

## A new strategy for global climate protection

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**Abstract** This essay proposes an innovative institutional strategy for global climate protection, quite distinct from but ultimately complementary to the UNFCCC climate treaty negotiations. Our “building block” strategy relies on a variety of smaller-scale transnational cooperative arrangements, involving not only states, but also subnational jurisdictions, firms, and civil society organizations, to undertake activities whose primary goal is not climate mitigation but which will achieve greenhouse gas reductions as a byproduct. This strategy avoids the problems inherent in developing an enforceable, comprehensive treaty regime by mobilizing other incentives—including economic self-interest, energy security, cleaner air, and furtherance of international development—to motivate a range of actors to cooperate on actions that will also produce climate benefits. The strategy uses three specific models of regime formation (club, linkage, and dominant actor models) which emerge from economics, international relations, and organizational behavior, to develop a variety of transnational regimes that are generally self-enforcing and sustainable, avoiding the free rider and compliance problems endemic in collective action to provide public goods. These regimes will contribute to global climate action not only by achieving emissions reductions in the short term, but also by creating global webs of cooperation and trust, and by linking the building block regimes to the UNFCCC system through greenhouse gas monitoring and reporting systems. We argue that the building blocks regimes would thereby help secure eventual agreement on a comprehensive climate treaty.

### 1 Introduction: addressing the limitations of the UNFCCC through a building block approach

The Durban Platform for Enhanced Action holds out promise of progress towards an eventual global climate treaty with greenhouse gas (GHG) emission limitation commitments for all major emitting countries, whether developed or developing. Current negotiations aim for some form of agreement to take effect by 2020. But in the interim, the only international climate regulation will be the rapidly weakening Kyoto Protocol. This gap, coupled with the

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serious obstacles to achieving a future agreement, creates the need and the opportunity for mobilizing other, less centralized forms of action for climate protection. Here we propose three different types of bottom-up transnational arrangements to meet this need, constituting what we term a building block approach. The building block approach has two goals: first, to capture the short and medium term emissions reductions that are achieved as co-benefits by regimes designed primarily around non-climate benefits; and second, to build and transform transnational networks and institutions of state and non-state actors in order to achieve cooperation, innovation and trust that will promote long term comprehensive agreement on climate action. We have elaborated further on the concepts outlined in this essay, particularly with respect to the legal framework, in another article (Stewart et al. 2013).

The primary obstacles to a global treaty result from structural features in the United Nations Framework Convention on Climate Change (UNFCCC):

1. Aiming to negotiate a single universal agreement;
2. Limiting participation in negotiations to countries, excluding non-state and subnational actors;
3. Establishing a rigid distinction between developed and developing countries;
4. Making commitments legally binding;
5. Including all sources, gases and sinks in a single agreement;
6. Aiming for economy-wide emissions targets; and
7. Allowing emissions reduction obligations to extend over a relatively long period of time.

Like many previous suggestions for bottom-up climate regimes (Victor et al. 2005; Aldy et al. 2007; Carraro and Egenhofer 2007; Falkner et al. 2010; Rayner 2010), the building block approach aims to make progress through many smaller undertakings. Our approach operates by shifting the locus of initiative to regimes that are bilateral and plurilateral, involving a limited number of national governments (developed and developing), subnational governments and/or private sector actors. These regimes will consist of specific regulatory, R&D, and financial programs that cover particular economic sectors, geographic areas, or emission sources. And by structuring commitments over shorter time periods, it becomes easier to monitor compliance by the regime participants with the terms of cooperation and implement effective mechanisms to deal with non-compliance.

Our building block approach differs from prior proposals for bottom up objectives in important respects. First, it focuses on economic or other self-interested organizational incentives that have GHG reductions as co-benefits. It does not rely on climate altruism as motivation. Second, it engages a wide variety of actors in global climate change, including governments, subnational jurisdictions, firms, civil society organizations, and consumers. Third, it proposes three specific institutional design templates—club, linkage, and dominant market actor—for developing successful regimes with these features. Fourth, it provides to the extent feasible for monitoring, reporting, and verification (MRV) of the GHG reductions achieved and their incorporation in the UNFCCC reporting system. These four features would form the basis for creating new, or reforming existing, transnational institutions that would not only reduce GHG but also build webs of cooperation, interlinked interests and trust that might lead both to greater international cooperation on climate action (Cole 2011) and success in the international climate negotiations.

The building blocks proposal is intended to be supplementary to, and supportive of, the UNFCCC negotiations by enhancing the willingness and ability of countries to agree to achieve stringent binding international targets in the future. By capturing climate co-benefits, this approach would help clarify and reduce the costs of GHG limitations, and potentially change opinions within the climate negotiations about the burdens involved in

limitations (Heal and Kunreuther 2011). As well, the regimes would involve cooperative GHG monitoring, reporting, and other information-based arrangements among the individual building block regimes and with the UNFCCC process (Stewart et al. 2013).

Our approach accepts that many nations pursue prevailing conceptions of national interest that make climate protection a low priority, that firms seek to maximize profit, and that most consumers seek to maximize their economic welfare. Our assumptions regarding the motivations of relevant actors are parsimonious. The approach seeks to tap non-climate motivations through incentives for governments, subnational jurisdictions, firms, and consumers to take self-interested actions (e.g. for economic, organizational or security reasons) that will produce net GHG reductions as a co-benefit. It represents both an enrichment of the notion of a bottom up regime and a reconceptualization and enhancement of elements of the current global climate regime complex (Keohane and Victor 2011) to emphasize the centrality of motivations unrelated to climate change and of institutional strategies that will link those motivations to achievement of GHG reductions.

The three specific institutional building block strategies for building transnational cooperation on actions that have the consequence of reducing GHG are as follows:

**Club Strategy:** The first strategy would stimulate development of new transnational cooperative regimes based on economic, environmental, or other non-climate objectives achieved through behavioral changes by the participants that will yield GHG reductions as a co-benefit. The non-climate benefits produced by cooperation would provide the primary or sole incentives for participation. The institutional arrangements would be structured in accordance with the economic concept of clubs (Buchanan 1965). Clubs represent a particular type of cooperation game, which aims to produce club benefits that accrue solely or primarily to those that participate in and abide by the terms of the cooperative arrangement. This arrangement is quite distinct from the type of cooperation game aimed at securing a global climate treaty (Barrett 2003), which attempts to secure a global public good and must accordingly deal with pervasive incentives to free ride on the efforts of others. Clubs also differ from pure coordination games (e.g. rules of the road), which are largely self-enforcing, because clubs must include institutional arrangements to monitor members' compliance with the club rules and exclude those who fail to do so.

**Linkage Strategy:** The second building block strategy takes advantage of existing non-climate transnational institutions in specific policy sectors or geographic regions, combined with pockets of support for climate action among some key internal or external institutional actors (such as bureaucrats, officials, states and funders). Policy entrepreneurs may then leverage the pockets of support in order to link climate-friendly initiatives to existing institutions and their missions. Examples of this linkage strategy are inclusion of rural renewable energy and low-GHG agriculture in existing bilateral and multilateral development programs, extension of the Montreal Protocol to include currently unregulated ozone-depleting substances (ODS) or substitute chemicals which are potent GHGs, and expanding the ASEAN Agreement on Transboundary Haze Pollution to include specific sources and pollutants. The linkage strategy reduces the institutional and political costs of mitigation initiatives by building on existing institutions for transnational cooperation and capitalizes on the circumstance that powerful nations who dominate international organizations either favor or are prepared to acquiesce to such policies even though they are unwilling to adopt domestic limitations measures or agree to internationally binding emissions limitations obligations.

**Dominant Market Actor Strategy:** The third strategy leverages the market power of dominant actors within specific sectors in ways that enable them effectively to determine or at least strongly influence the regulatory norms governing the sector, regionally or globally—akin to a California Effect (California motor vehicle emission standards) or Brussels Effect (EU regulations on products) (Bradford 2013). Where dominant actors (public or private) perceive economic, strategic, or reputational gain from a particular climate-positive action sufficient to justify the costs of acting as a first mover, they may act unilaterally with the goal of inducing others in a sector to follow suit, often with the objective of gaining competitive advantage or avoiding competitive disadvantage. An example is the extension of the EU's emissions trading system (ETS) program to international airlines serving Europe, with the goal of forcing the airlines and/or their home countries to comply with or adopt the European regulations, or form or join a regulatory regime that will achieve comparable reductions, thereby avoiding competitive disadvantage to EU carriers. In the case of the private sector, one or a few dominant firms in a market for a given climate-beneficial technology, such as wind turbine nacelles or grid technologies, may adopt or promote adoption by regulators of a more demanding product or performance standard that gives it a competitive advantage. Other firms may be obliged to follow because the dominant market position of the leader(s) may effectively set the standards for the market.

The several building block regimes represent a complement to rather than a substitute for the UNFCCC. At the same time the institutional strategies that they employ are entirely different from the omnibus state-centric UNFCCC approach. The building block approach includes a large number of smaller-scale sectoral regimes involving and catalyzed by not only countries, but also firms, civil society organizations, and subnational jurisdictions (Abbott 2012) whose engagement in emissions reductions is a critical piece of this proposal. This inclusion helps to overcome the fact that support for climate action is quite uneven among states. In the context of international treaty negotiations, intense support in some states does not compensate for indifference or opposition in others. The building block regimes are designed to build cooperation incrementally, in discrete, concrete steps while providing direct benefits to the participants. This diversity of action and actors greatly reduces the risk of regime failure.

Finally, in smaller-scale regimes, self-interested participants can more readily develop institutional arrangements that generate trustworthy information about performance, monitor each other's performance, and address non-performance. These smaller regimes with strong links between the actors may serve as a stepping-stone to broader and deeper regimes (Downs et al. 1998; Gilligan 2004).

## 2 Specific proposals

### 2.1 Building block regimes based on a club strategy

The following are three examples of clubs that might be developed and provide economic or other non-climate excludable benefits to members while generating GHG emissions reductions as a public good co-benefit. We discuss a number of others, including clubs for linking market-based mechanisms for controlling air pollution, for the development of green product standards, and for developing GHG measurement systems, elsewhere (Stewart et al. 2013). Our approach differs from a recent proposal for clubs of countries for cooperation on climate goals (Weischer et al. 2012) in basing clubs on non-climate objectives and broadening membership beyond states. We recognize that the climate benefits produced by these clubs will often be sub-optimal compared to

a first-best agreement among states on climate mitigation. Because such an agreement is very difficult to achieve, the building block strategy aims to provide reductions in the interim and make eventual agreement more likely. We expect that the clubs will be able to capture emissions reduction opportunities that are currently under-supplied by the market. Further, the participation of governments in the clubs may allow for targeted subsidies where the clubs are producing benefits in the governments' non-climate interests, further reducing GHGs.

### *2.1.1 Government-led energy efficiency/renewable energy research and development clubs*

Major jurisdictions competing in developing and establishing global market position in energy efficiency and renewable technologies might find mutual benefit in establishing a cooperative R&D club for specific sectors. Joint R&D would realize economies of scale, pool and diversify the risks involved in innovation, and could tap complementarities in the diverse expertise and capabilities of the participants. The club arrangements would have to include intellectual property (IP) or confidentiality arrangements to restrict the benefits of innovation, including market and trade benefits, to the club members and their firms, as well as agreements on each member's contributions to the joint effort.

One example is a carbon capture and storage (CCS) technology club. Even with aggressive development of renewables, China and India are projected to increase coal combustion on a massive scale. Here the US and EU have a significant advantage in terms of their knowledge base and perhaps their storage options, China has advantages in terms of ability to manufacture and implement the needed technology cheaply, but currently lacks strong incentives to implement it domestically (Wilson et al. 2011). A CCS Club, already incipient due to EU-China joint demonstration projects, could speed development of the technology, address siting and storage issues, and provide expanded implementation in China, while allowing the EU to share in credit for emissions reductions and in eventual profits from selling the technology to non-member jurisdictions.

### *2.1.2 Government or industry-led club for harmonization of existing technical standards for green technologies and goods*

Firms and their governments would benefit from increased trade in green goods. While relatively high tariffs impede such trade (and steps to reduce same are under discussion in various forums), the existence of different and often inconsistent technical standards in different countries may be an even greater barrier (Ghosh 2011), for example in wind turbine components (Kwok 2009; Woebeking 2010). Arrangements that harmonize technical standard can expand markets, lower costs, widen competition, and promote innovation, diffusion, and deployment (Barrett 2003) and consequently lead to emissions reductions. As the Doha/Cancun Round remains stalled, the WTO cannot function as the venue for achieving harmonization. A small club, consisting of states and/or firms that are important players in the sector and could enjoy large benefits from harmonization, could launch such an effort. The club benefit would arise from the ability to shape the harmonized standard, to the economic (or other) benefit of the club members. Once created, the propagation of the standard follows the dominant actor strategy, where the harmonization club is the dominant actor in shaping the market, a two-stage hybrid model.

### *2.1.3 Industry-led clubs for resource efficiency in industrial processes*

Rather than countries, transnational groups of firms in key industry sectors, such aluminum, cement, paper and pulp, textiles, iron, and steel might form clubs aimed at meeting targets

for energy efficiency and other costs saving measures that would also generate GHG reductions. The club goods could include joint R&D as well as knowledge sharing concerning techniques to reduce energy use and promote resource efficiency, including changes in production arrangements, materials management techniques, and deployment of new technologies. The design could take an experimentalist strategy that would include performance benchmarking and tracking. Specific examples include the following:

**Aluminum:** Cooperation amongst members of the International Aluminum Institute (IAI) has already reduced PFC emissions per ton by over 90 % since 1990 (IAI 2011). Firms could use the existing IAI framework to channel further cooperation on new energy efficiency measures by providing technical assistance on best practices and by channeling research and development funding into innovations such as fluid bed technology and higher amperage cells (Das 2012).

**Textiles:** A variety of strategies and technologies exist for enhancing energy efficiency at each stage of the textile production chain, many of which are cost-effective and pay off their costs in terms of reduced energy consumption within 2 years. Significant financing, technical and informational barriers to realizing such gains could be overcome by sectoral clubs with government support (Elahee 2010; Nagesha and Balachandra 2006).

Such arrangements could also represent an effort by dominant market actors to establish global standards in order gain competitive advantages, including by preempting or influencing government regulation.

## 2.2 Using linkage strategies to develop building block regimes

The linkage strategy for building block regimes seeks to take advantage of situations where there are existing institutions or institutional relations with objectives other than mitigation but where there may be pockets of mitigation support. Either new activities that would reduce GHG emissions and which would fit within the institutions' existing missions or existing missions which can feasibly be modified to include such activities could be catalyzed by internal or external policy entrepreneurs. The strategy is opportunistic, deploying a form of policy judo—targeted interventions to redirect the existing policy course of an organization. It leverages the institution's resources to undertake new programs that will reduce GHG.

An example, using the Montreal Protocol (MP) to regulate the GHG class hydrofluorocarbons (substitutes for ozone-depleting chemicals), has been widely discussed, and more recently, regulating nitrous oxide, a GHG that also depletes ozone, under the MP has been put forward (Kanter et al. 2013). We propose the following two additional examples of the linkage strategy:

### 2.2.1 *Bilateral and regional air pollution control programs*

Existing institutionalized forms of regional cooperation among countries, including on environmental or economic matters, could be extended to include regional programs for coordinated control of conventional air pollutants that cause significant local and regional health and other problems that would reduce GHG as a co-benefit. Exacerbation of transboundary regional air pollution is already an issue in Europe, North America, South Asia, and East Asia. Air pollution control agreements of various stripes currently involve

Europe and North America, and separately, the US with Canada and US with Mexico. Such expanded regimes should provide MRV for GHG reductions that are incidental to their main purpose. New agreements could be developed in East and South Asia and trans-Pacific (US-China) with the GHG-MRV architecture embedded from the start. The purpose would be to provide the basis, and create support, for future regulatory recognition, offset trading of the reductions, and eventually full GHG emission trading programs.

Two key warming agents, tropospheric ozone and black carbon particulate matter, could be reduced by such agreements. Reductions of CO<sub>2</sub> could also occur as a result. By including consideration of the side effects on CO<sub>2</sub> and other GHGs of controls on conventional air pollutants, use of control strategies, notably scrubbing of SO<sub>2</sub> and NO<sub>x</sub>, that have the effect of increasing GHG emissions, would be reduced. Developed countries with an interest in mitigation could provide substantial financial assistance to catalyze and support regional air pollution control programs (and associated GHG reductions) in developing country regions (ICTSD 2011), such as Southeast Asia, where ASEAN through the 1998 Male Declaration has thus far been rather ineffective in controlling regional haze.

### 2.2.2 Including GHG-reducing activities in development assistance programs

There are many opportunities to prioritize GHG reduction within development aid, and some of these are already being undertaken. This can, and is, happening by leveraging support for mitigation in developed-country development assistance ministries, multilateral development banks, and other international financial institutions to redirect development assistance in ways that also reduce GHG. There is currently a debate about mainstreaming climate within development assistance (Huq et al. 2006; Gupta and van der Grijp 2010). We sidestep this debate, and suggest that to the extent that these programs further a recipient country's self-decided development pathway, then it should not be problematic. Some examples of current and potentially expanded activities include the following:

**Energy Efficiency/Climate Financing Arrangements:** A wide variety of arrangements, public, private, and hybrid, to promote investment in energy efficient/low GHG technologies and infrastructure, especially in developing countries already exist and others could be developed (Newell 2011; Wright 2011). Examples include World Bank Clean Investment Funds, export credit agency policies favoring green energy projects, green stock indexes, and the Asia-Pacific Partnership on Clean Development.

**Black Carbon/Cookstoves:** The Climate and Clean Air Coalition, a US State Department-led country coalition, is using development funding (from developed country development agencies) to advance adoption of clean cookstoves (US State Dept. 2012). While this program is currently small in terms of funding, it has the potential to have a significant impact through demonstration effects. Cleaner burning cookstoves require less fuel, produce significantly less black carbon (a significant short-term climate forcer), and contribute to improved air quality within dwellings (UNEP 2011).

### 2.3 Building block regimes using dominant actor strategies

Jurisdictions that are strongly committed to mitigation and command a large share of international trade in a given sector may be able to exploit their market power by imposing GHG, energy efficiency, or other climate-related regulatory requirements on goods and services

entering their markets. Because of scale economies and transaction cost considerations, manufacturers and service providers may have strong economic incentives to follow those requirements globally (Barrett 2003; Bradford 2013).

There may also be dominant private actors that realize competitive advantage through some form of private standard setting. These private standards may then influence government regulation, as they did with ODS manufacturers like DuPont in the negotiation of the Montreal Protocol (Oye and Maxwell 1995; Benedick 1998), or by preempting government regulation, like the concerted steps of the aluminum industry to adopt technologies and methods to reduce their energy consumption and emissions (Das 2012).

A final variant could involve use of both club and dominant actor scenarios—a two-stage hybrid model. For example, a group of actors with similar or complementary strategic positions and substantial market power in a given sector may form a club to foster adoption of a product, performance, or service standards for the sector that would be to their mutual advantage. Once the members of the club established the standard, the club would effectively operate as dominant actor and could propagate the standard throughout the market sector. Firms in a sector subject to regulation by one or a few dominant jurisdictions may respond by developing a rival, voluntary regulatory club that will further harmonization of regulatory standards on their own terms. They may seek to enlist other countries to join in this effort. Something of this sort may develop in response to the EU's regulation of international airline CO<sub>2</sub> emissions. Following are two specific examples.

### 2.3.1 Aviation emissions

The EU has extended its ETS regulation of CO<sub>2</sub> emissions to flights by foreign air carriers that take off or land within the EU; the regulation covers all CO<sub>2</sub> emitted during such flights, including portions over international waters and in foreign countries (EC 2003). The regulation reflects EU frustration with the lack of progress over many years in negotiating an international agreement on emissions under the auspices of the International Civil Aviation Administration (ICAO), which would be a logical venue for establishing such standards. The EU is evidently hoping to use its market leverage to force carriers to either comply with its standards or induce international agreement on comparable standards. Indeed, the EU has agreed to postpone the inclusion of foreign carriers until after the 2013 ICAO General Assembly, assuming ICAO develops a comparable international standard. In another variant of the dominant actor model, if Airbus and Rolls Royce believe that they have a strategic edge over competitors in producing fuel-efficient aircraft and engines, respectively, they may ally with the EU in its aviation ETS initiative. Alternatively, they might push ICAO to adopt industry-wide standards that favor them.

### 2.3.2 Maritime pollution—black carbon in Arctic

Another potential dominant market actor initiative would involve action by one or a few major port/trading jurisdictions, or the dominant shipping company Maersk, to adopt fuel efficiency or air pollution emissions regulations for ships. The IMO could serve as the institutional base for global regulatory standards in the international shipping sector, as it has already done for SO<sub>2</sub> emissions (Barrett 2003). Dominant port/coastal states have already used this approach successfully to impose design and safety standards for ships, such as a requirement for double hulls on large tankers, which IMO has then adopted as a global standard (Mitchell 1994). Emissions of black carbon from incomplete diesel combustion on ships are a powerful forcing agent

(Menon et al. 2010). With the anticipated opening of the Arctic to extensive maritime traffic following retreat of the sea ice due to climate change, controlling black carbon from ships, which deposits on ice and speeds melting, has become a priority.

### 3 Developing effective transnational building block regimes for reducing GHG emissions

Implementing the building block approach will require institutional innovators to identify the most promising opportunities for building block regimes, design institutional arrangements to secure effective cooperation among relevant actors in the specific sector chosen, and mobilize key actors to organize the regime. The motivations for these institutional actors will depend on the strategy that they are working within. For clubs, private actors will be motivated by a potential competitive advantage, while public actors may be motivated by creating competitive advantages for domestic industry, or to achieve particular policy goals. Innovators in the linkage model will likely be motivated by climate concerns. Finally, dominant actors (both public and private) may be motivated by gaining an economic or other advantage, avoiding potential competitive disadvantage as well, by addressing climate concerns.

In each case there will be the need to set an agenda, identify and enlist the interest of the key players, negotiate the arrangements, define the terms of participation, monitor and police compliance, and overcome other barriers to securing participation and forming a well-functioning regulatory regime (Abbott and Snidel 2009). To the extent feasible, these arrangements should provide for monitoring, reporting, and verification for GHG emission reductions. This will not be possible in all regimes, but where it is, it would serve as a key step to creating a robust transnational system of building block regimes. Here we focus on the link between GHG emissions accounting and the UNFCCC reporting system.

Regimes that monitor GHG emissions as well as regime compliance could link, through a potential umbrella building block MRV network, into the UNFCCC reporting system. This could be achieved either in two non-exclusive ways. First, they could form an additional part of the UNFCCC reporting system, orthogonal to the existing country system reports, that would track and recognize the emissions limitations achieved by the sectoral regimes and their members, including subnational jurisdictions and non-state actors. Second, the building block MRV methodologies and data could be used to enhance the existing UNFCCC country reports and building block MRV experts could contribute to UNFCCC MRV design and review of reports.

Although there are challenging methodological and practical issues involved in implementation, linking building block regimes' methods and reports with those of the UNFCCC could be workable and beneficial. First, there are strong incentives for developed and developing countries, firms, and other entities participating in building block regimes to support such linking in order to claim credit in the UNFCCC for the reductions achieved by those regimes. The UNFCCC Secretariat, the reporting systems of the building block regimes, and expert communities would likely also support linking. Involving building block MRV experts would increase the accuracy of country reports, and where included in Expert Review Teams, provide increased monitoring ability and decrease resource demands on the UNFCCC.

Finally, such linkage via MRV systems could serve larger political purposes. Implementing a building block approach, where targets or actions are less inclusive or ambitious than those sought by the UNFCCC, will be criticized in some quarters as abandonment of both multilateralism and the UNFCCC process. Many developing countries already criticize bilateral and plurilateral GHG reduction initiatives as a means for developed countries to avoid their

UNFCCC responsibilities (Hoffmann 2011). Linking building block regimes to the UNFCCC process, in a way that respects the need for multilateralism in addressing the global character and consequences of climate change, may help defuse these criticisms.

#### 4 Conclusion

Notwithstanding the adoption of the Durban Platform, there remain serious obstacles to achieving a GHG Treaty with participation by all major emitting developed and developing countries, significant binding GHG reductions commitments, and adequate compliance assurances. Further, the lack of significant regulation beyond existing EU commitments under the second Kyoto period of 2012–2020 means that there is the need for a new strategy, complementary to the UNFCCC state-centered diplomatic process, to address these obstacles and realize the promise of Durban. The building block approach can mobilize and harness the diverse incentives and energies of all levels of government, of firms, and of civil society actors to take actions that will have the effect, if not in many cases the purpose, of reducing GHG emissions. Such an approach can bypass the political blockages and lack of leadership in the national governments of the biggest emitting countries in order to make mitigation progress and build networks of trust. In doing so, it can help change political and economic conditions and outlooks and build transnational and domestic constituencies in ways that eventually will make an effective international climate treaty more achievable.

Diverse public and private policy entrepreneurs and institutional innovators must take the lead in this effort, with support from a variety of existing international and domestic institutions with an interest in mitigation. Researchers and analysts can make important contributions to this enterprise by examining the incentives of relevant actors to undertake actions in specific sectors and fields as described above, the opportunities for developing policies and institutions to mobilize those incentives, and the design of the most appropriate and effective institutional arrangements. A hardheaded focus on political economy considerations and public choice dynamics in the specific context of each different building block strategy and each potential regime is essential.

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