



STRENGTHENING THE GLOBAL TRADE SYSTEM



The Case for Climate Clubs

David G. Victor

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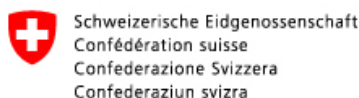
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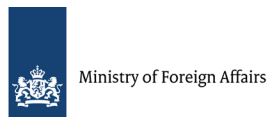
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ABSTRACT

Negotiations on climate change have made little tangible progress since the early 1990s. Much of the failure to make diplomatic progress reflects that the problem is structurally extremely difficult to solve. This paper focuses on one among the many institutional reforms that could allow for more progress—making a greater effort in small groups, or “clubs.” Framing climate deals in smaller groups—designed in a way that encourages expansion of membership and linkages among groups over time—could allow for greater flexibility and reduce the effort and complexity of required deal making. This club approach to diplomacy would not eliminate the need to work in maxilateral, global forums such as the 1992 United Nations Framework Convention on Climate Change. Outlining the problems with the status quo, the paper identifies major tasks that clubs could perform. They could help to provide a forum for enthusiastic countries to “do the deals” that would get reluctant countries to make bigger efforts. In crafting these deals, it is likely that both enthusiastic and reluctant countries will find that there are benefits to working in small groups—small enough that complex deals can be crafted and yet large enough that there are gains from multiple countries engaging in coordinated efforts. Small groups offer, as well, a place to work out the contentious issues surrounding trade in embodied carbon, which has exploded with the globalization of the economy and will require new trade rules such as border tariff adjustments. Smarter trade rules will diminish the concerns that countries have about the impacts on international trade and create an incentive for developing countries to join a treaty. Small groups will also allow the flexibility needed to coordinate policies on technological innovation and deployment among the handful of countries that account for most technological change in the world economy. New technologies are essential to solving the climate crisis. The flexibility of small groups, will among other things, also make it easier to engage firms that are essential players in the process of developing and testing new low-emission technologies. The strongest case for clubs lies in the ability of small groups to develop and demonstrate solutions to hard problems—and for those solutions to expand into more widespread use.

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LIST OF ABBREVIATIONS

CCAC	Climate and Clean Air Coalition
CCS	carbon capture and storage
CDM	Clean Development Mechanism
CO2	carbon dioxide
GATT	General Agreement on Tariffs and Trade
IPCC	Intergovernmental Panel on Climate Change
SLCPs	short-lived climate pollutants
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
UK	United Kingdom
US	United States
WTO	World Trade Organization

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INTRODUCTION

Ever since the early 1980s, the world's diplomatic community has become highly skilled at holding meetings to talk about the need for coordinated action on climate change. Unfortunately, those meetings have not produced many tangible outcomes beyond what countries would have done on their own.

The failure to make progress has come in different forms. Early on, it took the form of agreements that had little real impact on behavior. The 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the 1997 Kyoto Protocol were two treaties that were relatively easy to agree upon in large part because they had almost no impact on the emissions that cause global warming. More recently, failure has taken the form of gridlock. As governments have tried to tighten the screws and get more serious, disagreements have proliferated and no major new agreements have emerged. The Copenhagen meeting in 2009, which was supposed to yield a new treaty that would replace the Kyoto Protocol, ended in rancor and disarray. Negotiations since Copenhagen have moved slowly. In 2015, negotiations in Paris are supposed to culminate in a new agreement on climate change. There are encouraging signs that Paris might yield a meaningful new agreement—many more countries are engaged, efforts to design new agreements are more flexible than in the past, and serious talks about new funds are well advanced. As an analyst who has been predicting gridlock for the last 15 years I, personally, am more encouraged about the road to Paris than any previous round of climate change talks since the early 1990s. But there are also eerie parallels between the run up to Paris and the state of diplomacy the year before Copenhagen. Then, as now, there was much grand talk and optimism, yet many nasty disputes lurking beneath the platitudes.

Much of the perennial failure to make diplomatic progress reflects, simply, that the climate change problem is structurally extremely difficult to solve. Serious mitigation of emissions requires paying upfront costs for distant and uncertain benefits. Ultimately, it requires that all nations cooperate; yet each country will have substantial incentives to defect since low-carbon energy is now more expensive than the energy technologies that exist. Since energy costs are such a big part of economic competitiveness, in a globalized economy there can be strong incentives to avoid bearing the cost of decarbonization. There are some ways to break through this seemingly impossible structure—for example, by focusing on mitigation policies that have large local co-benefits and investing in research to lower the cost of alternative energy systems—but fundamentally the problem is not conducive to serious action.

While the level of difficulty in addressing climate change is high, poor choices in institutional design have made the

diplomatic job even harder. I have elsewhere documented a wide array of institutional reforms that would be useful (Victor 2011). Here I focus on one—making a greater effort in small groups, known as “clubs.” I argue that a substantial part of the gridlock on climate change is rooted in the extreme complexity of serious bargaining among too many countries with diverse interests and capabilities. Framing climate deals in smaller groups—designed in a way that encourages expansion of membership and linkages among groups over time—could be much more effective. This club approach to diplomacy would not eliminate the need to work in maxilateral, global forums such as the UNFCCC. But it would shift some emphasis away from the maxilateral and would prize systems that create flexibility to encourage greater effort within smaller groups. I am encouraged about the road to Paris in large part because the UNFCCC system is now, finally, actually following this advice.

The next section outlines the problems with the status quo and then turns to the case for clubs, identifying six major tasks that they could perform. The final section focuses on the actions that could be taken in the run up to Paris to make this vision more practical.

THE STATUS QUO AND ITS TROUBLES

Almost from the beginning—in the late 1980s when the first climate change talks began—the world's major governments decided that climate negotiations should be organized within the United Nations (UN) system. The choice of the UN meant that the forum would be universal—a negotiating table big enough that any nation (even the Vatican) has a seat. The UN system has brought some big benefits, such as legitimacy. Big groups also bring the benefit of visibility and gravitas, which creates the impression that many nations working in concert are getting things done. When most governments do not really intend to spend much of their own money to get things done, big groups are a good place to hide.

While the legitimacy of universal forums is important, the gains from legitimate processes are highly diffused and somewhat abstract. Meanwhile, the cost of working in large forums is immediately evident and has been on display since the early days of the UNFCCC. The bigger the group, the harder it is to design complex deals. As talks get more serious, more countries will be required to make greater and more complex trade-offs, and these deals are going to be difficult to put together.

Big groups are also problematic if some countries actively try to block cooperation. The big fossil fuel exporters—notably

Saudi Arabia, and Kuwait in the early years—have used their membership in the UNFCCC to create procedural roadblocks that have, in important ways, made the hard job of coordination even harder. For example, there are no formal voting rules for important decisions because these countries blocked them. These countries are simply adopting the best strategic option for advancing their interests in a diplomatic system where consensus is essential to making decisions and where any individual unit (usually working with at least a few others) can block inconvenient decisions. They are in the carbon exporting business, and cuts in carbon would cause them tangible harm.

Beyond outright blockers, there is the sheer diversity in preferences and goals. Some countries care most about mitigation of emissions. Many countries, especially the poorest and most vulnerable, focus on adaptation assistance—a strategy that makes sense since these countries emit little but will likely face severe consequences of unchecked warming. Many nations emphasize the reality that there are massive inequalities in the international system, including in historical and current levels of emissions that cause harmful climate change. These many different ideas and formulations are often conveyed under the umbrella of “common but differentiated responsibilities,” but what matters most is that they reflect very different visions for how the burdens and benefits of collective action should be allocated, as well as divisive views on the overall level of action required. It is no wonder that it has been hard for diplomats to find a zone of agreement among nearly 200 countries, even if it will leave each of them better off for cooperating.

To be sure, the cooperation that has occurred—while thin—has produced some useful outcomes. The quality of data about emissions and policies is probably higher today than it would have been in the absence of the UNFCCC. Standards for reporting data, adopted early in the process and adjusted periodically, have been essential. The UNFCCC’s financial mechanism has funded useful capacity-building programmes. It has been useful for governments to meet regularly and draw attention to the climate problem—and to steer the Intergovernmental Panel on Climate Change (IPCC) in its periodic assessments of climate science. The Kyoto Protocol may have helped provide “cover” to adopt national and regional actions—for example, the European Union’s (EU) adoption of internal emission targets and the Emission Trading Scheme—although assessing the cause-and-effect relationship is extremely difficult. For some observers, the launch of Kyoto’s Clean Development Mechanism (CDM) is a meritorious outcome. My view is that most of the CDM was an expensive sham, but I am mindful that there is a range of perspectives on this (Victor 2011).

THE CASE FOR CLUBS: SIX TASKS THEY COULD PERFORM

Fortuitously, the climate problem is caused mainly by a small number of countries and not the nearly 200 countries in the UN system. Only about 12 to 15 countries account for 75% of world emissions, although the exact ranking depends on how emissions are counted and whether one focuses on current or accumulated historical emissions (Victor et al 2014). One cannot stop climate change and totally transform the world’s energy system unless all countries are ultimately involved. But it is possible to get started on complex deal-making by working in smaller groups.

There is some important small group cooperation already under way. Indeed, the existing minilateral efforts are one reason why international institutions in this realm have become highly diffused and decentralized. Back in the early 1990s, when the UNFCCC was crafted, most observers expected that the international regulatory regime to mitigate emissions that cause climate change would be organized hierarchically, with the UNFCCC at the center—much as happened with the Vienna Convention and the Montreal Protocol and its many amendments that have effectively addressed depletion of the ozone layer. What has emerged, instead, is a decentralized “regime complex” or “polycentric” system for governance (Keohane and Victor 2011; Ostrom 2009). But what if the effort in smaller clubs were pushed aggressively? What could the clubs actually do? Here I suggest six efforts that could get started. For each, a club approach offers flexibility and impact that would be harder to obtain in the maxilateral, UNFCCC.

ENTICING RELUCTANT COUNTRIES

Perhaps the most important challenge for long-term management of climate change is getting countries that do not want to spend their own resources on mitigation to do more. I call these “reluctant” countries. Because these countries do not put global warming high on the list of national concerns, they will not do much to control emissions except where those efforts coincide with other national goals. Outsiders can change how these countries calculate their national interests by threatening penalties such as trade sanctions or offering carrots such as funding for investments that lower emissions. Outsiders can also provide information on global warming dangers, which will (in time) help reluctant countries see their interests differently. A country whose government and non-governmental

organizations (NGOs) are better informed about the perils of unchecked climate change will be more likely to mobilize for change—especially if there is an international framework that would allow their national efforts to be magnified through the efforts of other big emitters.

If the climate change problem was caused just by enthusiastic countries, it would be a lot more tractable. Of course, there would be concerns about defection and leakage and burden-sharing. The efforts would be vulnerable to cycles of public attention that wax and wane. But they would get the job done. And they might set up a fund to pay reluctant countries to change their behaviour. That, more or less, is the story of the successful diplomacy to stem depletion of the ozone layer. Rich countries cared a lot about the ozone layer and adopted strict rules. Credible rules encouraged innovation by firms, which created new ozone-friendly industries that lobbied for still stricter regulation. And the reluctant countries were bought off with a fund that, over its lifetime, totalled several billion dollars. That storyline does not work for climate change, however, because the role of reluctant countries is much larger and growing—these nations already account for more than half of global emissions. Worse, perhaps, even some of the higher income countries that might be expected to place a greater value on the long-term protection of nature are also, at times, reluctant—witness Canada today (but less so in an earlier era), the United States (US) during much of the 2000s (but perhaps less so today), and Australia, which waxes and wanes in its enthusiasm for action. As a general rule, emissions from the most enthusiastic countries are now declining—partly because they are mature economies and partly because they adopt policies, and emissions from the reluctant countries are rising. Essentially all that growth comes from the emerging economies—especially the upper middle-income nations—and the cost of buying them off is prohibitive.

The first thing that clubs could help do is provide a forum for enthusiastic countries to “do the deals” that would get reluctant countries to make bigger efforts. There are already many promising examples of this kind of club-like behaviour. Norway has led the creation of a big international fund that is rewarding tropical countries for better land management practices—notably Brazil and Indonesia, and now in West Africa. The US is in the midst of efforts to convince India to accept tighter regulations on hydrofluorocarbons (HFCs) in the Montreal Protocol—a move that is being blocked mainly by India. If it succeeds, it would have a substantial impact on global warming. These kinds of deals are so complex that they must be pursued in smaller settings. The US-India efforts, for example, ultimately revolve around the interests of a handful of firms in India that produce HFCs—strategies must be found to buy off or squelch those firms.

In crafting these deals, it is likely that both enthusiastic and reluctant countries will find that there are benefits to working in small groups—small enough that complex deals can be crafted and yet large enough that there are gains from multiple countries engaging in coordinated efforts.

As a general rule, the higher the complexity, the smaller has to be the group. Evidence from the experiences of the Group of Eight (G8) and Group of Twenty (G20) suggests that groups of five to 12 members are probably about right. To be effective, such groups will need to find ways to create “club goods”—that is, goods whose benefits accrue to club members, but which can be excluded (at least partially) from outsiders. Examples might include low-tariff zones for low-emission energy technologies—a benefit that would flow to countries that agreed to the tariff regime but which could be excluded from others. Other examples might also include emission trading zones. Other benefits could be environmental. Technology-sharing clubs, for instance, could help countries tackle problems such as air pollution from soot, with the benefits flowing mainly to club members—the effort taking shape between California and India on soot control (Pachauri et al. 2014) is one example. In tandem, club benefits have climatic benefits, which, of course, are public goods. Club goods help convince members that there are benefits to cooperation and help entice others to join along the way. And once seen as credible, that dynamic generates public goods as well.

For countries that have emission trading schemes, climate clubs could be a forum where the crucial yet highly complex task of linking those systems together is done. Linkage helps create incentives for more countries and firms to make reductions—it can, when designed properly, generate tangible benefits to new parties that are contemplating emission reductions, while creating incentives for those that face costly emission reductions to find new places to generate and purchase credits. That logic is well known and explains why there is so much discussion of linkage. Yet, in reality, almost no trading systems are actually linked. The paucity of real linkage reflects that emission trading systems are like a new form of money—if a country with a robust system links to one with a poor system (or a system with a different level of effort, reflected in a different cap), in effect, the bad money floods the good system. Such problems are readily fixed with border and price adjustments, central banker functions, price collars, and other schemes—but these need care in design.

This logic helps to explain why in the real world the linkages between trading systems are likely to emerge among “like” countries—that is, nations that have similarly capable national institutions, powers of enforcement, and economic structures. When linking such countries, fears that poor management within one country will spread like a contagion across the whole trading system will be diminished. And the capital flows from linking will be minimized since the marginal costs of abatement across the linked systems will be similar. Of course, essentially all the economic models show that the biggest benefits will arise when “unlike” systems are linked. Here, as in so many aspects of the climate problem, the political and administrative logic must determine the first steps. Linking must begin with like systems to build confidence before higher value linkages across un-like systems are attempted. Indeed, premature

linkage across un-like systems helps to explain why the CDM became a debacle—hugely valuable emission credits from a poorly administered system that was rife with transaction costs linked un-like systems in developing countries with high-value buyers in the EU and Japan.

Getting serious about making these deals will benefit not just from working in small groups but also working in groups of one. Unilateral action can have a huge impact on demonstrating credibility and creating technologies that are more viable and competitive. Examples include the recent US draft regulations on emissions from power plants, which have probably done more to boost the country's credibility as a deal-maker on climate change than any other action in more than a decade. I am also encouraged by the unilateral reforms to the United Kingdom (UK) power market, which have opened opportunities for demonstration of carbon capture and storage (CCS) technologies that are probably pivotal to any future world that sees deep reductions in emissions while still using prodigious quantities of inexpensive fossil fuels.

Efforts to entice reluctant countries may also emerge from actors other than countries—such as cities or provincial governments. Clubs of cities, such as the C40 Cities Climate Leadership Group initiative, can demonstrate tangible action while also putting a focus on areas where cities alone cannot act—where national governments and firms must do more. It has become popular to say that national governments—that is, “the states”—have become less relevant. But the reality is that when tackling hard problems like climate change the state is an indispensable actor. And thus a central logic for clubs is to find ways to get states to do more than they would otherwise.

DESIGNING SMART BORDER MEASURES

The most important of the human-made greenhouse gases, carbon dioxide (CO₂), comes mainly from burning fossil fuels. No country will do much to cut CO₂ unless its competitors also bear somewhat comparable costs. That is the fundamental logic that explains why getting serious about climate change requires collective action. It is not just that CO₂ and other pollutants mix globally; it is that the costs of control deter countries from leading unless others follow. Thanks to globalisation, that logic is making collective action even harder to design and sustain.

When somebody in the US buys a ton of steel from a Chinese steel plant they get the benefit of less expensive steel, but do not pay for the cost of the emissions that occurred while manufacturing it. Back in 1990, when climate diplomacy began, there was very little international trade in so-called “embodied” carbon. Today, mainly due to the rise of export manufacturing in China and other emerging economies, trade in embodied carbon has exploded. All told, developing countries today are exporting more than 600 million tons

of carbon dioxide and other greenhouse gases embodied in goods (numbers reported by the IPCC in Victor et al. 2014; for the original work, see Davis and Caldeira 2010 and Peters et al. 2012). Figure 1 shows these patterns as reported by the IPCC, which reveals that essentially all this trade in embodied carbon is between the upper middle-income nations and the rich, mature economies. In 1990, the trade in embodied carbon between developed and developing countries was just one-tenth of what it is now. These numbers reflect just the embodied carbon that is easy to count because it comes from large, bulk, energy-intensive goods such as steel and concrete, and wallboard to some degree. If we add other things such as manufactured products, the numbers are much bigger. Production remains the dominant source of emissions, but adjustments for consumption are becoming more important to the politics of climate change and the ability to gain leverage on emissions.

Politically, a globalized economy with large amounts of embodied carbon creates incentives for “leakage”—for countries to avoid the cost of emission limits and thus attract investment and economic growth for themselves at the expense of others. That same logic creates incentives for countries to defect, even if they agree to strict rules. Fixing these problems is very difficult and is best done in a small group of big countries so that the structures they agree on are likely to be spread more widely.

A small group can begin working on two fronts. First, some discipline is needed on the various unilateral border measures that a few large and enthusiastic countries have been contemplating. Border measures were in the draft 2009 legislation for climate change policy in the US. Several European countries have threatened border measures, and the EU is expanding its emission trading scheme to cover airlines in a way that is similar to a unilateral border adjustment. Trade lawyers and strategists have outlined ways in which border measures can remain compatible with the World Trade Organization (WTO), and their advice would be the right place to start. (A similar conversation would be impossible in the UNFCCC where trade expertise is low and the agenda is already overcrowded with other topics.) This effort must be done in a way that leads, ultimately, to a broader consensus among many nations—the club is, tactically, a way to begin but strategically must focus on how agreements in minilateral forums will spread throughout the trading system.

A second front is better accounting statistics—there are a few methods already available for border adjustment, and with a small bit of effort those could be used officially. (Today, countries report their national territorial emission statistics to the UN and ignore the effects of trade—with the result that a big importer like the UK can pretend that it is cutting emissions when, in fact, trade-adjusted emissions statistics show that the country has made a lot less progress.) This effort to improve the statistical base must be done within the context of whole economies rather than just focused on trade. That will help to maintain a perspective on where and

how trade effects are important. Though the whole economy will be eventually affected by these efforts, information is initially needed to help focus these efforts on the sectors that matter most.

Getting the reluctant countries to do more will be much easier if we can avoid the pernicious effects of globalization by adjusting emission statistics for trade in embodied carbon. If the Chinese or the US saw different trade rules, their interests in global warming regulation would change a little bit. They would be more favorable to doing more about climate change if they saw that they would not be fully charged for the emissions that are embodied in the products that they are sending to other countries. Put differently, border adjustments shift the focus from cutting costs in production to making consumption more environmentally friendly. Smarter trade rules will diminish the concerns that countries have about the impacts on international trade. They would create an incentive for developing countries to join a treaty. They would transform the problem from one that is nearly impossible to solve by collective action—under the constant shadow of defection—into one that is more like an assurance.

Globalization is bringing tremendous benefits to the climate problem—it is making it easier to create a global gas market, and it is helping to diffuse the best technologies around the world more quickly. But if we do not fix the easy “leakage” of emissions from regulated to less regulated parts of the world economy, the benefits of globalization will turn into a nightmare for serious efforts to address climate change.

CRAFTING CONDITIONAL COMMITMENTS

The tighter the screws on emissions, the more efforts by one government will depend on what others do as well. This is the key logic for international cooperation, and it hinges on the ability to make conditional commitments—that is, commitments in which the actions by one state (or firm or locality) depend on those of another. In addition to commitments, conditional promises can make clear the benefits of cooperation that will flow if countries make joint efforts. Smart, conditional promises can be the engine for international cooperation. They can help lock into place what countries have already agreed to do while also propelling

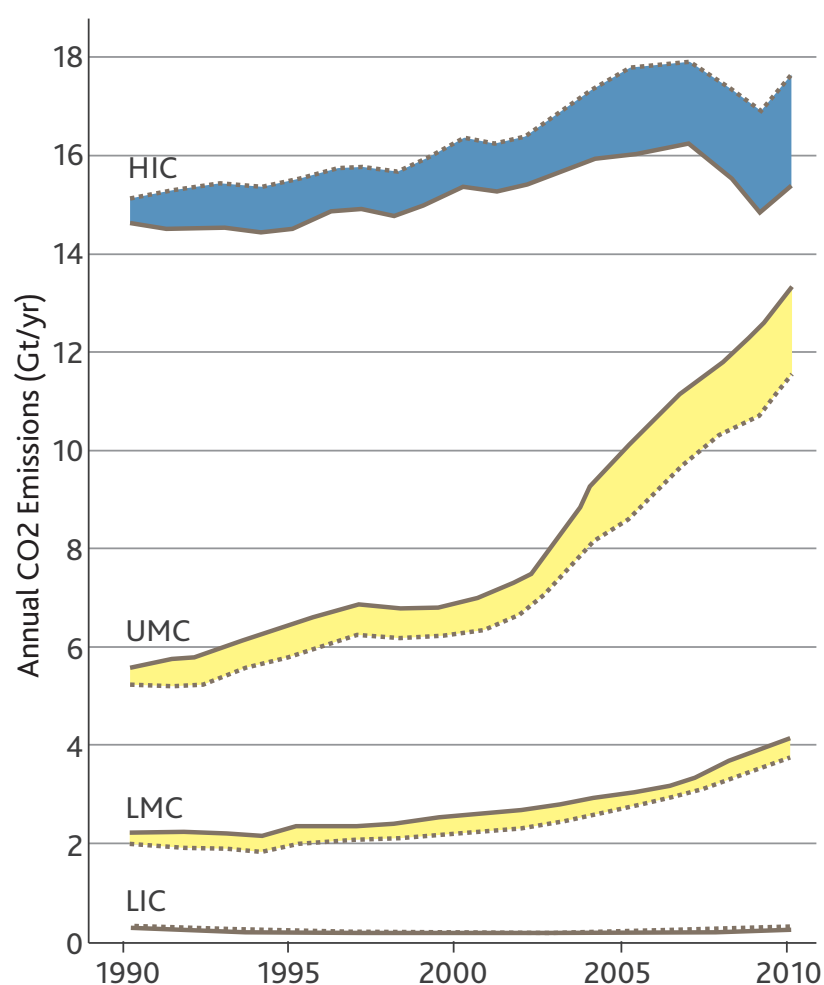


FIGURE 1

CO₂ Emissions from Fossil Fuel Combustion by Economic Region

Attribution Principle

..... Consumption-Based

— Territory-Based

Transfer of Embodied CO₂

■ Net Import

■ Net Export

Notes: Accounting is on the basis of territory (solid line) and final consumption (dotted line), with shaded areas showing the net transfer. Blue indicates a net importer; yellow an exporter. HIC indicates “high income country”, UMC “upper middle income country”, LMC “lower middle income country”, and LIC “low income country”.

Source: IPCC (Victor et al. 2014) based on Peters et al. (2012) but with data from Eora, a global multiregional input-output model (Lenzen et al. 2013).

them to pledge even more when they see the benefits of cooperation become tangible.

Some of the foundations for conditional, interlocking commitments are now coming into place. Most countries have made pledges about their actions to mitigate emissions. Many of these pledges are diligent statements about their interests and capabilities, and a starting point for talking about what more could be done with the right incentives. Since every country's calculation about the right level of effort depends, in part, on what others are doing, these discussions need to be done in a multilateral setting—a setting that is large enough for real gains from collective action but not so large that it is beset by gridlock and complexity.

A model, perhaps, for these clubs of conditional commitments lies in the plurilateral agreements of the Tokyo Round of the General Agreement on Tariffs and Trade (GATT). These agreements fell under the umbrella of the larger Tokyo Round negotiations, but each agreement did not require full participation. They arose because full agreement would have been impossible. This approach to breaking impasses—and to experimenting with alternative forms of agreement—is regaining traction as the WTO multilateral negotiations stall (Draper and Dube 2013).

As a practical matter, making interdependent commitments will require much more shared and robust information about what countries are willing and able to do. The pledges that are now emerging in the UNFCCC process—known as “intended nationally determined contributions”—are a start, but to make them effective a system of peer and expert review is needed to assess which parts of the pledges

are robust and where additional incentives could lead to additional action. At the Conference of the Parties meeting held in Lima in December 2014 it became clear that many nations will not allow that peer review mechanism to become too powerful or invasive. Working in smaller groups to outline conditional pledges along with procedures for peer review could prove much more comfortable, especially for reluctant nations.

CRAFT AND DEMONSTRATE TECHNOLOGY STRATEGIES

It is hard to overstate the importance of technological innovation and deployment as the ultimate solution to the climate problem. That is the lesson to be learned from essentially every other major international environmental problem where there has been substantial progress—such as transboundary air pollution or depletion of the global ozone layer. Progress comes not from cuts in welfare and consumption, which is politically always difficult. It comes from new technologies that give confidence that changes in behavior are feasible and not overly costly.

Innovation and deployment is an ideal topic for small clubs since worldwide spending on innovation and outputs from innovation (for example, patents) are highly concentrated in a few countries (Figure 2). The International Energy Agency (IEA) has made some efforts on this front, although those are long on discussion and not designed to focus on scaling up major programmes. More interesting are the joint programmes, such as between the US and China, that focus on clusters of technologies—for example, CCS—with

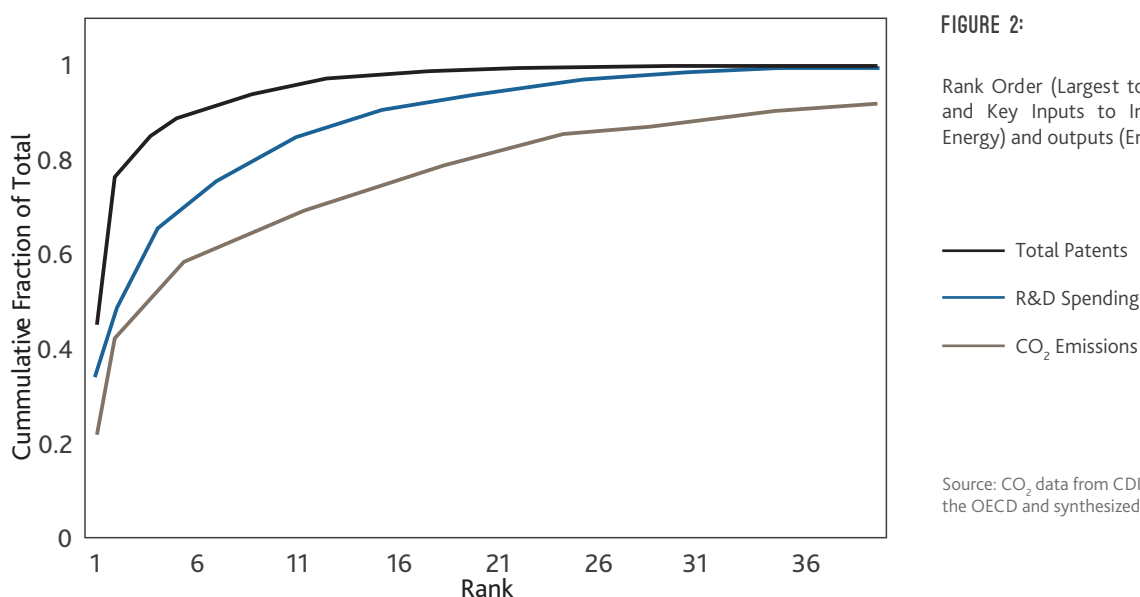


FIGURE 2:

Rank Order (Largest to Smallest) for CO₂ Emissions, and Key Inputs to Innovation (R&D Spending on Energy) and outputs (Energy-related Patents)

— Total Patents
— R&D Spending
— CO₂ Emissions

Source: CO₂ data from CDIAC, R&D and patents as reported by the OECD and synthesized in Victor (2011).

mutually coordinated projects that generate benefits for both partners.

For most technologies, the key actions needed to advance innovation and deployment will involve not just governments but also firms. Indeed, the logic of clubs is readily extended to include important firms and industry associations. Governments and firms—pledging together—could commit to developing and testing critical low-emission technologies, such as advanced power plants with CCS or large-scale deployments of renewables or nuclear power. It is encouraging to see the large number of firms already engaged with the climate issue—for example, the many firms that made pledges around the UN Secretary General's summit on climate change in September 2014. Getting firms more heavily involved will require that governments think strategically and focus their efforts. Firms will tend to be involved in highly concentrated industries—because the large, leading firms can recover a greater benefit for themselves if they make effective pledges. Thus efforts to include firms in clubs should start, at least initially, in those areas. Indeed, that logic helps to explain why the palm oil industry is now moving quickly to cut its emissions while other industries that are much more decentralized, such as meat production, are not.

Strategic thinking about engaging firms must also engage with the reality that firms will not (and cannot) act out of pure altruism. Companies will not test and deploy CCS, for example, unless they see credible incentives that allow them to earn a profit. By that logic, getting firms engaged in serious club efforts on technology will require that governments find ways of making the promise more credible that rewards will follow if firms actually invest. None of this will be easy since it requires that governments do nearly the opposite of what they have been doing so far. They must focus on a few critical industries and get comfortable working with a few firms rather than treating all comers equally. And they must make what will be seen as insider deals to help create more confidence that firm-level investment can earn a reward.

TACKLE EASIER PROBLEMS

So far, I have focused on what is difficult about coordinating the mitigation of greenhouse gases. The strongest case for clubs lies in the ability of small groups to develop and demonstrate solutions to hard problems—and for those solutions to expand into more widespread use. But small groups can also make progress on easier problems as a way to help build political credibility.

Today, the best example may lie with short-lived climate pollutants (SLCPs) such as soot, methane and HFCs. For all these pollutants, there are opportunities to make big cuts in emissions that have a tangible impact on the climate. In the case of soot, there are also massive co-benefits to the

country that undertakes the effort because soot is not just a big contributor to warming—it is also a leading cause of respiratory disease and death. Even governments that might care little about global commons tend to care a lot about pollution that causes demonstrable local harm. For methane and HFCs, the local co-benefits are smaller, but, like soot, the relatively low cost and feasibility of big emission cuts have now been widely demonstrated. Politically, unlike long-lived CO₂ that accumulates slowly in the atmosphere, there is much less inconsistency between the time when the cost of SLCP actions is incurred and the benefits are evident. It is impossible to stop warming through SLCPs alone—for that, efforts are required on all major pollutants, including notably long-lived CO₂—but it is possible to make a dent in the warming problem and to demonstrate that credible action is feasible.

That logic has already inspired the Climate and Clean Air Coalition (CCAC)—a club of countries committed to action on these pollutants. It has also inspired a variety of methane-focused partnerships, including with the World Bank, that have sought to cut flaring and venting of methane from oil and gas operations (a major source). The methane initiatives are notable for their prominent inclusion of business firms such as many of the leading oil and gas companies. These are demonstrations of unilateral action to advance the “easy” part of the climate agenda. Similar efforts could be made on fossil fuel subsidy reform—although the G20 began on that agenda in 2009, it has since drifted to other topics. (Frankly, a strategy for renewables subsidy reform would be helpful as well since so many countries are building renewable subsidy obligations that are not sustainable, and yet all countries have a common interest in an effective and competitive renewables industry.)

LEARN HOW TO HELP COUNTRIES ADAPT

Finally, I note that in the last decade the international agenda on climate change has wisely shifted from an almost exclusive focus on mitigation to paying more attention to adaptation. The least developed and most vulnerable countries have driven that shift, and it has come with demands for more international funding. While dreams of \$100 billion of new public funds focused on climate change will not become realities, there is little doubt that large new funding efforts will focus on adaptation.

While that shift is good news, a critical unanswered question remains—how can the international community wisely spend money on adaptation? In the area of mitigation this question was relatively easy to answer because most funding was targeted at the extra cost of low-emission technologies. Countries that might build a high-emission energy system—say, based on conventional coal—would be enticed to build systems that are more efficient, with less polluting technologies, and get compensated for the “agreed incremental cost” of that extra effort.

Adaptation is different. Nearly all activities that are the most cost-effective means of adaptation also make sense for countries to pursue for selfish reasons. Better weather and crop forecasting systems, better flood predictions, and better planned coastal urban areas are examples. So what is the marginal cost that international funds should pay? How should the best practices in climate adaptation be diffused from one locality to another? An adaptation-focused club could provide some answers. Here the best models may be Norway's climate fund. A group of donors puts a large and credible funding promise into play, along with credible offers of technical assistance. Countries that could use that funding compete with each other to make the best offers—leading, at first, to programmes in countries where success is most likely, followed by learning and diffusion of similar programmes to other countries. This kind of best practice is now being followed more broadly in many development assistance programmes.

Some elements of this kind of club are already in place. The C40 initiative has brought together leaders of major cities—an important constituency since most climate impacts will be felt and require response at the local level. So far, however, my impression is that the C40 has been more focused on talking about mitigation than on doing things with adaptation. Large donors could help open a new front in that effort.

CONCLUSIONS AND NEXT STEPS

This idea of getting started in small groups—"clubs"—is not new. What is different today, however, is the realization that the broad UN-based approach to cooperation has not, by itself, worked that well. Efforts are needed on multiple fronts—not as replacements for the UN approach but as friendly competitors and complements. Indeed, many such efforts are under way, but making them more effective will require efforts on four fronts.

First, open the door. While much progress has been made in the last few years—especially under the leadership of Cristiana Figueres at the climate change secretariat—the UN-oriented system of climate diplomacy remains highly suspicious of club-like initiatives. These debates are familiar, such as those regarding the role of preferential trade agreements within a larger multilateral trading system. In an ideal world, all countries would follow the same rules and the same core agreements. But that world, at present, is not a practical goal—the complexity of getting meaningful agreements is so great that efforts must begin smaller. The larger UN multilateral system can open that door by agreeing—in Paris in 2015—to an umbrella agreement of agreements. That would actively

encourage multiple smaller club-like initiatives that contribute to the larger goal.

Second, create some discipline for clubs. One of the chief concerns about a multiplicity of clubs rather than unified multilateral agreements is that the multi-agreement world will undermine core principles and could lead to policy chaos due to fragmentation and conflicts in laws. Those are legitimate worries although prone to overstatement. In the real world, fragmented regulatory regimes—"regime complexes"—have led to much more policy coordination than might be expected (Keohane and Victor 2011). And, frankly, competition and conflict can be helpful. As a general rule, when one does not have the ideal model or answer to a problem, the worst strategy is to create a monopoly. Competition—in goods markets, as in policy—encourages innovation and creates space for the most effective ideas to gain market share.

Concerns about fragmentation, however, merit a response since all fragmentation is not always good news for policy. Between now and Paris, one critical task for the UNFCCC and for the major climate clubs can include adopting some basic standards for clubs. Clubs should be designed to encourage new members and deepen commitments. Mutual recognition across club commitments may help to stitch together different club efforts and reduce unhelpful fragmentation. Clubs, like individual countries, should make pledges to the UNFCCC process and expose themselves to serious peer review—so that effective systems can be identified and expanded while impotent ones are abandoned in time.

Third, it is important to get expectations right. It is clear, already, that many clubs have formed and fragmentation into regime complexes has happened. It is important that policymakers not lament that outcome but see it as the inevitable result of serious efforts to cooperate on a highly complex problem. It is also important that we recognize that these decentralized, bottom-up efforts are slow and difficult to craft—just as it took decades to build the modern institutions that govern international trade and investment, such as the WTO and the network of bilateral investment treaties and investment chapters of trade agreements. That slowness probably guarantees that emissions will blow through widely discussed goals such as stopping warming at 2 degrees Celsius above pre-industrial temperatures.

Fourth, strategic thinking is needed to identify which countries are likely to make the effort to create and join clubs since it is constellations of national interests that will determine whether clubs actually make serious efforts. This paper has suggested that two kinds of countries will be most important. One kind of club member consists of nations that want much more effective action on climate change but know that multilateral forums will not make much progress alone. I put the US in that category along with countries such as Norway that are massive contributors to global public goods. The Norwegian-led forestry programme or the multilateral CCAC (which has been led by Norway, Sweden, the US, and a few others) are good examples. The EU's participation in such clubs

is crucial. Perhaps the most important news for club-related strategies is that after decades of unwavering support for maxilateral diplomacy through the UNFCCC, the EU is now more sympathetic to club-like strategies working in tandem with the UNFCCC.

The other kind of club member is the reluctant nation that still wants action. These countries are coming to the realization that they must act on climate change because it is an important global agenda and because failure to act will eventually cause them harm. But they are wary of entangling commitments because they do not know exactly what they can implement. Many are wary, as well, about UN monitoring and inspection procedures, and this kind of risk aversion makes them unwilling to adopt binding global commitments. Fundamentally, however, these countries want to begin cooperation—especially if cooperation can focus, at least initially, on areas where climate change overlaps heavily with policies that the country wants to adopt for other reasons. China is, in my view, an exemplar. And the US-China climate deal announced in November 2014 is a good example of how reluctant nations can be enticed into action. The deal focuses on what countries will do out of national interest but is oriented around a larger, global problem. It is non-binding and thus more flexible. It begins a process that can, with effort, expand to include not just substantive commitments but also important procedures such as systems for mutual review of policies. China has been wary about allowing such systems for implementation review to be included in the UNFCCC context, but it will be more accommodating in a smaller group where there are higher levels of trust and control.

Clubs consisting of these two types of countries probably offer the greatest gains from cooperation. Still, the mere presence of potential gains does not mean that real gains will be realized. Strategic attention will be needed to ensuring that clubs become big enough that a "critical mass" of gains appears—and that those collective gains are weighed against the extra cost of working in larger groups. The many lessons from minilateralism in trade must be heeded as well, such as the need for small groups to focus on outcomes that will eventually entice other members to join. Getting those incentives right will require, among other things, attention to the role of incentives for new members—both coercion (for example, trade sanctions) and positive incentives (for example, payments from climate funds such as the Tropical Forest Alliance). Few clubs that engage with difficult issues that have implications for national sovereignty and competitiveness work on altruism alone. Incentives are essential to make the club effective.

Strategic thinking about clubs must include some realization of the countries that will not be constructive members—such as the blocking nations that have already caused much mischief in the UNFCCC process (and in related forums such as the IPCC). A strategic approach to clubs can help to address one of the greatest fears about clubs, which is that they will erode the legitimacy and common purpose of a global, maxilateral forum. The purpose of clubs is to offer a forum

where countries that have differing interests and are averse to the risks of a global forum can craft deals that lead to more action and greater accountability than would be possible if they bargained only in the global forum. Those actions will be evident—as they are already in the club on forests, among many others. From those tangible outcomes, along with accountability and the eventual expansion of clubs to more members, will emerge higher levels of legitimacy.

A serious political strategy on climate needs to deal with the fact that credibility in international institutions is very low. Firms know that governments and the UN have been working for decades on climate change and have little to show for their efforts. That knowledge has had a profound effect on the extent to which firms believe that they will need to mitigate their emissions. When firms do not believe new rules are coming any time soon, they pare back on innovation; they shift their thinking about climate change away from chief executive officers and strategic thinkers in the company and move more in the direction of public relations and woolly social responsibility. This shift means that we are gradually becoming less and less prepared to act on emissions. It also means that when we do act, the costs will probably be a lot higher than optimal. And the shift means that it is much harder for the political forces that want to rally for action on climate change to build a politically winning coalition. I think this erosion in confidence is a serious problem—perhaps the most serious problem—for a smart, long-term climate change policy. Tangible gains, forged in clubs, can help reverse the tide.

Success with clubs in global warming could help offer models for other areas of international cooperation also beset by gridlock. In the decades after World War II international cooperation emerged from an international hierarchy that put a small number of countries on top (mainly the US) and offered a structure in which there were large, concentrated gains from investing in international cooperation and institutions. Over the last two decades, that hierarchy has fragmented; the gains from investing in global institutions have become much more diffused.

That logic helps explain the gridlock. Maxilateral trade negotiations are stalled, as is diplomacy on many important topics in international finance. Human rights diplomacy is stalled, in part because countries cannot agree whether it is better to make more treaties on topics such as the "responsibility to protect" or to do a better job of advancing the human rights that are already on the books. Multilateral efforts to contain Iran's nuclear ambitions have led even traditional allies—the US and UK—to disagree on strategy. Even in one of the areas where multilateral cooperation seems to have been working well in the last decade—cooperation in the Arctic, notably through the Arctic Council—fissures are opening as countries learn more about the riches that could be theirs for the taking as the Arctic thaws and new technology makes it easier to extract oil, gas, fish, and other riches from the region. More minilateralism in all those domains might help a lot.

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