiating bloc, it must agree on certain principles in order for it to effectively negotiate with Annex I and Non-Annex I countries. While their willingness to negotiate as a group at Copenhagen

suggests they agree on certain principles, their actions must translate into explicit words. As a group, any principles they agree to must acknowledge that: 1) their responsibility to deal with the problem is increasing with their emissions; 2) their economic capacity to mitigate emissions is significantly greater than the rest of the developing world; and 3) they are willing to negotiate emissions reductions agreements that do not strictly adhere to the concept of CDR.

As noted above, high incentives and coinciding interests encourage the BASIC countries to negotiate as a bloc through a bottom-up approach. Next, the BASIC countries must adopt some version of core principles mentioned above, to direct all future negotiations with both Annex I and Non-Annex I parties. Additionally, all other UNFCCC parties, especially Annex I parties, must engage and foster the BASIC group to reach emissions reduction deals leading up to a climate agreement in 2015. As explained below, there are two specific strategies the Annex I parties might use to engage BASIC to achieve emissions reductions agreements.

Negotiate a Greenhouse Development Rights Framework Between Annex I and BASIC

One tool the UNFCCC parties should consider using to negotiate with the BASIC bloc is the Greenhouse Development Rights Framework. A concept devised by representatives from NGOs EcoEquity and the Stockholm Environment Institute,[42] this novel approach addressing the climate change problem has not been seriously proposed for implementation by any country, but if properly modified, could be used as part of a bottom-up club approach.

Explaining the Greenhouse Development Rights Framework

The current approach taken by the UNFCCC parties distributes the burden of reducing emissions to individual countries, not their individual citizens. Contrary to this approach, the Greenhouse Development Rights Framework [Hereinafter also "GDR Framework"], would re-vamp the current strategy and put the burden to reduce emissions on each country's citizens earning above a minimum annual income. The strategy utilizes a number of important factors to determine which citizens of a country must shoulder the economic burden of GHG emissions reductions. First, the authors

define the "development threshold" as a certain level or amount of annual income that allows one to purchase more than just the essentials, beyond which any citizen must bear a certain burden of reducing emissions.[43] They settled on $7,500 per year as an appropriate figure, above which citizens must pay a certain amount to reduce GHG emissions.[44] Next, "capacity" is one's income above and beyond that $7,500 amount, which is counted to determine ones responsibility for emissions reductions.[45] Finally, "responsibility" represents only one's cumulative carbon emissions occurring above what is necessary for basic needs.[46] Combined, these three factors create a "Responsibility Capacity Index," [hereinafter also "RCI"] which is the concept's "single indicator of obligation."[47] Each country's calculated RCI establishes a specific percentage emissions reduction payment that must be made by citizens of each country that earn above the minimum annual income threshold.[48] The proposed GDR Framework allocates the following percentage responsibility in 2010: the United States at 33.1%; the EU at 25.7%; China at 5.5%, India at 0.5%; Brazil at 1.7%; and South Africa at 1.0%.[49] As time progresses, the RCI evolves so different countries share more or less of the burden.[50] For example, in 2010, China is required to share only 5.5% of the overall emissions burden, but in 2030, its burden increases to 15.2% of the global burden to reduce emissions, because more individuals in that country are rising above the "development threshold."[51]

After allocating the burden for which individuals of each country are responsible, the authors propose two possible ways that countries can approach their burden. First, they "imagine a single grand international fund to support both mitigation and adaption," which countries pay into based on their percentage of wealthy citizens responsible for the overall burden.[52] Second, they suggest the burden could create individual country "emission reductions obligations."[53] Accordingly, individuals would either pay into an international fund, or fund domestic efforts to reach their country's reduction targets.[54] The GDR Framework clearly breaks with the traditional CDR concept that requires rich countries to reduce emissions but allows poor ones to keep emitting, by requiring individuals worldwide, earning above a certain annual income, to fix the problem.

Problems with the GDR Framework

Despite its lofty goals, the GDR Framework as currently proposed is difficult to implement within the current UNFCCC structure of Annex I and non-Annex I

countries. First, although the authors argue that the concept of "common but differentiated responsibility" is equitably maintained through the GDR Framework, that is not exactly the case. Under the UNFCCC, CDR explicitly requires "the developed country Parties should take the lead in combating climate change and the adverse effects thereof."[55] Under the GDR Framework, its authors would distribute a share of the financial burden to every developed *and* developing country citizen who earns over the financial threshold amount. Due to the staunch opposition Non-Annex I countries maintain to circumventing CDR, they are unlikely to accept the GDR Framework. The authors even recognize the concept is not "politically realistic" because it suggests parting with the CDR concept that relieves Non-Annex I countries from responsibility for making binding emissions reductions.[56]

Second, the GDR Framework completely scraps the use of Annex I and Non-Annex denotations relied upon since the ratification of the UNFCCC. The authors admit the GDR Framework "implies a restructuring that today is politically impossible, one that will only become possible once more time – and much more effort – has been spent building confidence among developing countries, to the point where they have real reason to trust that the climate regime will not choke off their development."[57] While imperfect, the decades-old Annex I, Non-Annex I framework cannot be merely discarded to implement an *untested* theoretical approach that spreads the costs of emissions reductions to a limited group of individuals in almost every country around the world.

Third, while the authors offer a comprehensive approach,[58] the fact that no country has adopted it as a realistic option[59] since it was first proposed in 2007,[60] demonstrates how unacceptable the framework is to the UNFCCC parties as currently proposed. However, a modified GDR Framework might function as a strong tool within a UNFCCC structure made up of three distinct groups - the Annex I, BASIC, and Non-Annex I clubs.

Applying a Modified GDR Framework to Annex I and BASIC Countries

If the GDR Framework was modified to apply only between the Annex I and BASIC blocs, the concept could equitably result in reduced GHG emissions. While the majority of Non-Annex I countries will not break with the concept of Common but Differentiated Responsibility, the BASIC and Annex I blocs are more likely to consider a burden-

sharing framework. As one of the most important Annex I parties, the U.S. has recently shown willingness "to make a contribution to a global fund of $100 billion,"[61] while South Africa, Brazil and India, three of the four BASIC countries, have expressed willingness to "accept[] legally binding commitments."[62] Even China is considering some form of "mandatory emission reductions."[63] This suggests a modified GDR Framework could work if applied exclusively to these two blocs of countries.

One option is that both blocs could pay into an international fund under a modified GDR Framework, which would be used for emissions reducing activities worldwide. Under the proposed GDR Framework, in 2020, Annex I countries like the United States or those within the European Union would make payments of $290 and $230 billion each, while the BASIC countries of China and India would pay roughly $100 and $12 billion, respectively.[64] While these figures may seem high, the negotiated amounts could be reduced to create a smaller fund, and the modified GDR Framework could function as simply one of many tools that the three UNFCCC blocs might use to achieve reductions.

Alternatively, instead of creating an international fund for each bloc to pay into, the percentage burden for each bloc and country could be defined as "national emission reduction obligations," similar to the Kyoto requirements.[65] While this approach would omit Non-Annex I countries, it would still result in significant emissions reductions by the two largest-emitting blocs, Annex I and BASIC. Using the current GDR Framework, after calculating the shared responsibility of Annex I and BASIC blocs, and excluding Non-Annex I countries, their efforts would account for significant emissions reductions. In 2010, 2020 and 2030, 85.7%, 83.4%, and 81.4% of GHG emissions would be accounted for under a modified GDR Framework applying solely to Annex I and BASIC blocs.[66]

While Annex I and BASIC groups already seem amenable to a GDR-type framework, there are a few additional ways to encourage their participation. First, the countries could set a "much weaker temperature target" resulting in a much smaller "size of financial and technology transfers" required of BASIC and Annex I blocs.[67] Second, the blocs could agree to a higher "development threshold." The authors reduced this threshold between their first and second assessment from $9,000 to $7,500 because they decided that figure best reflected what they thought comprised the top end of the international lower class.[68] These two blocs could establish a more agreeable and less-costly threshold. Finally, the clubs could agree to modified timetables, which ranged

from 2010 to 2030 in the proposed GDR Framework.[69] Under a modified GDR Framework, the blocs could calculate RCI to distribute financial responsibility in a way that is more acceptable to each group.

Because the concept of CDR is so important to Non-Annex I parties, the proposed GDR Framework, which would require emissions reductions efforts from all countries, will not work with every UNFCCC party. The approach's elimination of the "Annex I/Non-Annex I divide"[70] is too drastic for all countries to accept. However, if applied solely to Annex I and BASIC blocs, a modified GDR Framework could function to create significant emissions reductions, because each bloc of countries is open to binding emissions reductions, unlike the Non-Annex I group, and because the modified GDR Framework could address each bloc's particular interests. Most important, as applied to these two blocs, a modified GDR Framework would address a minimum of 80% of worldwide emissions reductions. Accordingly, a modified GDR Framework is an important tool the UNFCCC parties should consider as they explore ways to engage the BASIC bloc in GHG emissions reduction negotiations leading up to 2015.

Pursue Climate Contracts Between Annex I and BASIC Countries

Climate Contracts as Part of a Bottom-Up Approach

While a modified GDR Framework could help reduce emissions among the Annex I and BASIC blocs, it is *only one* of the tools the two groups can use to negotiate emissions reductions. Another strategy that could prove equally successful in combating GHG emissions involves BASIC and Annex I entering into climate contracts. In contrast to the current comprehensive UNFCCC approach, climate contracts would function between groups of countries.[71] As Eric Orts proposes, "a multitude of 'climate contracts' working together, growing, and evolving will provide the means by which to seriously address climate change."[72] Climate contracts, whether made at the international or municipal level[73] take a bottom-up approach to achieving emissions reductions. Of the types of contracts countries might pursue, "Climate Accession Deals" [hereinafter also "CADs"], are specific climate contracts proposed by David Victor, that both Annex I and BASIC countries could use to equitably reduce GHG emissions.[74]

Explaining Climate Accession Deals

Victor proposes Climate Accession Deals as a strategy to engage developing countries to reduce their GHG emissions.[75] He argues Clean Development Mechanisms [hereinafter "CDMs"] encourage the wrong type of investment in developing countries, which has resulted in minimal emissions reductions.[76] Because foreign groups, which have little understanding of the needs of host developing countries, initiate CDM projects, they are much less effective in achieving reductions than they could be. CADs, on the other hand, are deals or agreements "anchored in the host country's interests… [that] offer the opportunity for maximum leverage on emissions with minimal and well-focused external resources."[77] As climate contracts, proposed CADs would be more cost-effective, and result in significantly higher emissions reductions in major developing countries than current CDMs are achieving.[78]

The process of developing a successful CAD between countries requires particular actions by developed and developing countries. First, developing countries would determine which emissions reductions projects are in their best interests.[79] After determining where their needs are greatest, they would then bid out emissions reduction projects to developed countries. Second, developed countries must invest in long-term projects resulting in the most favorable, realistic reductions within the host country.[80] Developed countries prefer projects backed by the strongest assessment and monitoring mechanisms to guarantee them the most cost-effective and accurate emissions reductions.[81] Unlike CDMs, CADs can provide a bigger bang for the buck. First, because developing nations must design the project proposals, this ensures foreign investment will go to the projects that benefit host developing countries the most. Second, because developing countries want to continue receiving foreign investment and other support for their emissions-reducing projects, their projected emissions reductions are more likely to be accurate, and the host developing countries will more likely accept assessment and monitoring mechanisms as part of the CADs. CADs, therefore, could potentially serve as a powerful tool to achieve significant emissions reductions.

Possible Climate Accession Deals with the Individual BASIC Countries

David Victor proposes a number of potential CADs that could be reached with Brazil, South Africa, India, and China. For Brazil, as the "main host for the world's largest forest," he focuses primarily on the need to protect this important carbon sink from additional destruction.[82] Investment by developed countries in "surveillance radar, drones and helicopters for a much larger police force,"[83] could help maintain this dwindling carbon sink, and effectively reduce emissions. Additionally, developed countries could invest in Brazilian energy sector projects that "document[] greenhouse gas emissions from its dams" and increase the role of nuclear power in the country.[84]

Victor foresees potential CADs between developed countries and South Africa, India and China that focus on each country's energy sector. In South Africa, because of its large dependence on coal, he suggests CADs that improve the infrastructure and technology in this government-run sector will result in significant emissions reductions.[85] In China, CADs could focus on projects to improve energy efficiency, natural gas pipelines, and the overall improvement of the country's electrical grid.[86] Additionally, CADs in India might advance projects that result in the construction of more efficient electrical power plants, and create stronger regional power grids.[87]

Engaging the BASIC Bloc with Climate Accession Deals

While Victor proposes various applications of CADs within countries, and even emphasizes how approaching "clubs" of the largest emitting countries could be beneficial,[88] he does not propose CADs between any particular blocs of countries. However, CADs could be highly successful in achieving emissions reductions if used specifically between Annex I and BASIC blocs. As noted throughout this paper, both blocs are tentatively interested in reaching emissions reduction agreements, but neither believes there is a current mechanism to achieve equitable agreements among the current UNFCCC parties. There are many reasons, however, to believe that if CADs were negotiated between Annex I and BASIC blocs, they could have a significant impact in reducing emissions worldwide. First, as explained earlier in this paper, the BASIC countries have strong coinciding interests and incentives to negotiate as a bloc with the Annex I group to achieve emissions reduction agreements. Second, as Victor notes, it is much easier to negotiate agreements between smaller groups of countries

with similar interests than it is between large groups of "countries that have very different interests."[89] Accordingly, it will be much easier for the Annex I bloc to negotiate custom-tailored CADs with a four country BASIC bloc, than with every Non-Annex I country that is a party to the UNFCCC. Third, CADs can function as one of many tools in a bottom-up approach, and without the pressure to serve as a cure-all for the climate change problem, may "evolve into a wider and full-blown cooperation" between the Annex I and BASIC blocs over the coming decades.[90] Therefore, CADs could incentivize the BASIC and Annex I clubs to engage in agreements that achieve significant emissions reductions.

II. RESPONDING TO THE CRITICS

While this paper asserts compelling reasons to engage the BASIC countries leading up to the negotiation of an international climate agreement in 2015, three important criticisms deserve review.

The BASIC Countries will Never Form Their Own Cohesive Block

Despite the evidence suggesting the BASIC countries are willing to negotiate together as a distinct bloc, some may argue they have not yet shown strong resolve to desert the Non-Annex I countries and negotiate on their own. While this is a concern, it should not discourage parties to the UNFCCC from fostering the development of this separate negotiating bloc. The evidence presented in this paper demonstrates that the BASIC bloc can become an integral player in the international climate change negotiations. Their coinciding interests, increasing incentives to negotiate as a club, and the failure of the current top-down approach, all suggest the BASIC countries are moving in the direction of negotiating with Annex I as a distinct bloc leading up to climate agreement in 2015.

The BASIC Countries will not Accept Anything Less than CDR

Because Brazil, South Africa, India, and China currently remain part of the Non-Annex I countries, some critics may contend they will not accept anything less than Common but Differentiated Responsibility, even if they decide to negotiate as a distinct bloc.

While this could be true, the past three years suggest none of the four countries remain wedded to the concept of CDR. Their collective agreement in the Copenhagen Accord signaled their willingness to accept some responsibility for the climate change problem. Additionally, while none of the four have committed to anything yet, each has indicated they would commit to some type of reductions in the coming decades, if the developed world committed first. While CDR is alive today, if the BASIC countries rise as a distinct negotiating bloc, that may signal the beginning of the end for CDR, and possibly a new era of international negotiations resulting in real emissions reductions.

Annex I Countries will Oppose the Transfer of Financial and Technological Assistance

Some may argue that even if the BASIC countries want to negotiate as a distinct bloc, the Annex I bloc will oppose providing financial assistance or the necessary technology to four countries that are strong economic competitors with the developed world. While negotiation between both clubs may involve the transfer of financial and technological assistance, however, the benefits to the Annex I countries are likely significant enough for this club to find negotiating with BASIC to be beneficial. In negotiating a modified GDR Framework or different CADs, the Annex I group can ensure its financial investments in the BASIC countries are targeted for specific projects, and that Annex I countries receive credit for the emissions reductions. Additionally, Annex I countries can negotiate terms of use, distribution, and intellectual property rights with BASIC countries to ensure they receive proper compensation or maintain limited use of the technology they agree to transfer. Finally, because Annex I countries currently cannot get *any* developing countries to commit to emissions limits, *any* significant reduction agreements this club can achieve with BASIC will likely be worth the financial and technological investment. For these reasons, the Annex I countries will likely not vehemently resist necessary financial and technological transfers to the BASIC bloc.

III. CONCLUSION

The past twenty years of international negotiations provide clear evidence that the top-down UNFCCC approach has failed to produce significant binding emissions reductions. As temperatures continue to climb, weather events become more

destructive, and seas continue to rise, the parties to the UNFCCC must consider alternatives to achieve emissions reductions in an equitable way. As proposed in this paper, a bottom-up approach engaging Annex I and BASIC clubs can help to achieve the necessary reductions. First, the interests and incentives exist for BASIC to negotiate as a distinct club. Second, a modified GDR Framework and Climate Accession Deals serve as two strategies, which applied to Annex I and BASIC blocs, could achieve the historic emissions reductions necessary to avert disastrous climate change. Accordingly, despite any persisting criticism, this bottom-up approach engaging smaller clubs of the world's largest emitters is something all the parties to the UNFCCC should seriously consider supporting as the 2015 climate negotiations draw near.

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