ALTERNATIVE ARCHITECTURE FOR CLIMATE CHANGE: MAJOR ECONOMIES

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I. INTRODUCTION

This article argues that the Kyoto Protocol[1] to the 1992 Framework Convention on Climate Change (UNFCCC)[2] was doomed to face difficulties *ab initio* because it places the responsibility of reducing greenhouse gas (GHG)[3] emissions only with developed countries[4] as if they were the only *sinners* of climate change. A more plausible solution to reduce GHG emissions is to involve major GHG emitters irrespective

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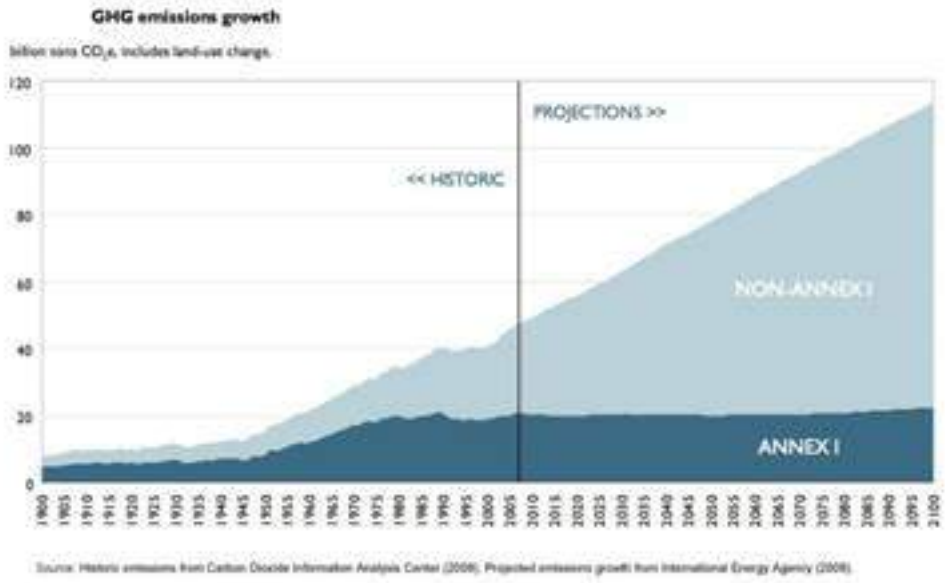
of their GDP. The article also proposes using the experience of trade agreements as a model for reaching a global climate treaty, since oftentimes the very same people are at the negotiating table for trade and environmental issues.[5]

The Kyoto Protocol is a top-down agreement on climate change which has proven to be very rigid in its approach to reducing GHG emissions.[6] For the purposes of GHG emission reduction, the UNFCCC divides the world into Annex I countries (or developed countries)[7] and developing countries, legally binding only Annex I countries to reducing their GHG emissions by a certain deadline.[8] Why so? Because seen retrospectively, rich-countries have been (and continue to be) the major polluters; they are responsible for most of the GHG emissions, and have the financial and technological means to tackle climate change.

However, instead of asking only Annex I countries to reduce GHG emissions, this article argues that a better (and arguably fairer) way to tackle the climate change issue today is by bringing together the major GHG emitters, irrespective of their GDP. Why? Seen prospectively, climate change is a developing-countries problem, as predictions indicate that, in the near future, developing countries will be the major polluters (see chart below) as well as the major victims of the consequences of climate change, especially countries near the equator.[9] The longer we wait, the harder and more expensive it will become to deal with climate change.[10] So major GHG emitters (whether developed or developing countries), which are responsible for historic, current, and future emissions, should therefore be the ones to take action.[11]



As of 2000, the top 25 GHG emitters accounted for approximately 83 per cent of global emissions.[12] Moreover, the top five GHG emitters today (China, U.S., the EU—treated as a single entity—India, and Russia) were responsible in 2000 for over 60 per cent of global emissions.[13] By contrast, most of the remaining countries contributed very little in absolute terms to GHGs in the atmosphere (i.e., the 140 least-pollutant countries were responsible for only 10 per cent of global GHG emissions).[14] These countries include the least-developed countries and many small island states.

II. Background

International efforts to negotiate a comprehensive, universal, and legally binding treaty on climate change have "been producing diminishing returns for some time"[15] and an alternative approach to this top-down fashion of law-making is needed "which develops different elements of climate governance in an incremental fashion and embeds them in an international political framework."[16] At the same time, there are 193 parties to the Kyoto Protocol, many of which are in favor of the continuation of the Kyoto Protocol for logical reasons. This continuation of the Kyoto Protocol could be conceived not in isolation but along with complementary climate agreements. For instance, countries in favor of the continuation of the Kyoto Protocol argue that it is currently the only legal instrument with legally binding constraints on GHG emissions of any sort. Bilateral and regional agreements could therefore complement the UNFCCC/Kyoto Protocol. Other smaller *fora* with major GHG emitters could provide stimulus for an agreement in the UNFCCC regime.

Moving the climate change agenda forward multilaterally among the 195 parties to the UNFCCC is proving to be a serious challenge.[17] The lack of progress in UNFCCC negotiations in recent years, especially the failure to obtain an international agreement on emissions limitations targets and timetables by all major developed and developing country emitters, has led many to question whether the UNFCCC is, in fact, the best and most effective forum for mobilizing a global response to climate change.[18] This current approach to negotiating a comprehensive, universal, and legally binding global agreement on climate change is unlikely to succeed.[19]Moreover, the current targets and the Nationally Appropriate Mitigation Actions (NAMAs) under the system of "pledge and review" are most likely insufficient toward the goal of limiting the increase in global temperatures to 2 degrees Celsius above pre-industrial levels agreed upon at the COP-15 in Copenhagen.[20] Furthermore, many of the world's larger emitters today are developing countries (such as China, India, Brazil, and South Africa), who thus far have refused to agree to binding emissions limitation obligations under the international UNFCCC/Kyoto Protocol regime, in part because of the lack of any U.S. limitations commitments.

The near-disaster Conference of the Parties[21] (COP)-15 in Copenhagen empirically demonstrated that the UN machinery is incapable of moving forward fast enough to produce a global climate deal. Moreover, international climate policy, as it has been understood and practiced by many governments of the world under the Kyoto Protocol approach, has failed to produce any discernible real world reductions in emissions of greenhouse gases since the mid 1990s.[22] The underlying reason for this is that the UNFCCC/Kyoto model was structurally flawed and doomed to face serious difficulties because it systematically misunderstood the nature of climate change as a policy issue between 1985 and 2009. In this sense, a group of authors from Asia, Europe, and North America produced the Harwell paper, which urged a radical change of approach.[23]

Arguably, agreement at the COP-16 in Cancún, however unsatisfying, could only be reached because the more difficult and contentious issues (such as internationally agreed emissions targets) were put to one side during the negotiations, despite the vocal objections of Bolivia. (In the UN machinery, consensus among the parties is required, which, according to COP-16 Chair, Mexican Foreign Minister Patricia Espinosa, does not mean unanimity. Therefore, one country—i.e., Bolivia in the COP-16—does not have the right to veto a decision that the other 194 members agree on).[24] In the absence of any further progress on GHG emission limitations agreements, there is growing concern that some key countries

will tire of the unmanageable negotiating process, and perhaps disengage from the issue of climate change entirely.

For the creation of a future global climate change agreement, the following fundamental points need to be kept in mind. First, assessing the emission reduction pledges: are they enough?; second, fast-track finance: what are the sources of finance and what are the targets; third, technology diffusion; fourth, the impact of investments in the energy sector; fifth, what will the political groupings be in the multilateral agreement on climate action and what will parties ask for?; sixth, what can be done to facilitate the UN process in the climate change context? Should the climate talks be 'multi-track'?; seventh, what are the complementary and supporting routes to an agreement on climate action?: The EU presidency? The G-20?[25] Bilateral agreements between major players?; eighth, can and will sub-national, national, and regional agreements reduce greenhouse gas emissions?;[26]ninth, are there any 'quick-win' multipliers for climate action? There is indeed no shortage of ideas on how to advance the aim of climate protection.[27] Below are some suggestions on how to move forward the climate change agenda.

III. THE MONTREAL PROTOCOL AS A MODEL FOR INTERNATIONAL ENVIRONMENTAL REGULATORY COOPERATION

The UNFCCC negotiation process has much to learn from the success of the Montreal Protocol on Substances that Deplete the Ozone Layer. [28]The legal point of departure of the process which led to the Montreal Protocol is the Vienna Convention for the Protection of the Ozone Layer.[29] Although the UNFCCC and its Kyoto Protocol are the principal instruments to fight climate change, the Montreal Protocol has emerged as a major mechanism for regulating certain GHGs with a high global warming potential. The Montreal Protocol was adopted in 1987 to eliminate aerosols and other chemicals that were blowing a hole in the Earth's protective ozone layer.[30] In 1985, an agreement was reached on a Framework Convention, i.e., an international agreement with vague objectives and no specific obligations for signatory countries. Nevertheless, the Convention anticipated specific numerical limits by calling for future negotiations of additional protocols. The combination of fear regarding the ozone hole, the threat of worse things to come, and the availability of an alternative path led countries to agree to a strong protocol to the Convention in Montreal in 1987. There is debate over how strong a role fear of the ozone hole (and possibly worse outcomes in the future) among policy-makers and the public played in the negotiations toward signing the Montreal Protocol.[31]

The Montreal Protocol and successor agreements are regarded as highly successful examples of international environmental regulatory cooperation that has been capable of rapid modification to take account of developing scientific information, spur credible regulatory commitments, and reflect technological advances.[32] This system has often been held up as a model for dealing with global warming (including recent proposals to use the Montreal treaty regime to control some specific greenhouse gases).[33] The analogy between ozone depletion and climate change works well in some respects: both the climate change and the ozone problems are long-lived because, once emitted, the problematic gases remain in the atmosphere for periods exceeding a century. As a result, emissions from any one country may affect many others, and current decisions to continue emitting or to minimally reduce emissions bear irreversible consequences. Moreover, both problems are characterized by large scientific uncertainty and potentially devastating outcomes.

Furthermore, the Montreal Protocol is one example of an international environmental agreement in which trade-related environmental measures form a key component. Most prominently, the Protocol's restriction on Parties trading in ozone-depleting substances with non-Parties has served the dual purpose of encouraging wide participation in the Protocol[34] and removing any competitive advantage that a non-party might enjoy (i.e., preventing leakage to non-participating jurisdictions). Additionally, provision within the Protocol for funding and transfer of alternative, ozone-friendly technologies was intended to promote trade between industrialized and developing countries.

There are legislative lessons to be learned from the ozone layer experience for the case of climate change. In the case of the ozone layer via the Montreal Protocol, the international community established a two-pronged international approach involving scientific research and assessment along with a parallel international negotiating process. In the case of climate change, an international regime was developed that is similar in some respects, involving a general Framework Convention envisioning sequential protocols with specific obligations (e.g., the Kyoto Protocol) and a parallel scientific assessment process (i.e., the Intergovernmental Panel on Climate Change). A fund which enables industrialized countries to finance emission-free projects (including private-sector initiative and investment) in developing countries was also established (in the form of the Clean Development Mechanism).[35]

Some of the questions and mistakes that arose from the Montreal Protocol can also be instructive for the climate negotiations process. For example, should more aggressive action have been taken in 1987 while negotiating

the Montreal Protocol so that some ozone depletion and skin cancer cases could have been avoided? This is precisely the dilemma decision-makers now face with global warming: given the uncertainties, how strong should the first steps be toward the creation of a meaningful global climate change agreement? The climate change problem affords an opportunity for humans to act in advance of a surprising, undesirable, and very noticeable outcome, analogous to the ozone hole.

However, the Montreal Protocol included both mandatory production limits for developing countries and enforcement provisions for non-compliance that were strong, at least on paper. Neither is envisioned in the Kyoto Protocol, and events at the 2009 COP-15 in Copenhagen highlighted the difficulty of reaching an agreement on binding GHG emission limits for developing countries. In addition, the threat of skin cancer posed by the ozone hole engaged public attention to a greater extent than climate change did, except during relatively brief periods when hurricanes, heat waves, or melting ice caps are in the news.

In spite of these differences, there is much to be learned from the ozone story, and at the very least it demonstrates that international environmental agreements can work, albeit a little too slowly. Countries can manage to come together, evaluate science, and act sensibly to avert natural disaster. Moreover, the Montreal Protocol process shows that it is not necessary for science to be certain and for impacts to be evident in order to develop strong policy initiatives that receive public and industry support, and it contains important lessons on risk, uncertainty, precaution, and on cooperative approaches to solving large environmental challenges. Furthermore, the Montreal Protocol experience provides specific guidance on how to engage developing countries as well as how to implement and enforce such an international agreement quickly to achieve unexpectedly rapid results. Finally, the politics of domestic implementation was straightforward and the cost of doing so, minimal. All these experiences are directly transferable to the climate change challenge.

Following the example of the Montreal Protocol, it is important to have a flexible approach in order to create a climate change agreement. The Kyoto Protocol is clearly not working, partly due to its lack of flexibility. Therefore, bilateral and regional climate agreements—which are more flexible and manageable than a universal climate change agreement—could complement the Kyoto Protocol in the reduction of GHG emissions.

IV. The Importance of a Flexible Approach

Given the fragmented and cyclical nature of international law generally,

bringing together a group of countries—as opposed to the entire global community—seems to make sense as a stepping stone toward the eventual creation of a future global climate change agreement. In the case of climate change, two leading scholars of international governance, Robert Keohane and David Victor, argue that the diverse range of institutions involved in climate change governance constitutes a regime complex, which has advantages and disadvantages compared to a unitary international regime.[36] The chart below shows a graphical map of the climate change regime complex:[37]

The case of international trade law is a good illustration of the fact that nature of international law, generally speaking, is fragmented and cyclical.[38] At first, international trade agreements were bilateral. Then came the 1947 General Agreement on Tariffs and Trade (GATT),[39] which multilateralized bilateral trade agreements. Years later, international trade law saw the collapse of multilateralism in 1979, which broke down during the Tokyo Round of multilateral trade negotiations. A series of new plurilateral (or selectively multilateral) agreements were adopted during the Tokyo Round, which caused a fragmentation of the multilateral trading system.[40]In 1994, international trade law was again multilateralized with the World Trade Organization Agreement.[41]

The same thesis could be used for climate change law. Given the success at multilateralizing international trade law—while not always easy—why not emulate the experience of multilateralization of international trade law for

the case of climate change law? While not always easy, this trend of using bilateral or plurilateral agreements to build toward eventual multilateralization, is worth emulating for the case of climate change law.[42] In the framework of the UNFCCC, there are currently 195 parties to the Convention. One option to move the climate change agenda forward is to bring together major GHG emitters via bilateral and plurilateral agreements (for example, in the framework of the G-20[43] or the Major Economies Forum on Energy and Climate [MEF]). Having a flexible system beyond the traditional top-down approach would be an efficient way to move forward multilaterally in climate change.[44] In environmental regimes, there is a particular need for flexibility and evolution,[45] because our understanding of environmental problems is likely to change as science and technology develop. Flexibility is therefore key for a successful climate change agreement.[46] This flexible approach was the success of the multilateral trading system.

1. *The Institutional Evolution of Multilateral Regimes: An Opportunity for Climate Change*

a. The Examples of the WTO and the EU

Experience from successful precedents tells us that multilateralism is often an evolutionary process, which, by definition, takes time and does not always have to grow in a linear manner. In this sense, the COP-15's failure in Copenhagen has led many people to rethink the best way to create an effective international response to climate change. Some think that the path to a new legally binding agreement on climate change may need to take a longer and more incremental approach than what has been attempted at the various COPs.[47] This path to a new legally binding agreement on climate change will involve a gradual process of evolution,[48] as has been the case of the GATT/World Trade Organization (WTO),[49] the European Union,[50] and the G-8[51]/G-20.

How and why do regimes evolve? Oftentimes regimes start out as non-legal, voluntary arrangements that eventually become legally binding.[52] The multilateral trade regime is a good illustration of a successful regime evolution. The 1947 GATT, which set out a plan for economic recovery after World War II by encouraging reduction in tariffs and other international trade barriers, started with just 23 members and did not establish any formal organization, as it was just an international trade agreement. Over the years, the GATT evolved through several rounds of negotiations to acquire enough credibility by the parties in order to transform a general agreement into an international organization. The 1986-1994 Uruguay Round of multilateral trade negotiations reformulated and institutionalized the GATT and replaced it with the WTO, which was

eventually born in 1995. The WTO, a global trade agency with binding enforcements of comprehensive rules expanding beyond trade, has grown to more than 150 members as of early 2011. The membership is expected to expand in the near future. The WTO is certainly a remarkable example of institutional evolution.

The same is true for the EU. From a small group of six rather homogeneous West-European countries in the 1950s, it later became a group of nine countries in the 1970s, 12 in the 1980s, 15 in the 1990s, up to 27 countries in the 2000s that are legally bound by common EU treaties. As the EU was progressing, European countries saw the benefit of being EU members and eventually joined. The European integration project is ongoing, and it is expected that more countries will join the EU in the future. However, if the EU were to have started with its current 27 Member States, chances are that it would not have succeeded. The EU, therefore, makes a good case for the incrementalist approach.

In the case of climate change, the temporal factor should not be a real concern if the 20 major GHG emitters, responsible for around 80 per cent of GHGs in 2008,[53] are on board from the beginning. An incremental expansion to the rest of the UNFCCC membership will not really be detrimental to the global warming effect, as the rest of the UNFCCC membership is only responsible for around 20 per cent of global emissions.[54]

The ultimate goals should still be a comprehensive and binding global climate change agreement but, in the meantime, small steps, both within and outside the UNFCCC, offer an effective way forward. Furthermore, when designing a future climate change agreement, one should take advantage of prior agreements to reduce transaction costs and increase legitimacy. In order to create a binding agreement, States need to have confidence and trust in the regime. A good example is the WTO's dispute settlement system, which has demonstrated over time to be an impartial judicial body.

The trade and climate change communities faced a double negative at the beginning of 2010, i.e., no global deal at the 2009 Copenhagen climate Conference of the Parties to reduce emissions of heat trapping gases and no concluding deal at the WTO of the Doha Round of multilateral trade negotiations. Both multilateral negotiations are highly complex, but also of great importance to all parties involved, whether industrialized or developing countries. Attempts to keep the two multilateral agreements and their respective negotiations apart, hoping to reduce complexities, have not been successful. The two multilateral processes could be more

directly linked to each other and bridges could be built to reach more ambitious goals in both multilateral *fora*.[55]

Given the possibly catastrophic consequences of climate change, of course a more rapid process would be ideal. However, this article argues that, given the current obstacles to multilateral climate change negotiations, the evolutionary approach is the most credible way forward.

b. An Incremental Approach for Climate Change

In the case of the climate change regime, although the international response has developed along an evolutionary pathway,[56] in some key respects, it has proceeded in fits and starts, and has, at this stage, stalled or even moved backward.[57] There have been many incremental steps so far—in fact, the regime has become fragmented, with the Major Economies Forum (MEF) and other initiatives emerging, which are only loosely connected with the UNFCCC. Another important way in which the climate change regime has evolved is in its financial mechanism. Examples are the Kyoto Protocol's Adaptation Fund[58] and the Clean Development Mechanism (CDM).[59] However, no such steps have been taken in one critical area—the legalization of countries' core commitments. In some ways, it seems the regime is moving in the direction of political rather than legal commitments.[60] Overall, the UNFCCC has remained very rigid because of the division between Annex I and non-Annex I countries, which has proven very resistant to evolution.

One reason the climate change regime appears to have stalled in recent years is that it has tried to forge ahead too quickly along the legal dimension. According to Bodansky and Diringer, "arguably, the leap was too ambitious for a relatively young regime, which had not had time for trust to develop".[61] Continuing to push for binding commitments in the near term could produce a string of failures and potentially undermine the credibility and relevance of the UNFCCC process in the eyes of both parties and observers.[62] The urgency to reduce GHG emissions made parties feel impatient to create a legal framework as soon as possible. The multilateral record, however, shows that "oftentimes strong, stable and legally binding architectures are not simply hatched; they are built step by step over time".[63]

So how should the climate change regime evolve?[64] One way is by giving priority to institutional development and then gradually turn to legalization. For example, even if parties do not formally agree on mitigation pledges, they can move forward in other areas, including stronger support for developing countries and better systems for the

measurement, reporting, and verification of mitigation efforts. These measures will build the UNFCCC's role as an international forum for *action*, as opposed to *negotiation*. Once parties are prepared to legalize their commitments, one possibility is to initially adopt parallel agreements, and only later merge the various tracks into a single agreement.

Some have proposed a top-down,[65] burden-sharing architecture for international climate policy going forward, designed to produce a fair distribution of burdens across countries,[66] while also giving priority to economic development, addressing concerns about wealth inequality, and achieving emission reductions consistent with limiting the expected increase in global average temperature to 2 degrees Celsius.[67] This proposal to change the current rules of the game accepts the UNFCCC's principle of "common but differentiated responsibilities",[68] but eliminates the distinction between Annex I and non-Annex I countries. The variables that could be used to differentiate the responsibilities of the UNFCCC parties are total GDP, per capita GDP, total emissions, per capita emissions,[69] and population *inter alia*.[70]

If we pursue the evolutionary approach to climate change, and defer for now the question of ultimate legal form, what happens to the Kyoto Protocol? Parties could choose to keep elements of Kyoto operational (for example the CDM) even after its first commitment period expires after 2012. Eventually, the CDM and other elements of Kyoto could be incorporated into whatever institutional structure is established by a new legal agreement.

i. Climate-based RTAs and the Building-Blocks Approach

Trade mechanisms can be an effective tool for securing environmental objectives. Since reaching a global climate change agreement is no easy task, this article proposes the use of regional trade agreements (RTAs)[71] with strong climate change chapters for the creation of a future global climate change agreement. This regional approach is more realistic than aiming for a global climate agreement. Both approaches share the objective of creating a strong international framework for climate action. However, they differ on how to achieve the goal.

The multilateral trading system—just like climate negotiations—has been besieged with institutional difficulties, resulting in an enormous proliferation of RTAs as a way to progress. WTO Members that traditionally favored most-favored-nation (MFN) liberalization based on the WTO rule of non-discrimination[72] are increasingly being drawn into RTAs. Given this tremendous proliferation of RTAs in recent years, the WTO is losing its centrality in the international trading system. RTA

proliferation implies the erosion of the WTO law principle of non-discrimination, which endangers the multilateral trading system.[73] RTAs can help countries integrate into the multilateral trading system, but are also a fundamental departure from the principle of non-discrimination.

So why do countries conclude RTAs? There are both economic and political reasons. One of the economic reasons is that countries are in constant search for larger markets since they feel the pressure of competitive regional liberalization. "Moreover, deeper integration is always much easier at the regional level than it is at the multilateral level. Furthermore, as we know from previous experience, multilateral negotiations can take a very long time and are very complex, whereas RTAs move much faster.[74] Despite repeated statements of support and engagement, WTO Members seem incapable of marshaling the policies and political will needed to move the multilateral trade agenda forward".[75] Trade powers want to gain greater access to one another's markets but, at the same time, have struggled to lower their own trade barriers.[76]

There are also several political reasons for countries to engage in RTAs: they ensure or reward political support; regulatory cooperation is easier regionally than it is multilaterally; there is less scope for free riding on the MFN principle; and there are always geopolitical as well as security interests for the conclusion of RTAs. Thus, while most countries continue to formally declare their commitment to the successful conclusion of the Doha Round of multilateral trade negotiations—which would contribute toward enhancing market access and strengthening the rules-based multilateral trading system—for many countries, bilateral deals have taken precedence and their engagement at the multilateral level is becoming little more than just a theoretical proposition.

The current proliferation of RTAs may be an effective avenue toward a future global climate change agreement. We should capitalize on these RTAs in the climate arena. How so? Why not incorporate strong climate change chapters to RTAs so that they become building blocks toward reaching a multilateral agreement in the climate regime? For example, countries should include climate-protection chapters in their bilateral/regional trade agreements and support greenhouse gas-reducing activities in third countries.

As Houser argues, "the climate doesn't have time for a Doha-like approach",[77] referring to the extremely low progress of multilateral trade negotiations. This is how trade and climate change get to cooperate: based on the premise that RTAs can be used as building blocks for

multilateralism, one could envisage a global climate change agreement based on climate-related RTAs, especially large RTAs such as the Trans-Pacific Partnership.[78] Indeed, given how proactive developing countries are in the conclusion of RTAs, this option would be an effective way toward a future global climate change agreement, especially since Kyoto demands nothing concrete of them. In this sense, climate-based RTAs can be used as a legal mechanism to move forward the multilateral climate change agenda, thereby including also major developing countries.[79]

Admittedly, the approach of using climate-based RTAs as building blocks for multilateralism may lead to regulatory fragmentation as well as confusion,[80] legal conflict, and uncertainty,[81] whereas a global climate change agreement would serve as a more coherent and unified international framework for regulating climate change.[82] Moreover, since the building-blocks approach does not require universal participation, it may reduce the urgency of global cooperation.[83] Therefore, even if climate change policy does become increasingly bilateral, these agreements would ultimately have to lead to a global climate treaty with common rules and common procedures. Nonetheless, overall there is much within the trade experience that can be inspirational for the case of climate change.

ii. Incremental Bottom-up Approach

The idea behind the bottom-up approach[84]—which envisions the international climate change effort as an aggregation of nationally defined programs put forward by countries on a strictly voluntary basis—is to aim at economic change toward a low-carbon future through promoting energy efficiency and inducing technological breakthroughs throughout the economy.[85] Each country would determine what is socially, economically, politically, and technically feasible based on national circumstances.[86]

A good example of a bottom-up initiative is the 2005 Asia-Pacific Partnership on Clean Development and Climate, adopted in January 2006, where a group of major Asia-Pacific countries (Australia, Canada, China, India, Japan, Korea, and the U.S.) engages in discussions about energy security, air pollution reduction, and climate change.[87] Collectively, these countries account for more than 55 per cent of the world's GHG emissions, population, economy, and energy use.[88] The Charter of Asia-Pacific Partnership on Clean Development and Climate clearly stipulates in its preamble that "the purposes of the Partnership are consistent with the principles of the United Nations Framework Convention on Climate Change and other relevant international instruments, and are intended to complement but not replace the Kyoto Protocol".[89] The Charter further stipulates that one of the purposes of the Charter is to "create a voluntary,

non-legally binding framework for international cooperation to facilitate the development [...] and transfer of [...] cleaner, more efficient technologies and practices among the Partners".[90] At the same time, the Charter also stipulates that, while the Partners have come together voluntarily to advance clean development and climate objectives, they recognize that "development and poverty eradication are urgent and overriding goals internationally".[91]

At an individual-country level, the U.S. has some policy tools available that may allow for international cooperation with respect to GHG mitigation. For example, there are options for the U.S. Environmental Protection Agency to implement regulations under the Clean Air Act[92] to limit GHG emissions. The U.S. could also use some form of cap-and-trade scheme to limit its GHG emissions.[93] There may, within the cap-and trade scheme, be scope to trade offsets arising from emissions reductions in developing countries; thus, U.S. firms investing in emissions reductions in such countries could use the reductions as credits against their Clean Air Act emissions limitations requirements.[94] There is also a number of subnational carbon trading schemes already in operation or in development, notably the Regional Greenhouse Gas Initiative (RGGI),[95] a system for utility emissions limitations in Northeast states in the U.S., and the Western Climate Initiative, spearheaded by California's GHG emissions limitations program.[96] In addition, there are some early examples of international cooperation among sub-national jurisdictions looking toward some form of transnational emissions trading.[97] In this respect, RGGI has been in discussion with the UK about such a scheme. California has signed a Memorandum of Understanding with the Brazilian state of Acre and the Mexican state of Chiapas, forming a working group that seeks to promote efforts on Reducing Emissions from Deforestation and forest Degradation (REDD).

For the future, a very plausible scenario entails cooperative GHG regulatory arrangements among large GHG emitters (whether developed or developing countries), including progress towards some form of GHG limitations/emissions trading system. From the U.S. perspective, this scenario would allow U.S. firms to satisfy any obligations to reduce emissions by purchasing allowances or credits from developing countries at a substantially lower cost than they would incur if they achieved the reductions domestically. This cooperative scenario, along with an agreement by major developing country emitters to limit emissions, would enhance the prospects for securing climate legislation in the U.S. Congress, especially given the fact that the absence of any developing country emissions limitations obligations according to the Kyoto Protocol

was a key factor in the broad opposition in the U.S. Senate to the Kyoto Protocol with the Byrd-Hagel resolution in 1997. Major emitters such as China and Brazil would be interested in some form of cooperation if it brought, through emissions trading or otherwise, further investment and technology to their countries (as has been the case with China through the Kyoto Protocol's Clean Development Mechanism). Major emitters would also be interested in some form of cooperation if it provided an expanded market for their goods (for example, biofuels in the case of Brazil, and wind and solar equipment in the case of China). However, these two countries are currently reluctant to accepting regulatory obligations that might threaten their ability to continue high rates of economic growth, now or in the future.

iii. Multilateralizing Bilateralism: Beyond China and the U.S.

What is absurd is that the world's first and second largest CO2 emitters—i.e., China and the U.S. respectively—are not bound by the Kyoto Protocol.[98] Together, they account for 42% of the world's total GHG emissions. If we are serious about reducing GHG emissions, we must have both countries on board, without which it is difficult to continue with climate change negotiations effectively. The continuation of Kyoto as it is now is less effective in the absence of China and the U.S. The international community should amend Kyoto so that China and the U.S. are legally bound. The U.S. is a crucial country in climate change negotiations because it has both the technology and the financial capacity to reduce GHG emissions.[99] Having the U.S., China, and the EU on board would certainly expedite the creation of a future global climate change agreement.

The United States and China are cooperating on a number of joint efforts over clean technology, which plays a major role in the relations of the two countries.[100] If the United States and China can continue their clean technology collaborations, it will show the world that two major players on the international climate change platform are serious about combating the climate change challenge, and it will also encourage other countries to create alliances. Among the most noticeable efforts are:

> 1) The United States-China Clean Energy Research Center, which will facilitate research and development by a team of leading scientists and engineers in the clean technology industry. The initial research priorities include promoting energy efficiency, clean vehicles, and clean coal, which includes carbon capture and storage.[101]
> 2) The United States-China Energy-Efficient Buildings, which is an action plan for green buildings and communities, industrial energy

efficiency, consumer products standards, advanced energy efficiency technology, and public-private engagement.[102]

3) The United States-China Electric Vehicles, which reflects the shared Sino-American interest in greater utilization of electric vehicles to decrease oil dependence and greenhouse gas emissions, while promoting viable economic growth.[103]

4) The 21st Century Coal Program,[104] which calls for collaboration between a number of companies in the United States, including General Electric, AES, and Peabody Energy. These companies will be working with a number of Chinese companies to develop an integrated gasification combined cycle power plants, methane capture, and other technologies that promote a cleaner use of coal resources.

5) The China Greentech Initiative.[105]

6) The United States Alliances in Chinese Cleantech Industry.[106] Currently, many companies from the United States are exploring opportunities through alliances, clean technology and capital technology transfer investments. This new exploration leads to an increase in opportunities to assist clean technology into becoming one of the largest industries on a global platform.

7) The United States-China Renewable Energy Partnership,[107] which develops roadmaps for widespread and continual renewable energy research, development, and deployment in the United States and China,[108]including renewable energy road mapping, regional deployment solutions, grid modernization, advanced renewable energy technology research, and development collaboration in advanced biofuels, wind, and solar technologies, as well as public-private engagement to promote renewable energy[109] and expand bilateral trade and investment via a new annual United States-China Renewable Energy Forum.[110]

8) The United States-China Energy Cooperation Program,[111] which is a vehicle for companies from both countries to work together and pursue clean sector market opportunities, address any trade impediments, and increase sustainable development.

9) The U.S.-China Regional Cooperation Initiatives, such as the U.S.-China Green Energy Council (based in the San Francisco Bay area),[112] the U.S.-Clean Energy Forum (based in Greater Seattle),[113] and the Joint U.S.-China Cooperation on Clean Energy (based in Beijing, Shanghai, and Washington D.C.).[114]

A way forward in climate change negotiations is the creation of bilateral deals between developed and developing countries, possibly (and desirably) involving the U.S. These could include emissions allowances, a Kyoto-type

Clean Development Mechanism, cash, and non-climate change benefits in trade or other side payments[115] or linkages,[116] for instance, and may solve some of the equity problems among countries of who pays how much.

2. *Variable Geometry*

Variable geometry is a possible option to move forward toward a global climate change agreement. Variable geometry, a decentralized system, consists of making deals within smaller clubs[117] of like-minded countries such as those in the Major Economies Forum on Energy and Climate (MEF), which brings together large emitters of GHG.[118] These clubs could eventually expand to reach the entire UNFCCC membership, as is the case of the so-called Green Room in the WTO,[119] a similar practice of which already exists in many forms in the UNFCCC negotiations. Another example of variable geometry at the WTO was the July 2008 WTO Mini-ministerial Conference, composed of a trade G-7,[120] because of the serious difficulties that arose from the entire WTO membership of more than 150 Members trying to move the trade agenda forward. The desire to complete the Doha Round of multilateral trade negotiations was such that the negotiations' membership was reduced to 40 countries and eventually just the seven key players at the WTO; hence the name mini-Ministerial Conference. That said, the mini-ministerial conference was just a means to try to reach an informal agreement in the WTO framework, whereas the actual WTO agreement would need the approval of the entire WTO membership.[121] In the case of climate change, ideally these clubs of countries could be integrated into a single framework agreement on climate change, resulting in greater coordination and reciprocity.

In the EU context, there are two classic examples of variable geometry (or enhanced cooperation, as it is known in the EU parlance),[122] namely the Schengen Agreement and the Eurozone. The Schengen Agreement started in 1985 among five EU Member States for abolition of border control. As of 2008, 22 EU Member States and three other non-EU European countries were part of the Schengen Convention. In the case of the Eurozone, it started with 11 members. As of 2011, the Eurozone is composed of 17 of the 27 EU Member States, which have adopted the Euro as their common currency. These two experiences show that creating smaller working groups within the context of larger, less manageable systems can foster both cohesion among the members and advancement of the integration process.

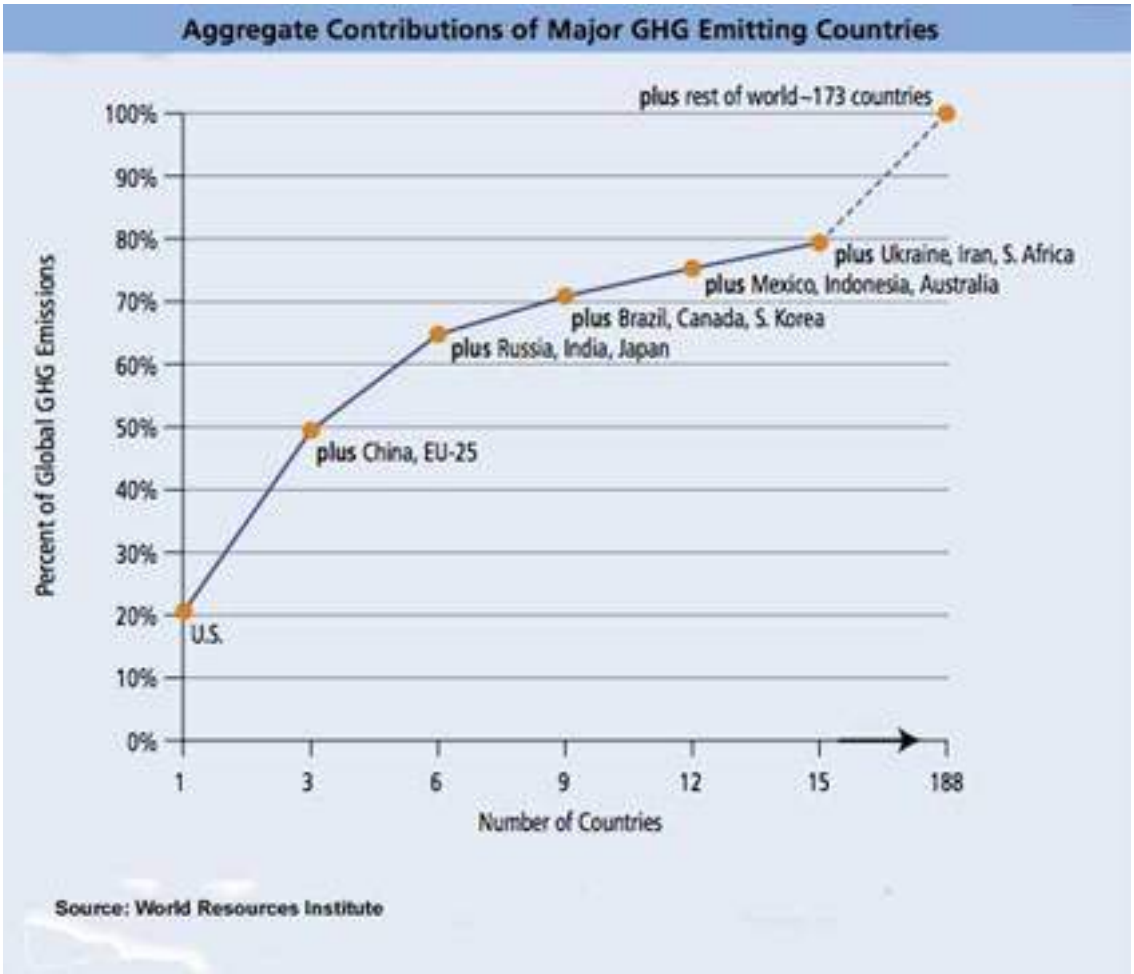
Pursuing the climate change challenge in *fora* other than the UNFCCC could complement evolution within the UNFCCC (i.e., it does not have to

be an either/or situation). If the UNFCCC stalls, these non-UNFCCC processes would become more urgent. For example, as countries move forward with domestic emissions trading systems, they likely will look for opportunities to link them through bilateral or plurilateral arrangements. Moreover, if, for instance, climate-related trade disputes begin to arise more frequently, they could easily lead to cases before the WTO, which might be then forced to consider rules to mediate between trade and climate policy.

a. The Underlying Rationale and Incentive Creation

Based on empirical observation, variable geometry (or a 'club' approach) seems both logical and fair as a mechanism to move forward the climate change agenda, given that a relatively small number of countries produces a large majority of GHG emissions. Moreover, from a practical viewpoint, it is easier to negotiate amongst a small number of large players than amongst a large number of small players, which explains the creation of clubs. So bringing together a group of countries (i.e., major GHG emitters in the case of climate change, whatever the format may be, whether bilaterally or plurilaterally) seems to make sense, especially because there is more pressure to deliver when the group of countries is smaller.[123] Furthermore, less time is spent on procedural matters when dealing with a small group of countries. Moreover, based on international negotiating experience from other fields, the only way to get any real business done is in small meetings (sometimes tête-à-tête meetings between key leaders).[124]

Indeed, the chart below shows that 15 out of the 195 UNFCCC members were responsible for approximately 80 per cent of global GHG emissions in 2005. This figure means that the remaining UNFCCC membership was only responsible for around 20 per cent of global emissions. In other words, very many countries have contributed very little to climate change, but very few countries have contributed very much. This latter small group of countries should therefore be responsible for fixing the current situation, which would be easier and less complex to fix in a small club than among the entire UNFCCC membership. The horizontal axis of the chart denotes the number of countries most involved in the UNFCCC. Moving from left to right, countries are added in order of their absolute GHG emissions, with the largest GHG emitter added first.[125]



If we accept this club approach, what *fora* may be used for formulating a global response to climate change?[126] The G-20, the MEF, the G-8,[127] the G-3,[128] and regional groupings all seem plausible options to provide political leadership. They all have the shared vision that GHG emissions must be reduced, with targets for developed countries and actions from developing countries. As mentioned earlier, though, not every part of the world needs to be represented at the beginning. The global GHG contribution of the least-developed countries and small island developing states is so minimal, that it seems logical to start with the major GHG emitters and eventually have the rest of the world join in the quest for GHG emission reduction. Once the major parties are grouping together, the chance of having other countries join increases.[129] Previous experience shows that negotiating and decision-making resulting from such clubs has been valuable in *fora* such as the UN Convention on the Law of the Sea, the WTO or the creation of the Montreal Protocol.[130] So there seems to be added value to formalizing negotiations in smaller groups.

As for the creation of incentives for a future climate change agreement, an optimal treaty should be such that no state can benefit from withdrawing and no party can benefit from failing to comply. Incentive is a major reason why countries agree to ratify agreements. The European Union is a good example of countries willing to give up (some of) their sovereignty to join a supranational institution because there are clear advantages to becoming a member. Another example is China's accession to the WTO, which meant reforming much of China's economy to be WTO-compatible, in return for which China has benefited immensely on a domestic front.

b. Forum Options

This sub-section argues that polycentric systems can produce collective action more effectively than unified institutions such as the UNFCCC/Kyoto Protocol process.[131] Moreover, it is also argued that climate governance should follow the examples of concentric circles in larger structures in other fields of global governance. For instance, just as the G-20 in the context of the International Monetary Fund or the Security Council in the context of the United Nation are examples of concentric circles for monetary and foreign policy respectively, the Major Economies Forum on Energy and Climate may serve as a concentric circle for global climate governance. However, in the case of climate change negotiations, least-developed countries and small island states have constantly shown their preference for the UNFCCC as a negotiating platform. Below are some non-exhaustive suggestions of plausible forum options to produce collective action in climate change mitigation and adaptation. The various selected concentric circles from smaller to larger are the G-3, the MEF, and the G-20.

i. The G-3

An agreement among a small group of major GHG emitters (for example, China, the U.S., and the EU, i.e., the G-3) could provide a starting point for building new international emission-reduction commitments involving all major emitting countries. If this group of countries can agree to some meaningful measures, then the arrangement might be expanded to include Brazil, Japan, Australia, Canada, India, Indonesia, South Africa, possibly Russia, and other major emitting countries. This major emitter "club" could be built under the auspices of an existing international forum, such as the G-20 group of major developed and developing countries, or a new network organization, and eventually feed back into the UNFCCC, which would provide much more legitimacy to the exercise. On the other hand, major countries that are not at the table may object to a three-party

initiative (such as the suggested one of China, the U.S., and the EU), triggering backlash that could impede progress on global emissions reductions.

ii. The Major Economies Forum on Energy and Climate

The Major Economies Forum on Energy and Climate (MEF) was launched on March 28, 2009.[132] The MEF is intended to facilitate a candid dialogue among major developed and developing economies, help generate the political leadership necessary to achieve a successful outcome at future UN climate change conferences, and advance the exploration of concrete initiatives and joint ventures that increase the supply of clean energy while cutting greenhouse gas emissions. The MEF partners include: Australia, Brazil, Canada, China, the EU, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, Russia, South Africa, the UK, and the U.S.[133]Bringing together these major emitters, which were responsible for around 75 per cent of GHG emissions in the world as of 2009,[134] will increase the likelihood of reaching a climate change agreement, as the MEF is a more efficient negotiating forum than the UNFCCC.[135] Furthermore, an agreement amongst them would be almost as valuable as an agreement amongst all UNFCCC parties in terms of absolute GHG emission reductions, since most GHGs come from the MEF partners.

The MEF is therefore a means to facilitate progress in the climate change negotiations. The MEF has a controversial relationship with the UNFCCC/Kyoto Protocol process and offers a substantially different means to respond to climate change.[136] The Kyoto Protocol is universal in scope, whereas the MEF is based on small-group negotiations among 17 parties; the Kyoto Protocol is legally binding, whereas the MEF stresses voluntary measures; the Kyoto Protocol focuses on GHG emission reduction, whereas the MEF fosters technological innovation. To avoid the obstacles faced by the UNFCCC machinery, the MEF should focus on each member's economic weight as well as GHG emission reduction responsibilities, in order to fairly decide who should reduce GHG emissions and by how much.

iii. The G-20

Most of the largest GHG emitters have large economies, large populations, or both. Given the direct link between climate change and the world economy, the G-20 could be a plausible forum for moving forward the climate change agenda. The G-20 "brings together important industrial and emerging-market countries from all regions of the world. Together, member countries represent around 90 per cent of global gross national product, 80 per cent of world trade [including intra-EU trade] as

well as two-thirds of the world's population. The G-20's economic weight and broad membership gives it a high degree of legitimacy and influence over the management of the global economy and financial system".[137] In 2008, the G-20 represented 66 per cent of the world's population and produced over 80 per cent of the world's GHG emissions.[138]

V. Incentives for Cooperative Compliance

Moving forward post-COP-16 in Cancún, two main issues are necessary for the creation of a global climate change agreement: 1) obtaining binding commitments and 2) the enforcement of obligations. The first attempt to negotiate specific binding commitments began in 1995 with the Berlin Mandate, which grew out of the impending failure of industrialized countries to implement the voluntary commitments in Article 4 of the UNFCCC. Two years later, countries signed an agreement in Kyoto that contained binding provisions, including specific targets and timetables for emissions reductions below 1990 levels (-7% for the US, -8% for the EU, -5% for industrial countries overall, based on average emissions in 2008-2012 compared to 1990). The Kyoto Protocol also included novel and controversial flexible mechanisms for meeting those obligations, largely to satisfy the concerns of the U.S. that it would not otherwise be able to meet its target.

Basically, States commit to treaties because it is in their own interest. In the first place, treaties are bilateral, where there is a *quid pro quo*. An example is bilateral investment treaties, where the investing State will provide investment capital in exchange for a degree of security in the way that capital and the resulting returns are treated. Later, there appear multilateral treaties setting up a legal regime,[139] so that a State does not bind itself without there being a credible multilateral regime under which a substantial number of States are bound, thus providing the *quid pro quo*.[140]

The basic problem with establishing a regime on GHG emission reductions has been the failure to establish a balance between setting up a regime and having a built-in reciprocal element—in part because of the insistence of the developing countries that, because of their low historic contribution to climate change, they should be excused from onerous commitments and, in part, but linked to the first element, because of the reluctance of the U.S. to undertake commitments which many see as unilateral as well as onerous.[141] In the past, the UN machinery has produced agreements well enough where it can be shown that there is a degree of fairness for all.[142]

So if the commitments are to be offered by States as binding obligations, one has to look for another way. In some cases, regional organizations might spearhead the way if each State thought that they were all in the same boat and that there was a balance. The EU has done this in several contexts and then extended its system broadly into a multilateral regime. Generally, in many areas the EU has adopted standards and then required aspirant trade partners or those countries hoping for EU development aid, partnership, or EU membership to swallow these standards by way of approximation. The essential-elements clauses for human rights and non-proliferation, to name but a few, show the technique. By conceptual analogy, one could well envisage the use of this technique for GHG emission reduction commitments. With the other areas, for the most part there exist multilateral agreements already to which the suppliant State is expected to accede.

As for the enforcement of obligations, if the Kyoto Protocol obligations are a last, rather than a first step toward worldwide GHG emission cuts, they would not, in and of themselves, reduce GHG emissions very much due to the absence of any long-term commitments or developing country involvement.[143] A global carbon trading zone was envisioned in Kyoto in 1997, but nothing came out of it in part because it would have to be established and enforced by a legally binding treaty. Therefore, this article suggests the creation of a new mechanism modeled on the General Agreement on Tariffs and Trade (GATT) that would monitor national commitments to cut GHG emissions, even if it is acknowledged that multilateralism is not doing that well these days.

Using the GATT monitoring as a model would be perfectly feasible so long as the monitoring is carried out by an international body with environmental expertise. There may well be lessons to be learned from the GATT techniques as regards compensatory adjustments for violations. Clearly, it would not be acceptable for country A to feel free to disregard its own GHG emission commitments because country B has—in the opinion of country A—already disregarded its commitments. The monitoring problem arises only once the commitments are made, even if sometimes States are reluctant to undertake commitments because they believe that others will cheat and not be caught out.[144]

So how would a new mechanism modeled on the GATT monitor national commitments to cut GHG emissions? Unlike the Kyoto Protocol, which would have subordinated a State's policies to the decisions of an international organization, a future General Agreement to Reduce Emissions (GARE) would perform in the same manner as the 1947 GATT in terms of setting rules, dispute settlement, and creating incentives for

countries to coordinate their efforts in reducing greenhouse gas emissions.[145] Just as was the case in the GATT, the advantage of the proposed GARE is that it would not have to be established or enforced by a legally binding treaty.[146] Countries could join the GARE by adopting their own ambitious and verifiable reductions targets based on domestic legislation. So although the international dimension of the GARE would be politically binding, the GARE would be based on legally binding national obligations.

Parties to the GARE would cooperate with each other to make sure that all of them have reliable reporting, monitoring, and enforcement mechanisms. Once the laws of the various participating countries are sufficiently ambitious in reducing emissions, and once they have confidence in one another's compliance with their own targets, international emissions trading would be the logical next step.[147] A single set of rules would presumably lower the transaction costs for participants; and investors would be inclined to fund projects[148] in countries with the most cost-effective emission-reduction policies.[149]

With the high barriers to legislative approval in the U.S.,[150] the GARE would be a major incentive for the U.S. because it would not be a treaty but an agreement. The practical implication of this distinction between a treaty and an agreement is that the GARE would require a sixty-vote majority in the U.S. Senate, instead of the sixty-seven votes necessary for treaty ratification. Moreover, current U.S. legislation already authorizes the United States Environmental Protection Agency (EPA) to trade emissions permits with any "national or supranational foreign government" that imposes a mandatory cap on GHG emissions. Furthermore, the current legislation also requires the EPA to determine that the foreign country's program is "at least as stringent as the program established by this title [Title VII], including provisions to ensure at least comparable monitoring, compliance, enforcement".[151] In other words, countries could legislate nationally and coordinate globally.

VI. Conclusion

To sum up, avoiding the linkage between trade and climate change is not possible. From an economic, environmental, and political point of view, these two areas are inextricably linked, and therefore the international community must find a mechanism to continue to lower barriers to trade while also combating climate change. Ideally, the conclusion of an effective and comprehensive global climate change agreement should be a priority. However, in the absence of that, it would make sense to explore the "clubs approach"—such as the MEF or the G-20—the RTAs

possibility, and the future General Agreement to Reduce Emissions avenue for the creation of a global climate change agreement based on the success of international trade agreements in the past. In this sense, using the evolution of the GATT and WTO as a model for building an effective global architecture to combat climate change is desirable.

Regarding ways to move the climate change agenda forward, it is well known that equitable and efficient international cooperation multilaterally is very difficult. No breakthroughs will take place regarding a global climate change agreement until there is more political maturity on the side of the U.S., and until rapidly emerging economies such as China and India indicate that they are ready to play their part in tackling climate change, since they are part of the solution. Large emitters of GHG need to be involved for negotiations to come to a conclusion. Much progress is still needed until we reach an international agreement that covers all the world's countries and that is strong enough to tackle climate change effectively, and equitable enough to gain the sympathy of all countries.

Based on the experience of incremental multilateralism in the context of the WTO and the EU, an incremental and gradual approach to multilateralism in climate change may take time until all countries of the world are covered by a global agreement on climate change. However, so long as the major GHG emitters are reducing their emissions, not having the full UNFCCC membership on board does not really matter, given that the contribution to climate change by non-major emitters of GHGs is minimal. Moreover, the fact that perhaps only a club of major emitting countries may move the climate change agenda forward plurilaterally to limit GHG emissions—instead of the entire UNFCCC membership—is not as problematic as would be the case in the multilateral trading system, where issues of violation of the WTO law principle of non-discrimination would arise. Unlike the case of multilateral trade agreements, in the climate field, it is better to have a mini-lateral climate change agreement (through clubs or coalitions of the willing) than no agreement at all, [152]if that means making sure that the Earth's rising temperature is being addressed. There are clear costs and risks to not reaching a climate change agreement. Therefore, in the absence of a global climate change agreement, proceeding without the entire UNFCCC membership as the second best option is a wise option.

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[6] Raymond J Kopp, 'The Climate has Changed—So Must Policy' (2011) Issue Brief 11-03 Resources for the Future <http://www.rff.org/News/Features/Pages/The-Climate-Has-Changed-So-Must-Policy.aspx> accessed 22 June 2011 (suggesting what the path for climate change might likely be, given the global economic and political forces shaping the foreign policies of the major nations).

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[10] The Stern Review: The Economics of Climate Change, Summary of Conclusions, p. vi, available at http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/media/3/2/Summary_of_Conclusions.pdf.

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[37] Source: Ibid, 10. The regimes and institutions within the oval are those in which substantial rule-making or other activities have already taken place, focused on one or more of the tasks needed to manage the diversity of cooperation problems that arise with climate change. Those completely or partially outside the oval are those regimes in which additional rule-making is needed.

[38] See generally Thomas Cottier and Panagiotis Delimatsis (eds) *The Prospects of International Trade Regulation: From Fragmentation to Coherence* (Cambridge University Press, 2011).

[39] For an understanding of how the GATT came into being, see Douglas Irwin, Petros Mavroidis and Alan Sykes, *The Genesis of the GATT* (Cambridge University Press, 2008).

[40] See Statement of the GATT Director-General on the Tokyo Round, April 12, 1979, 18 I.L.M. 553.

[41] For further elaboration of the argument, see Rafael Leal-Arcas, *International Trade and Investment Law: Multilateral, Regional and Bilateral Governance* (Edward Elgar, 2010).

[42] See the work by Thomas Cottier, 'Confidence-building for Global Challenges: The Experience of International Economic Law and Relations' (2011) NCCR Trade Working Paper No. 2011/40 <http://www.wti.org/fileadmin/user_upload/nccr-trade.ch/wp5/5.5a/International%20Economic%20Law%20Cottier%20final%200311%20%282%29.pdf> (exploring to what extent the experience in international trade regulation could be employed to design an appropriate architecture in climate change mitigation).

[43] The members of the G-20 are the finance ministers and central bank governors of 19 countries: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom, and the United States. The European Union is also a member, represented by the rotating Council presidency (since the entry into force of the Lisbon Treaty, it is the European Council president) and the European Central Bank. To ensure that global economic *fora* and institutions work together, the Managing Director of the International Monetary Fund (IMF) and the President

of the World Bank, plus the chairs of the International Monetary and Financial Committee and Development Committee of the IMF and World Bank, also participate in G-20 meetings on an ex-officio basis. See http://www.g20.org/about_what_is_g20.aspx.

[44] In the case of the EU integration process trying to find the right balance between the maintenance of any redefined division of competences between the EU and its Member States and ensuring that the European dynamic does not come to a halt, the failed EU Constitutional Treaty had envisaged a flexibility clause (Article I-18 of the Constitutional Treaty), which is the procedure which gives the European Union new competences in areas unspecified by the Constitutional Treaty. According to the flexibility clause, if the European Commission deems it necessary to conduct a new action in order to reach the Union's objectives, it makes a proposal to that effect to the EU Council, which acts unanimously after obtaining the approval of the European Parliament. With respect to the control procedure of the subsidiarity principle, the EU Council may assign the necessary competences to the Union. The new competences cannot, however, entail harmonization of Member States' laws or regulations in cases where the EU Constitutional Treaty excludes such harmonization.

[45] See generally Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge University Press, 1990).

[46] See Robert Keohane and David Victor, 'The Regime Complex for Climate Change' (2011) 9 Perspectives on Politics 7 (arguing that there is no integrated regime governing efforts to limit the extent of climate change. Instead, there is a regime complex: a loosely coupled set of specific regimes).

[47] See the views of UNFCCC Executive Secretary Christiana Figueres at http://www.clintonglobalinitiative.org/ourmeetings/2010/meeting_annual_multimedia_player.asp?id=26&Section=OurMeetings&PageTitle=Multimedia.

[48] On the complexity of setting agreements and institutions in any given area, see Kal Raustiala and David Victor, 'The Regime Complex for Plant Genetic Resources' (2004) 59 International Organization 277.

[49] See for instance Rafael Leal-Arcas, 'Proliferation of Regional Trade Agreements: Complementing or Supplanting Multilateralism?'(2011) 11 Chicago Journal of International Law 597 (arguing that, with the creation of the WTO in 1995, the pyramidal design of the international trading system placed multilateralism at the top of the pyramid, regionalism/bilateralism in the middle, and the domestic trade and economic policies of WTO Member States at the bottom of the pyramid. The author questions whether this vertical structure is still the case today, given the tremendous proliferation of regional trade agreements in recent years and the fact that the WTO is losing its centrality in the international trading system).

[50] Despite its evolutionary structure, the EU also went through crises. One example resulted from a provision in the Treaty of Rome which stipulated that, with effect from 1 January 1966, unanimous voting would gradually be replaced by qualified-majority voting. France, under General de Gaulle, opposed the changeover by rejecting a series of European Commission proposals, blocking their adoption in the EU Council, and refusing to move from unanimous to qualified-majority voting. The French Government decided to express its disapproval by applying the 'empty chair' policy, where France refused to participate in EU Council meetings. The veto of a single country was brought into question. On January 28, 1966, through the Luxembourg Compromise, France agreed to resume its Council seat. It was decided that the majority vote procedure would be replaced by unanimous vote if an EU Member State considers that "very important interests" are at stake.

[51] The members of the finance G-8 are the US, Canada, UK, Germany, France, Italy, Russia, and Japan.
[52] See generally Kenneth Abbot and Duncan Snidal, 'Hard and Soft Law in International Governance,' in Judith Goldstein, Miles Kahler, Robert O. Keohane, and Anne-Marie Slaughter (eds) *Legalization and World Politics* (MIT Press, 2001); Kal Raustiala, 'Form and Substance in International Agreements' (2005) 99 American Journal of International Law 581.
[53] See U.S. Energy Information Administration, *International Energy Statistics 2009*, 2009.
[54] Ibid.
[55] See the study in Raymond Saner, 'International Governance Options to Strengthen WTO and UNFCCC' (2011) CSEND.
[56] See generally Farhana Yamin and Joanna Depledge, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures* (Cambridge University Press, 2004).
[57] See the analysis by Daniel Bodansky and Elliot Diringer, *The Evolution of Multilateral Regimes: Implications for Climate Change* (Pew Center on Global Climate Change, 2010).
[58] See http://www.climatefinanceoptions.org/cfo/node/147; see also http://www.climatefundsupdate.org/listing/adaptation-fund. For an analysis of the adaptation fund, see J. Brown, N. Bird, & L. Schalatek, 'Direct Access to the Adaptation Fund: Realizing the Potential of National Implementing Entities', Heirich Böll Stiftung/ODI Climate Finance Policy Brief No 3, November 2010.
[59] Article 12 of the Kyoto Protocol.
[60] See for instance the Copenhagen Accord as an example of a political commitment.
[61] Daniel Bodansky and Elliot Diringer, *The Evolution of Multilateral Regimes: Implications for Climate Change* (Pew Center on Global Climate Change, 2010).
[62] Ibid.
[63] Ibid, 23.
[64] For various options, see H Winkler and J Beaumount, 'Fair and Effective Multilateralism in the Post-Copenhagen Climate Negotiations' (2010) 10 Climate Policy 638.
[65] See for instance W Hare, C Stockwell, C Flachsland, S Oberthür, 'The Architecture of the Global Climate Regime: A Top-Down Perspective' (2010) 10 Climate Policy 600 (arguing that a legally binding, multilateral agreement is a necessary condition for achieving the highest levels of GHG emission reductions consistent with limiting warming to below either 2°C or below 1.5°C. Clear legally binding commitments within a multilaterally agreed process with strong legal and institutional characteristics are needed to give countries the confidence that their economic interests are being fairly and equally treated).
[66] H Shue, 'Global Environment and International Inequality' (1999) 75 International Affairs 531.
[67] J Cao, 'Beyond Copenhagen: Reconciling International Fairness, Economic Development, and Climate Protection' (2010) Harvard Project on International Climate Agreements Discussion Paper Series 2010.
[68] Article 3.1 of the UNFCCC.
[69] On per capita allocation proposals, see A Agarwal, 'Making the Kyoto Protocol Work: Ecological and Economic Effectiveness, and Equity in the Climate Regime' Centre for Science and Environment <http://old.cseindia.org/programme/geg/pdf/cse_stat.pdf>

[70] For differentiating commitments, see the methodology by J Gupta, 'Engaging Developing Countries in Climate Change: (KISS and Make-Up!)' in D Michel (ed) *Climate Policy for the 21st Century: Meeting the Long-Term Challenge of Global Warming* (Center for Transatlantic Relations, 2003).

[71] Regarding international trade terminology, it is interesting to note that Jagdish Bhagwati prefers to use the terminology of preferential trade agreement (PTA) instead of RTA "because the PTAs are not always regional in any meaningful sense. For example, the U.S.-Israel FTA is not regional." I share his views. J Bhagwati, *Termites in the Trading System: How Preferential Agreements Undermine Free Trade* (OUP 2008).

[72] GATT Article I.

[73] That said, the WTO's dispute settlement system is not applicable to disputes within an RTA.

[74] (*footnote original*) On the issue that decision-making in the WTO has become ever more difficult as the number of WTO Members rises and the range of issues tackled broadens, see Patrick Low, *WTO Decision-making for the Future* (World Trade Organization 2009), online at http://www.wto.org/english/res_e/statis_e/tait_sept09_e/tait_sept09_e.htm.

[75] Rafael Leal-Arcas, 'Proliferation of Regional Trade Agreements: Complementing or Supplanting Multilateralism?' (2011) 11 Chicago Journal of International Law 597.

[76] D Ljunggren, 'G20 Leaders Drop Doha Target, See Smaller Deals' (2010), Reuters <http://www.reuters.com/article/idUSTRE65P27P20100627>.

[77] T Houser, 'Copenhagen, the Accord, and the Way Forward' (2010) PB10-5 Peterson Institute for International Economics 16.

[78] Ghosh and Yamarik have studied the impact of RTAs on the environment. They found that membership in an RTA reduces the amount of environmental damage by increasing the volume of trade and raising per capita income. They did not, however, find that RTAs directly impact the environment. These results suggest that recent surge of regional trading arrangements will not increase the amount of pollution, but in fact may help the environment. See S Ghosh and S Yamarik, 'Do Regional Trading Arrangements Harm the Environment? An Analysis of 162 Countries in 1990' (2006) 6 Applied Econometrics and International Development.

[79] Some scholars have compared developments in the trade policy area with the building-block approach to climate change governance. See Daniel Bodansky and Elliot Diringer, 'Towards an Integrated Multi-Track Climate Framework' (2007) Pew Center on Global Climate Change <http://www.pewclimate.org/docUploads/Multi-Track-Report.pdf>; W Antholis, 'Five 'Gs': Lessons from World Trade for Governing Global Climate Change' in L Brainard and I Sorkin, (eds) *Climate Change, Trade, and Competitiveness: Is a Collision Inevitable?* (Brookings Institution Press, 2009).

[80] T Sugiyama and J Sinton, 'Orchestra of Treaties: A Future Climate Regime Scenario with Multiple Treaties among Like-minded Countries' (2005) 5 International Environmental Agreements 65.

[81] See for instance R Stewart, 'Environmental Regulatory Decision Making Under Uncertainty' in R O Zerbe, and T Swanson (eds), *An Introduction to the Law and Economics of Environmental Policy: Issues in Institutional Design* (Elsevier, 2002).

[82] See generally F Biermann, P H Pattberg, H van Asselt and F Zelli, 'The Fragmentation of Global Governance Architectures: A Framework for Analysis' (2009) 9 Global Environmental Politics 14.

[83] Ibid, 26.

[84] See G Prins, Isabel Galiana, Christopher Green, Reiner Grundmann, Mike Hulme, Atte Korhola, Frank Laird, Ted Nordhaus, Roger Pielke, Steve Rayner, Daniel Sarewitz, Michael Shellenberger, Nico Stehr, Hiroyuki Tezuka, 'The Hartwell Paper: A New Direction for Climate Policy after the Crash of 2009' (2010) London School of Economics and Political Science and University of Oxford < http://sciencepolicy.colorado.edu/admin/publication_files/resource-2821-2010.15.pdf> accessed 22 June 2011; M Hulme, 'Moving Beyond Climate Change' (2010) 52 Environment 15; S Rayner, 'How to Eat an Elephant: A Bottom-Up Approach to Climate Policy' (2010) 10 Climate Policy 615; N Pennell, R Fowler, A Johnstone-Burt and Ian Watt, 'Bottom Up & Country Led: A New Framework for Climate Action' (2010) Booz & Company.

[85] See T Nordhaus and M Shellenberger, 'The End of Magical Climate Thinking' (2010) Foreignpolicy.com <http://www.foreignpolicy.com/articles/2010/01/13/the_end_of_magical_climate_thinking>.

[86] R Reinstein, 'A Possible Way Forward on Climate Change' (2004) 9 Mitigation and Adaptation Strategies 295.

[87] Bodansky and Diringer have studied the possibility of a step-by-step integration process of the climate agenda. See Daniel Bodansky and Elliot Diringer, 'Towards an Integrated Multi-Track Climate Framework' (2007) Pew Center on Global Climate Change <http://www.pewclimate.org/docUploads/Multi-Track-Report.pdf>.

[88] See the fact sheet of the Asia-Pacific Partnership on Clean Development and Climate, available at http://www.asiapacificpartnership.org/pdf/translated_versions/Fact_Sheet_English.pdf.

[89] Charter of the Asia-Pacific Partnership on Clean Development and Climate, preamble.

[90] Ibid, para. 2.1.1.

[91] Ibid, para. 1.1.

[92] U.S. Code, Title 42, Chapter 85.

[93] That said, there are American organizations that oppose the cap-and-trade system. See for instance FreedomWorks at http://www.freedomworks.org/publications/top-10-reasons-to-oppose-cap-and-trade.

[94] John C Nagle, 'Climate Exceptionalism' (2010) 40 Envtl. L. 53; N Bianco and F Litz, *Reducing Greenhouse Gas Emissions in the United States Using Existing Federal Authorities and State Action* (World Resources Institute, 2010).

[95] Regional Greenhouse Gas Initiative, Memorandum of Understanding, December 2005, available at http://rggi.org/docs/mou_final_12_20_05.pdf.

[96] A Diamant, *Key Institutional Design Considerations and Resources Required to Develop a Federal Greenhouse Gas Offsets Program in the United States* (Electric Power Research Institute 2011) (which evaluates the governmental institutional requirements and resources needed to develop a large-scale national domestic GHG emissions offset program in the United States, and the potential institutional barriers that might limit the ability of the evolving carbon market to generate significant offset supplies in the U.S.).

[97] On international cooperation, see D Victor, 'Toward Effective International Cooperation on Climate Change: Numbers, Interests and Institutions' (2006) 6 Global Environmental Politics 90.

[98] Deborah Seligsohn, Robert Heilmayr, Xiaomei Tan, and Lutz Weischer, 'China, the United States, and the Climate Change Challenge' (2009) World Resources

Institute Policy Brief; Pew Center & Asia Society, 'Common Challenge, Collaborative Response: A Roadmap for U.S.-China Cooperation on Energy and Climate Change' (2009); R Stewart and J Wiener, *Reconstructing Climate Policy: Beyond Kyoto* (American Enterprise Institute 2003), Chapter 3 and pp. 102-109 (on how to attract the participation of China and other major developing countries).

[99] S Pacala and R Socolow, 'Stabilization Wedges: Solving the Climate Problems for the Next 50 Years with Current Technologies' (2004) 305 Science 968.

[100] S Wolfson, 'Gathering Momentum for U.S.-China Cooperation on Climate Change' (2009) Tsinghua University Law Journal.

[101] N Jiang and E J Chua 'Clean Development Mechanism in China' (2006) 21 J Int'l Bank L & Reg 569; M Kim and R Jones, 'China: Climate Change Superpower and the Clean Technology Revolution' (2008) 22(3) Nat Resources & Envt 9; Hiranya Fernando, John Venezia, Clay Rigdon, Preeti Verma, 'Capturing King Coal: Deploying Carbon Capture and Storage Systems in the U.S. at Scale' (World Resources Institute, 2008); M Gerrard 'Coal-fired Power Plants Dominate Climate Change Litigation,' (2009) New York Law Journal; D Biello, 'The Price of Coal in China: Can China Fuel Growth without Warming the World?' (2010) Scientific America.

[102] K Khoday, 'Mobilizing Market Forces to Combat Global Environmental Change: Lessons from UN-Private Sector Partnerships in China' (2007) 16(2) Rev Euro Comm & Int'l Envtl L 173.

[103] Fan Gang, Nicholas Stern, Ottmar Edenhofer, Xu Shanda, Klas Eklund, Frank Ackerman, Li Lailai and Karl Hallding (eds), *The Economics of Climate Change in China: Towards a Low Carbon Economy* (Earthscan, 2010).

[104] The White House, Office of the Press, 'U.S.-China Cooperation on 21st Century Coal' <http://www.chinafaqs.org/files/chinainfo/US-China_Fact_Sheet_Coal.pdf>.

[105] M Kim and R Jones, 'China: Climate Change Superpower and the Clean Technology Revolution' (2008) 22 (3) Nat Resources & Envt 9.

[106] See for instance PricewaterhouseCoopers, 'The US-China cleantech connection: shaping a new commercial diplomacy' (2011) <http://www.pwc.com/en_US/us/technology/assets/us-china-cleantech-connection.pdf>.

[107] See for instance US-China Quarterly Market Review, Spring 2011, (which examines the most significant developments in renewable energy markets, finance, and policy in the U.S. and China during the first quarter of 2011).

[108] L Hunter *et al*, *Renewable Energy in America: Markets, Economic Development and Policy in the 50 States* (American Council on Renewable Energy 2011).

[109] J Firestone and J Kehne, 'Wind,' in M Gerrard (ed), *The Law of Clean Energy: Efficiency and Renewables* (American Bar Association 2011); C Komanoff, 'Whither Wind? A journey through the heated debate over wind power' (2006) Orion 30; M Hoffert, 'Renewable Energy Options – An Overview' (2004) from workshop proceedings, *The 10-50 Solution: Technologies and Policies for a Low-Carbon Future*, The Pew Center on Global Climate Change and the National Commission on Energy Policy 1-19, <http://www.pewclimate.org/docUploads/10-50_Full%20Proceedings.pdf>.

[110] J McGee and R Taplin, 'The Asia-Pacific Partnership and the United States' International Climate Change Policy' (2008) 19 Colo J Int'l Envtl L & Pol'y 179.

[111] http://www.uschinaecp.org/.

[112] http://ucgef.org/en.

[113] http://www.cleanenergyforum.org/.

[114] http://www.juccce.com/.
[115] On side payments, see the analysis by Scott Barrett, *Environment and Statecraft: The Strategy of Environmental Treaty-making* (OUP, 2003).
[116] Ibid, chapter 12.
[117] See for instance B Müller, 'UNFCCC – The Future of the Process: Remedial Action on Process Ownership and Political Guidance' (2011) Climate Strategies (where Benito Müller looks at the use of small groups, be it during negotiations or informal consultations, and considers the way in which high-level stakeholders are to give guidance to the climate change negotiations process. The report gives a number of simple and practical ideas for dealing with these issues in a way that benefits the negotiating process).
[118] Choosing the appropriate *forum* is not always easy. For example, if the MEF were to be chosen as the *forum* to move forward the climate change agenda, there would be a free-riding issue with Iran, which is a major GHG emitter, but not an MEF member.
[119] The "Green Room" is a phrase taken from the informal name of the WTO director-general's conference room. It is used to refer to meetings of 20-40 delegations. These meetings can be called by a committee chairperson as well as the WTO director-general, and can take place elsewhere, such as at Ministerial Conferences. In the past, delegations have sometimes felt that Green Room meetings could lead to compromises being struck behind their backs. So, extra efforts are made to ensure that the process is handled correctly, with regular reports back to the full membership. In the end, decisions have to be taken by all members and by consensus. No one has been able to find an alternative way of achieving consensus on difficult issues, because it is virtually impossible for WTO members to change their positions voluntarily in meetings of the full membership.
[120] This trade G-7 should not be confused with the finance G-7 representing the most industrialized nations in the world. The trade G-7 has replaced the so-called "Quadrilateral Trade Ministers' Meeting" or Quad and is composed of the Quad (the US, the EU, Canada, and Japan) plus China, India, and Brazil. Its purpose is to see how key trade and investment matters can be moved forward.
[121] On variable geometry, see the criticism by Daniel Drache of the Sutherland and Warwick Commissions in Daniel Drache, 'The Structural Imbalances of the WTO Reconsidered: A Critical Reading of the Sutherland and Warwick Commissions' Chaos International 9 (arguing that the downside of variable geometry, if adopted, is that it would, de facto, create two classes of WTO Members, making it more difficult for developing countries to defend their legitimate interests at the WTO. <http://www.yorku.ca/drache/academic/papers/structuralimbalancesoftheWTO.pdf>.
[122] In the EU context, this concept refers to a situation in which some countries may integrate more (or faster) than others. This phenomenon has been given many other different names—among them, flexibility, differentiated integration, closer (or enhanced) cooperation, concentric circles, Europe *à la carte*, and two-speed (or multi-speed) Europe. The 1997 Treaty of Amsterdam represented the first attempt to formalize this principle. Before that, however, the UK's and Denmark's opt-outs on the Economic and Monetary Union, the UK's and Ireland's exemptions from the Schengen Agreement, and Denmark's opt-out on anything to do with a common EU defense policy had already created *de facto* variable geometry. Another example was the admission to the EU of the neutral states of Austria, Finland, Sweden, and Ireland, which were not full members of the Western European Union and would inevitably be forced to resort occasionally to constructive abstention in foreign and security affairs. Given the prospect of the EU growing even less homogeneous with

the accession of former Soviet bloc countries, such divergences appeared likely to increase rather than to diminish.

[123] K Abbot and D Snidal, 'Why States Act Through Formal International Institutions' (1998) 41 Journal of Conflict Resolution 1.

[124] A Poteete, M Janssen and E Ostrom, *Working Together: Collective Action, the Commons, and Multiple Methods in Practice* (Princeton University Press, 2010).

[125] Note that the data are pre-2007. Since then, China, and not the U.S., is the largest emitter of GHGs.

[126] See the views by Michael Levi, 'Beyond Copenhagen: Why Less May be More in Global Climate Talks' (2010) Foreign Affairs; see also R Stavins, 'Options for the Institutional Venue for International Climate Negotiations' (2010) Issue Brief 2010-3 The Harvard Project on International Climate Agreements.

[127] The climate G-8 would be composed of China, the U.S., the EU, India, Brazil, South Africa, Japan, and Russia.

[128] I am referring to the G-2 (U.S. and China) plus the EU.

[129] See S Barrett,*Environment and Statecraft: The Strategy of Environmental Treaty-making* (OUP, 2003).

[130] M Kahler, 'Multilateralism with Small and Large Numbers' (1992) 46 International Organization 706.

[131] See for instance the work of Elinor Ostrom on the management of common pool resources and on global environmental change in E Ostrom, 'Beyond Markets and States: Polycentric Governance of Complex Economic Systems' (2010) 100 American Economic Review 641; E Ostrom, 'Polycentric Systems for Coping with Collective Action and Global Environmental Change'(2010) 20 Global Environmental Change 550.

[132] The MEF has gone through a number of name changes. It was previously called the Major Emitters Forum and the Major Economies Process on Energy Security and Climate Change.

[133] See Major Economies Forum on Energy and Climate <http://www.majoreconomiesforum.org/about/descriptionpurpose.html>.

[134] J Broder 'Clinton Says U.S. is Ready to Lead on Climate' (2009) The New York Times <http://nyti.ms/huEbYb>. These numbers include land-use change.

[135] K Oye, 'Explaining Cooperation under Anarchy' (1985) 38 World Politics 21.

[136] On differentiation of countries' future commitments, see for instance M Berk and M den Elzen, 'Options for Differentiation of Future Commitments in Climate Policy: How to Realise Timely Participation to Meet Stringent Climate Goals?' (2001)1 Climate Policy 465; M den Enzen, 'Differentiation of Countries' Future Commitments in a Post-2012 Climate Regime: An Assessment of the 'South-North' Dialogue' (2007) 10 Environmental Science and Policy 185.

[137] See http://www.g20.org/about_what_is_g20.aspx.

[138] See U.S. Energy Information Administration, *International Energy Statistics 2009*, 2009.

[139] In the case of investment treaties, see for example Rafael Leal-Arcas, 'The Multilateralization of International Investment Law' (2009) 35:1 North Carolina Journal of International Law and Commercial Regulation 33.

[140] Some highly successful treaties both set up a regime and have a built in reciprocal element, such as the Vienna Convention on Diplomatic Relations. See E Denza, *Diplomatic Law: Commentary on the Vienna Convention on Diplomatic Relations*(3rd edn, OUP, 2008). The Treaty on the Non-Proliferation of Nuclear Weapons of 1968 is an example of a treaty which contained a *quid pro quo* as well as establishment of a regime and a system for verification of compliance which has

been extended. For an analysis, see D Joyner, *International Law and the Proliferation of Weapons of Mass Destruction* (OUP, 2009) Chapter 1.

[141] See the proposal by the Brazilian Ministry of Science and Technology, "Technical Note on the Time-Dependent Relationship Between Emission of Greenhouse Gases and Climate Change," January 2000; see also proposed elements of a Protocol to the UNFCCC, presented by Brazil in response to the Berlin Mandate.

[142] See, for example, the string of law-making agreements and environmental agreements such as that on the ozone layer in the 1985 Vienna Convention for the Protection of the Ozone Layer (1985) 26 ILM 1527 and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer (1987) 26 ILM 1550.

[143] S Barrett, 'Climate treaties and the imperative of enforcement' (2008) 24 Oxford Review of Economic Policy 239; Xueman Wang & Glen Wiser, 'The Implementation and Compliance Regimes Under the Climate Change Convention and its Kyoto Protocol' (2002) 11 RCEIL 181; D Victor and E Skolnikoff, 'Translating Intent Into Action: Implementing Environmental Commitments,' (1999) 41 Environment 16.

[144] For an analysis of the problem of enforcement of obligations, see G Ulfstein (ed), *Making Treaties Work: Human Rights, Environment and Arms Embargo* (Cambridge University Press, 2007).

[145] William Antholis and Strobe Talbott have studied the possibility of creating an international mechanism modelled on the GATT that would monitor national commitments and create incentives for other countries to coordinate their efforts to cut greenhouse gas emissions. See W Antholis and S Talbott, *Fast Forward: Ethics and Politics in the Age of Global Warming* (Brookings Institution Press, 2010).

[146] There is a difference between a treaty and an (executive) agreement. A treaty is an agreement formally signed, ratified, or adhered to between two or more nations or sovereigns and governed by international law. "The legal terminology used by the United States to describe international agreements is markedly different from that employed elsewhere. Under the U.S. Constitution, the term 'treaty' has a particular meaning—an agreement made by the President with the advice and consent of the Senate." See D Bederman, International Law Frameworks (2001) 158. An executive agreement, however, is an international agreement entered into by the President, without approval by the Senate, and usually involving routine diplomatic or military matters. See B Garner, *Black's Law Dictionary* (9th edn, West 2009) 651.

[147] For an examination of whether international emissions trading falls within the scope of WTO Agreements, whether it might violate substantive WTO rules and, if so, whether it could be covered by exemption clauses, see C Voigt, 'WTO Law and International Emissions Trading: Is there Potential for Conflict?' (2008) 2:1 Carbon and Climate Law Review 52.

[148] Already in the 2009 COP-15 in Copenhagen, consensus was emerging among the Parties to the UNFCCC that a new international climate fund should be established, a fund which would dwarf all existing funds dedicated to supporting developing-country climate change activities. At the same time, there is a growing realization that the current relationship providing guidance and ensuring accountability between the UNFCCC's Conference of Parties and the existing operating entity, is in need of reform. For an analysis of how such a reform could be carried out and how it could be used in providing a legitimate and effective process to set up the new fund, see B Müller, 'Why Reinvent the Wheel?: on establishing new funds while guiding and holding accountable operating entities of the UNFCCC financial mechanism' (2010) Oxford Energy and Environment Comment. See also B

Müller and A Chandani, 'What Expertise? On who should be drafting the framework documents for a new Global Climate Fund' (2010) Oxford Energy and Environment Comment.

[149] For more details on the GARE proposal, see T Stern and W Antholis, 'A Changing Climate: The Road Ahead for the United States' (2007-08) 31 Washington Quarterly 175; see also A Petsonk, 'Testimony before the Subcommittee on Energy and Air Quality' (2007) Committee on Energy and Commerce; N Purvis, 'Trading Approaches on Climate: The Case for Climate Protection Authority' (Summer 2008) Resources.

[150] According to the U.S. Constitution, for a treaty to enter into force, two third of the U.S. Senate have to ratify it. See Article II, Section 2, of the U.S. Constitution.

[151] U.S. House of Representatives, "American Clean Energy and Security Act of 2009," 111 Congress, 1 sess., HR 2454, Title VII, Part C, Section 728, International Emissions Allowances, 774.

[152] Mini-lateralism has been studied in fields other than climate change. For example, Daniel Kono has studied whether mini-lateral agreements help or hinder multilateral cooperation. See D Kono, 'When Do Trade Blocs Block Trade?' (2007) 51 International Studies Quarterly 165. See also mini-lateralism in the context of peace operations in F Attina and D Irrera (eds), *Multilateral Security and ESDP Operations* (Ashgate, 2010).