The International Law on Climate Change And it's Effect on the World's Poor

Geoffrey Perusse

The global community faces a substantial challenge. Although there remains some uncertainty, many scientists feel the surface temperature of the earth is rising as a result of human activities. Nations have relied on fossil-fuels to provide energy and fuel economic growth since the industrial revolution. However, the production of energy has not come without a price. This price has been the massive release of carbon dioxide, a gas which is largely responsible for climate change. Now the global community is facing the repercussions of this unbridled growth. Other gases with similar properties to carbon dioxide have also been released from a variety of sources which has further compounded the problem.

The ability of the eco-system to absorb the carbon dioxide released through this energy production is limited. Therefore, in order to avoid the consequences of climate change, the international community must find a solution. A solution that is acceptable to all nations has been difficult to find. As in almost all international agreements, differing viewpoints have emerged in the area of climate change.

If global warming continues unabated, it is likely that the effects will be felt in a way that will generally exacerbate existing inequalities between wealthy nations and poorer ones. Sea level rise, a likely result of warmer temperatures, will inundate low-lying coastal areas and island nations. Storms are predicted to increase in both intensity and frequency. Poorer nations, with less available resources, will be less able to cope with the repercussions of climate change. Furthermore, it is predicted that poorer nations will suffer more than those developed nations in Europe and North America.[1]

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[1]See generally, The United Nations Development Programme, *The Human Development Report* (New York:Oxford U.P., 1998).

A climate change treaty that restricts all additional emission of gases such as carbon dioxide will leave the poorer nations in their current economic state. Without the possibility of economic growth a country will be forced to redistribute existing wealth in order to alleviate the impoverished circumstances of its citizens. This result would be as unfair as simply not addressing the problem at all.

Obviously, climate change presents a complex situation. The ability of the atmosphere to absorb greenhouse gases is a limited resource. Like any generally available but limited resource, allocations should be made in accordance with principles of equity and justice. These principles should take into account, among other things, the geopolitical distributions of wealth and the rights of individuals to acquire minimal subsistence levels of income. The only just way to set these allocations is on the individual level. Therefore it is imperative that emission standards are computed on a per-capita basis. Any international treaty that effectively deals with climate change must take into account these principles of equity

This paper first reviews the problem of climate change. Secondly, it surveys current and proposed international law in this area. Third, it examines the contextual situation and the differences that have arisen between the developed world and the developing world. Fourth, it reviews the United States's response to the issue and examines the theoretical and ethical considerations implicated by this position. Finally, it recommends a solution that effectively deals with the problem of climate change in a fair and just manner.

I. The Problem of Climate Change

In 1995 a group of scientists announced that, "The balance of evidence suggests that there is a discernible human influence on the global climate."[2] This announcement was made by the Intergovernmental Panel on Climate Change (IPCC), which was created at the request of the international community.[3] This panel, along with a number of other scientists, believes that certain human activities have contributed to the problem of climate change.

The underlying scientific theory is relatively straight-forward. Absent certain gases in the atmosphere, the temperature of the earth would be much cooler than it currently is. Gases, such as carbon dioxide, are transparent to sunlight as it enters the atmosphere. However, these gases are opaque to thermal radiation. These gases trap infrared radiation inside the atmosphere and increase the surface temperature of the earth. As the concentrations of these gases increase, the ability of the atmosphere to contain infrared radiation increases and it is more difficult for heat to escape.[4] Many of these so-called greenhouse gases occur naturally. These include carbon dioxide (CO_2), methane (CH_4), and nitrous oxides (NO_2). Several other gases that are not present naturally have similar

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[2] Intergovernmental Panel on Climate Change, Climate Change 1994: IPCC Second Assessment Report, Summary for Policy Makers 10 (J.T. Houghton et al. eds., 1995)

[3] The IPCC was created by the United Nations Environment Program (UNEP) and the World Meteorological Organization (WMO) in 1988. It was created in part to form a global consensus on the problem of climate change. See *Hearing on the Kyoto Protocol, Before House Commerce Comm.., Subcomm. On Energy and Power*, 105th Cong., Mar. 4-5, 1998 (http://www.state.gov/www/policy_remarks/1998/980305_yellen_climate.html)

[4] See generally CLIMATE CHANGE 1995: THE SCIENCE OF CLIMATE CHANGE (J.T. Houghton et al. eds., 1996)

properties and are also considered greenhouse gases. These include various hydro-fluorocarbons (HFC), chlorofluorocarbons (CFC) and sulfur hexafluoride (SF_6).

There are several sources that have contributed to the increasing concentrations of these gases. However, carbon dioxide, which is found in the largest concentration in the atmosphere, is primarily emitted through the combustion of fossil-fuels.[5] As a result, climate change differs fundamentally from other types of environmental problems. Certain pollutants can be reduced through more efficient or cleaner technology. These pollutants can also be decreased by increasing the cost of the goods being produced. However, the problem with climate change is different. "Industry can only significantly reduce the emission of carbon dioxide . . . by decreasing combustion itself. Unlike other pollutants, the production of carbon dioxide through combustion has been the foundation of the industrial revolution."[6] There are ways of creating energy that do not rely on the combustion of fossil fuels. However, currently energy production relies upon this fossil-fuel combustion. This places climate change in direct opposition to the traditional model of economic growth. If a country wishes to increase its economic development in the same manner that the developed nations followed then it is inevitable that those countries' emission of greenhouse gases will increase.

The IPCC has made several predictions in regards to the effects of climate change. It has concluded that human production of greenhouse gases will cause a rise in the global temperature of about 1 degree to 3.5 degrees Celsius over the next century if production

[5] Jeffrey J. Rachlinski, *Symposium: Innovations in Environmental Policy: The Psychology of Global Climate Change* 2000 U. Ill. L. Rev. 299, 300.
[6] Id. at 301

of greenhouse gases continues at their current rate.[7] This relatively small change is very significant. As a point of reference, the last ice age occurred when the average global temperature was only 4 degrees C cooler than current temperatures.[8] If the temperature rises as much as these scientists predict, severe consequences would result. Over the next century the world could witness increasing sea levels causing the destruction of low-lying land areas. Storms strength and frequency would increase dramatically. Climate zones would shift north, possibly faster than the ability of plant and animal species to migrate.[9] Regional rain patterns may change. Global warming could also result in an acceleration of the evapo-transpiration cycle. This may increase rain in some areas, but it would also speed up the evaporation of water resulting in drier soils and lower crop yields. This could also cause both flooding and desertification in certain areas.[10] "These horrors could make many heavily populated regions virtually uninhabitable and turn valuable farmland into deserts. Coping with adverse climate change has the potential to drain the resources of the wealthy nations and dash the prospects for economic improvements in poor ones."[11]

The effects of global warming are predicted to hit developing nations the hardest both as a result of geography and as result of their limited resources. Many of the poorer nations already have limited land area available for food production and many have large

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[7] See Information Unit for Conventions (IUC), *UNEP Press Backgrounder: A Brief History of the Climate Change Convention* (last modified Feb. 6, 1998) (http:// www.cop3.de/fccc/info/backgrod.htm)
[8] George Monbiot, *Last Warning on Earth*, WORLD PRESS REVIEW, April 1, 1996, available in 1996 WL 8399620 (citing INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SECOND ASSESSMENT REPORT (1995)).
[9] See generally, David Hunter et al., International Environmental Law and Policy 609-25 (1998) (summarizing the consequences of climate change on the environment).
[10] See, *Understanding Climate Change: A beginner's guide to the UN Framework Convention*, UNEP/WMO publication, available at http://unfccc.int/resource/beginner/html. (last visited April 23, 2002).
[11] Rachlinski at 300.

population centers situated in low-lying areas. The increased droughts and sea-level rise will have a negative affect on these areas. Furthermore, with less available resources poorer countries will be less capable to cope with the changing climate.[12] The resources used to counter any negative effects of climate change would not be available for other pressing needs, such as infrastructure, education, health-care and access to safe drinking water. This would increase the poverty of the individuals in these countries. Furthermore, many impoverished citizens may be forced to relocate as the sea claims their entire nation.

II. The International Law Framework Regarding Climate Change

Currently international law does not limit countries in the emission of greenhouse gases[13]. The first international legal instrument that attempted address climate change was the Framework Convention on Climate Change (FCCC) signed in 1992 at the United Nations "Earth Summit" in Rio de Janeiro.[14] This document provided no mandatory limits on emission on greenhouse gases. The FCCC established a framework and a process for agreeing to future specific actions. It also established reporting requirements for parties and obligated parties to take climate change into consideration when implementing certain domestic policies. Furthermore, the FCCC established a subsidiary body to provide scientific and technological advice.[15] The purpose of the FCCC was to

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[12] See generally, The United Nations Development Programme, *The Human Development Report* (New York:Oxford U.P., 1998).

[13] However, the signatories of the Kyoto Protocol do have a duty not to undermine the purpose of the treaty.

[14] United Nations Conference on Environment and Development: Framework Convention on Climate Change, May 9, 1992, 31 I.L.M. 849 [hereinafter FCCC].

[15] Id., also see generally, *Understanding Climate Change: A beginner's guide to the UN Framework Convention*, UNEP/WMO publication, available at http://unfccc.int/resource/beginner/html. (last visited April 23, 2002).

set forth several general principles and goals that the parties could agree to. It recognized climate change as a problem and articulated that it was the responsibility of the international community to prevent or mitigate this problem. The parties agreed to settle the specifics on how these objectives were to be achieved at later negotiations. Specifically, the parties agreed to negotiate, in time for Kyoto at the end of 1997, a protocol laying out binding targets and timetables for the reduction of greenhouse gases by developed countries.[16]

One of the key principles set forth in the Convention was the concept of "common but differentiated responsibility."[17] This concept implied that because the developed nations are disproportionately responsible for the current emission of greenhouse gases and have a greater capacity to act these countries should bear much of the initial burden of limiting Greenhouse gases. The interpretation of this concept has been one of the more contentious issues in developing binding targets. The United States has accepted this principle, but has interpreted it differently from other countries.[18]

Following the Convention there has been several "conferences of the parties". The first was held in Berlin in March of 1995. The parties felt that the commitments reached in the FCCC were not sufficient to combat the problem of climate change and decided to supplement those commitments. No agreement, however, was reached at Berlin, except for the decision to negotiate a future supplemental agreement.

Kyoto was the most important conference of the parties. The Kyoto Protocol was the primary result of the conference. Under the Kyoto Protocol only the developed

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[16] See Review of the Implementation of the Convention and of Decisions of the First Session of the Conference of the Parties, U.N. Framework Convention on Climate Change Conference of the Parties, 2d Sess., Agenda Item 5, at 3, U.N. Doc. FCCC/CP/1996/L.17 (1996).
[17] See FCCC, pmbl. & arts. 3-4, 31 I.L.M. at 851-56.

nations have binding obligations.[19] All developed nations have emission reduction obligations, while some also have financial transfer obligations. The Kyoto Protocol requires the Annex B nations to reduce their greenhouse gas emissions by an average of five percent below 1990 levels between 2008 and 2012. The Kyoto Protocol was not immediately presented to the U.S. Senate for ratification. The Senate was concerned by the lack of binding commitments on all parties and its negative impact on the U.S. economy.[20] Due to the lack of support of the United States and other developed nations, the Kyoto Protocol has not come into effect. However, in March of 2002, the 15 member European Union agreed to ratify the Kyoto Protocol and the members are currently working to put political pressure on the United States.[21]

The Kyoto Protocol will enter into effect when two conditions are met. First, fifty-five parties must ratify the treaty. Secondly, among the fifty-five ratifying parties, there must be sufficient Annex B nations ratifying to account for fifty-five percent of Annex B nation's emissions. Although it is possible for the Kyoto Protocol to come into effect without U.S. ratification, it seems unlikely. Support from the U.S. could prove fundamental to the adoption of the Protocol.

One of the largest hurdles to a consensus in the area of climate change is the different general conceptualizations of the solutions amongst the parties. One of the clearest contrasts has appeared between the developed nations and the developing nations. Although this characterization is broad, several shared characteristics can be

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[18] See, *infra*, note 50 and accompanying text.
[19] See, Conference of the Parties to the Framework Convention on Climate Change: Kyoto Protocol, adopted Dec. 10, 1997, 37 I.L.M. 22 [hereinafter Kyoto Protocol].
[20] See, S. Res. 98, 105th Cong., 143 Cong. Rec. S8138-39 (daily ed. July 25, 1997) (Byrd-Hagel Resolution)

discerned. The developed nations emit a large proportion of greenhouse gases. The developed countries of the Organization for Economic Co-Operation and Development (OECD) account for 44.7 percent of the global emissions of carbon dioxide. The United States counts for nearly 22 percent of this amount; while China accounts for 11.9 percent; Russia for 9.4 percent; and Japan for 5 percent.[22] The United States had the highest per capita emissions -19.1 metric tons per year- while China had approximately 2.27 metric tons per year.[23]

Current emissions of carbon dioxide, standing alone, do not adequately illustrate the relative positions of the developing nations and the developed nations. Developed nations are responsible for the majority of the past emission of greenhouse gases. However, rates both of population and emission of greenhouse gases are growing at faster rates in developing nations. Many of the disputes arising between the two camps are a result of these facts. Each side used those facts that aided their arguments.

Several other conferences of the parties have been held. These include conferences at the Hague (COP-6) in November 2000, in Bonn, Germany (COP-6bis) in March 2001 and in Marrakesh (COP-7) in November 2001. Much of the negotiations in the Hague centered around the acceptable methods to curb greenhouse gas emissions, "particularly the use of forest sinks to absorb carbon dioxide emissions and whether these absorbed emissions should count toward national emission reduction requirements."[24] The conference did not accomplish anything as the developed nations fought between

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[21] See, *U.S. to Take More Heat on Global Warming at G8* (April 11, 2002), at http://www.cnn.com/2002/TECH/science/04/11/canada.environment.reut/index.html (last visited April, 12, 2002).
[22] World Resources Institute, *Atmosphere and Climate*, in WORLD RESOURCES 1996-1997, at 315-325 cited in Hunter et al., at 631-632.
[23] Id.

themselves on these issues. In March, 2001 the United States abandoned the Kyoto Protocol.[25]

The Bonn discussions brokered a compromise between the OECD countries concerning the issues raised at the Hague in November, 2000. The practical details of this compromise were hammered out at the Marrakesh meeting in November, 2001. This agreement finalized many of the operational details of the Kyoto Protocol. This includes the role "sinks" would play in lowering a country's obligations, the mechanism for trading carbon emissions allowances between parties, and the amount of credit a country receives for implementing reductions in other developing nations. The mechanisms are designed to help countries meet their targets by buying or selling carbon credits on an international financial market or by reducing their quota by expanding forests and farmland that soak up carbon dioxide from the atmosphere.[26] The agreement allowed for he generous use of "sinks" as a way of reducing a country's obligations. However, the agreement "may have assuaged the fears of some that too active a use of sinks would empty the Protocol of much of its substantive content."[27] The effectiveness of the Kyoto Protocol depends on the manner and amount of reductions these mechanisms allow. It is unclear at the present time whether these mechanisms will ultimately result in an effective treaty.[28]

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[24] Mark A. Drumbl, *Northern Economic Obligation, Southern Moral Entitlement, and International Environmental Governance* 27 COLUMBIA J. OF ENVIRON. L. 361, 376 (2002).
[25] See, *Bush Firm Over Kyoto Stance*, (March 29, 2001), at http://www.cnn.com/2001/US/03/29/schroeder.bush/index.html. (last visited April 12, 2002)
[26] *Climate Treaty Set to Be* Ratified, (Nov. 10, 2001) at http://www.cnn.com/2001/TECH/science/11/10/climate.talks/index.html (last visited April 12, 2002)
[27] Drumbl, at 376-377 n. 44.
[28] Several provisions were included that weaken the effectiveness of the treaty. For example, the Russian Federation was provided with almost double their forest management credits, and their baseline year of 1990 actually allows for an increase of carbon emissions from their current levels. These allowances while possibly increasing participation, particularly of Japan, may significantly weaken the effectiveness of the

Since the FCCC was signed in 1992, greenhouse gas emissions have risen significantly. A reduction to 1990 levels of greenhouse gas emissions would entail more significant costs than originally anticipated, and result in a drastic change to both output and lifestyles. The severity of these changes may be decreased in the long-term through new technology or methods of energy production, such as using nuclear power.

Because the Kyoto Protocol has not entered into effect, there exists no clear international law on the subject. However, treaties are not the only source of international law. Certain norms or principles may not be present in treaties, but nevertheless be considered part of international law. One manner for this to occur is through the existence of custom, sometimes referred to as customary international law. For a norm to be a binding part of customary international law two features must be present. First, the custom must accurately describe state action. Secondly, this state action must be normatively based. In other words, states must accept these customs as law (*opinio juris*).[29] The concept of custom is based on the realization that although the international arena is largely anarchical state actions follow certain patterns. States can only avoid being bound by these customs by consistent objection. This underscores the nature of international law which depends almost entirely on the consent of states.[30] Proving the existence of customary international law is difficult to do. Courts differ as to the type and amount of evidence necessary to prove the existence of a customary

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treaty. Also, it has been estimated that the compromises reached in Marrakesh may reduce the commitment levels of Kyoto by as much as thirty percent.

[29] See generally Daniel Bodansky, *Customary (and Not So Customary) International Environmental Law* 3 Ind. J. Global Legal Stud. 105, 108-109 (1995).

[30] Certain important principles in international law do not depend on the consent of states. These are generally termed preemptory norms and no derogation is permitted. For example, human rights concerns such as the right to be free from torture or systematic killing based on race are largely held not to be based on any state's consent.

international law. Many times comments by high ranking officials will serve as evidence that the nation accepts the law as normative.

States are under the general obligation not to cause transboundary environmental harms to another state. This concept was articulated in the *Trail Smelter* arbitration.[31] This case arose after fumes from a Canadian company drifted across the boarder injuring U.S. citizens and property. Although the case has little value for binding precedent, it is often cited in support of the existence of this obligation. The court found:

> [U]nder the principles of international law, as well as of the law of the United States, no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.

The direct application of this principle to the emission of greenhouse gases is unclear. A court would not likely grant damages in a case based on climate change unless a clear causal connection between the injury and the harm was established. Although customary international law does not seem to provide a guide for national activity or provide a legal foundation allowing for compensation for any damages, it serves as an illustration of the competing values involved in this issue.

Although, the right to development generally is not considered part of customary international law, it is embodied in the preamble of the FCCC.[32] As a result, the right has some legal significance for the parties. The right to develop is often articulated in two distinct ways. First, "sovereign States exercise control over their resources and have the right to control their own economic, social and cultural development, and second, all peoples enjoy a right to a certain minimum level of development, measured in more than

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[31] United Nations, *Reports of International Arbitral Awards*, Vol. III, 1905-81.
[32] It has also been endorsed by the 1986 UN General Assembly Resolution on the Right to Development, UNGA Res. 41/128 (Dec. 4, 1986).

economic terms."[33] This principle has often been articulated by the developing nations in regards to climate change.

It is unclear which competing legal claim would prevail in regards to the emission of greenhouse gases and the consequential harm to the environment. Although the scientific theory underlying climate change might be proven to the necessary standards of a civil trial, the specific effects of climate change are difficult to pinpoint. Secondly, the causal connection between the climate change and any particular damage would be difficult, if not impossible, to prove. Assuming that global warming results in harmful events, such as an increase in the frequency of storms, it is difficult to ascertain whether any particular storm is a result of global warming. Therefore, a legal claim based on the customary law of not causing transboundary international harm would be difficult to pursue. Secondly, the right to develop appears to be more established in international law than the duty to not cause transboundary harms. Coupled with the problems of proving causation, it is likely that the right to develop would prevail over any claims based in the duty to not cause transboundary environmental harm with respect to climate change.

III. The Developing World v. the Developed World

International environmental law is created and developed largely through the interests of nations. The interests vary, but include protecting their citizen's security and economic interests. The emerging regulation of climate change affects more than just the environment. It also affects, "economic development and invokes the geopolitics of

[33] David Hunter, et al. *International Environmental Law and Policy*, at 330.

global wealth distribution."[34] This is particularly true in the area of climate change, as current modern economies are dependent upon fossil fuels for energy.

An effective solution to climate change would place several burdens on economic growth. The extent of these burdens is relatively uncertain, but under current estimates they are staggering.[35] These costs would come from three separate areas. The most immediate and easily estimable costs are the direct costs of implementing the current treaty, as articulated in the Kyoto Protocol and the latter amendments. Direct costs include "the disbursements necessary to enact, administer, and enforce the domestic laws necessary to give force to any international agreement."[36] Direct costs also include the costs of the technology and labor necessary to comply with the international agreement.

Opportunity costs are another source of the total costs of implementing a climate change convention. The actual value of these costs is difficult to determine. These opportunity costs could arise as economic growth slows or even stops as the restrictions on the emission of greenhouse gases are implemented. Economic growth may slow as a result of the resources diverted to implement any commitments. For example, growth may slow as alternative means of energy, other than fossil-fuel oriented sources, are implemented. These alternative energy sources, while emitting less greenhouse gases may be more expensive per unit of energy.

The effects of global warming will be felt globally, not solely by those countries largely responsible for it. The developed nations assert that as a result of the dangers

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[34] Mark A. Drumbl, *Northern Economic Obligation, Southern Moral Entitlement, and International Environmental Governance* 27 Columbia Journal of Environmental Law 361 (2002)
[35] The direct costs alone of stabilizing carbon emissions to 1990 levels are estimated at 2-3% of national GDP. See, William E. Colglazier, *Scientific Uncertainties, Public Policy, and Global Warming: How Sure is Sure Enough?*, 19:2 Pol'y Studies J. 61,65 (1991)
[36] Drumbl at 363.

presented by taking no action, all countries must help solve the problem. Developing countries examine this opinion with some degree of skepticism. The responsibility for much of the problem lies in the hands of the developed world. This unequal responsibility is not only historical, it continues to this day.[37] Clearly one fear that the developed world has, is that placing restrictions on one group of countries and not on others will result in a shift in wealth. Jobs, factories and resources will migrate from regulated countries to those countries facing fewer restrictions. As one commentator has remarked, "The realpolitik is that one way to safeguard ongoing polluting behavior in developed countries is to prevent new polluting behavior from emerging in the industrializing world."[38] This viewpoint questions the underlying motivation of the developed world. Their desire for securing a reduction in greenhouse gases is not a result of any desire to safeguard the environment, but a result of their desire to safeguard the status quo of global wealth distribution.

Regardless of the motivation behind the desire to reduce the emission of greenhouse gases, the developing world has found some success in using their reluctance as a negotiating strategy. Realizing that industrialized nations alone cannot solve the problem, the developing world has required several concessions. First, and most importantly, they have initially avoided any binding obligations for the reduction of greenhouse gas emissions. Secondly, the developing countries have demanded technical and financial transfers. The text of the FCCC states that:

> The extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by the developed country Parties of their commitments under the Convention related to financial resources and transfer of technology and will

[37] Drumbl at 364.

take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties.[39]

These provisions require technological transfers and articulate the developmental priorities of the South. However, the provisions go further than merely requiring the performance of the transfers. It also provides that any obligations of the South are *conditioned upon* the performance of these transfers. This arrangement has been termed a "shared compact" because it represents an interstate agreement entered into to handle a particular problem while the obligations are shared amongst the parties.[40] This arrangement represents not only an obligation and a commitment, but also an entitlement. The developing nations are not required to accept the terms of the climate change treaty without regard to the behavior of the industrialized nations. The industrialized nations however, are not providing an open-ended source of funds and technology. The developing world agrees to use these funds only for the purposes intended. Although commentators disagree on the importance of this provision, it does demonstrate that the developed world is willing on a limited basis to redistribute wealth[41]

The climate change treaty can be viewed as a product of self-interest maximization. The developed world hopes to avoid the costs of unbridled emission of greenhouse gases while maintaining their relative position, while the developing world is using their required participation as a bargaining chip for wealth distribution. However, Henry Shue has remarked that a treaty motivated purely on self-interest would not have

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[38] Drumbl at 364-365.
[39] FCCC, art. 4(7).
[40] See Drumbl at footnote 20.
[41] Some commentators do not find this Article 4(7) very significant. This includes Daniel Bodansky, *The United Nations Framework Convention on Climate Change: A Commentary*, 18 YALE J. INT'L L. 451, 511 n.364 (who describes Article 4(7) as a "neutral formulation" that makes a "factual observation" of the current international background).

been truly global in scope.[42] He argues that the industrialized nations would have chosen instead to bargain with a handful of developing counties which have the potential to have the greatest effect on climate change. Although in the short-term it seems appropriate to deal with those developing countries that currently pose the greatest threat, in the long-term requiring as many nations as possible to be under the umbrella of the climate change convention could reduce the costs to the developed nations. This would occur by limiting the migration of factories and jobs to those nations that have cheaper sources of energy.

The developing nations with the most influence also chose to negotiate an international or multilateral treaty. Countries, such as China, India and Indonesia, had the leverage to negotiate bilateral treaties with the developed nations. These bilateral negotiations would likely have produced more tangible benefits for those nations. However, these countries decided to negotiate along with the rest of the developing world. They traded their leverage not for national gains, but for a more equal distribution of gains amongst all developing countries. These actions do not seem to be motivated purely by self-interest. On the other hand, "by ensuring that the discussions were completely multilateral, the largest nations of the South also ensured that there would be no free-riders, such that no nation (no matter how small) would be exempted from whatever environmental control measures may have been agreed upon in the treaty."[43]

These shared compacts tend to emerge in areas, such as climate change, where the environmental externalities are imposed upon the developing nations.[44] It seems that while there are some components of self-interest maximization present, these components

[42] Henry Shue, *The Unavoidability of Justice*, in THE INTERNATIONAL POLITICS OF THE ENVIRONMENT, ACTORS, INTERESTS AND INSTITUTIONS 381-385 (Andrew Hurrell & Benedict Kingsbury eds., 1992).
[43] Drumbl at 371.
[44] Drumbl at 370.

do not completely drive state behavior. Other considerations, such as concerns for justice, may be present in the behavior of these states.

IV. The U.S. Response

In March, 2001 the United States decided to withdraw from the Kyoto Protocol. Following the decision, the U.S. did not attend the Conferences of the Parties in either Marrakesh or in Bonn. Although, the U.S. had signed the Kyoto Protocol, it has not been ratified by Congress. Following the Kyoto conference of the parties, the Clinton administration and the Senate both felt that the Kyoto Protocol, in its current form, was unacceptable. The Senate's reaction was particularly strong. In July 1997, the U.S. Senate adopted Senate Resolution 98 (SR-98), popularly known as the "Byrd-Hagel Resolution" by a vote of 95-0. The resolutions provided, *inter alia*, that the U.S. should not become a party to any protocol on climate change that would:

> (A) mandate new commitments to limit or reduce greenhouse gas emissions for the Annex I [developed countries] Parties, unless the protocol or other agreement also mandates new specific scheduled commitments to limit or reduce greenhouse gas emissions for Developing Country Parties within the same compliance period; or
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> (B) would result in serious harm to the economy of the United States...[45]

The current formulation of the Kyoto Protocol clearly does not meet the first condition because it does not contain specific commitments for developing nations. The second condition may be met, although this is uncertain. The President's Council of

Economic Advisors estimated the cost of implementation to be between $7 billion and $12 billion per year between 2008 and 2012.[46] Economic analyses of whether the implementation of the Kyoto Protocol will harm the U.S. economy vary. Much of the debate stems from the actual costs that will result from global warming. If the economic costs of global warming are high, then there will be negative long-term implications on the economy. Further complicating this issue is whether the measures imposed by the Kyoto Protocol will be effective in reducing or stopping global warming.

The Senate was concerned that developing countries would have an unfair economic advantage because no restrictions on greenhouse gas emissions were to be imposed upon them. Economic growth is largely proportional to energy use and under the current methods of energy production also linked to greenhouse gas emissions.[47] There was a fear that U.S. manufacturing and U.S. jobs would move to those countries with relaxed environmental restrictions.

The Senate was also afraid that, without binding commitments on the part of certain large developing countries, the Protocol would not be effective in stopping climate change.[48] Many senators supported this position by citing the example of China who is estimated to surpass the U.S as the leading producer of greenhouse gases by 2015.[49] The Senate's position on the necessary inclusion of binding commitments for developing countries does not imply that all developing countries should be make

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[45] Paul G. Harris, *Common But Differentiated Responsibility: the Kyoto Protocol and United States Policy*, 7 NYU ENVIRON. L. J. 27, 36-37 (1999), citing S. Res. 98, 105th Cong., 143 Cong. Rec. S138 (daily ed. July 25, 1997).
[46] Harris at 60.
[47] Harris at 37.
[48] See 143 Cong. Rec. at S8117 (daily ed. July 25, 1997) (statement of Sen. Byrd); id. at S8122 (statement of Sen. Roberts). See also, Sen. Frank H. Murkowski, *The Kyoto Protocol is Not the Answer to Climate Change*, 37 HARVARD J. ON LEGIS. 345 (Summer, 2000).
[49] See id. at S8122 (statement of Sen. Roberts); id. at S8124 (statement of Sen. Lott).

identical commitments to those of the developed countries.[50] However, the acceptable commitment level for various countries remains unclear.

The executive branch has also demonstrated its disapproval with the current international agreement on climate change. President Clinton articulated similar views as those ascribed to by the Senate. He stated that "both industrialized and developing countries must participate in meeting the challenge of climate change."[51] President Clinton did not state that there must be binding commitments on the part of developing nations. He did, however, say that there must be "meaningful participation" on the part of several key developing nations.[52]

The Bush administration has pulled out of the Kyoto Protocol. President Bush stated that the agreement was, "fatally flawed in fundamental ways."[53] Although relatively unclear on the source of these flaws, it is clear that the administration is not interested in pursuing a solution to the climate change problem through the framework of the Kyoto Protocol.

These objections should be analyzed to determine whether the U.S. response to the Kyoto Protocol is tenable in light of general ethical principles. The stated objections can be condensed into three general categories. First, the Kyoto Protocol is flawed because of the lack of binding commitments on the part of several large developing nations, particularly China, India, and Indonesia. Second, there is some concern that the framework will seriously damage the U.S. economy. Finally, there are some doubts still

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[50] Harris at 38-39 (surveying the statements of a variety of senators and concluding that "SR-98 was not a renunciation of the "common but differentiated responsibility" principle but rather an alternative interpretation of it…").
[51] Harris at 42.
[52] Harris at 42.
[53] See, Bush's Remarks on Climate Change. Available from White House Office of the Press Secretary (June 11, 2001), at http://www.whitehouse.gov/news/releases/2001/06/20010611-2.html.

lingering over the validity of the scientific theories that serve as the foundation of the Kyoto Protocol.

The last objection is the easiest to address. There is some uncertainty in the validity of the theories underlying the predictions of global warming. Global warming may be occurring naturally, as part of a larger climate shift that occurs over long periods of time. However, the objection does not alone support the rejection of the Kyoto Protocol.

Assuming that the harms are uncertain at best, one still must consider the magnitude of the harm in determining the proper course of action. Legal systems act as a tool to discourage certain actions that are likely to harm others. This occurs through the proscription of certain activities and the attachment of liabilities to those actions. In our national system this can occur in both a criminal context and through the imposition of civil penalties. After an injury occurs a court will assess responsibility to a party if this party is deemed to be responsible for the injury. This civil liability rests on the concept of fairness and justice. A party should not incur costs associated with an injury if another party was responsible for that injury. Legal theories have been developed in order to address the particulars of these rather messy concepts. A recurring theme in the assessing civil liability is that people should act reasonable. They should, where possible, avoid injuring others. However, the costs associated in avoiding all accidents and all injuries would be astronomical and unreasonable. Judge Learned Hand asserted that a reasonable person should take any precautions that are less burdensome than the probability of that harm occurring multiplied by the magnitude of that harm.[54] Following this formulation, a reasonable actor should examine not only the probability of the harm occurring, but the

severity of that harm. In a situation, such as global climate change, where the predicted harms are immense it is reasonable to take precautions in order to avoid the injuries even in the absence of certainty.

This principle is found in international law. The "precautionary principle" was incorporated into the Framework Convention on Climate Change (FCCC). It provides:

> The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost effective so as to ensure global benefits at the lowest possible cost.[55]

The "precautionary principle" is recognition of the fundamental uncertainty underlying all scientific theories and the severity of any potential damage. As a signatory of the FCCC, the U.S. is bound by this Article, or at the least bound not to take actions that would undermine the spirit of the agreement. Furthermore, fairness requires that the U.S. take steps to minimize the potential for disaster.

The second U.S. objection is based on the potential damage that will occur to the economy. Assuming that significant long-term costs will be borne by the U.S. economy, this objection does not overcome the justice of the situation. Equity and justice require that parties bear costs relative to their positions. The eco-system will not tolerate world wide per-capita emissions of greenhouse gases even approaching the current levels of emissions found in the developed world. This means that to avoid catastrophic events, the richer countries must either reduce their emissions to allow for increases in poorer countries or poorer countries must limit per-capita emissions at levels much lower than those currently experienced in wealthier nations. What is the equitable solution to this

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[54] *United States v. Carroll Towing Co.*, 159 F.2d 169, 173 (2d Cir. 1947).
[55] FCCC, Art. 3.

dilemma? Can the wealthier nations reject limitations based solely on the cost to their own society?

As Henry Shue posits, there are certain ethical considerations when a resource, which was previously thought unlimited, is found to be finite.[56] The allocation of a limitless natural resource is immaterial. For one country to possess any certain amount does not limit the amount others can possess and use. This is the case, for example with sunlight. For all practical purposes this resource is renewable and limitless.

While greenhouse gases are imperceptible, there are limits to the capacity of the atmosphere to absorb (without increases in surface temperature). As Shue remarks, "This capacity is valuable, indeed vital, but scarce."[57] Therefore, the allocation choices contain inherent ethical considerations. "In particular, it raises all the questions about justice that are raised by the choice of a process for allocating any scarce natural resource, especially a resource essential for minimal economic welfare or subsistence."[58]

In determining the appropriate costs that should be shouldered by the U.S. in regards to the GHG emissions one must determine the fair distribution of this limited resource. As Shue comments, "a country has no right to emit gases in excess of its pre-agreement fair share. Not only does one have no right to produce those emissions, but it is wrong to produce them because, in using up a scarce and valuable capacity, a country is unfairly impinging upon the fair shares of others..."[59] Therefore, there is some level of emission that is just and equitable. This level does not depend on the existence of any international agreement. Assuming that the levels of emissions stated in the Kyoto

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[56] Henry Shue, *After You: May Action by the Rich Be Contingent Upon Action by the Poor?*, 1 IND. J. GLOBAL LEG. STUD. 343 (Spring, 1994).
[57] Shue at 357.
[58] Shue at 358.

Protocol reflect this just level of emissions, we ought to pay for the costs of reducing emissions to that level even in the absence of any agreement.

Of course, the acceptable level of emissions may actually be much lower than those stipulated in the Kyoto Protocol. Total emissions must be held constant and "many of those whose emissions are only one-tenth the emissions of others are living in extreme poverty which they can exit only via economic development that would sharply increase their emissions per capita." These two facts actually point to even lower levels of emissions than are currently proposed by the Kyoto Protocol. It is unfair to balk at the price of implementing measures that would allow many people the possibility of economic growth necessary to reach a level of subsistence.

The U.S has also objected to the Kyoto Protocol because some developing countries did not make binding commitments for greenhouse gas emissions. This argument is the strongest against acceptance of the Kyoto Protocol. It does not relieve the duty of wealthy nations to reduce their emissions to a just level, but it could stand as a reason not to enter into an international treaty. It is not acceptable to expect these developing countries to limit their emissions to 1990 levels, but it is not unreasonable to expect some type of commitment. By accepting a treaty with one-sided commitments, the U.S. may lose the leverage necessary to bargain for acceptable emission limitations by developing countries, such as China. Accepting these unilateral commitments may only serve to shift the source of the problem to other countries. A self-imposed reduction of emissions would leave the threat of increasing those emissions a possibility. This could be used as a negotiating "stick" adding additional incentives to the "carrot" of financial and technology transfers for countries that may threaten the global environment.

[59] Shue at 363.

V. Conclusion: The Ethical and Practical Response

In the short-term, equity and fairness require that the United States reduce its greenhouse gas emissions to a level which would allow for sustainable economic growth. However, these principles of equity, discussed earlier, do not require the acceptance of the Kyoto Protocol in its current form. Global warming is truly a global problem, and it requires a global solution. The effects of global warming could be extremely damaging to poorer countries that lack adequate resources to deal with the consequential environmental problems. As a result these poorer nations would be less likely to secure subsistence level income for all their citizens. At the same time, it is unfair for these developing countries to limit their economic growth in order to solve the problem of global warming. The solution lies mostly in the hands of the industrialized nations. This remains true, even if this solution causes damage to their economies. It is not just to require the citizens of the developing nations to live in conditions of extreme poverty in order to solve the problem of climate change.

Large developing nations must realize that their emissions, at some point, must be curbed. Actions taken to in accordance with these aims should be supported by the wealthy nations through technology transfers and direct financial assistance. However, the developing countries should, at the very least, commit to further negotiations in order to determine the acceptable levels of emissions.

The appropriate measure of emissions should be on a per-capita basis. It is individual persons and their well-being that is our ultimate concern. Other possibilities

include measuring emissions per mile or per unit of GNP.[60] However, it is the needs of individuals that matter. On the basis of our common humanity each person has the right to a certain level of development. It would be unfair to limit the ability of some individuals to escape poverty through environmental regulation, while more wealthy individuals are allowed to continue emissions at much higher levels under the same regime.

Population growth is one potential problem that arises when using a per-capita measurement. Generally, less developed nations have higher rates of population growth. Historically there has been a correlation between economic growth and a reduction in the population growth. If this correlation continues then population change may not present a problem. As the developing countries reach economic levels similar to those enjoyed by the developed nations, their rate of population growth will decrease. However, in order to assure an equal playing field, the Kyoto Protocol should place ceilings on the total amount of emissions. In other words, initial limits should be determined using a per-capita model, but the total amount of emissions per country should be capped at some point. This level could be determined using a model of economic growth and population rate change based on historical information.

The U.S. is one the few developed countries that refuses to support the Kyoto Protocol. There appears to be no justification for this separate stance on the issue. Other similarly situated countries are willing to accept these commitments. These nations, such as the members of the European Union, have similar standard of livings, GNP growth rates and education levels. The U.S.'s position may have its roots in the general public attitudes towards consumption and growth, the lack of information regarding climate

[60] See, Shue at 365.

change, or in the influence of energy industry lobbyists. However, fairness and equity demand that the U.S. take the necessary steps to reduce its emissions. A solution to climate change is difficult and will result in some redistribution of wealth. It will require a significant change in the expectations of the developed world's citizens. They must be willing to change their lifestyles of consumption, and measure well-being in a more complex manner. Equity and fairness require this change however difficult it may be.