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EQUITY LESSONS FROM MULTILATERAL REGIMES FOR THE NEW CLIMATE AGREEMENT

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EXECUTIVE SUMMARY

Equity issues will be at center stage in the negotiations for an international climate agreement in 2015. Starting from the moment that the Durban Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC) in 2011 launched the negotiating process leading to a 2015 agreement, equity has become a central question in those discussions. The new climate agreement is meant to apply to all Parties, thus raising obvious questions about which countries will take what actions and how equity should factor into making those determinations. The core principles in the UNFCCC of equity and common but differentiated responsibilities and respective capabilities (CBDR-RC) lie at the heart of this debate.

To shed light on these equity discussions within the UNFCCC, this working paper examines other international regimes as a source of lessons for the climate negotiations. We undertake an overview of several regimes, including environmental, trade, and human rights regimes, and provide examples of how equity issues have been handled. In part, we considered the issues of differentiation among countries, particularly between developed and developing countries. But a central, overarching lesson from our review of these regimes is that equity must be considered not only by the way in which agreements differentiate among the commitments of parties but also with respect to the institutions, support, and procedures that facilitate participation or create conditions that promote the objectives of the regime.

The paper is focused on questions such as whether and how fair commitments are defined; whether countries are supported, based on principles of fairness, in achieving

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key objectives; whether countries receive fair benefits; and whether institutions and procedures are fair in the way they treat different nations. Based on the lessons from across the regimes, we offer some recommendations and conclusions about what the lessons suggest for the 2015 climate agreement. This working paper does not attempt to be exhaustive but, rather, provides an overview based on selective examples and points the way to areas for further research and analysis, including a set of issues that we identify at the conclusion of the paper.

We have divided the lessons into two categories: those relating to differentiation of commitments and those relating to institutions, support, and procedures. We highlight the following key lessons:

Differentiation of Commitments

- A variety of modes of differentiation have been used in a number of multilateral regimes, both for differentiating among parties and for differentiating among the actions they will take; exploring various approaches will be useful for the next steps in the UNFCCC. Differentiating the timing of obligations applicable to parties has been a good model for achieving success in some regimes and may be particularly important to consider in the climate context.

- Establishing an effective process for determining differentiation is key. Differentiated commitments can be agreed through a process in which a basket of objective criteria provide a starting point for discussion, but conclusions are reached through negotiations. Though there are clear differences between European Union (EU) policy and the UNFCCC, the EU experience with a process to determine effort sharing for greenhouse gas emission reduction may provide an instructive model for the UNFCCC process.

- Exploring ways in which the climate regime can be strengthened over time may be valuable. Multilateral regimes can grow more robust over time as those with less capacity are given time to develop before taking on greater commitments. In addition, flexibility of forward movement by leaders, with some parties signing elements of an agreement that enable them to go farther than others, may also help create positive momentum in the regime.

Equity through Institutions, Support, and Procedures

- Finance and other support to enhance access to specific technologies, as well as providing capacity and know-how, are key to achieving equitable and effective outcomes. Access to technology is essential to move from a mindset about sharing burdens to galvanizing opportunity.

- Attention to equity in establishing procedures and institutions is important for strengthening compliance and participation. Facilitative modes of promoting compliance, rather than sanctions, have been useful for developing countries in many multilateral regimes.

- Country ownership of strategies and plans, along with effective monitoring of whether finance is meeting its intended objectives, are important in achieving equity. Attention must be paid not only to amounts of assistance, but also to effective means for implementation; countries receiving finance should play a lead role in strategizing about how to make effective use of resources. In addition, it may be helpful to explore models for monitoring and review of outcomes.

Finally, this working paper identifies further research and analysis that we believe is worth undertaking, including lessons on equity from other regimes relevant to the following issue areas: vulnerability and impacts; technology cooperation, including cooperation involving patents; equitable contributions to and allocation of financial resources; equity at the intranational level; and the negotiating process itself.

INTRODUCTION

Equity issues have been at the core of the international climate debate from its inception, often revolving around questions about how to differentiate obligations for countries at different levels of development. Much of that debate has focused on varying interpretations and perspectives on how to understand and put into practice the principles of equity, often focusing on issues involving common but differentiated responsibilities and respective capabilities (CBDR-RC), among the phrases in the UN Framework Convention on Climate Change (UNFCCC) that is most frequently cited (Winkler and Rajamani 2013).[1]

As the negotiations for a 2015 climate agreement begin to gather speed, the main purpose of this paper is to provide insights from a range of multilateral regimes as to how equity can be addressed in the design of the new agreement. In an effort to expand the current thinking on equity in the climate negotiations, we have undertaken a review of several multilateral regimes to distill lessons from these regimes that can shed light and provide important lessons for the UNFCCC process. How equity should be applied in the coming phases of the UNFCCC is contested, and we are not attempting to resolve those issues in this paper. Rather, we are providing examples that may be useful in envisioning what is possible and that may provide options or ideas for how to address various issues under discussion.

In canvassing other international regimes and arrangements for lessons regarding equity, this paper takes a broad view of what equity involves. While there have been a number of possible definitions proposed for equity, including in the context of climate change,[2] we use what is essentially an operational notion of equity[3] as any of a variety of modes used to achieve collective global objectives in ways that are fair.[4] Although issues of equity at the national and subnational level are also highly relevant to the climate regime, this paper does not address those concerns, instead focusing on equity among nations.

In the climate context, discussions of equity have mainly been focused on the mitigation dimensions of climate action, particularly emission reduction commitments, and have revolved around interpretations and uses of CBDR-RC. Proposals for equitable approaches to addressing responsibility and mitigation goals abound,[5] but parties approach equity differently and have not come to consensus on the best way to share emission reductions. Until now, differentiation under the UNFCCC has been primarily by the distinction between what is required of a clearly demarcated group of developed countries, on the one hand, and developing countries on the other. Developed countries have challenged this binary distinction (Winkler and Rajamani 2013; UNFCCC 2012a); and, while current realities render the previous approach outdated, inequalities remain that must be taken into account. This paper, therefore, examines the ways in which different multilateral regimes have approached the differentiation of commitments.

Yet, despite the center-stage role played by mitigation commitments in the climate negotiations, that is not the whole story. Other aspects of the climate regime are also highly relevant to equity. The paper, therefore, considers equity broadly as the ways in which multiple aspects of a regime may be based, whether explicitly or sometimes implicitly, on some grounds involving fairness. Our approach is to canvass the regimes for examples of various ways in which equity has been handled and identify important positive and negative consequences. The paper is concerned with questions such as whether and how fair commitments are defined; whether countries are supported, based on principles of fairness, in achieving key objectives; whether countries receive fair benefits; and whether institutions and procedures are fair in the way they treat different nations.[6]

The paper is structured so that, in the first section, we consider each of the regimes in a case study, highlighting the specific lessons on equity derived from that regime. In the second section, we synthesize the lessons from each of the case studies within two overarching categories—a category involving differentiation of commitments and another category involving institutional, support, and procedural issues—and suggest how those lessons can be applied in the UNFCCC context. We also propose a set of equity issues that merit further research and analysis to explore lessons from other regimes.

For this paper, we chose a set of regimes that we believe have some relevance or share some common features with the UNFCCC. The multilateral environmental agreements (MEAs) reviewed all address targets for reduction in a specific form of pollution, like the mitigation aspect of the UNFCCC. Many of the regimes, including those not necessarily environmentally related, have aspects that resemble issues relating to procedural equity and equity regarding institutions that are faced by the UNFCCC involving adaptation, finance, technology transfer, and capacity building. We acknowledge that this review is not encyclopedic, and there are other regimes from which equity lessons can be drawn, but the lessons found in the selected regimes are pertinent and useful to the UNFCCC.

The following regimes are those from which we have drawn lessons:

- The international trade regime and the World Trade Organization (Trade)
- The European Union's 1997-98 Burden Sharing agreement and 2009 Climate and Energy Package (EU 1997 and 2009)

- The Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol and various amendments (Montreal)
- The Convention on Long-Range Transboundary Air Pollution and its many protocols (LRTAP)
- The Stockholm Convention on Persistent Organic Pollutants (POPs)
- The Minamata Convention on Mercury (Mercury)
- International aid and the process surrounding the Paris Declaration on Aid Effectiveness (Aid)
- The human rights regime, including the International Covenant on Economic, Social and Cultural Rights (Human Rights)

Inherent in a survey of other regimes is the question of the relevance of the experience under those regimes. To help those engaged with the UNFCCC think creatively, we have reviewed a spectrum of regimes, some of which are more similar to the UNFCCC than others. However, for all the lessons we draw, we have explained how the experience from other regimes might be relevant to the UNFCCC. A more detailed, exhaustive analysis of the regimes for application of equity and its role in relation to the multiple factors influencing outcomes may be warranted as a topic for further research.

LESSONS LEARNED: CASE STUDIES

International Trade Regime

The international trade regime has a history of more than 60 years that can provide insights regarding the challenges of integrating equity into an evolving global regime. Established in 1947, the General Agreement on Tariffs and Trade (GATT) was a provisional arrangement to manage global trade, setting tariffs and other rules mainly for developed countries through successive rounds of negotiations over several decades. In 1995, the World Trade Organization (WTO) incorporated and replaced the GATT and included a dispute resolution process aimed at enforcing the actions laid out in WTO agreements. The negotiations establishing the WTO, referred to as the Uruguay Round, required developing countries to undertake obligations in the trade regime in a significant way for the first time.

Principles of nondiscrimination and equal treatment are fundamental to the trade regime.[7] However, from early in the GATT's history, developing countries raised the need for differential treatment and debate has occurred on how much weight to give to development and distributional considerations, especially when these might require departure from the principles of nondiscrimination and equal treatment (Honkonen 2009, pp. 49–67).

The international trade regime has addressed differences among industrialized and developing countries in different ways over the years, with mixed results. Under the Tokyo Round (1973–79), countries were left to decide whether they wanted to join new GATT agreements on nontariff barriers and other issues, and many developing countries did not. This resulted in legal complexity and a gap between developed and developing countries (Cottier in Bell et al. 2012, pp. 124–32).

The GATT also allowed for exemption of developing countries from some rules and other forms of special treatment under the principle of special and differential treatment (SDT), but this has had mixed results. For example, under the Enabling Clause, industrialized countries can implement the Generalized System of Preferences (GSP), which allows an industrialized country to deviate from the GATT's principles of nondiscrimination by selectively providing lower tariffs to developing countries. This concession comes, however, with conditions and criteria at the discretion of the developed country, which can withdraw the concession at any time (Cottier in Bell et al. 2012, pp. 124–32). The developed countries that grant the preferences have used criteria that eliminate the preferences for products when the developing country reaches some benchmark. For example, this could occur when imports exceed a specified percent of GSP imports of the same product for all GSP countries in three years (European Union) or exceed a specified value or constitute more than 50 percent of total U.S. imports' value of that product (United States).

In establishing the WTO in 1995, the Uruguay Round employed a comprehensive package deal; all countries adhered to most aspects of the agreement.[8] The Uruguay Round combined the increased intellectual property protection and market access in services sought by developed countries with the liberalization of textile and agricultural trade sought by developing countries (Cottier in Bell et al. 2012, pp. 124–32). Currently, under the WTO, countries are placed into three basic categories: developed

countries, developing countries based on self-selection,[9] or least developed countries (LDCs) according to the UN list identifying such countries (WTO 2013c).

The Uruguay Round included an array of provisions for SDT of developing countries and least developed countries (Matthews 2005; Michalopoulos 1999). Developing countries were generally given longer phase-in periods (Jackson 1997, p. 322; International Institute for Sustainable Development 2003; Keck and Low 2004) and other kinds of concessions, such as lesser tariff reductions and exemptions. Sometimes these provisions differentiate not only between industrialized countries and developing countries, but also differentiate least developed countries. For example, under the Agreement on Agriculture, developing countries have flexibility to implement reduction commitments over a period of up to 10 years, while LDCs are not required to undertake tariff reduction commitments (Matthews 2005, p. 5). Under the General Agreement on Trade in Services, developing countries can open fewer sectors, and under the Subsidies Agreement, LDCs and developing countries with a low GDP per capita lacking export competitiveness are exempt from the prohibition on export subsidies.[10]

However, in the years following creation of the WTO, developing countries have been dissatisfied with the extent of the benefits of SDT. A central complaint is that many, perhaps most, of the SDT provisions are nonbinding, "best endeavor" provisions. Other concerns are that technical assistance has been inadequate and used as a negotiating chip, and transition periods have been too short (Honkonen 2009, pp. 60, 66). Attempts have been made to enlarge the benefits, such as the 2000 proposal for a "development box" and the 2004 Framework Agreement in the agriculture negotiations (Matthews 2005, pp. 8–9; IISD 2003). These efforts have stalled, however, along with the broader WTO negotiations, of which agriculture is a part known as the Doha Round.

The difficulties with the Tokyo Round approach (where countries could pick and choose which agreements to sign) were one motivation for the package deal approach of the Uruguay Round, known as the "single undertaking." However, the subsequent Doha Round has stalled with divergence between developed and developing countries. This has led to commentary suggesting that the contemporary multipolar world is inhospitable to package deals and that it may be necessary to move back toward an approach where countries have more leeway to pick and choose which agreements to join (Cottier in Bell et al. 2012, pp. 124–32). However, such an approach risks a gap between the committed and uncommitted, which has led to discussion of an approach that includes participation by all with different commitments and, ultimately, graduation to new obligations. Rights and obligations would depend on economic indicators. Graduation exists in a few instances already but with a resulting loss of benefits, and it has been suggested that research is required to define benefits that could be provided upon graduation, such as enhanced market access (Cottier in Bell et al. 2012, pp. 124–32).

In general, whether and to what extent developing countries actually benefit from the trade regime and the balance of benefits and obligations is a matter that is actively debated. Many representatives and proponents of developing countries maintain that the larger picture is one that tends to disfavor their development strategies and the products in which they wish to expand while developed countries press to enter their markets with agricultural and other products, often subsidized (Tandon 2009, pp. 72–4; Cheng 2007; Khor 2008). Others argue that trade and globalization are beneficial to developing countries and help alleviate poverty; although it is suggested that transitional adjustment assistance and other safeguards are warranted (Bhagwati 2007).[11]

Dispute settlement under the WTO enables complaints to be filed against trade rule violations. Failure to comply with a ruling provides a basis for the winning party to bring proceedings to withdraw trade concessions—that is, retaliate. It has been suggested that smaller countries lack the heft to impose effective sanctions, and, as a result, the system has been used principally by larger countries (Cottier in Bell et al. 2012, p. 143).[12] However, developing countries, at least middle-income countries and emerging countries like Brazil, India, and China, increasingly use the dispute settlement system and have secured significant favorable decisions (Li 2012, pp. 1111–37; Efstathopoulos 2012, pp. 269–93; Schnepf 2011). In this perspective, the dispute settlement body, in providing a neutral tribunal and securing compliance, may be contributing to a wider sense of equity regarding the trade regime.

The WTO review of countries' trade conduct takes place under the Trade Policy Review Mechanism (TPRM). Reviews occur every two years for the four major trading powers—the United States, EU, China, and Japan—every four years for the next 16 countries in share of world trade, and every six years for others, except a longer period

may be fixed for LDC members. The review is based on a submission by the member and a report of the WTO Secretariat, which issues the findings of the TPRM. The rules of the TPRM provide for a process of interaction, including written questions before the review meeting, which "should be answered in writing by the member under review by the start of the meeting." Member governments discuss the Secretariat's draft report in two days of meetings. The reports are important for transparency, but there are no data on whether or not governments take action on TPRM urging or naming and shaming in the WTO (Cottier in Bell et al. 2012, pp. 145–46).

Lessons

- The trade regime reflects long-standing attention to differentiation, including through the use of differentiated timing and level of commitments.

- Flexible forward movement has been important to enabling strengthening of the regime over time, including through agreements on specific issues that enable enhanced commitments by some but not all parties. Even though all parties may not be involved and all issues may not be addressed initially, progress can be made and can serve as a basis for more comprehensive next steps.[13]

- However, dissatisfaction with the results persists. Some of this dissatisfaction stems from the specific terms of differentiation and can be dealt with by addressing those specific issues. However, some of the dissatisfaction stems from more fundamental, clashing interests and views on issues such as agriculture subsidies. It is important to keep in mind that solutions must be tailored to the fundamental issues at stake, rather than assuming that the difficult issues can be resolved by fine tuning prior understandings on differentiation.

- When the trade regime has been able to move forward, it has depended on its ability to convince the world's largest economies that liberalizing markets will, overall, do more good than harm to their interests, while recognizing that this requires transitional buffers and slower progress where domestic economic impacts are significant.

- The TPRM provides an example of facilitative compliance using a peer review mechanism. Both facilitative (TPRM) and mandatory compliance (dispute settlement body) mechanisms exist and might support each other.[14]

- The frequency of review under the TPRM differs for larger and smaller countries to ensure a fair review process.

European Union Climate Policies

Over the past two decades, the European Union (EU) has adopted a series of climate policies that apply to its Member States. While the EU is more economically homogeneous and integrated than the Parties to the UNFCCC, the development of collective climate policies for a significant range of economies can provide important lessons for the international climate process.

In 1997, to provide credibility for the Kyoto Protocol negotiations, the EU adopted an agreement on mitigation "burden-sharing," with differentiated emission reduction commitments for the 15 members of the EU at the time. That agreement was updated in 1998 to reflect the EU's actual mitigation target under the Kyoto Protocol.

The 1997 and 1998 decisions within the EU were negotiated on the basis of mitigation targets that were initially proposed by the Netherlands, then holding the EU presidency, based on an approach to emissions targets called the Triptych Approach. The Triptych methodology proposed overall emission reductions for each country based on criteria for each of three economic sectors: electricity, heavy industry, and the so-called domestic sector (services, light industry, etc.) (Lacasta et al. in Oberthür and Pallemaerts 2010, p. 95). The Triptych Approach used a variety of factors to set emission reductions: a mix of criteria in the electricity sector, including taking into account the level of economic development of certain countries; flat percentage changes for energy efficiency; and convergence of per capita emissions in the domestic sector (Ringius, Torvanger, and Underdal 2002, p. 23). The Dutch government took the emission reductions suggested by the Triptych Approach and adjusted them slightly to take into account less wealthy EU country concerns before injecting the targets into the EU political process (Ringius et al. 2002, p. 27). With those numbers as a starting point, a negotiation ensued, leading to an eventual outcome that grew from the initial proposed targets but reflected a significant political process (Ringius et al. 2002, p. 31).

Both equity and cost-effectiveness were reflected in that outcome (Lacasta et al. in Oberthür and Pallemaerts 2010, p. 97). Countries with higher marginal abatement cost curves received relatively easier targets than they would have otherwise, while countries with lower living standards, based on consumption expenditure per household, received relatively easier targets (Marklund and Samaklovlis 2003, p. 14). This paper's analysis shows the relationship between targets and GDP per capita to be quite close (**Figure 1 in the Annex**). Thus, although the Triptych Approach did not explicitly address a country's GDP per capita, a sectoral approach to reductions, coupled with a negotiating process, led to reasonably equitable outcomes from the point of view of economic capacity.

Ringius et al. (2002, pp. 42–3) argue that "the EU process shows that a few, intuitively appealing quantitative indicators . . . . can usefully guide negotiations on differentiated targets." As Ringius et al. also note, "differentiation by technical formula could greatly complicate negotiations by increasing their technical and scientific content . . . . Differentiation will in the end be decided through a political process, not a technical one, involving pressures and offers." The combination of quantitative guidelines for considering the actions a country might take and a political negotiation building on those guidelines appears to have generated an equitable result.

While the process was different for the EU climate and energy package enacted in 2009 (European Parliament 2009b), which by then covered 27 Member States, the results were similar. The climate and energy package set out legally binding annual greenhouse gas commitments for EU Member States for the period 2013–2020. The agreement's emissions trading system (ETS), which mainly covered electricity and heavy industry, contained a single EU-wide cap instead of the old 27 national allocation plans (Oberthür and Pallemaerts 2010, pp. 44–55). The trading scheme was to be overseen in a centralized manner for all countries by the European Commission and so was not subject to differentiation. Meanwhile, however, Member States retained direct responsibility for emissions control for sectors not covered by the ETS. Those sectors, which included transport, buildings, agriculture, and waste, were covered by the agreement's "effort-sharing" arrangement, which included differentiation among the EU members.

The change in vocabulary from "burden sharing" in 1997 to "effort sharing" in 2009 reflected an effort to highlight opportunities for jobs and clean development. In proposing mitigation targets for the effort sharing agreement, the European Commission (EC) used a number of principles to guide its proposal, including cost-effectiveness, flexibility, fair competition among industries, subsidiarity, fairness (taking into account levels of prosperity and thus capacity), and international competitiveness. The EC gave priority to cost-effectiveness and fairness, and the EC's proposal factored in differentiation for state targets based on GDP per capita, reflecting the principle of "solidarity." Its own analysis showed that countries with low GDP per capita usually have higher reduction costs proportional to their GDP (European Commission 2008, p. 46).

The Commission, therefore, proposed that countries with incomes below the EU average would be allowed to emit more than they did in the baseline year in non-ETS sectors, but only up to a maximum limit of 20 percent. Countries with above-average incomes would have to reduce emissions more than the EU average reduction. Targets were set for each country for each year from 2013 to 2020, with violations subject to infringement action under Articles 226, et seq., of the EC Treaty and additional sanctions flowing from the operation of the Kyoto Protocol compliance mechanisms (Lacasta et al. in Oberthür and Pallemaerts 2010, pp. 103–4, 111).

The Member States accepted targets in the Commission's proposal for the effort-sharing agreement. Again, our analysis shows the relationship between targets and GDP per capita to be quite close (**Figure 2 in the Annex**). The principal remaining negotiations were not on the targets but on flexibility, including carry-over and banking of credits (Lacasta et al. in Oberthür and Pallemaerts 2010, pp. 107–9). The climate and energy package also included other modes of differentiation. Eastern European states were given the option to put in place a gradual shift from free emission allowances to auctioning, allowing them to protect their coal power plants to some extent until 2020 (Skjoerseth and Wettestad in Oberthür and Pallemaerts 2010, p. 80). The package also included a new renewables directive that set mandatory targets for Member States to increase renewable energy by 5.5 percent plus an additional amount weighted by GDP, taking into account existing renewable energy sources (European Parliament 2009a). Member States can also cooperate to achieve their targets jointly (Oberthür and Pallemaerts 2010, pp. 44–55).

The EU provides an example of countries with differentiated obligations that have evolved over time from a political or soft law approach to an approach binding under EU law. The burden sharing agreement of 1997 was soft law, a political agreement establishing a negotiating position for the Kyoto Protocol, as opposed to a commitment. The 2009 Effort Sharing Decision is binding under EU law. The former was an agreement among environmental ministers, while the latter was a decision of Heads of State or Government in the European Council.

Lessons

- Differentiation can be achieved through a process in which objective criteria provide a starting point, but conclusions are reached through negotiations.

- The EU example suggests that taking equity into account was important in building and maintaining consensus on effort sharing over time.

Montreal Protocol

The Montreal Protocol on Substances that Deplete the Ozone Layer is an international treaty that was adopted in 1987 and entered into force in 1989. Under the treaty, countries have agreed to phase-out the production of chemicals that harm the ozone layer. The Montreal Protocol provides some interesting lessons regarding the use of timing as a way of differentiating among countries, the role that technology plays in reaching an agreement's objective, and facilitative approaches to compliance.

The Protocol provided a 10-year delay in chlorofluorocarbon (CFC) reduction requirements during which developing countries with annual per capita consumption below 0.3 kilograms could increase consumption up to that level. The Montreal Protocol also established a Multilateral Fund (MLF) to pay the incremental costs of developing countries ("Article 5 Parties") in complying with the treaty (Benedick 1998, p. 93; Barrett 2003, p. 324).[15] Eastern European countries were initially ineligible for funding under the MLF. However, they received funding from the Global Environment Facility (GEF) after economic shocks due to changed economic conditions accompanying the end of the Soviet Union (Barrett 2003, p. 348).

The relationship between delayed compliance and the MLF is instructive. At Montreal in 1987, developing countries were mainly interested in maintaining use of CFCs for as long as possible. However, as implementation of the Montreal Protocol began, the 10-year delay became almost irrelevant because industrialized countries were moving faster than expected to phase-out CFCs. Developing countries quickly became motivated to move to the new technologies and focused on the need for financial assistance (Benedick 1998, pp. 148, 187). At the same time, many companies preferred not to rely on government finance. Therefore, market forces may have actually played the primary role in the phase-out of CFCs, especially after phase-out in developed countries took off. However, the Fund was important for developing countries as a catalyst, building confidence that incremental costs would be covered and enabling companies to transition sooner than otherwise would have been the case (Benedick 1998, pp. 266-67).

The Montreal Protocol is recognized for its effective compliance system, which has several elements, including the Implementation Committee, the MLF, and the credible threat of trade sanctions. The system is largely facilitative, that is, non-confrontational. Effectiveness is backed by credible sanctions that are rarely used. The sanctions gain legitimacy due to availability of financing under the Fund (Brack 2003). Equity is served by enabling a facilitative compliance process, together with the funding of the MLF for those initially lacking capacity.

When the Protocol was adopted in 1987, the treaty postponed elaboration of a compliance mechanism, which, due to the potential controversial nature of the issue, is thought to have expedited the negotiations and has been followed in other MEAs. The compliance provisions were adopted in 1992, providing for an "indicative list of measures," including a spectrum of actions from facilitative to more confrontational, such as assistance, cautions, and suspension of rights, including trade (Barrett 2003, pp.287–88). The Protocol provides that Parties report data to the Secretariat upon becoming a Party and annually after that on forms provided by the Secretariat. There is no review mechanism to verify accuracy, but for countries working with the implementing agencies of the MLF (UN agencies and the World Bank), there is some external check (Brack 2003).

The Implementation Committee has two members from each of the five UN regions. Parties can bring concerns about other Parties to the Committee or can report their own difficulties with compliance, but the main source of reports of possible non-compliance is the Secretariat based on reporting by Parties of their own data. The Committee usually works with Parties to develop compliance plans, including timed benchmarks or commitments on regulatory

measures. The Committee can also propose sanctions. It then makes recommendations to the Meeting of the Parties for adoption (Brack 2003).

However, the language of the Protocol was carefully written to suggest that capacity to comply depends on finance without explicitly relieving Parties from compliance obligations (Benedick 1998, p. 196). The MLF was created to compensate developing countries for the incremental costs of the phase-out of the specified chemicals. The Fund was created with checks and balances among donors and recipients. The Fund is governed by a two-thirds majority, comprising separate simple majorities among North and South, thus giving both the ability to block. Contributions to the Fund are apportioned according to the UN assessment scale. The issue of mandatory versus voluntary contributions was finessed. While not obligatory, the detailed scale implied commitment.[16]

It has been argued that the trade sanctions and financing were mutually supportive in ensuring maximum implementation; compliance is encouraged by the carrot of the MLF and the stick (mostly behind the door) of trade sanctions against non-compliant Parties (Brack 2003; Barrett 2003, pp. 289, 324). Moreover, it has been suggested that the trade sanctions were perceived as fair and were made an effective deterrent because the MLF gave them moral legitimacy (Barrett 2003, p. 324).

Finally, the Protocol requires Parties to ban import and export to non-Parties of various substances. The purpose of the ban was to encourage participation in the treaty and to deter leakage—movement of industry to non-Parties (Brack 2003). The trade ban helped gain the support of manufacturers of substitutes, who would have been less motivated if leakage occurred, and they, in turn, influenced participation by developed countries (Barrett 2003, p. 321).

Lessons

- The Montreal Protocol exemplifies a form of differentiation based on the broad categories of developed and developing countries, where Parties are required to meet the same commitments but are differentiated based on the timing of commitments and funding for incremental costs.[17]
- While market forces may have played a primary role in phasing-out CFCs, the MLF was important for developing countries as a catalyst in stimulating investment in the new technologies, which helped to promote equity by leveling the playing field with developed countries.
- The Montreal Protocol's compliance mechanism has been primarily facilitative, backed by trade sanctions, but the trade sanctions were perceived as fair and made an effective deterrent because the MLF gave them moral legitimacy.

Long-Range Transboundary Air Pollution

The Convention on Long-Range Transboundary Air Pollution (LRTAP) and its protocols provide an example of agreements through which a wide group of countries set targets for reducing emissions from a range of pollutants.

The LRTAP (UN Economic Commission for Europe 1979) was agreed to in 1979 and has since been adopted by 51 Parties, including many European countries and the United States, and went into force in 1983. Its intent is to gradually reduce the presence of long-range air pollution, and seven of the Convention's eight protocols established national targets for countries to reduce their emissions of certain air pollutants (Bull, Johansson, and Krzyzanowski 2008). Each protocol sets out the obligations for each country in an Annex by establishing emission ceilings that Parties must meet by certain dates. These targets often reflected a stepwise approach with targets that became stricter over time (Bull et al. 2008).

The Gothenburg Protocol to Abate Acidification, Eutrophication, and Ground-level Ozone was adopted in 1999 under the LRTAP (UNECE 1999). The agreement covers Western Europe, North America, Eastern Europe, the Caucasus, and Central Asia. The Protocol sets emission reduction targets for four pollutants: sulphur, ammonia, volatile organic compounds, and nitrogen oxide.

Under the Gothenburg Protocol, those countries with the largest share of emissions are responsible for making the greatest reductions in their emissions, while countries with lower emissions have very little burden to reduce emissions (Wettestad 2001). Overall, this has resulted in large reductions for some of the pollutants (European Environment Agency 2012). Countries adopted cleaner technologies and reduced heavily polluting behaviors in order to achieve these results (EEA 2012).

For some of the pollutants,[18] the obligations of the largest emitters appear to reflect consideration of a country's economic capacity. The Protocol assigned each Party targets for reducing the four covered pollutants across a range of required reductions (UNECE 1999). **Figures 3 and 4 in the Annex** demonstrate the correlation between emission reduction commitments and GDP per capita[19] for the largest emitters of sulphur dioxide (greater than 1,000 tons) and nitrogen oxide (greater than 1,000 tons).

Assigning countries emission targets under the LRTAP and its protocols has proved to be an effective approach to reducing harmful air pollutants throughout Europe (Bull et al. 2008). Scientists and policymakers view the LRTAP and its protocols as effective because of their ability to "bridge different political systems" and enhance the development of abatement strategies through an effects-based approach (Bull et al. 2008). Requiring countries with the highest historical emissions and the greatest capacity to pay for and implement reductions appears to have resulted in an equitable approach to the abatement of air pollution. Since the LRTAP does not comprise as wide a range of economies and geography as many other treaties do, it was likely easier to reach an agreement that most parties could find equitable.

Even though there has not been total compliance with the ceilings that the protocols of the LRTAP established, many of the countries were able to meet their obligations by 2010 and came even further into compliance within a year of the deadline (EEA 2013).[20] Every EU country lowered its sulphur emissions below its particular ceiling, and almost all countries met their reduction requirements for non-methane volatile organic compounds and ammonia (EEA 2012).

Across the EU, the largest emission reduction has been achieved for sulphur oxides, which in 2010 were 82 percent less than in 1990 (EEA 2012). Emissions of the other air pollutants have also dropped significantly since 1990, including carbon monoxide (62 percent reduction), non-methane volatile organic compounds (56 percent reduction), and nitrogen oxides (47 percent reduction) (EEA 2012).

The protocols of the LRTAP have also encouraged Parties to transfer technologies by providing technical assistance, creating favorable conditions for cooperation, and exchanging information on mitigation (UNECE 1988 art. 3, UNECE 1994 art. 3, UNECE 1999 art. 4). The language of the protocols indicates that Parties should cooperate in a reciprocal manner so that there is a two-way technology exchange in commercial terms, rather than one-sided technological assistance (Honkonen 2009, pp. 177–78). Where countries are joint signatories to the LRTAP and its protocols, there has been an increase in the transfer of SO_x and NO_x abatement technologies (Organisation for Economic Co-operation and Development 2011, p. 74). The protocols were able to achieve the reductions that they did partially because of this transfer of clean technologies from one country to another (OECD 2011, p. 74). This was made possible by conferences and documents that facilitated information sharing on available mitigation technologies, as well as by the sharing of best practices regarding the design of policies addressing pollutants and by financial incentives (e.g., preferential access to protected technologies) (OECD 2011, p. 74).

The lessons from the LRTAP and its protocols may be limited given the smaller, though not insignificant, range of the countries' economic capacities and stages of development. Also, many of the countries in the LRTAP are in close geographic proximity, so they have greater incentive to work together to reduce emissions that can harm neighboring countries. Nonetheless, the LRTAP demonstrates that a fairly wide set of countries can use economic capability as a key factor in reaching agreement on effective emission limits.

Lessons

- Differentiating commitments based on emission levels and capability allows each country to make reductions that are in line with its current emissions and ability to make reductions.
- Multilateral environmental treaties have the potential to encourage technology transfer among parties, resulting in an enhanced achievement of the treaty's objective.

The Stockholm Convention on Persistent Organic Pollutants

The Stockholm Convention on Persistent Organic Pollutants (POPs) provides lessons about how questions of equity were handled in international environmental agreements that did not include explicit differentiation of country commitments. While the Convention does not differentiate its obligations, it does differentiate based on the provision of assistance. The Stockholm Convention

entered into force in 2004 after being adopted in 2001. POPs are highly toxic pollutants that persist in the environment, bioaccumulate, and can be transported thousands of kilometers (Chasek, Downie and Brown 2010, p. 142). The hazard that POPs presented led the UN Environment Programme (UNEP) Governing Council in 1997 to call for international action (Chasek et al. 2010, p. 144). This started negotiations, which included workshops on POPs in order to increase awareness, especially in developing countries and economies in transition (Chasek et al. 2010, p. 145).

The Stockholm Convention established different provisions to reduce or eliminate POPs because of their harmful health and environmental impacts. Annex A of the Convention sets out a list of chemicals that Parties are required to eliminate (UN Environment Programme 2001). The Convention allowed Parties to elect to use an opt-in procedure according to which an amendment to the Annexes (i.e., addition of chemicals) would apply to a specific country only if it expressly decided to opt in (UNEP 2001, art. 25(4)). This could be seen as a form of self-differentiation that allows countries with few financial resources to limit their participation. In practice, both developed and developing countries have taken advantage of this provision.[21] In addition, the Stockholm Convention required Parties to use the best available techniques and the best environmental practices in order to prevent and reduce the release of some of the POPs, (UNEP 2001, art. 5(d)–(e)).[22]

The Stockholm Convention addressed the concerns of developing countries through a requirement that developed country Parties provide financial support to developing countries and economies in transition to help them protect human health and the environment from the harmful impacts of POPs in their countries (UNEP 2001, art. 13(2)). All Parties under the Convention have obligations to reduce POPs, but only developed countries have the additional obligation of providing financial resources to cover the costs of implementing mitigation measures in developing countries. Other Parties can also provide financial support if they are capable, but this is purely on a voluntary basis (UNEP 2001, art. 13(2)). The Convention recognizes that developing countries will not be able to effectively implement their reduction obligations if developed countries do not meet their financial commitments (UNEP 2001, art. 13(4)). The Convention therefore established a mechanism for developed countries to provide "adequate and sustainable financial resources" to economies in transition and developing countries (UNEP 2001, art. 13(6)).

During the negotiations regarding the financial support mechanism in the Stockholm Convention, developed and developing countries were divided regarding the design of the mechanism (Kohler and Ashton 2010, p. 461). Developing countries wanted the Convention to create a new financial mechanism that was tailored to this specific treaty in order to allow the Parties of the Convention to have greater control over the types of projects that could receive funding (Kohler and Ashton 2010, pp. 471–72).

Developed countries, on the other hand, wanted the Convention to use an already established financial mechanism, such as the GEF, in part because of the potential to enhance the impact of the aid and streamline the process of providing financial aid for environmental protection (Kohler and Ashton 2010, pp. 472–73). Some developing countries were opposed to the use of the GEF because of concerns about transparency and fairness of funding priorities and decisions (Kohler and Ashton 2010, p. 472).[23] A compromise was reached between the developing and developed countries according to which the GEF would be used as the interim financial mechanism that would be overseen by the Stockholm Conference of the Parties (Kohler and Ashton 2010, p. 474). Some developing countries are still requesting an alternate mechanism to the GEF because of their insufficient capacity to access financing and funding itself being unavailable (Kohler and Ashton 2010, pp. 475, 477). An alternative mechanism could increase the transparency and procedural fairness, which could make it easier for countries to access funding (Kohler and Ashton 2010, p. 472).

Despite the debate over the role of the GEF, as of 2010, the GEF had promised US$425 million for projects related to POPs with US$700 million leveraged in co-financing (GEF 2011, p. 4). While this funding is significant, so far it has mainly gone to implementation planning, rather than to actual implementation. However, there are some signs of progress, such as increased funding and regional centers established to support capacity building (Kohler and Ashton 2010).

The Stockholm Convention also acknowledges the importance of technology transfer and capacity building in allowing developing countries to take necessary actions, such as ending production of the pollutants (UNEP 2001,

art. 13(4)). The Convention requires Parties to establish processes, including regional and subregional centers for capacity building and technology transfer, for developed countries to transfer technology to developing countries and economies in transition (UNEP 2001, art. 12(4)). The assistance not only should be timely, but also should include the appropriate technologies in order for developing countries to successfully manage POPs (UNEP 2001, art. 12(1)). To help countries produce high-quality, comparable data on POPs, UNEP established projects in 32 developing countries to build their analytical capabilities (Fiedler, Abad, van Bavel, de Boer, Bogdal, and Malisch 2013). These projects have allowed developing countries to identify priority areas and potential abatement actions, as well as to evaluate the effectiveness of these actions (Fiedler. et al. 2013).

Lessons

- Equity can be facilitated through the provision of financial support to those countries with the least resources and capacity. In this instance, all countries are required to take action, but developing countries receive support to fulfill their commitments.

- Providing funds for capacity building has allowed developing country parties to collect better quality data on POPs, which has allowed for a more accurate assessment of the effectiveness of abatement actions.

Minamata Convention on Mercury

The Minamata Convention on Mercury, which draws to a significant degree on elements of the Stockholm Convention, is a recently negotiated treaty that was adopted by 140 countries in January 2013 and opened for signatures in October 2013.[24] The Convention will require action to reduce mercury pollution in the air. The health impacts on populations vulnerable to mercury's negative effects helped encourage negotiators to agree to a new regime to regulate mercury. A UNEP Governing Council decision in 2003 determined that sufficient evidence of substantial negative impacts existed to necessitate immediate action to reduce mercury in order to protect the health of vulnerable populations (UNEP 2003). This conclusion stemmed from the findings in two reports that significant health impacts arose from exposure to mercury and certain populations were especially at risk (UNEP Governing Council 2002a, UNEP Governing Council 2002b). Throughout the negotiations, ensuring the prevention of exposure to mercury in vulnerable populations was a concern that influenced views on the actions parties should be required to take (IISD 2012).

The Minamata Convention requires Parties to use the best available technologies (BAT) and the best environmental practices (BEP) to control and reduce new sources of mercury within five years of the Convention entering into force (UNEP 2013a, art.8(4)). Parties must also implement a national plan within 10 years of the Convention entering into force that includes a quantified goal for controlling and reducing mercury emissions, emission limits, the use of BAT and BEP, alternative measures to reduce mercury emissions, and a multi-pollutant control strategy that delivers mercury reduction co-benefits (UNEP 2013a, art. 8(5)).

During the negotiations, some countries proposed specific requirements for countries with "significant aggregate mercury emissions" (SAME) based on a list of atmospheric mercury emission sources (UNEP 2011, p. 11).[25] The proposal would have required the SAME countries to establish a national emission reduction goal, as well as to develop national action plans to reduce mercury emissions from the covered sources (UNEP 2011, p. 11).

Many developing countries opposed these additional requirements for Parties with significant aggregate mercury emissions. For example, China wanted the SAME provision removed, while the African Group and Indonesia wanted further discussion around the issue and a clearer definition of SAME (IISD 2011a, p. 8). Developing countries with large populations, such as Brazil and India, were concerned that they would fall into this category because of the size of their populations and level of their emissions due to their need to provide power (IISD 2011b, p. 6). This was especially a concern for China and India, which together with the United States, accounted for almost 60 percent of global atmospheric mercury emissions in 2005 (UNEP 2010, p. 22). India suggested that if these provisions were to remain, they should be based on emissions per capita, rather than absolute emissions (Government of India 2011, p. 2).

The concerns raised about inequitable obligations caused negotiators to remove the SAME provisions from the Convention. Instead, the Convention's BAT and BEP requirements were adopted for all countries as the principal means to reduce emissions; major emitters will not be required to undertake additional measures beyond

BAT and BEP. The Minamata Convention also encourages the provision of financial assistance as well as technology transfer as a way to address equity considerations (UNEP 2013a, arts. 13, 14). Parties "within their respective capabilities" are required to provide financial and technical assistance to developing countries, especially least developed countries, small island developing states, and economies in transition (UNEP 2013a, art. 14(1)). The Convention also calls upon developed countries to promote and facilitate the transfer of "up-to-date environmentally sound alternative technologies" to developing countries (UNEP 2013a, art. 14(3)). In addition, the Conference of the Parties is tasked with identifying challenges that Parties, especially developing countries, experience with regard to technology transfer (UNEP 2013a, art. 14(4)(c)). This evolution of the treaty's requirements demonstrates that equity also plays a role in the negotiation process.

Lessons

- Equity can be enhanced by the provision of financial support to those countries with the least resources and capacity. All countries are required to take action, but developing countries receive support to fulfill their commitments.

- A focus on vulnerable populations reminds negotiators of the need to take action and influences the requirements that the Convention mandates for the participating countries.

International Aid

While development assistance is not generally negotiated in a multilateral regime, and while many countries view climate finance as distinct from international aid, the recent evolution of international frameworks on assistance provides lessons for structuring the relationships among countries as they attempt to achieve common objectives. Over the past decade in particular, much of the international framework for "aid effectiveness" has focused on country ownership and emphasized the central role of nationally-determined priorities and strategies in driving change. Although many countries distinguish between climate finance and development aid, the focus on country-driven approaches found in development aid can be instructive for both climate finance and for climate policy more generally.

In 2002, the United Nations convened the Financing for Development conference in Monterrey, Mexico, to lay the groundwork for a clearer international agenda on assistance. The Monterrey Consensus on Financing for Development includes an exhortation to developed countries to set their target budget for official development assistance (ODA) at 0.7 percent of gross national income in keeping with a UN resolution passed in 1970, along with general recommendations to make ODA more effective. This 0.7 percent goal has not been met by many donor countries, with the exceptions of Sweden, the Netherlands, Norway, Denmark, Finland (temporarily), and Luxembourg (OECD 2010). The United Kingdom has stated several times that it intends to reach the 0.7 percent goal in 2013 (Booth 2013).

Since that conference, the OECD Development Assistance Committee has convened several meetings of multilateral and national donors to develop frameworks for successful development support and enhanced ownership of development programs by developing countries, which includes management of aid through existing developing country institutions and increased control of their development agendas. In 2005, the Second High Level Forum on Aid Effectiveness adopted the Paris Declaration, which laid out five core principles for aid effectiveness: ownership by developing countries, alignment with recipient country priorities, harmonization among donors working in the same country, managing for results, and mutual accountability. The Accra Agenda for Action, agreed to in 2008, further clarified the specific steps toward reaching the principles and acknowledged emerging "South-South" assistance among developing countries for capacity building and cooperation. The Accra Agenda also looked to ensure country ownership beyond the recipient countries' governments through civil society and private sector engagement (Bird and Glennie 2011).

In 2011, the Busan Partnership for Effective Development Cooperation went beyond the earlier agreements by addressing the role of nonstate actors such as civil society organizations at the country level (Oxfam 2012). Civil society is specifically called upon to enable people to understand and claim their rights. More generally, though, nonstate actors are invited to partner with national governments in developing countries and with donors to broaden the array of approaches available in improving aid effectiveness. The Busan outcome also addressed South-South assistance from developing countries, allowing developing country donors to adhere voluntarily to the agreement's principles, which developed countries were required to fulfill (Oxfam 2012).

Implementation of the five principles of the Paris Declaration has varied by donor and recipient country (Wood 2011). Between 2005 (Paris) and 2011 (Busan), progress had been made in two general areas: country ownership, and delivering and accounting for results (Wood 2011). The improvements in country ownership came mostly in terms of developing countries' strong national-level development strategies and improvements in defining measures and standards for tracking performance (Wood 2011). The improvements in delivering and accounting for results were related to donors' increased transparency (Wood 2011).

Some world leaders questioned whether the Paris Declaration could provide developing countries adequate control over their development process. For example, former President of Tanzania, Benjamin Mkapa, thought that the Paris Declaration would further entrench developing countries' dependency on aid, rather than helping them become self-sufficient (Mkapa 2008). The Office of the High Commissioner for Human Rights commissioned a study on the Paris Declaration in preparation for the Accra meeting. The study found that, while developing country ownership is one of the five principles in the Declaration, implementation and measurement of development assistance in reality often required bilaterally or multilaterally negotiated plans between the developing country and its donors, allowing donors to influence the degree to which the developing country actually makes decisions (Bissio 2008).

However, the evolution of the development assistance agreements demonstrates a strengthening of the principle of country ownership. The Accra Agenda more explicitly states the factors needed for developing country ownership than the Paris Declaration, such as engaging parliaments and subnational governments to take control of the development process by making decisions rooted in nationally identified priorities. The Accra Agenda also more clearly describes how donor countries can support developing country ownership, such as through direct support for improving capacity of actors and institutions. The Busan Partnership's shift of language from "aid effectiveness" to "development effectiveness" is also an indicator of a progression toward fuller developing country ownership. Orienting the discussion around development effectiveness empowers developing countries to incorporate aid into their broader development goals, rather than focusing on donors' priorities and conditions. Developing countries have continued to participate in this process, even though it has developed slowly, because they find it to be a way to "improve mutual accountability between donor and recipient" (Bird and Glennie 2011).

Procedural and institutional equity are particularly important factors to ensuring equity in a regime. In the case of climate finance, according to the Convention, developed countries' responsibilities include providing finance, while developing countries' responsibilities are to develop sustainably and protect their people from the unavoidable impacts of climate change. To do that effectively, developing countries must manage their development plans and build the capacity of their own institutions and fiduciary systems (Brown, Polycarp, and Spearman, forthcoming). The negotiations around the finance and technology mechanisms currently being designed are a context where developing countries are demanding greater influence in terms of the conditions and standards placed on recipient countries (Bird and Glennie 2011). "While many of these standards and criteria are essential to the responsible investment of climate finance, if they are developed through the coercive use of donor power, rather than the collective decisions of all stakeholders, they are less likely to have a sustained impact" (Ballesteros et al. 2010, p. 28).

Lessons

- Developing country ownership of development plans is a key feature in achieving effectiveness, which is required to achieve equitable differentiation. Country ownership increases the likelihood that a given initiative will succeed because it was chosen by the people who will implement it.

- Equitable distribution of decision-making power for the parameters around which aid is provided is a prerequisite for ensuring procedural and institutional equity.

Human Rights

The UN General Assembly adopted the International Covenant on Economic, Social and Cultural Rights (CESCR) in 1966, and the Covenant entered into force in 1976. The rights protected by CESCR, explicitly or by implication, include rights relating to social security, health, food, clothing, housing, water, and work (Office for the High Commissioner for Human Rights 1966, Part III; Weissbrodt and de la Vega 2007, pp. 120 et seq.).

The CESCR has features that may be helpful models for varying purposes in the climate regime. In part, the notion of progressive realization in the human rights regime could be useful in considering various modes of differentiating commitments. In addition, the human rights regime can provide an important model for reviewing outcomes in a country from the standpoint of equity, such as whether those most vulnerable to climate change impacts have been provided adequate and effective support by developed countries.

In terms of differentiating commitments, the CESCR contains the principle of "progressive realization" in Article 2, which calls on each country to "take steps . . . to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant. . . ." The concept of progressive realization recognizes that economic, social, and cultural rights may not be immediately fulfilled, but that progress should be made toward their fulfillment, concrete steps must be taken, and monitoring should take place to help assure fulfillment (Weissbrodt and de la Vega 2007, pp. 121–22). However, states are not granted wide latitude to ignore their duties, because they are expected to meet certain minimum obligations and to adopt necessary policies, budgets, and other measures and demonstrate constant progress in fulfillment of rights (Bodansky 2010, pp. 520–21; International Council on Human Rights Policy 2008, p.13).

The Committee on Economic, Social and Cultural Rights (Committee), which helps implement the CESCR, interprets the CESCR as imposing minimum core obligations for each right and, if resources are constrained, targeted programs for the vulnerable (OHCHR 1990, par. 10 and 12). Allowances are made for lack of resources, but effort is expected, progress is expected, and, as resources become available, there may be graduation toward more demanding requirements. It is also noteworthy that, by providing that the obligation to fulfill economic, social, and cultural rights depends on availability of resources, the CESCR recognizes that countries can be in compliance while not making progress at the same speed. Since the availability of resources will often vary, depending on the level of a country's development, this may often amount to differentiation based on how economically advanced a country is.

The UN Human Rights Council, which was created in 2006 to replace the Commission on Human Rights, conducts a universal periodic review to check on whether human rights commitments are being fulfilled (Weissbrodt and de la Vega 2007, pp. 264–65). In addition to the Council, the various human rights treaties each have committees, which perform monitoring functions by reviewing reports submitted by the Parties (Weissbrodt and de la Vega 2007, pp. 271–78).

Under the CESCR, Parties report at five-year intervals following Committee guidelines. Concerned individuals, bodies, and nongovernmental organizations can submit documentation. A list of questions is sent to the Party under review, and then a meeting is held for Committee members to ask questions of the Party representatives. The Committee issues concluding observations in writing, which are made public and provided to the Party. The Party is requested, in its next periodic report, to state the steps taken to implement the recommendations. In addition to these procedures, the Committee may request an in-person visit by one or two of its members to the country concerned. The Committee also cooperates with special rapporteurs of the Human Rights Council and other UN agencies (Committee on Economic, Social and Cultural Rights 2011).

The guidelines for the periodic reports require information on measures taken toward implementation of rights under the Covenant and progress achieved, including steps taken to address issues previously raised by the Committee. The country is asked to state whether it has a framework of law, policy, and strategy to implement each right and mechanisms to monitor progress, including indicators and related national benchmarks, taking into account the framework and tables of illustrative indicators outlined by the UN High Commissioner for Human Rights.[26] The country is also asked to describe measures undertaken to ensure that the rights of the disadvantaged are protected in engaging international financial and other bodies, judicial and other remedies to obtain redress under domestic law, and obstacles to realization of rights beyond the control of the party (Committee on Economic, Social and Cultural Rights 2009).

During the periodic review, the Committee, along with the Parties, considers vulnerable groups. The Committee focuses on groups whose rights are not protected because minimum economic or other standards are not met. The Committee looks at indicators and benchmarks to provide targets for the next reporting period to ensure protection of the vulnerable. Also, it should be noted that, in addition to the Committee, the UN Human Rights Council

pays attention to economic rights and has designated special rapporteurs to visit individual countries to report. The CESCR Committee issues recommendations rather than legally binding judgments, but it has been said that the strength of the periodic reporting is the "painstaking, professional evaluation of each State Party's progress in fulfilling the treaty provisions" (Weissbrodt and de la Vega 2007, pp. 122, 158–9, 275).

The CESCR may provide lessons for the climate regime for careful monitoring against benchmarks to determine whether actions are being implemented effectively from an equity standpoint. The CESCR provides an example of monitoring progress on the human needs addressed by economic, social, and cultural rights that are also affected by the impacts of climate change. These impacts have adverse effects on many of the needs addressed by economic, social, and cultural rights. Accordingly, the means used to advance these rights are worth considering when crafting measures to adapt to climate change by avoiding climate impacts or lessening their effects. The human rights review process suggests approaches that might be useful in undertaking and reviewing implementation of adaptation and other forms of assistance under the UNFCCC. Understanding the CESCR is useful because of the interesting approach it takes to effective implementation for equitable results in dealing with the challenging problem of making progress on economic, social, and cultural issues.

There are differences, of course, between the CESCR context and that of the climate regime. Human rights are principally the responsibility to its own citizens of the state that is a party to the CESCR.[27] Under the UNFCCC, Parties have international responsibilities that go beyond their own citizens. Developed countries have responsibility for a number of key items, including to "take the lead" on mitigation[28] and to provide financial assistance to developing countries, especially to vulnerable countries, to meet the costs of adapting to the adverse effects of climate change.[29] Also, the UNFCCC contemplates that developed and developing countries will work together to address adaptation, providing that all Parties should take climate change considerations into account in social, economic, and environmental policies (United Nations, 1992, art. 4). To do so, Parties could establish the need for adaptation assistance in a particular country as a goal and a program for progressive realization of the goal and monitoring to assure that developed countries are meeting their responsibilities.[30]

Lessons

- The principle of progressive realization of rights and the review process to monitor and help assure such realization under the CESCR are worth consideration as models for the monitoring of effective implementation under the UNFCCC. The principle may facilitate fulfillment by developed countries of their responsibility to provide assistance for adaptation and other needs under the UNFCCC.[31]

- Additionally, in the context of differentiation, the framework of progressive realization recognizes that economic, social, and cultural goals may not be immediately attainable but that continuous progress must be made.

LESSONS FOR THE CLIMATE REGIME LEARNED FROM MULTILATERAL REGIMES

In this section, we summarize the lessons regarding equity for the climate change regime that we derive from the review of other international regimes and specific elements of the UNFCCC set forth in the previous sections. As noted earlier, a central, overarching lesson from our review of these regimes is that equity is achieved not only by the way in which agreements differentiate among the commitments of parties, but also by the institutions, support and procedures that facilitate participation or create conditions that promote the objectives of the regime.[32] We have, therefore, divided the lessons into two categories: those relating to differentiation of commitments and those relating to institutions, support, and procedures.

For each lesson, we refer briefly to examples from the regimes that support the lesson; greater detail on the regimes is provided in previous sections of this paper.

Differentiation of Commitments

A variety of modes of differentiation can be useful to consider, both for differentiating among parties and for differentiating among the actions they will take. Differences in timing of obligations may be a particularly important option for the climate regime to consider.

A variety of approaches have been used to differentiate among parties to determine their level of commitments. In some cases, countries have been differentiated on the

basis of broad categories, such as developing and developed countries (Montreal) or developed, developing, and least developed countries (Trade). In other instances, countries have been differentiated along a spectrum based on various criteria. Although spectrum approaches have mainly been used where countries have fallen within a somewhat limited band of economic capacity, these approaches could have broader application (EU 1997, 2009; LRTAP[33]). A variant is to provide that meeting a commitment depends on availability of resources, which may result in a spectrum because countries vary in their resources (Human Rights).

In setting parameters for the actions that countries will take, in some cases the actions have been differentiated in terms of the level of ambition required (EU 1997, 2009; LRTAP; Trade). In other cases, however, the regimes have required all parties to meet the same commitments but have allowed differentiation based on the time by which an obligation must be reached (Montreal, Trade). In the case of the human rights regime, progress is monitored and measured against benchmarks, targets, and timelines that are developed through interaction of each country and a monitoring committee under the treaty (Human Rights). Finally, some regimes do not differentiate among the actions taken by countries but provide financial support to developing countries to enable them to fulfill their commitments (POPs, Mercury).

Some approaches used are identified in **Table 1**, with some illustrative examples:

Table 1 | **Examples for Approaches to Differentiation**

	COUNTRY GROUPINGS	SPECTRUM OF COUNTRIES	ALL COUNTRIES BUT WITH SUPPORT
Obligations at same time for all parties		EU climate LRTAP	POPs Mercury
Time delay for some parties	Montreal Trade	Human Rights	

The WTO negotiations provide an important caution in considering various modes of differentiation. The trade regime has cycled through various methods of differentiation over decades with mixed results. Some of this dissatisfaction stems from the specific terms of differentiation and can be addressed by resolving those specific issues. However, some of the dissatisfaction stems from more fundamental, clashing interests and views on issues such as agriculture subsidies. It is important to keep in mind the difference and not assume that the difficult issues can be resolved by fine tuning prior understandings on differentiation.

Lessons for the UNFCCC

Considering various modes of differentiation will be useful for the next steps in the UNFCCC, particularly as the guidance for possible equity reviews is considered. An equity review would ensure that equity considerations are taken into account in formulating commitments for a new agreement. Winkler and Rajamani (2013, sec. 6) note that Copenhagen and Cancun reflect key political compromises around differentiation between targets and actions, as well as for absolute versus relative reductions, and that differentiation must also encompass finance. Differentiation for the timing of commitments has also been a successful model for achieving success in some regimes that may be particularly important to consider in the climate context (Trade, Montreal, Human Rights). At the same time, it is important to keep in mind that the underlying questions of who takes what actions cannot be addressed just through mechanical application of a specific form of architecture or differentiation used somewhere else outside or inside the UNFCCC. Rather, it is necessary to engage in a negotiating process that comes to grips with differing basic interests so that issues of equity can be effectively addressed among countries.

Effective differentiation can be agreed to through a process in which a basket of objective criteria provides a starting point for discussion, but conclusions are reached through negotiations. Although there are clear differences between EU policy and the UNFCCC, the EU experience with a process to determine effort sharing for emission reductions may provide an instructive model for the UNFCCC process.

The development of EU climate commitments demonstrates the potential value of a negotiated process using objective factors as a basis for the negotiations. In 1997, the decision on burden sharing within the EU was based on targets for three economic sectors using a mix of cri-

teria with some consideration given to level of economic development. Those targets were then modified through a political process and negotiations that incorporated equity concerns.[34] In the 2009 EU climate and energy package, the country targets for sectors outside the emissions trading scheme considered a basket of criteria, with a particular focus on GDP per capita as a criterion for fairness. For example, at the time Germany's GDP per capita was US$40,275, while Bulgaria's was only US$6,403, so their responsibilities were affected accordingly (World Bank 2013). After the targets were proposed, much of the negotiation on non-ETS sectors focused not on the targets themselves but on flexibility regarding credits for smaller, less wealthy countries. In both 1997 and 2009, the negotiated outcomes reflected equity concerns based on economic capability. The LRTAP negotiations also reflected concerns regarding equity in the negotiated agreement of targets for the largest emitters of some substances.

Lessons for the UNFCCC

The EU example shows an agreement among a number of countries on greenhouse gas reductions, taking into account social and economic considerations and promoting equity by weighing capacity. The combination of a neutral, expert proposal and a political negotiation that took into account equity is instructive. The political element in negotiations may well be inevitable, but it was evidently made less difficult because it followed and built on a proposal by a neutral outside expert. Where consensus on effort sharing has been successful (EU; LRTAP), the economic, social, and political integration of the parties has facilitated consensus building (even though the economic diversity of the EU has increased significantly in recent years). Nonetheless, the outcome from these processes is noteworthy and may be instructive more widely: The negotiations process led to outcomes that generally reflected key dimensions of equity, while also resulting in successful emission reductions.

Regimes can grow stronger over time as those with less capacity are given time to develop before taking on greater commitments. Flexibility of forward movement by leaders, with some parties signing elements of an agreement that enable them to go farther than others, may also help create positive momentum in the regime (Trade).

Evolution over time has allowed countries to take on burdens gradually, which may have made it easier for those with less capacity to do so and to build greater capacity. Evolution over time also affords time for assistance funding or other support mechanisms to work and to show that more developed countries are taking action (Montreal, EU). The EU example suggests that taking equity into account was important in building and maintaining consensus on effort sharing over time and moving from a soft law to hard law approach. Essentially, this was done by balancing efficiency and equity by giving recognition to capacity (i.e., GDP per capita) and providing other concessions to less economically advanced countries.

Also, there may be value in arrangements that allow or enable some parties to "go further faster" than others with less capacity, while bringing in those parties gradually over time. This approach of different commitments for different parties may involve simple differences in timing or more complex arrangements where some parties choose to go beyond basic commitments (Trade).

However, there may sometimes be trade-offs because a gap may open up between the faster and slower parties, potentially detracting from attainment of the regime's objectives (Trade). Negotiators must be conscious of the need to strike a balance to maximize forward movement among all parties, while also providing the time needed for those with less capacity to take on increased commitments.

Lessons for the UNFCCC

The 2015 milestone is just one point in the evolution of the climate regime. We must envision not only what will be accomplished in 2015, but also how it will provide a foundation for further progress.

Parties to the UNFCCC have been engaged from almost the beginning in an effort to muster the political will to strengthen the Convention to catch up with the runaway climate crisis. In the current phase, there is discussion on whether the next step should be a prescriptive agreement (e.g., with prescribed targets and timetables) or a facilitative agreement (e.g., with self-selected targets and actions) or a hybrid approach. Rajamani (2012) suggests that a prescriptive agreement could be rated high on equity and ambition but lower on autonomy and feasibility. A facilitative agreement could be based on self-selected targets and actions with strong monitoring, reporting and verification requirements and would be higher on autonomy and feasibility but perhaps lower on equity (Rajamani 2012).

The parties will need to carefully consider how to achieve equity and ambition in light of these considerations.

It is important to think about the steps in strengthening the UNFCCC over time. The time must be used to build confidence that others are acting and that burdens and benefits are fairly shared so that Parties will be willing to take the next steps. The movement over time of the EU to a more comprehensive approach is a reasonably good example of this. Another approach that may be helpful in the UNFCCC context would be to add agreements on specific sectors or initiatives that some countries can adopt in order to go beyond basic commitments, thereby enhancing ambition in the regime.

In many ways the WTO is something of a cautionary tale about the need to maintain momentum. While it has had its accomplishments, it has deadlocked over major substantive points of disagreement, including over equity. As Parties consider next steps for 2015, they need both to encourage greater ambition for all, for example, by vetting the offers and commitments, and to showcase action by leaders willing to go further faster. Ultimately, of course, the problem for the UNFCCC is both the sequencing of strengthening and time because there is not time for extended deliberation.

Equity through Institutions, Support, and Procedures

Finance and other forms of support are important to enhance access to specific technologies, improve know-how, and build capacity. As technology needs evolve, these are key to ensuring responses that achieve equitable and effective outcomes. Access to technology is essential to move from a mindset about sharing burdens to galvanizing opportunity.

Enhancing access to technology has the potential to turn a perceived burden into an opportunity, making it easier to develop consensus that new obligations are equitable. In addition to questions about timing or targets, the availability and provision of specific technologies can be critical to determining whether differentiation attracts participation and action and, therefore, whether the regime succeeds.

In the case of the Montreal Protocol, developing country Parties were given more time to comply, but many decided that participation in the market for the substitute products was more attractive. They did not use the full compliance delay. The funding for incremental costs from the MLF turned out to be an aspect of equity in the agreement that was as important or perhaps more important than the timing delay. Given initial uncertainty about whether market access was possible, it may be that the delay provision was essential in building confidence to reach the agreement, but in the long run, the technology assistance was important to achieve both equity and the goals of the Protocol.

Many international environmental regimes reflect a recognition of the need for new technologies to be made available to countries lacking that capability.[35] In addition to Montreal, other environmental regimes include support to enhance countries' capacities to achieve pollution reduction objectives. For example, the Stockholm POPs treaty instructs developed countries to provide new and additional financial resources for developing countries and economies in transition. So far, funding has mainly gone to planning. However, there are some signs of additional progress, such as increased funding and regional centers established to support capacity building (Kohler and Ashton 2010). This has improved developing countries' data on POPs, which has allowed for a more accurate assessment of the effectiveness of abatement actions. The LRTAP has also enhanced technology transfer between Parties to the agreement, but the cooperation seems to be mostly based on information exchanges that occur through conferences or document sharing.

The MLF under the Montreal Protocol indicates successful features of a technology assistance mechanism and its key role in making the Protocol work. The MLF is a carefully designed mechanism with balanced North-South management and funding targeted at incremental costs. The Fund provided an incentive for participation by enabling those with less capacity to achieve market benefits. The Fund made agreement possible by addressing developing country concerns that the phase-out could affect their standard of living and that they should be able to make as well as buy the substitutes (Benedick 1998, pp. 149, 157). The Fund also established a compliance process widely perceived as fair. In sum, the MLF helped increase the Protocol's ambition and effectiveness by providing the means of implementation to countries that otherwise would have lacked the capacity.

The interaction of the Fund and market forces was important in the phase-out. The Fund served as a catalyst and helped in building confidence that incremental costs would be covered for developing countries (Benedick 1998, pp. 266–67).

Lessons for the UNFCCC

Access to technology is key, which includes harnessing public and private sector contributions to technology innovation and diffusion.

Earlier multilateral regimes show the value of enabling developing countries to achieve specific technological shifts. Of course, the changes required to achieve a low carbon path are more far-reaching than with ozone-depleting substances or POPs. A broad understanding of the process of innovation is necessary, and attention is needed for a range of measures on research, training, production, industrial organization, and international commercial relations (Bell 2009, pp. 40–41). Yet, just as with ozone, technological shifts and market forces must be ignited by greater policy certainty and greater ambition and recognition of the benefits of climate action among industrialized countries and other major emitters. Moreover, commitments to finance technological shifts are important to galvanize and stabilize the market and to enable it to do its work.

Attention to equity in establishing procedures and institutions is important for strengthening compliance and participation.

Under the Montreal Protocol, rather than relying principally on punitive measures, the compliance process has generally been facilitative in providing capacity building, technical assistance, and assistance for incremental costs to developing countries that are falling short on compliance. This has enhanced the confidence of developing countries in the process.

It has been suggested that, under the Montreal Protocol, trade sanctions were perceived as fair and were made an effective deterrent because the MLF gave them moral legitimacy (Barrett 2003, p. 324). In sum, generally non-confrontational compliance backed by credible sanctions can and did work.

The TPRM and the reviews under the CESCR are examples of other forms of facilitative compliance mechanisms. The former has different review requirements for different countries, so that less developed countries are reviewed less often (Trade). The latter engages each country in an interactive multilateral process to develop benchmarks and targets to make continued progress (Human Rights).

Lessons for the UNFCCC

Sanctions can be important for cooperation but, to be effective, they must be fair and credible. Facilitative compliance under the Montreal Protocol was backed by the threat of trade sanctions, but this approach faces much greater difficulties in the climate regime (Barrett 2003, pp. 290, 324, 388–89). The importance of fairness in the UNFCCC suggests that, it is first necessary to build confidence that all will be acting and that effort is fairly shared. For this, facilitative compliance seems most useful in a process that includes discussion about progress and also how progress aligns with responsibility and capability. It may also be possible to develop more rigorous sanctions, as was done under the EU effort sharing and the Kyoto Protocol, but equity should remain a consideration in determining to whom and how such measures would apply. Moreover, the availability of resources affects the robustness and effectiveness of the compliance, transparency, and accountability regimes.

The frequency of review is often very important to ensure a fair review process, which is a concern of developing countries. A current example is the process for considering commitment offers in the UNFCCC. One possibility is to have developed countries or major emitters reviewed more often than the least developed countries. This would make the review process more equitable by focusing more attention on the countries that have greater emissions and greater capacity to take action (Trade).

Country ownership of strategies and plans along with effective monitoring of whether finance is meeting its intended objectives are important in achieving equity.

Achieving equity requires more than a determination of commitments or an appropriate amount of finance to enable climate action. Designation of an amount is only meaningful if the funds accomplish their intended outcomes, and developing countries are best situated to prioritize their own needs, vulnerabilities, and capacities. The Paris Declaration and its processes relating to international assistance have highlighted the need to ensure that provision of resources is aligned with and even based

on the goals of the recipient country, rather than following an approach principally determined by the donor.

Country ownership of strategies and plans is important not only in order to achieve procedural equity, but also to increase the likelihood that action will be effective. This principle may be applicable not only for achieving equity in implementing finance, but also for setting strategies and plans more generally (Aid). Additionally, to ensure that funds accomplish intended outcomes, attention must be paid to careful planning for implementation and monitoring. The principles of progressive realization and monitoring against goals and benchmarks under the CESCR afford examples for consideration (Human Rights).

Lessons for the UNFCCC

Recipient countries should be able to play the lead role in shaping the implementation of finance and technology support so that they can effectively use the support and apply it to those priorities that have been identified by their citizens. Moreover, the sense of legitimacy that comes from fair procedures may strengthen compliance and build trust overall.

For UNFCCC mechanisms (e.g., the technology mechanism, Green Climate Fund, and Clean Development Mechanism) or agreements (e.g., the 2015 agreement) to be considered fair, attention must be paid not only to amounts of assistance, but also to effective means for implementation. Countries receiving finance and making commitments to undertake action should be able to have full ownership of strategies for the effective use of resources as they pursue low-carbon development and increase climate resilience.

Additionally, the monitoring and review process used in the human rights regime may provide a useful model for monitoring the actual implementation of climate finance, particularly adaptation finance, to ensure that developed countries are meeting their responsibilities to provide assistance in a way that actually achieves the needed results (Human Rights). In view of developing countries' growing interest in the inclusion of outcome objectives for adaptation in the post-2020 regime, the benchmark approach and indicators used in the context of the CESCR would be worth exploring further.

FUTURE RESEARCH TOPICS

In writing this paper, we discovered many related issues that deserve additional attention and research. Further investigation of these topics would provide additional instructive lessons for the UNFCCC process on ways to operationalize equity in the new climate agreement. Some of these topics cut across different multilateral regimes and could be looked at within the context of these agreements as well as for their potential application to the UNFCCC. A few topics are listed below, but this is not an exhaustive list; these topics are meant to be illustrative.

Addressing Vulnerability and Impacts. How countries address the impacts of climate change on the most vulnerable is a central issue of equity for the climate regime going forward. The lessons drawn from the human rights regime on review of outcomes provide only an initial step in addressing these difficult questions. Other key questions include how to incorporate vulnerability and impacts into frameworks for assessing equitability of action in the regime, how to steer and allocate resources to the most vulnerable, and how to address loss and damage from climate impacts that cannot be avoided or adapted to.

One source of potential lessons worth further research may be regimes and policy models, such as those for disaster risk reduction, that have focused on the needs of particularly vulnerable populations as key criteria for determining and scaling up support and action. Another set of multilateral regimes that may provide useful lessons are those that have attempted to create systems of liability for harm caused, though liability may not be a viable path for policy in the climate negotiations. In developing liability regimes, it appears that a tension has existed between ensuring a comprehensive and ambitious agreement, on the one hand, and securing sufficient participation to make the agreement effective, on the other. For instance, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal has a top-down comprehensive draft liability protocol. By contrast, the Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety used a more bottom-up approach based on civil liability rules aligned with national legal systems. Neither protocol has been ratified by enough parties to enter into force.

Technology Cooperation. A central question of equity for the climate regime is how to enhance technology cooperation, particularly given the lessons that this paper

has identified concerning the importance of access to technology. Efforts in other regimes to promote technology cooperation and sharing, including of patents, may provide helpful models and a menu of tools to effectively meet the needs of a wide range of countries. For instance, the Medicines Patent Pool[36] (MPP) demonstrates one approach to equity with respect to managing intellectual property. The MPP aims to enhance access to HIV/AIDS medications by providing a place for patent holders to share their HIV medicine patents. While patent pools are not a new concept, further research could look at how they have encouraged the innovation of technologies and how the UNFCCC could do the same for stimulating the development and dissemination of clean and climate-resilient technologies. However, the effectiveness of a technology transfer model depends on the attributes of the technology and market concerned.

Equitable Contributions to and Allocation of Finance and Support. Determining who contributes to finance and how much has been the subject of much debate in the climate regime, as has determining how to allocate support. Other regimes, including various models of development assistance, may provide instructive examples for the generation and distribution of climate finance. Issues that could be explored include whether developing countries might provide climate finance, whether resources for adaptation should be directed based on the vulnerability of countries or particular populations, and how to distribute mitigation finance equitably.

Equity at Intranational Levels. Issues concerning equity within, and not only among, countries have received relatively limited attention in the UNFCCC. These issues have emerged most clearly in the context of developing guidelines and programs for REDD (Reducing Emissions from Deforestation and forest Degradation), during which the rights and interests of affected populations at the intranational level have become a central concern. Regimes outside the UNFCCC, including those involving human rights and international aid, may provide important lessons for addressing these kinds of intranational questions. In addition, issues involving the equitable implementation of climate action at the national level, such as with carbon pricing or fossil fuel subsidy phase-outs, may be relevant to this area of research.

Negotiating Process. Additional research on how negotiating methods and processes could lead to more equitable results could benefit the UNFCCC decision-making process. For instance, lessons concerning the ways in which negotiations are conducted and how various Parties are included may be helpful to addressing the concerns of vulnerable or otherwise marginal countries in the process. Another review, building on the work of Bell et al. (2012), could explore further how to allow those in a position to go further faster without alienating those who cannot. In addition, further research could look at the current approach of "nothing is agreed until everything is agreed" and possible alternatives that might lead to more equitable outcomes.

CONCLUSION

Equity runs like a silver thread through most of the international regimes we reviewed. Sometimes it has been stitched into the fabric of the regime explicitly and sometimes implicitly, but it is important in reaching agreement and launching effective implementation.[37] In commentary regarding the UNFCCC, it is sometimes suggested that equity is too difficult an issue to be addressed in negotiations or, on the other hand, that equity is a problem that can be solved in the abstract and used as a key to unlock the negotiations.

What we have found in our review of other regimes is somewhat different from either of these approaches. Equity has been critical to achieving consensus in a sometimes complex interplay with other considerations. On this view, equity can neither be eliminated from the negotiations nor somehow solved in isolation.

The integral nature of equity for international agreements takes different forms. For example, other regimes use a variety of techniques of differentiation, but one cannot imagine, as the history of the trade regime teaches, that an array of distinctions will yield consensus if the substantive result is not addressed in an outcome viewed as fair.

Also, the relationship of equity and other considerations is evident in the way in which other regimes have arrived at results through the use of both objective analysis and political bargaining. It is sometimes said that consensus can never develop on equity, but the EU experience shows that objective analysis can narrow the task of political negotiation, thereby making the difference between feasibility and stalemate.

Another fundamental point to emerge from our review concerns the assertion that gaining consensus on equity

is just too difficult. Sometimes this view is embedded in an oversimplified understanding of the climate challenge. Some may think that we must transform industrial civilization, but no one will agree to pay for that or that we will never get agreement on who will pay and who will be assisted; so it is too hard a problem. However, as we have seen with the Montreal Protocol, while international cooperative regimes may not be able to carry the weight of the entire technology transformation, neither are they dispensable. Indeed, they can be an essential catalyst for market forces. It is often said that an agreement like Montreal is not a model for climate because the task was smaller. There is a deeper, more subtle lesson to be taken from this example: A relatively small but well-designed policy initiative may ultimately leverage much greater action in the market.

Finally, there is the issue of strategy, not a strategy for a particular country, but a strategy for the international community to avoid the future that scientists warn will result from business as usual. Our preliminary review of other regimes is only a first step. On top of this one must overlay the unfolding future of the climate regime. One perspective on this is Rajamani's suggestion of the implications for equity and ambition created by the alternatives of a facilitative or prescriptive approach to the 2015 agreement. The Parties will have to carefully consider how to create a solid foundation on which to build. Our review shows the value of building confidence over time to strengthen the regime and also the need to think through the steps to the stronger regime so that time is used to build strength rather than to court delay and stalemate. It was never more apt to say that "he that will not apply new remedies must expect new evils; for time is the greatest innovator" (Bacon 1625).

ANNEX

Figure 1 | European Union Burden Sharing: 1998 GHG Emission Reduction Commitments and GDP Per Capita.[38]

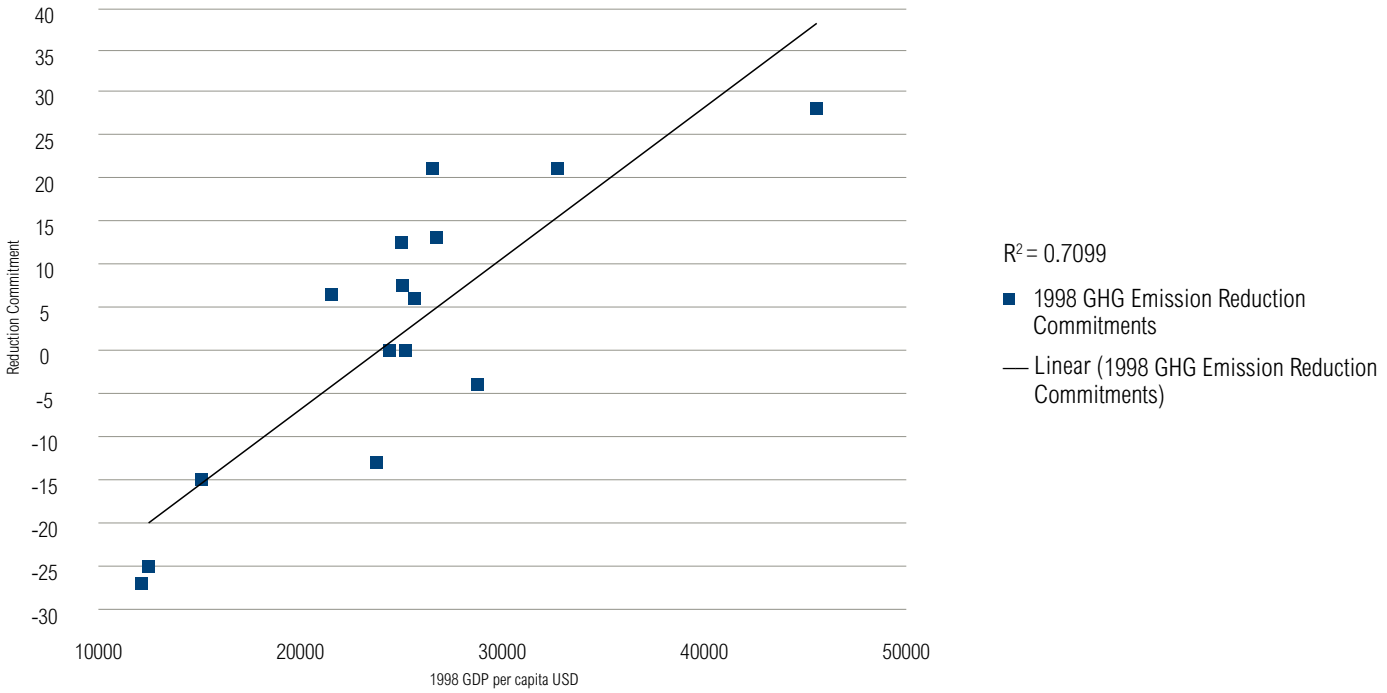


Figure 2 | European Union Effort Sharing: 2009 GHG Reduction Commitments and GDP Per Capita.[39]

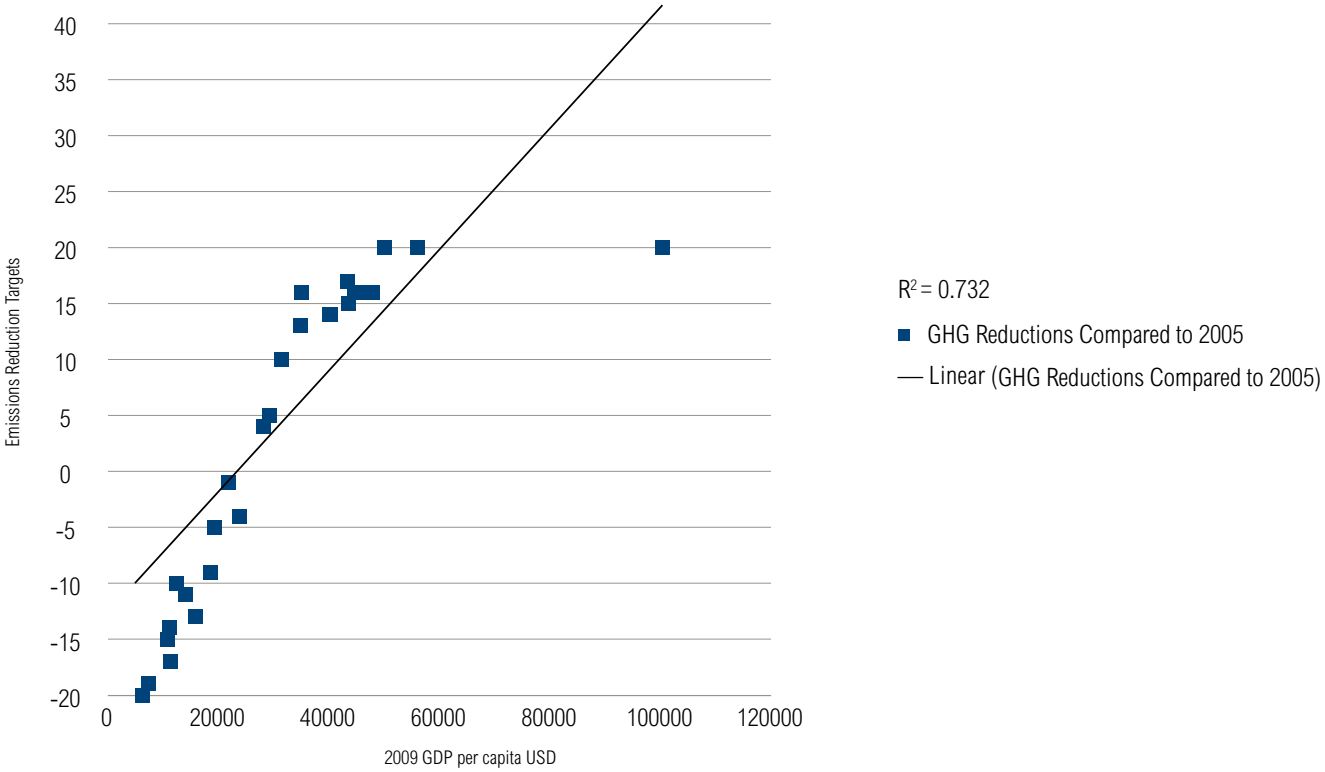


Figure 3 | **Gothenburg Protocol: Sulphur Reduction Commitments and GDP Per Capita.**[40]

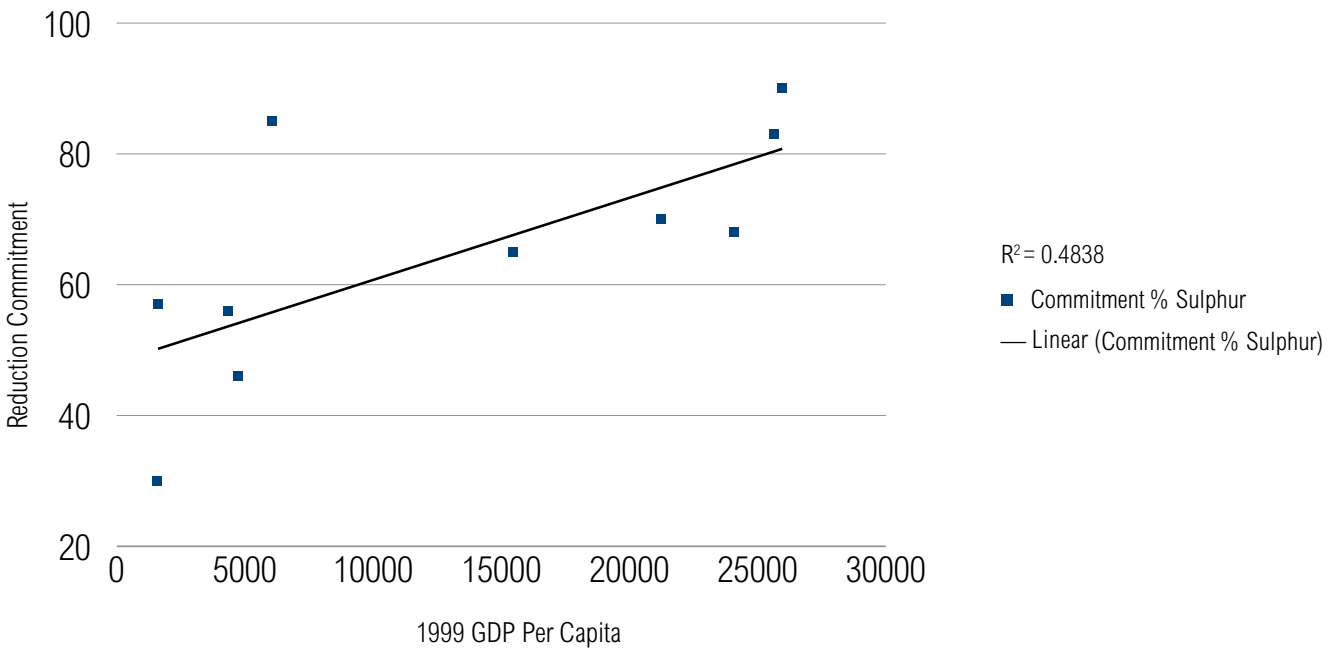
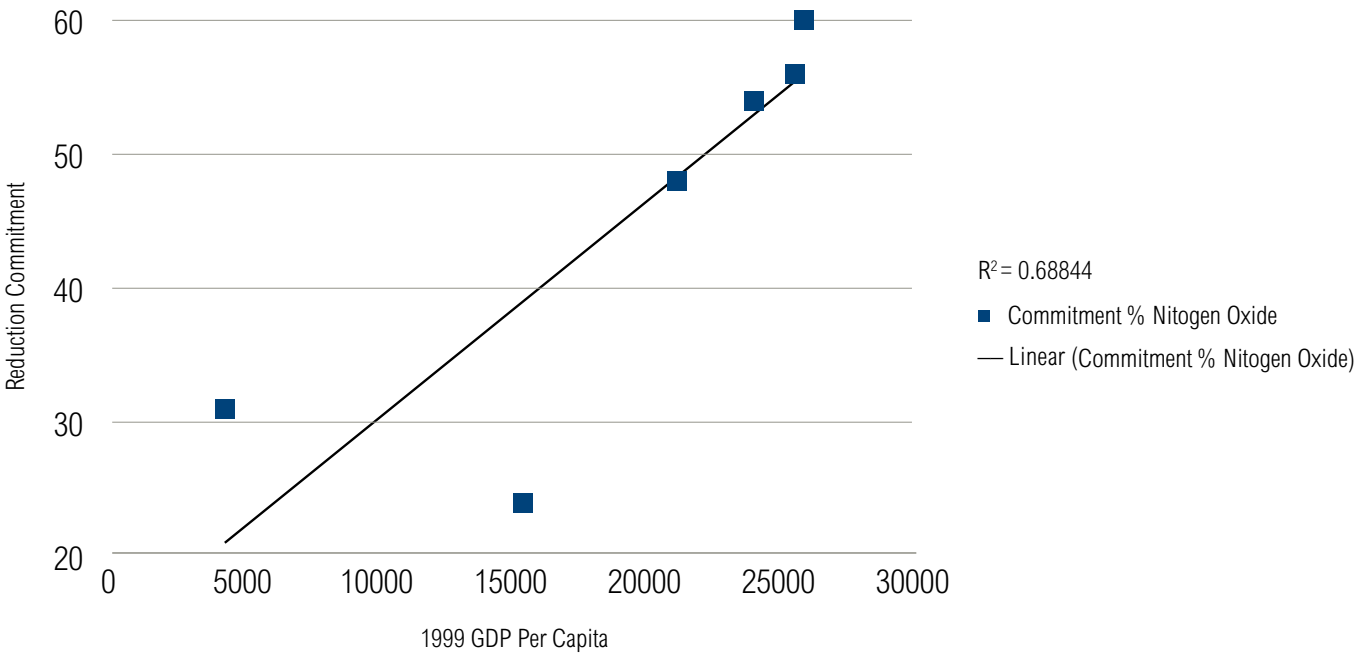


Figure 4 | **Gothenburg Protocol: Nitrogen Oxide Reduction Commitments and GDP Per Capita.**



ENDNOTES

1. Winkler and Rajamani note that equity is operationalized in the climate regime by CBDR-RC (2013, p. 2). Since both terms are used in the Convention, it may be the case that there are instances where "equity" applies more broadly than CBDR-RC.
2. Examples of definitions and frameworks for equity in the climate regime include procedural, consequential, and intergenerational notions of equity (IPCC 1995); polluter pays, ability to pay, egalitarian, and utilitarian frameworks (IPCC 2001); differential treatment based on fundamental distinctions (McInerney-Lankford, Darrow and Rajamani 2011); and a framework in which "rights, duties, benefits, and burdens are distributed with due consideration" (Melkas 2002). Many commentators, including the IPCC, note that a variety of moral principles "might be equally legitimate and justified claims. Therefore, it is very difficult to achieve a worldwide consensus on just one justice principle" (IPCC 2001, p. 670).
3. For a related point, see Amartaya Sen's comment that a theory of justice as a basis for practical reasoning must include ways of advancing justice "rather than aiming only at the characterization of perfectly just societies" (2009, p. ix). Honkonen comments that CBDR promotes equity in that "a regime is sought where differences among participants are accounted for in the relevant rules and obligations" (2009, p. 100).
4. See Fischer's comment that fairness involves settling differences through "practical solutions with which opposing parties could 'be content'" (2012, p. 18).
5. See, for example, IPCC 2001, p. 669; Baer, Athanasiou, Kartha, and Kemp-Benedict 2008; BASIC Expert Group 2011; UNFCCC 2012a.
6. This paper focuses on equity as addressing fairness among countries, and we do not principally address issues of equity within countries, though these are highly relevant questions as well.
7. For a discussion of the two key principles, known as "most favored nation" (each party grants every other party the most favorable treatment granted any country) and "national treatment" (treat foreign goods equally to domestic goods), see Jackson 1997, chs. 6 and 8.
8. For further explanation of the single undertaking principle and exceptions, see Jackson 1997, pp. 47–48. Various attempts to assist developing and least developed countries also remain, including encouraging increased market access, safeguarding their interests when adopting certain measures, and capacity building. For further detail, see WTO 2013b.
9. However, a country trying to avail itself of developing country benefits can be challenged (WTO 2013a).
10. Honkonen provides an overview of these and other special and differential provisions (2009, pp. 54–58).
11. For a brief discussion of the argument's pros and cons, and references to other authorities regarding the fairness to developing countries of the trade regime, see Jackson 1997, pp. 319–25.
12. Some effort has been made to help developing countries to access the dispute resolution process. For example, the WTO's Institute for Training and Technical Cooperation has hosted courses on dispute resolution (WTO 2012, p. 121).
13. For elaboration and other examples, see Bell et al. 2012, pp. 36, 56.
14. Data are lacking on the results of the TPRM, but this issue might warrant further research.
15. The threshold of per capita consumption below 0.3 kg in connection with the 10-year delay is noteworthy, but, as noted, the delay turned out to be less significant than expected. Moreover, there is no clear cut definition of "developing country" under the Montreal Protocol. Practice under the agreement has relied on reference to other lists, such as the G77. It has been said that "the Protocol basically accepted self-definition in this issue" (Honkonen 2009, p. 186). In fact, speaking more broadly, Honkonen says, "It is remarkable that there is no general definition for a developing country. International treaties routinely speak of developing countries without really paying attention to the need to define the group" (Honkonen 2009, p. 184).
16. Benedick writes, "The fact that a detailed 'scale of contributions,' expressed in percentages to two decimals, was accepted and appended, did convey the impression of at least a tacit commitment" (1998, p. 187).
17. As mentioned above, no clear definition of "developing country" is found in the Montreal Protocol. It is noteworthy that a per capita emissions threshold was applied to determine which developing countries could avail themselves of the 10-year delay, but it turned out that the delay was less important than expected.
18. The emission ceilings for ammonia and volatile organic compounds did not demonstrate any correlation with 1999 GDP per capita. This may be due to the fact that quite a few less developed Parties had similar emissions to those of wealthier Parties, or even higher (see UNECE 1999).
19. GDP per capita is simply one metric in which to measure the stage of a country's development. Other metrics that could be considered include total amount of annual emissions.
20. In 2010, Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Luxembourg, Malta, the Netherlands, Spain, and Sweden breached one or more of the limits for air pollutants covered under the Gothenburg Protocol (EEA 2013). Preliminary figures for 2011 revealed that Denmark, Malta, the Netherlands, and Sweden were in compliance, leaving only eight countries above their emission ceilings in 2011 (EEA 2013). Eleven countries in 2010 and seven in 2011 exceeded their nitrogen oxide limitations (EEA 2013).
21. Argentina, Australia, Bahrain, Bangladesh, Botswana, Canada, China, Estonia, Guatemala, India, South Korea, Mauritius, Micronesia, Moldova, Russian Federation, Slovakia, Slovenia, Spain, Vanuatu, and Venezuela (20 of the 179 parties to the Convention) took advantage of the so-called "opt-in" provision (UNEP 2013b). Argentina, Canada, South Korea, Moldova, and Spain have stated that the amendments to the annexes can enter into force (UNEP 2013b).
22. The convention defines best available techniques as "the most effective and advanced stage in the development of activities and their methods of operation" and best environmental practices as "most appropriate combination of environmental control measures and strategies" (UNEP 2001, art. 5(f)(i), (v)).
23. For more information on the lessons learned and controversial aspects of the GEF, see Ballesteros, Nakhooda, Werksman, and Hurlburt 2010.
24. As of October 16, 2013, 92 countries had signed the Convention. For an update on the signatures and ratification, see http://www.mercuryconvention.org/Convention/tabid/3426/Default.aspx.
25. These sources, which were chosen because they account for the majority of atmospheric mercury emissions, included coal-fired power plants and industrial boilers, nonferrous metals production facilities, waste incineration facilities, and cement production facilities (UNEP 2011, p. 28).

The word significant had yet to be defined; instead, the Convention simply stated that significant emissions were any amounts "that, in total, equal X or more tons" (UNEP 2011, art. 10(6)).

26. For example, indicators on the right to food include proportion of targeted population covered under nutrition program and prevalence of underweight children under age five (OHCHR 2008, p. 24).
27. It should be noted, however, that under the CESCR, each Party undertakes to meet its commitments "individually and through international assistance and co-operation. . ." (OHCHR 1966, art. 2.1).
28. Article 4.2 states that developed country Parties commit to take measures on mitigation that "will demonstrate that developed countries are taking the lead in modifying longer-term trends in anthropogenic emissions consistent with the objective of the convention. . ." (OHCHR 1966).
29. Article 4 provides that developed country Parties shall provide financial assistance to developing countries for adaptation and other matters and specifically states that developed country Parties will "assist the developing country parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects" (OHCHR 1966). Article 4 also provides that developed-country Parties shall provide financial and other assistance for technology to developing countries, as well as other forms of assistance, including for the list of obligations undertaken by all countries relating to reporting, planning, training, and taking climate change into account in policies and actions.
30. For related discussion pertaining to the climate regime, see Spearman and McGray 2011; Brooks, Anderson, Burton, Fisher, Rai, and Tellam 2013.
31. Other features of the CESCR worthy of further research for possible relevance to the UNFCCC include the practice by which the CESCR Committee provides general comments interpreting the treaty (Weissbrodt and de la Vega 2007, p. 121) and the Optional Protocol to the CESCR, which allows for individual complaints (UN 2009).
32. Elsewhere, we have pointed out that the elements of the legal character of an agreement relate not only to the nature of its commitments, but also to the institutions, procedures, and mechanisms of the agreement (Moncel, Joffe, McCall and Levin 2011, pp. 62–63). A review of equity involves all of these elements.
33. While the LRTAP obligations were not based explicitly on economic capacity, they seem to be based on this as well as the level of emissions. See the Annex for data supporting this inference.
34. In the first phase (1997), the process started with an expert proposal "commissioned and instructed by the Dutch presidency" of the EU (Aidt and Greiner 2002, p. 19). This was a starting point for negotiations. Thus, the process began with a "neutral assessment of member states' potential targets, even though the final agreement was eminently political" (Oberthür and Pallemaerts 2010, p. 95). Also, states with lower living standards received easier targets, indicating attention to equity.
35. See generally Honkonen 2009, pp. 170–78.
36. For more information on the MPP, see http://www.medicinespatentpool.org/.
37. "Today, some degree of differentiation in state obligations, in one form or another, has been included in most MEAs" (Honkonen 2009, p. 77).
38. GDP per capita data are taken from the World Bank (World Bank 2013), while the GHG reduction commitments data are taken from the European Commission (2013). Some numbers are negative because some countries were allowed to increase their commitments.
39. GDP per capita data are taken from the World Bank (World Bank 2013), and the GHG reduction commitments data are taken from a European Parliament decision (European Parliament 2009).
40. Figures 3 and 4 are based on the World Bank's historical data on countries' GDP per capita (World Bank 2013) and the emission levels established in Annex II of the Gothenburg Protocol (UNECE 1999).

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